CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

PROJECT NAME

LIDCOMBE MULTI STOREY WAREHOUSE PROJECT

PROJECT NO.

3658

ADCO

Plan Control and Amendment

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Project Version History

Revision	Date	Description / Updates	Reviewed by	Approved by
3.1	26/02/2024	Initial Draft Circulation of CEMP for Client & Internal Review / Comments	Paul Cassimatis	Paul Cassimatis
3.2	08/04/2024	Client Commentary Incorporated – Council Consultation & Approvals also included.	Paul Cassimatis	Paul Cassimatis
3.3	11/04/2024	Incorporation of IFC ESCP Plans (A-14) & Upgrade of CFERP to Final (A-15). Also, minor amendments made to formatting & wording.	Paul Cassimatis	Paul Cassimatis
3.4	20/05/2024	Update with reference to DPHI & SES Consultation in A-27, more specifically, CEMP body text & appended plans as directed.	Paul Cassimatis	Paul Cassimatis

1. CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN MATRIX

This CEMP has been prepared to address the specific requirements of the approved development consent **SSD-36464788** and in consideration of the Guideline for the Preparation of Environmental Management Plans.

As required by **SSD-36464788**, the following have been prepared to support this CEMP for the **Boorea Street Warehouse & Distribution Centre** Project:

a) Construction Traffic Management Plan (ptc. consultants);

b) Erosion and Sediment Control Plan (Costin Roe Consulting);

c) Construction Flood Emergency Response Plan (Costin Roe Consulting);

d) Construction Noise and Vibration Management Plan (Pulse White Noise Acoustics);

e) Construction and Demolition Waste Management Plan (ADCO Constructions);

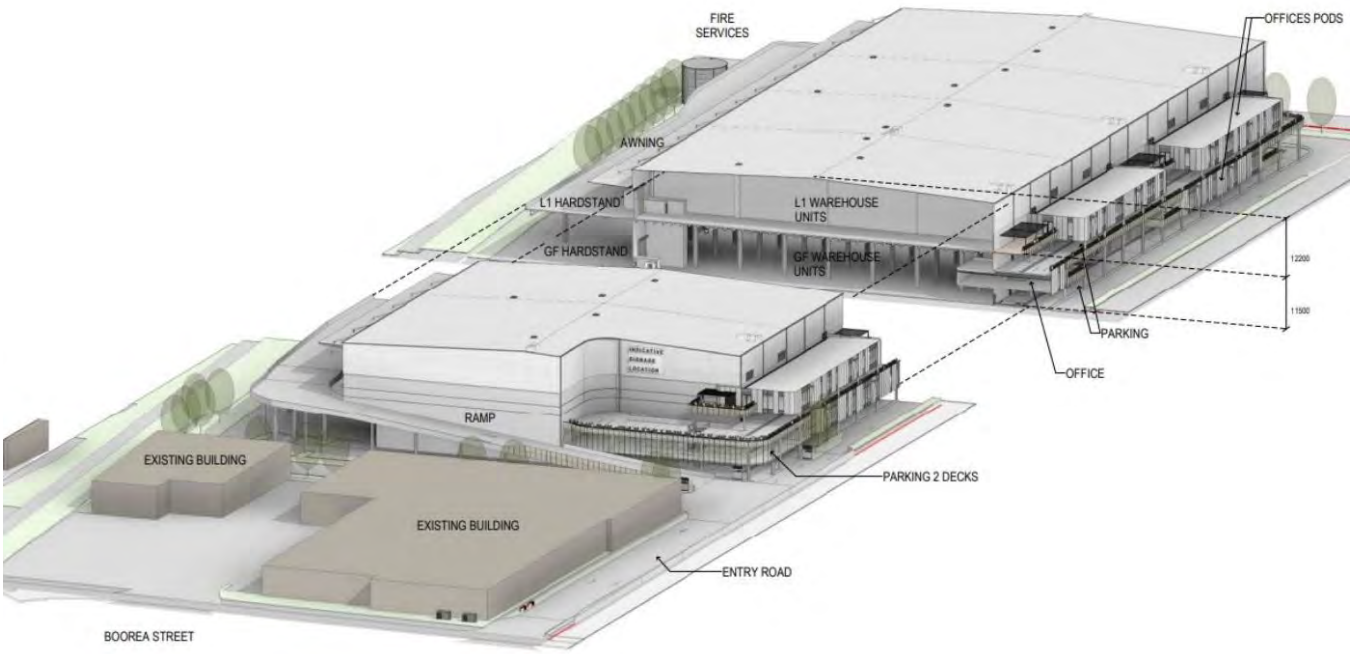
f) Unexpected Contamination Finds Procedure (ADCO Constructions);

g) Acid Sulfate Soils Management Plan (JBS&G);

h) Community Consultation and Complaints Handling Procedure (ADCO Constructions);

i) SSD-36464788 Development Consent Conditions (Department of Planning Housing & Infrastructure); and

j) Statement for Repairs (Condition A13) (ADCO Constructions).



1.1 Scope of CEMP Requirements

This CEMP has been prepared to satisfy Conditions C1 – C4 of **SSD-36464788**. The specific requirements of these consent conditions, along with where these requirements have been addressed within this CEMP, are listed in the **SSD-36464788 Matrix** below:

SSD-36464788 - Consent Condition	Reference
Condition C1 – Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	
a) Details of: (i) the relevant statutory requirements (including any relevant approval, licence, or lease conditions); (ii) any relevant limits or performance measures and criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	**Refer to Appendix A-13 – Construction Traffic Management Plan of the CEMP** **Refer to Appendix A-16 – Construction Noise & Vibration Management Plan of the CEMP**
b) A description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	**Refer to Section 4.1.2 of the CEMP**
c) A program to monitor and report on the: (i) impacts and environmental performance of the development; and (ii) effectiveness of the management measures set out pursuant to paragraph (c) above;	**Refer to Section 4.1.3 of the CEMP**
d) A contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	**Refer to Section 4.1.4 of the CEMP**
e) A program to investigate and implement ways to improve the environmental performance of the development over time;	**Refer to Section 4.1.1 of the CEMP**
f) A protocol for managing and reporting any: (i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) complaint; (iii) failure to comply with statutory requirements; and	**Refer to Section 6.3 of the CEMP**
g) A protocol for periodic review of the plan. *Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans*	**Refer to Section 4.1.1 of the CEMP**
Condition C2 – The Applicant must prepare a Construction Environmental Management Plan (CEMP) in accordance with the requirements of condition C1 and to the satisfaction of the Planning Secretary.	
Condition C3 – As part of the CEMP required under Condition C2 of this consent, the Applicant must include the following:	
a) Construction Traffic Management Plan (see Condition B1);	**Refer to Appendix A-13 – Construction Traffic Management Plan**
b) Erosion and Sediment Control Plan (see condition B12);	**Refer to Appendix A-14 – Erosion & Sediment Control Plan of the CEMP**

c) Flood Emergency Response Plan (see condition B18);	**Refer to Appendix A-15 – Construction Flood Emergency Response Plan of the CEMP**
d) Construction Noise and Vibration Management Plan (see Condition B27); and	**Refer to Appendix A-16 – Construction Noise & Vibration Management Plan of the CEMP**
e) Construction and Demolition Waste Management Plan (see condition B62);	**Refer to Appendix A-17 Demolition Procedural Plan & A-18 – Construction Waste Management Plan of the CEMP**
f) An Unexpected Contamination Finds Procedure (see condition B69);	**Refer to Appendix A-19 - Unexpected Contamination Finds Procedure of the CEMP**
g) the approved Acid Sulfate Soils Management Plan submitted as Appendix Y of the EIS; and	**Refer to Appendix A-20 - Acid Sulfate Soils Management Plan of the CEMP**
h) Community Consultation and Complaints Handling.	**Refer to Appendix A-21 Community Consultation and Complaints Handling Procedure of the CEMP**
Condition C4 – The Applicant must: a) not commence construction of the development until the CEMP is approved by the Planning Secretary; and b) carry out the construction of the development in accordance with the CEMP approved by the Planning Secretary and as revised and approved by the Planning Secretary from time to time.	**Noted**

1.2 Statutory Requirements

Development Consent **SSD-36464788** was granted to Hale Property Services Pty Ltd (Hale Capital Partners) on 12 December 2023 for the construction and operation of a two-storey warehouse and distribution centre including ancillary offices, car parking, loading areas and landscaping.

The conditions relevant to the construction of the Boorea Street Warehouse & Distribution Centre (Lidcombe Multi Storey Warehouse Project) are outlined in the below table:

CONDITION	DESCRIPTION OF CONDITION	RELEVANCE TO THIS REPORT
PART A ADMINISTRATIVE CONDITIONS		
OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT		
A1	In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	Noted by ADCO Constructions and Hale Capital.
TERMS OF CONSENT		
A2	The development may only be carried out: (a) in compliance with the conditions of this consent; (b) in accordance with all written directions of the Planning Secretary; (c) in accordance with the Environmental Impact Statement and Response to Submissions; (d) in accordance with the Development Layout in Appendix 1; and (e) in accordance with the management and mitigation measures in Appendix 2.	Noted by ADCO Constructions and Hale Capital.
A3	Consistent with the requirements in this consent, the Planning Secretary may make written directions to the Applicant in relation to: (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and (b) the implementation of any actions or measures contained in any such document referred to in condition A3(a).	Noted by ADCO Constructions and Hale Capital.
A4	The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in condition A2(c) or A2(e). In the event of an inconsistency, ambiguity, or conflict between any of the documents listed in condition A2(c) or A2(e), the most recent document prevails to the extent of the inconsistency, ambiguity, or conflict.	Noted by ADCO Constructions and Hale Capital.
LIMITS OF CONSENT		
Lapsing		
A5	This consent lapses five years after the date from which it operates unless the development has physically commenced on the land to which the consent applies before that date.	Noted by ADCO Constructions and Hale Capital.

NOTIFICATION OF COMMENCEMENT		
A6	The date of commencement of each of the following phases of the development must be notified to the Planning Secretary in writing, at least one month before that date, or as otherwise agreed with the Planning Secretary: (a) construction; (b) operation; and (c) cessation of operations.	Noted by ADCO Constructions. Planning Secretary to be notified via. the Planning Portal by Hale Capital.
A7	If the construction or operation of the development is to be staged, the Planning Secretary must be notified in writing, at least one month before the commencement of each stage (or other timeframe agreed with the Planning Secretary), of the date of commencement and the development to be carried out in that stage.	Noted by ADCO Constructions. Planning Secretary to be notified via. the Planning Portal by Hale Capital.
EVIDENCE OF CONSULTATION		
A8	Where conditions of this consent require consultation with an identified party, the Applicant must: (a) consult with the relevant party prior to submitting the subject document to the Planning Secretary for approval; and (b) provide details of the consultation undertaken including: (i) the outcome of that consultation, matters resolved and unresolved; and (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.	Consultation to be tabled by ADCO Constructions in Appendix A-27 (records of any interactions with community stakeholders) and A-30 (Cumberland City Council).
STAGING, COMBINING AND UPDATING STRATEGIES, PLANS OR PROGRAMS		
A9	With the approval of the Planning Secretary, the Applicant may: (a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program); (b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and (c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).	Noted by ADCO Constructions. Planning Secretary to be notified via. the Planning Portal by Hale Capital.
A10	If the Planning Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.	Noted by ADCO Constructions. Planning Secretary to be notified via. the Planning Portal by Hale Capital.
A11	If approved by the Planning Secretary, updated strategies, plans or programs supersede the previous versions of them and must be implemented in accordance with the condition that requires the strategy, plan or program.	Noted by ADCO Constructions. Planning Secretary to be notified via. the Planning Portal by Hale Capital.

UTILITIES, SERVICES AND PUBLIC INFRASTRUCTURE		
A12	Prior to the commencement of construction of the development, the Applicant must consult with the relevant owner and provider of utility services or public infrastructure that are likely to be affected by the development or that need to be installed as part of the development, to make suitable arrangements for relevant approvals, access to, diversion, protection and support of the affected services or infrastructure.	Noted by ADCO Constructions. Consultation of the utility works with service provider approval has been made with the certifying authority of the development.
A13	Unless the Applicant and the applicable authority agree otherwise, the Applicant must: (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the development; and (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.	Refer to Appendix A-23 – Statement of Repairs (Signed) of the CEMP.
A14	Prior to the commencement of operation of the development, the Applicant must obtain a Compliance Certificate for water and sewerage infrastructure servicing of the site under section 73 of the Sydney Water Act 1994.	ADCO Constructions is currently finalising with Land Partners & Sydney Water. This will be provided to the certifier within the relevant CC and prior to the operation of the development.
A15	Prior to the issue of a Construction Certificate for any stage of the development, the Applicant (whether or not a constitutional corporation) is to provide evidence, satisfactory to the Certifier, that arrangements have been made for: (a) the installation of fibre-ready facilities to all individual lots and/or premises in the development to enable fibre to be readily connected to any premises that is being or may be constructed on those lots; and (b) the provision of fixed-line telecommunications infrastructure in the fibre-ready facilities to all individual lots and/or premises in the development demonstrated through an agreement with a carrier.	ADCO Constructions currently designing the NBN Infrastructure requirements for the relevant CC (CC1) with Edgewater Connections & C-Level.
A16	Prior to the issue of an Occupation Certificate for the development, the Applicant must demonstrate that the carrier has confirmed in writing it is satisfied that the fibre-ready facilities are fit-for-purpose.	Prior to the issue of an Occupation Certificate for the development, ADCO Constructions must demonstrate that the carrier has confirmed in writing it is satisfied that the fibre-ready facilities are fit-for-purpose
DEMOLITION		
A17	All demolition must be carried out in accordance with Australian Standard AS 2601-2001 The Demolition of Structures (Standards Australia, 2001).	ADCO Constructions to ensure demolition is carried out in accordance with 'AS 2601-2001 The Demolition of Structures.'

STRUCTURAL ADEQUACY		
A18	All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with: (a) the relevant requirements of the BCA. Note: • Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works. • Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.	ADCO Constructions to ensure all new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with the relevant requirements of NCC-2022.
EXTERNAL WALLS AND CLADDING		
A19	The external walls of all buildings including additions to existing buildings must comply with the relevant requirements of the BCA.	ADCO Constructions to ensure the external walls of all buildings including additions to existing buildings are in compliance with the relevant requirements of the current version of the NCC-2022.
A20	Prior to the issue of: (a) any Construction Certificate relating to the construction of external walls (including the installation of finishes and claddings such as synthetic or aluminium composite panels); and (b) an Occupation Certificate, the Applicant must provide the Certifier with documented evidence that the products and systems proposed for use or used in the construction of external walls (including finishes and claddings such as synthetic or aluminium composite panels) comply with the requirements of the BCA.	ADCO Constructions to provide the Certifier with documented evidence that the products and systems proposed for use or used in the construction of external walls (including finishes and claddings such as synthetic or aluminium composite panels) comply with the requirements of the NCC-2022 prior to the issue of any relevant Construction Certificate and Occupational Certificate.
A21	The Applicant must provide a copy of the documentation given to the Certifier to the Planning Secretary within seven days after the Certifier accepts it.	Hale Capital must provide a copy of the documentation given to the Certifier to the Planning Secretary within seven days after the Certifier accepts it.
COMPLIANCE		
A22	The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.	Refer to Section 4.5 of the CEMP.

COMPLIANCE		
A23	Under Section 7.12 of the EP&A Act and in accordance with the Cumberland Local Infrastructure Contributions Plan 2020, the Applicant must pay of a levy of 1% of the proposed cost of carrying out the development to Council.	Hale Capital will pay this Levy prior to commencement of construction.
A24	The monetary contribution required by condition A23 must be paid prior to the issue of a construction certificate in respect of any building to which this consent relates. The amount to be paid is to be adjusted at the time of the actual payment, in accordance with the Cumberland Local Infrastructure Contributions Plan 2020.	Hale Capital will pay this Levy prior to commencement of construction.
OPERATION OF PLANT AND EQUIPMENT		
A25	All plant and equipment used on site, or to monitor the performance of the development, must be: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Refer to Section 6.2 of the CEMP. For operational requirements, if required, Hale Capital are to adhere to these requirements.
EASEMENT		
A26	Prior to the commencement of operation of the development and pursuant to section 88B of the Conveyancing Act 1919, the Applicant must carry out a lot boundary adjustment or create an appropriate easement over Part of Lot B DP 415100 (44 Boorea Street, Lidcombe) benefitting the site to permit the use of part of this lot for the access driveway to the development, as illustrated in Drawing No.C014411.01-DA41 dated 24 February 2023 prepared by Costin Roe Consulting Pty Ltd.	Hale Capital to provide the boundary easement prior to the commencement of operation.
WORK AS EXECUTED PLANS		
A27	Prior to the issue of the Occupation Certificate for the development, work-as-executed drawings signed by a registered surveyor demonstrating that the stormwater drainage and finished ground levels have been constructed as approved, must be submitted to the Principal Certifier.	ADCO Constructions will provide work-as-executed drawings signed by a registered surveyor demonstrating that the stormwater drainage and finished ground levels have been constructed as approved to the Certifying Authority.

APPLICABILITY OF GUIDELINES		
A25	References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.	ADCO Constructions to adhere to references in the conditions of this consent to any guideline, protocol, Australian Standards, or policy are to such guidelines, protocols, Standards, or policies in the form they are in as at the date of this consent.
A26	However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.	ADCO Constructions acknowledges consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.
ADVISORY NOTES		
AN1	All licences, permits, approvals and consents as required by law must be obtained and maintained as required for the development. No condition of this consent removes any obligation to obtain, renew or comply with such licences, permits, approvals and consents.	Refer to Section 4.2 of the CEMP.

PART B SPECIFIC ENVIRONMENTAL CONDITIONS		
TRAFFIC AND ACCESS		
Construction Traffic Management Plan		
B1	Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition C2 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) be prepared in consultation with Council; (c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction; (d) include details of: (i) heavy vehicle types, routes, access, and parking arrangements; (ii) the strategies that would be implemented to minimise the number of construction workers who will drive to the site; and (iii) any potential impacts to general traffic, cyclists, and pedestrians within the vicinity of the site from construction vehicles during the construction of the development; (e) include a Driver Code of Conduct and Induction Program to: (i) minimise the impacts of earthworks and construction on the local and regional road network; (ii) minimise conflicts with other road users; (iii) minimise road traffic noise; and (iv) ensure truck drivers use specified routes; (f) include a program to monitor the effectiveness of these measures; and (g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.	Refer to Appendix A-13 – Construction Traffic Management Plan of the CEMP.
B2	The Applicant must: (a) not commence construction until the Construction Traffic Management Plan required by condition B1 is approved by the Planning Secretary; and (b) implement the most recent version of the Construction Traffic Management Plan approved by the Planning Secretary for the duration of construction.	Noted by ADCO Constructions. Planning Secretary to approve Appendix A-13 – Construction Traffic Management Plan of the CEMP prior to commencement on-site.
Construction Traffic Management Plan		
B3	Prior to the commencement of construction of the development, the Applicant must submit design plans to the satisfaction of the relevant roads authority that demonstrate: (a) the access driveway to the development is designed to accommodate the turning path of a 26-metre B-Double heavy vehicle; and (b) the design is consistent with the most recent version of the AUSTROADS Guide to Road Design	Noted by ADCO Constructions. Transport NSW / Cumberland City Council to approve Appendix A-13 – Construction Traffic Management Plan of the CEMP prior to commencement on-site.
B4	Prior to the commencement of operation of the development, the Applicant must complete the access driveway to Boorea Street to the satisfaction of the relevant roads authority. The Applicant must obtain approval for the works under section 138 of the Roads Act 1993.	Noted by ADCO Constructions. Transport NSW / Cumberland City Council to approve Appendix A13 – Construction Traffic Management Plan of the CEMP prior to operation of the development.

B5	The Applicant must provide sufficient parking facilities on-site, including for heavy vehicles and for site personnel, to ensure that traffic associated with the development does not utilise public and residential streets or public parking facilities.	Refer to Appendix A-13 – Construction Traffic Management Plan of the CEMP.
On-Site Traffic Control		
B6	Prior to the commencement of construction of the development, the Applicant must prepare an On-Site Traffic Control Plan for the development to the satisfaction of the Planning Secretary. The On-Site Traffic Control Plan must: (a) be prepared by a suitably qualified and experienced person(s); (b) be prepared in consultation with Council; (c) include details of all safety and efficiency measures to be implemented on-site to manage and mitigate the potential for on-site pedestrian and vehicle conflict during operation of the development for all internal roads, parking areas, loading/unloading areas and access ramps and the site access driveway; and (d) include detailed architectural plans illustrating the location of all line marking, signage (including speed limit signage), and convex mirrors required for operation of the development.	Noted by ADCO Constructions. Please refer to the On-Site Traffic Control Plan as per Appendix 29.
B7	The Applicant must: (a) not commence construction of the development until the On-Site Traffic Control Plan required by condition B6 has been approved by the Planning Secretary; and (b) implement the most recent version of the On-Site Traffic Control Plan approved by the Planning Secretary for the duration of the development.	Noted as per the above.
Operational Traffic Management Plan		
B8	Prior to the commencement of operation of the development, the Applicant must prepare an Operational Traffic Management Plan (OTMP) for the development to the satisfaction of the Planning Secretary. The OTMP must: (a) be prepared by a suitably qualified and experienced person(s), whose appointment has been endorsed by the Planning Secretary; (b) be prepared in consultation with Council; (c) detail the measures that are to be implemented to ensure road safety and network efficiency; (d) detail heavy vehicle routes, access, and parking arrangements; (e) include an Operational Driver Code of Conduct to: (i) minimise the impacts on the local and regional road network; (ii) minimise conflicts with other road users; (iii) minimise road traffic noise; (iv) inform truck drivers of the site access arrangements and use of specified haul routes; (v) include a program to monitor the effectiveness of these measures; (f) include a Loading Dock Management Plan: (i) consistent with the '42 Boorea Street Framework Loading Dock Management Plan' prepared by Ason Group dated September 2022, Attachment 4 of Appendix F of the RTS; (ii) that restricts any vehicle larger than a 20-metre articulated vehicle from accessing the ramp and Level 1 warehouse tenancies and Warehouse 1 on the Ground Floor; (iii) that restricts any vehicle larger than a 12.5-msetre articulated vehicle from accessing the eastern dock of Warehouse 4 on the Ground Floor and the two eastern docks of Warehouse 10 on Level 1; (g) include the approved On-Site Traffic Control Plan required by condition B6; and (h) include a Green Travel Plan: (i) outlining facilities and measures to promote public transport usage, such as car share schemes and employee incentives; (ii) describing pedestrian and bicycle linkages and end of trip facilities available on-site; and (iii) including a Travel Access Guide.	Prior to the commencement of operation of the development, the Operational Traffic Management Plan is to be approved by the Planning Secretary. This will be prepared by Hale Capital, noting construction related items, such as the Construction Management Plan and Traffic Engineering Design Development (Traffic Swept Paths) will be undertaken by ADCO Constructions.

B9	The Applicant must: (a) not commence operation until the OTMP required by condition B8 is approved by the Planning Secretary; and (b) implement the most recent version of the OTMP approved by the Planning Secretary for the duration of the development.	Prior to the commencement of operation of the development, the Operational Traffic Management Plan must be approved by the Planning Secretary. This will be provided by Hale Capital.
Operating Conditions		
B10	The Applicant must ensure: (a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest version of AS 2890.1:2004 Parking facilities Off-streetcar parking (Standards Australia, 2004), AS 2890.2:2018 Parking facilities Off-street Commercial Vehicle Facilities (Standards Australia, 2018) and AS 2890.6.2009 Parking facilities Off-street parking for people with disabilities (Standards Australia, 2009) (b) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant AUSTROADS guidelines; (c) the development does not result in any vehicles queuing on the public road network; (d) heavy vehicles and bins associated with the development are not parked on local roads or footpaths in the vicinity of the site; (e) all vehicles are wholly contained on site before being required to stop; (f) all vehicles enter and leave the site in a forward direction; (g) all loading and unloading of materials is carried out on-site; and (h) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.	All points are noted and will be adhered to by ADCO Constructions. In reference to point (a), ADCO Constructions has received and sent to the Certifier to their satisfaction (consistent with SSD Requirements). In reference to Point (b), refer to Appendix A-13 – Construction Traffic Management Plan of the CEMP, more specifically, Turning Path Assessment. Hale Capital are to adhere with the requirements from (c) to (h) during operation.
SOILS, WATER QUALITY AND HYDROLOGY		
Imported Soil		
B11	The Applicant must: (a) ensure that only VENM, ENM, or other material approved in writing by EPA is brought onto the site; (b) keep accurate records of the volume and type of fill to be used; and (c) make these records available to the Planning Secretary upon request.	Refer to Construction & Demolition Waste Management Plan (Appendix A-17, specifically Page 15) appended to this CEMP.
Erosion and Sediment Control		
B12	Prior to the commencement of any construction for the development, the Applicant must install and maintain suitable erosion and sediment control measures on-site, in accordance with the relevant requirements of the Managing Urban Stormwater: Soils and Construction - Volume 1: Blue Book (Landcom, 2004) guideline and the Erosion and Sediment Control Plan included in the CEMP required by condition C2.	Refer to Appendix A-14 – Erosion & Sediment Control Plans of the CEMP.
B13	The Applicant must maintain the erosion and sediment control measures installed on-site in accordance with condition B12 for the duration of construction of the development.	ADCO Constructions to adhere to this condition in accordance with measures in Appendix A-14 – Erosion & Sediment Control Plans of the CEMP.

Discharge Limits		
B14	The development must comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL.	ADCO Constructions to adhere to this condition in strict accordance as nominated in Appendix A-2 – Key Environment Legislation of the CEMP.
Stormwater Management System		
B15	Prior to the commencement of construction of the development, the Applicant must demonstrate to the satisfaction of the Planning Secretary, that the stormwater management system for the development has been designed: (a) by a suitably qualified and experienced person(s) (b) been prepared in consultation with Council; (c) generally in accordance with the conceptual design in the Civil Engineering Report Incorporating Water Cycle Management Strategy prepared by Costin Roe Consulting dated 10 November 2023, Revision I submitted with the Additional Information; and (d) in accordance with: (i) Council's requirements relating to stormwater drainage and water sensitive urban design measures, including those set out in Council's letter to the Department dated 27 June 2023; (ii) applicable Australian Standards; and (iii) the system capacity requirements of Australian Rainfall and Runoff (Engineers Australia, 2016) and Managing Urban Stormwater: Council Handbook (EPA, 1997) guidelines.	This is noted by ADCO Constructions and will be provided to the Principal Certifier via. Costin Roe Consulting (Civil Engineer) once Stormwater Drainage Network is at IFC for approval when seeking the appropriate Construction Certificate. Once approved, this will also be provided to the Planning Secretary for secondary approval.
B16	Prior to the commencement of operation, the Applicant must install the stormwater management system in accordance with the finalised detailed design (as required by condition B15) and ensure the system is operational.	This is noted by ADCO Constructions and to be installed in accordance with the certified (Certatude) IFC Civil Drainage Design by Costin Roe Consulting.
B17	The Applicant must maintain the stormwater management system installed on the site under condition B16 for the duration of the development, and in accordance with the maintenance schedule in the Civil Engineering Report Incorporating Water Cycle Management Strategy prepared by Costin Roe Consulting dated 10 November 2023, Revision I submitted with the Additional Information.	Hale Capital are to maintain the Stormwater Management System during the operational phase post-construction.

Flood Management		
B18	Prior to the commencement of construction of the development, the Applicant must prepare a Construction Flood Emergency Response Plan (CFERP) to the satisfaction of the Planning Secretary. The CFERP must form part of the CEMP required by condition C2 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) be prepared in consultation with the NSW State Emergency Service; (c) address the provisions of the Floodplain Development Manual (2023) and associated guidance in the Department's 'Flood risk management toolkit'; and (d) include details of: (i) the flood emergency responses for construction of the development; (ii) predicted flood levels; (iii) flood warning time, flood notification, signs and depth indicators; (iv) assembly points and evacuation routes; (v) evacuation and refuge protocols; and (vi) awareness training for employees and contractors.	ADCO Constructions are to commence construction activities once the CFERP via. Costin Roe Consulting has been approved by the Planning Secretary. Refer to Appendix A-15 Construction Flood Emergency Response Plan provided as part of the CEMP.
B19	The Applicant must: (a) not commence construction until the CFERP required by condition B18 is approved by the Planning Secretary; and (b) implement the most recent version of the CFERP approved by the Planning Secretary for the duration of construction	ADCO Constructions are to commence construction activities once the appended CFERP (Costin Roe Consulting) has been approved by the Planning Secretary.
B20	Prior to the commencement of operation of the development, the Applicant must update the CFERP for the purposes of operation of the development in an Operational Flood Emergency Response Plan (OFERP) to the satisfaction of the Planning Secretary. The OFERP must: (a) be prepared by a suitably qualified and experienced person(s); (b) be prepared in consultation with the NSW State Emergency Services; (c) address the provisions of the Floodplain Development Manual (2023) and associated guidance in the Department's 'Flood risk management toolkit'; and (d) include details of: (i) the flood emergency responses for operation of the development; (ii) predicted flood levels; (iii) flood warning time, flood notification, signs and depth indicators; (iv) assembly points and evacuation routes; (v) evacuation and refuge protocols; and (vi) awareness training for employees and contractors.	Hale Capital are to update the CFERP to the OFERP via. Costin Roe Consulting during the operational phase post-construction.
B21	The Applicant must: (a) not commence operation of the development until the OFERP required by condition B20 is approved by the Planning Secretary; and (b) implement the most recent version of the OFERP approved by the Planning Secretary for the duration of the development.	Hale Capital are to commence operations once the OFERP via. Costin Roe Consulting has been approved by the Planning Secretary.
B22	All floor levels must be no lower than the 1% Annual Exceedance Probability flood plus 500 mm of freeboard.	Noted by ADCO Constructions – to be included within the certified (Certatude) IFC Civil Drainage Design by Costin Roe Consulting (CC1).

B23	Any structures below the 1% Annual Exceedance Probability plus 500 mm of freeboard must be constructed from flood compatible building components and to withstand flood velocities.	Noted by ADCO Constructions – to be included within the certified (Certatude) IFC Civil Drainage Design by Costin Roe Consulting (CC1).
NOISE		
Hours of Work		
B24	The Applicant must comply with the hours detailed in Table 1, unless otherwise agreed in writing by the Planning Secretary. **Activity** / **Day** / **Time** Construction: Monday – Friday 7 am to 6 pm; Saturday 8 am to 1 pm Operation: Monday – Sunday 24 hours	Refer to Section 2.6 of the CEMP.
B25	Works outside of the hours identified in condition B12 may be undertaken in the following circumstances: (a) works that are inaudible at the nearest sensitive receivers; (b) works agreed to in writing by the Planning Secretary; (c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or (d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.	Refer to Section 2.6 of the CEMP. Refer to Appendix A-16 Construction Noise & Vibration Management Plan.
Construction Noise Limits		
B26	The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures in the Appendix 2.	Refer to Section 2.6 of the CEMP. Refer to Appendix A-16 Construction Noise & Vibration Management Plan.
Construction Noise and Vibration Management Plan		
B27	The Applicant must prepare a Construction Noise and Vibration Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must: (a) be prepared by a suitably qualified and experienced noise expert; (b) describe procedures for achieving the noise management levels in the Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time); (c) describe the measures to be implemented to manage high noise or vibration generating works such as piling, in close proximity to sensitive receivers; (d) include mitigation measures identified in the 'Noise and Vibration Impact Assessment' prepared for the development by RWDI Australia Pty Ltd dated 6 February 2023, Version B, Final; and (e) include a complaints management system that would be implemented for the duration of the development.	Refer to Appendix A-16 Construction Noise & Vibration Management Plan.

B28	The Applicant must: (a) not commence construction of any relevant stage of the development until the Construction Noise and Vibration Management Plan required by condition B27 is approved by the Planning Secretary; and (b) implement the most recent version of the Construction Noise and Vibration Management Plan approved by the Planning Secretary for the duration of construction.	ADCO Constructions Group are not to commence construction of any relevant stage of the development until the Construction Noise and Vibration Management Plan required by condition B27 is approved by the Planning Secretary and implement the most recent version of the Construction Noise and Vibration Management Plan approved by the Planning Secretary for the duration of construction.
Operational Noise Limits		
B29	The Applicant must ensure that noise generated by operation of the development does not exceed the noise limits in Table 2.	Not applicable for ADCO Constructions Group during the construction of the development. Hale Capital to ensure adherence with Table 2 during operations of the facilities post-completion.
Operational Noise Verification Report		
B30	Within three months of the commencement of operation of the development, the Applicant must prepare and submit a noise verification report for the development. The noise verification report must: (a) be prepared to the satisfaction of the Planning Secretary by a suitably qualified acoustic consultant; (b) demonstrate that noise verification has been carried out by a suitably qualified and experienced acoustic consultant in accordance with: (i) the Australian Standard AS 1055:2018 Acoustics – Description and measurement of environmental noise (Standards Australia, 2018); and (ii) the EPA Approved Methods for the Measurement and Analysis of Environmental Noise in NSW (EPA, 2022); (c) include: (i) an analysis of compliance with noise limits specified in condition B18, including consideration of any modifying factors as defined in Fact Sheet C of the Noise Policy for Industry (EPA, 2017); (ii) an outline of management actions to be taken to address any exceedances of the limits specified in condition B19 and a timetable for the implementation of any required actions; and (iii) a description of contingency measures in the event management actions are not effective in reducing noise levels to an acceptable level.	Not applicable for ADCO Constructions Group during the construction of the development. Hale Capital to ensure adherence with Table 2 3 months prior to anticipated handover and commencement of operations of the facilities.

VIBRATION		
Vibration Criteria		
B31	Vibration caused by construction at any residence or structure outside the site must be limited to: (a) a vibration criterion of 8-10mm/s at the Upper Canal corridor in accordance with the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999). (b) for structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999); and (c) for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006) (as may be updated or replaced from time to time).	Refer to Appendix A-16 Construction Noise & Vibration Management Plan.
B32	Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition B31.	Refer to Appendix A-16 Construction Noise & Vibration Management Plan.
B33	The limits in conditions B31 and B32 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition C2 of this consent.	ADCO Constructions Group will ensure the limits in conditions B31 and B32 apply unless otherwise outlined in Appendix A-16 Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition C2 of this consent.
BIODIVERSITY		
Biodiversity Offsets		
B34	Prior to any clearing or construction works for the development, the Applicant must purchase and retire one ecosystem credit to offset the removal/disturbance of Plant Community Type 1234 at the site. The ecosystem credits must be retired in accordance with the requirements of EHG's Biodiversity Offsets Scheme and the Biodiversity Conservation Act 2016	Hale Capital have completed this item.
B35	The requirement to retire one ecosystem credits (see condition B34) may be satisfied by payment to the Biodiversity Conservation Fund of an amount equivalent to the number and classes of ecosystem credits, as calculated by EHG's Biodiversity Offsets Payment Calculator.	Hale Capital have completed this item.
B36	The Applicant must provide the Planning Secretary with evidence that: (a) the retirement of ecosystem credits has been completed (see condition B34); or (b) a payment has been made to the Biodiversity Conservation Fund (see condition B35), prior to undertaking any clearing or construction works for the development.	Hale Capital have provided evidence of fulfillment of Conditions B34 and B35.

Pre-Clearance Survey		
B37	Prior to clearing for construction of the development, the Applicant must carry out a pre-clearance survey and assessment of all vegetation to be cleared in accordance with the mitigation measures identified in the 'Biodiversity Development Assessment Report' prepared for the development by Ecologique dated 31 May 2022 Revision No.03. The pre-clearance survey must: (a) delineate the extent of clearing permitted; (b) identify, mark and map any habitat features present in trees and shrubs that will require a two staged clearance process; (c) locate nearby habitat suitable for the release of fauna that may be encountered during the clearing stage; (d) identify and map any areas of weed infestations that must be cleared separately and not be chipped for reuse on site; and (e) identify and map any areas where large woody debris generated from clearing of native vegetation can be feasibly reused on site.	ADCO Constructions to carry out the Pre-Clearance Survey prior to NOC Stage (Demolition), fulfilling requirements (a) to (e).
B38	Where fauna residing in vegetation to be cleared is identified in the pre-clearing survey carried out under condition B37, an experienced ecologist must be present to supervise the process, act as fauna spotter and relocate any fauna captured.	ADCO Constructions to carry out this condition as required (if applicable during survey).
B39	Clearing of trees and shrubs on the site must be avoided in late winter/spring during the breeding and nesting period for birds, unless the preclearance surveys carried out in accordance with condition B37 find no breeding or nesting activity present.	ADCO Constructions indent do undertake these works in Early June 2024.
B40	Prior to the commencement of operation of the development, the Applicant must provide written confirmation to the Planning Secretary that preclearance surveys and clearance supervision (if required) required under conditions B37 and condition B38 have been completed.	ADCO Constructions to provide written statement from Qualified Ecologist prior to the commencement of operations of the development.
Tree Protection		
B41	All tree protection mitigation and management measures identified within the 'Arboricultural Impact Assessment Report' prepared for the development by Canopy Consulting dated 8 November 2022, Version 3 – Final (Appendix NSW Government 15 Boorea Street Warehouse and Distribution Centre Department of Planning and Environment (SSD-36464788) J of the RTS), must be implemented prior to the commencement of construction of the development and maintained for the duration of construction	ADCO Constructions to ensure the measures within the Canopy Consulting Arboricultural Impact Assessment Report are strictly adhered to when establishing on-site.
B42	All trees identified for retention within the site are to be retained and protected in accordance with the recommendations of the 'Arboricultural Impact Assessment Report' prepared for the development by Canopy Consulting, dated 8 November 2022, Version 3 - Final (see Appendix J of the RTS) and with the latest version of Australian Standard 4970:2009 – Protection of Trees on Development for the duration of the development.	ADCO Constructions are to retain trees as documented within the Canopy Consulting Arboricultural Impact Assessment Report – also reflected on the project architectural & landscaping documentation.

VISUAL AMENITY		
Landscaping		
B43	Prior to the commencement of operation of the development, the Applicant must prepare a Landscape Management Plan to manage the revegetation and landscaping works on-site to the satisfaction of the Planning Secretary. The plan must: (a) be consistent with the Landscape Plans prepared by Geoscapes (Appendix D of the RTS) dated 27 October 2022, the 'Arboricultural Impact Assessment Report' prepared for the development by Canopy Consulting, dated 8 November 2022, Version 3 - Final (see Appendix J of the RTS) and correspondence dated 3 March 2023 from Geoscapes and 8 March 2023 from Canopy Consulting; (b) detail the species, size, quantity and location of all trees, shrubs and groundcover species to be planted onsite incorporating local native species; (c) detail the number of trees and location to be removed, the tree replacement ratio and number and location of trees to be planted; (d) include a tree maintenance schedule that demonstrates: (i) all replacement trees will be maintained for a minimum period of two years following planting; (ii) any replacement trees that do not survive are to be replaced by the same plant species; (iii) replacement plantings are of the same growth form (i.e. tree for a tree, shrub for a shrub) and must not decrease species diversity; (iv) newly planted vegetation is to be maintained for a minimum of 12 months following planting (e) where practicable, reuse native trees removed from the site, including tree trunks, root balls and logs on the ground, to enhance habitat within the site, or provide details of the potential for removed native trees to be used in habitat enhancement and rehabilitation works off-site; (f) describe the monitoring and maintenance measures to manage revegetation and landscaping works; and (g) include details of fencing along Haslams Creek in accordance with Sydney Water requirements, as required under condition B49.	Noted by ADCO Constructions. Planning secretary to approve the Landscape Management Plan which is consistent with the approved landscape plans to manage the landscaping works on-site (prior to operation of the development.
B44	The Applicant must: (a) not commence operation until the Landscape Management Plan required by condition B44 is approved by the Planning Secretary; (b) implement the most recent version of the Landscape Management Plan approved by the Planning Secretary; and (c) maintain the landscaping and vegetation on the site in accordance with the approved Landscape Management Plan required by condition B44 for the life of the development.	Noted by ADCO Constructions Group for points (a) & (b) to be fulfilled prior to operation. Hale Capital to maintain as required by point (c).
B45	The Applicant must ensure all landscaping and revegetation works in the approved Landscape Management Plan required under condition B43 are established prior to the commencement of operation of the development.	Noted by ADCO Constructions as per B43. Planning secretary to approve the Landscape Management Plan which is consistent with the approved landscape plans to manage the landscaping works on-site (prior to operation of the development.

Haslam's Creek Riparian Corridor		
B46	Prior to the commencement of operation of the development, the Applicant must establish a 10-metre wide vegetated riparian corridor along the eastern bank of Haslam's Creek. Landscaping of the riparian corridor must: (a) be carried out in accordance with the approved Landscape Management Plan required under condition B43; (b) minimise removal of local native trees, including Casuarina glauca; and (c) be maintained for the life of the development.	Noted by ADCO Constructions Group for points (a) & (b) to be fulfilled prior to operation. Hale Capital to maintain as required by point (c).
Lighting		
B47	The Applicant must ensure the lighting associated with the development: (a) complies with the latest version of AS 4282-2019 - Control of the obtrusive effects of outdoor lighting (Standards Australia, 2019); and (b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.	Noted. ADCO Constructions to install lighting in compliance with the latest version of AS 4282-2019 - Control of the obtrusive effects of outdoor lighting (Standards Australia, 2019) and ensure all lighting is mounted, screened, and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.
Signage & Fencing		
B48	All signage and fencing must be erected in accordance with the development plans included in the EIS, RTS and SSR and the approved Traffic Control Plan (required by condition B6). NSW Government 16 Boorea Street Warehouse and Distribution Centre Department of Planning and Environment (SSD-36464788) ***Note**: This condition does not apply to temporary construction and safety related signage and fencing*	Noted by ADCO Constructions to be instated prior to operations for permanent statutory signage included in the RTS.
B49	Fencing along Haslams Creek must be designed and constructed to ensure flood water and stormwater overland flow can flow across the fence and in accordance with Sydney Water requirements.	Noted by ADCO Constructions. Sydney Water to be consulted when undertaking these works in proximity to Haslam's Creek.
HAZARDS AND RISK		
Emergency Response		
B50	Prior to the commencement of operation of the development the Applicant must prepare the following documents: (a) a comprehensive Emergency Response Plan for the site in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'; and (b) an Emergency Services Information Package, developed in accordance with the FRNSW Fire Safety Guideline – Emergency Services Information Package	Hale Capital to prepare the Emergency Response Plan and the Emergency Services Information Package prior to commencement of operation of the development.

B51	The Applicant must implement the Emergency Response Plan and Emergency Services Information Package required under condition B50 for the duration of the development.	Hale Capital to implement the Emergency Response Plan and the Emergency Services Information Package for the duration of the development.
B52	The Applicant must ensure that adequate emergency vehicle access is incorporated into the development site design in line with FRNSW Fire Safety Guideline - Access for Fire Brigade Vehicles and Firefighters.	Noted by ADCO Constructions. To be addressed as part of the FER Process by the Traffic Engineer (ptc. consultants).
Dangerous Goods		
B53	The quantities of dangerous goods stored and handled at the site must be below the threshold quantities listed in the Department's Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 at all times.	To be strictly adhered to by ADCO Constructions as nominated in the CEMP & Appendix A-17 Construction Waste Management Plan.
Bunding		
B54	The Applicant must store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's Storing and Handling of Liquids: Environmental Protection – Participants Manual (Department of Environment and Climate Change, 2007).	To be strictly adhered to by ADCO Constructions as nominated in the CEMP & Appendix A-17 Construction Waste Management Plan.
AIR QUALITY		
Dust Minimisation		
B55	The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	Refer to Section 4.1.2 & 6.1 of the CEMP.
B56	During construction of the development, the Applicant must ensure that: (a) exposed surfaces and stockpiles are suppressed by regular watering or other alternative suppression method; (b) all trucks entering or leaving the site with loads have their loads covered; (c) trucks associated with the development do not track dirt onto the public road network; (d) public roads used by these trucks are kept clean; and (e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.	Refer to Section 4.1.2 & 6.1 of the CEMP.
Air Quality Discharges		
B57	The Applicant must install and operate equipment in line with best practice to ensure that the development complies with all load limits, air quality criteria/air emission limits and air quality monitoring requirements as specified in the Protection of the Environment Operations (Clean Air) Regulation 2010.	ADCO Constructions to adhere to this condition in strict accordance as nominated in Appendix A-2 – Key Environment Legislation of the CEMP.

Odour Management		
B58	The Applicant must ensure the development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).	ADCO Constructions to adhere to this condition in strict accordance as nominated in Appendix A-2 – Key Environment Legislation of the CEMP.
ABORIGINAL HERITAGE		
Unexpected Finds Protocol		
B59	Work in the immediate vicinity of any suspected non-Aboriginal archaeological relic(s) must not recommence until this has been authorised by Heritage NSW.	Refer to Sections 4.1.2, 5.3.2 & 5.4.1 of the CEMP. Refer to Appendix A-2 Key Environment Legislation and A-24 Statement of Heritage Impact of the CEMP.
B60	If any non-Aboriginal archaeological relics are uncovered during any works being carried out for the development: (a) all work in the immediate vicinity of the suspected relic(s) must cease immediately; (b) Heritage NSW must be contacted immediately; and (c) the suspected relic(s) must be evaluated, recorded and, if necessary, excavated by a suitably qualified and experienced expert in accordance with the requirements of Heritage NSW.	Refer to Sections 4.1.2, 5.3.2 & 5.4.1 of the CEMP. Refer to Appendix A-2 Key Environment Legislation and A-24 Statement of Heritage Impact of the CEMP.
B61	Work in the immediate vicinity of any suspected non-Aboriginal archaeological relic(s) must not recommence until this has been authorised by Heritage NSW.	Refer to Sections 4.1.2, 5.3.2 & 5.4.1 of the CEMP. Refer to Appendix A-2 Key Environment Legislation and A-24 Statement of Heritage Impact of the CEMP.
WASTE MANAGEMENT		
Construction and Demolition Waste Management		
B62	Prior to the commencement of construction of the development, the Applicant must prepare a Construction and Demolition Waste Management Plan for the development. The Plan must form part of a CEMP in accordance with condition C2 and must: (a) detail the quantities of each waste type generated during construction and the proposed reuse, recycling, and disposal locations; and (b) be implemented for the duration of construction works.	Refer to A-17 Construction and Demolition Waste Management Plan & A-18 Demolition Procedural Plan of the CEMP.

Waste Management		
B63	The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the latest version of EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014).	Refer to Appendix A-2 Key Environment Legislation of the CEMP. Refer to A-17 Construction and Demolition Waste Management Plan & A-18 Demolition Procedural Plan of the CEMP.
B64	All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.	
B65	Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal.	
B66	Waste must be secured and maintained within designated waste storage areas at all times and must not leave the site onto neighbouring public or private properties.	
Pests, Vermin and Priority Weed Management		
B67	The Applicant must:(a) implement suitable measures to manage pests, vermin and declared priority weeds on the site; and(b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or priority weeds are not present on site in sufficient numbers to pose an environmental hazard or cause the loss of amenity in the surrounding area. Note: For the purposes of this condition, priority weed has the same definition of the term in the Biosecurity Act 2015.	Refer to Appendix A-17 Construction Waste Management Plan of the CEMP.
CONTAMINATION		
Underwater Storage Tank		
B68	Prior to the commencement of construction, the Applicant must decommission, remove, and dispose of the underground storage tank identified as part of the Detailed Site Investigation prepared by JBS&G Australia Pty Ltd dated 10 May 2022 (Appendix W of the EIS), in accordance with the relevant requirements of the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019.	Refer to Appendix A-25 Additional Contamination Assessment of the CEMP.
Unexpected Finds		
B69	Prior to the commencement of construction, the Applicant must prepare an unexpected contamination finds procedure to ensure that potentially contaminated material is appropriately managed. The procedure must form part of the of the CEMP in accordance with condition C2 and must ensure any material identified as contaminated is disposed of in accordance with the POEO Act and its associated regulations. Details of the final disposal location and the results of any associated testing must be submitted to the Planning Secretary prior to removal of the contaminated material from the site.	Refer to Appendix A-19 Unexpected Contamination Finds Procedure of the CEMP.

Asbestos		
B70	The Applicant must ensure that any asbestos encountered during the demolition and construction works for the development is monitored, handled, transported, and disposed of by appropriately qualified and licensed contractors in accordance with the requirements of SafeWork NSW and relevant guidelines, including: (a) Work Health and Safety Regulation 2017; (b) SafeWork NSW Code of Practice – How to Manage and Control Asbestos in the Workplace December 2022; (c) SafeWork NSW Code of Practice – How to Safely Remove Asbestos December 2022; and (d) Protection of the Environment Operations (Waste) Regulation 2014.	Refer to Appendix A-2 Key Environment Legislation of the CEMP.

1.3 Consultation

In accordance with **SSD-36464788**, consultation has been undertaken with the applicable stakeholders. All evidence of consultation related to the specialist sub-plans which form part of this CEMP are summarised below and attached as Appendix A-22 Approved SSDA Consent Conditions.

Hale Capital Partners | Cumberland City Council | DPHI – Construction Traffic Management Plan
*As required by **Condition B1(b)** of **SSD-36464788**, consultation was undertaken with Cumberland City Council with regards to the CTMP. A copy of the CTMP was provided to Council on Monday 4 March 2024. A response from Cumberland City Council was received on Wednesday 27 March 2024 stating Cumberland City Council have no objections to the CTMP providing a list of conditions are met. These conditions are included in Council's correspondence attached within Appendix A-30. Our CTMP has been revised on 13 May 2024 to incorporate commentary from DPHI in Appendix A-27. Please refer to Appendix A-13 for the current CTMP which encompasses all commentary from all relevant stakeholders (DPHI, Cumberland City Council & Hale Capital Partners).*

Hale Capital Partners | Cumberland City Council | DPHI – Construction Noise & Vibration Management Plan
*As required by **Condition B27** of **SSD-36464788**, consultation was undertaken with Cumberland City Council with regards to the CNVMP. A copy of the CNVMP was provided to Council on Monday 4 March 2024. A response from Cumberland City Council was received on Wednesday 27 March 2024 stating Cumberland City Council have no objections to the CTMP providing a list of conditions are met. These conditions are included in Council's correspondence attached within Appendix A-30. Our CNVMP has been revised on 13 May 2024 to incorporate commentary from DPHI in Appendix A-27 and a separate voice call catch-up. Please refer to Appendix A-16 for the current CNVMP which encompasses all commentary from all relevant stakeholders (DPHI, Cumberland City Council & Hale Capital Partners).*

Hale Capital Partners | Cumberland City Council | DPHI – On-Site Traffic Control Plan
*As required by **Condition B6** of **SSD-36464788**, consultation was undertaken with Cumberland City Council with regards to the On-Site Traffic Control Plan. A copy of the On-Site Traffic Control Plan was provided to Council on Tuesday 4 April 2024. We have been provided with approval from Cumberland City Council as per Appendix-30. Further, our On-Site Traffic Plan has been revised on 13 May 2024 to incorporate commentary from DPHI in Appendix A-27. Please refer to Appendix A-29 for the current On-Site Traffic Plan which encompasses all commentary from all relevant stakeholders (DPHI, Cumberland City Council & Hale Capital Partners).*

Hale Capital Partners | NSW State Emergency Services | DPHI – Construction Flood Emergency Response Plan
*As required by **Condition B18** of **SSD-36464788**, consultation was undertaken with NSW State Emergency Services with regards to the Construction Flood Emergency Response Plan. A copy of the Construction Flood Emergency Response Plan was provided to NSW SES on Monday 29 April 2024. We have been provided with commentary from NSW State Emergency Services as per Appendix-27. Further, our Construction Flood Emergency Response Plan has been revised on 20 May 2024 to incorporate commentary from NSW SES & DPHI in Appendix A-27. Please refer to Appendix A-15 for the current Construction Flood Emergency Response Plan which encompasses all commentary from all relevant stakeholders (DPHI, NSW State Emergency Services & Hale Capital Partners).*

Welcome

Welcome to the Environmental Management Plan for ADCO projects/ workplaces.

This Plan forms an integral part of the ADCO Health Safety Environment & Quality Management System as detailed below.

ADCO is committed to a strong culture of environmental protection and management reflecting shared values and commitments supported by its leadership vision that environmental protection is a key priority in all business decisions and undertakings. Importantly, this Plan has been tailored for this project, addressing its specific requirements. It follows a simple and intuitive navigation trail, outlined below to help guide you through the document.

This Project Environmental Management Plan has been created as a Word Template. To customise this template, please follow these instructions:

- Save the template as a Word Document.
- Customise the front cover with the project name, date and revision number and the Table on Page 2.
- The date and latest revision of the master version is stated in the Plan footer. The footer must not be amended by the User, to ensure traceability to the relevant master version.
- Do not delete or remove the section breaks as this will affect the document formatting.
- Please update document using “Styles”, no free text as TOC will be incorrect.
- If you have any questions about how to use this Plan, please contact your State HSE Manager.

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Project Render of Future Boorea Street Warehouse & Distribution Centre Development

2. INTRODUCTION

2.1 Project Environmental Management Plan

ADCO, (incorporating ADCO Constructions Pty Ltd and ADCO Group Pty Ltd), and hereinafter referred to as ADCO operates an integrated management system where the functions and requirements of environmental management and work health and safety (WHS) /occupational health and safety (OHS) management and quality management are integrated. The ADCO Health, Safety, Environment & Quality Management System (HSEQ MS) and related plans, procedures, forms and templates are contained within The ADCO Way, located at the ADCO Intranet site The Hub.

The ADCO Way provides the overall framework for health, safety, environment and quality management at all ADCO workplaces including its construction projects. All ADCO construction projects must develop an Environmental Management Plan, which outlines the management practices for the key environmental aspects and impacts identified for an ADCO construction project site.

Management of the environment at this workplace consists of The ADCO Way Health Safety Environment & Quality Management System including the ADCO Corporate Management Plan together with this Project Environmental Management Plan and its relevant management sub plans, procedures, codes, standards and other supporting documents available at ADCO on The Hub. The structure of the HSEQ MS framework is outlined on Page 3 and is certified to the requirements of:

- AS/NZS ISO 14001: 2015 (Environmental Management Systems);

The Project Environmental Management Plan and related management sub plans shall be independently issued, but must be approved by the Project Manager, or nominated representative and the State Health Safety Environment Manager before the commencement of a construction project. This approval will be documented on the Plan, or through ADCO electronic reporting system or another electronic medium such as SIMPEL and / or Hammertech.

2.2 Revisions and Amendments

The Project Manager, or nominated representative, reviews the Project Environmental Management Plan (EMP) and related environmental management sub plans at maximum six (6) month intervals, or where significant changes to a scope of work(s) may significantly impact the environment or a significant environmental incident occurs. The Project EMP is also reviewed as part of internal independent audits of the management system and related compliance with legislation and ADCO requirements for environment. Audits are completed to the requirements of the ADCO Procedure Performance Management.

Project related minor revisions to this Environmental Management Plan, and related management sub plans may be independently issued, but must be approved by the Project Manager, or a nominated ADCO representative.

On receipt of a revision:

- The required amendment is incorporated in the revised Project Revision Table and any amended management sub plan tables where applicable.
- The date of the revision and new revision issue are listed in the Table on page 2 including the purpose and a brief summary of the amendments throughout the Project EMP.
- The new/revised Project EMP or management sub plan is issued to the project team including relevant site trade partners and other stakeholders, where applicable to their works through the SIMPEL portal or another approved format.
- ADCO project/workplace employees that are required to manage environmental aspects and impacts as a key part of their roles and responsibilities at the project are inducted into this Plan, and its related management sub plans relevant to their role and verified by signing the table at Appendix 12 of this Plan.
- Superseded Plans will be marked as such and will be located within the Management Plan Folder located in the Site Office or electronically. Amendments to the Plan are noted in the 'Description Updates' section of the Project Revision Table on Page 2.
- Copies of this and superseded Project Management Plans and associated Risk Registers are maintained (archived) by ADCO for a period of at least 24 months following an update completion.

2.3 Definitions

Terms used in this document and related ADCO HSEQ Management System documents are defined in the ADCO Procedure Definitions in the Management of Health Safety Environment. Where definitions may differ in the ADCO health, safety, or environment procedures, the abovementioned Procedure will prevail.

2.4 Principal Contractors Details

Name	State Address		ABN
ADCO Constructions Pty Ltd	**Address**	7 – 9 West Street	46 001 044 391
	Suburb	North Sydney	
	State	NSW 2060	
	Phone	02 8437 5000	

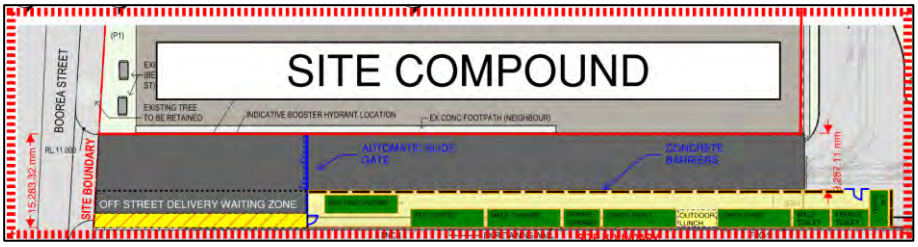
2.5 Project Information

Project Description	Hale Capital Partners has an underutilised 4-hectare site located on 42-44 Boorea Street, Lidcombe, located within the Cumberland Local Government Area (LGA). This site currently retains an existing warehouse facility with associated loading docks, car park & vegetation are planted along the site boundary. The site is located approximately 7.5 kilometres east from Parramatta. It is within a highly accessible location with connections to regional roads such as the M4 Motorway and Great Western Highway and public transport including Auburn and Lidcombe railway station. The site is surrounded by a variety of industrial uses in close proximity. ADCO will be undertaking the demolition of existing warehouse buildings and structures, followed by civil & infrastructure site preparation works to allow for the construction and operation of a two-storey WDC, comprising 28,962 m2 GFA, ancillary office space, fit-out, landscaping, driveway access, car parking, loading dock hardstand areas, earthworks and upgrades to existing on-site infrastructure. The proposal comprises the redevelopment of the site as summarised below: ▪ Construction, fit out and operation of a two-storey warehouse and distribution centre comprising of approximately 28,962sqm GFA including: - 10 offices with a total area of 4,103sqm; and - 10 lobbies with a total area of 168sqm. ▪ Provision of 34 bicycle & 10 motorcycle parking spaces ▪ Provision 188 car parking spaces at ground. ▪ Approximately 4,579sqm of hard and soft landscaping at ground. ▪ Provision of internal vehicle access route & loading docks on ground & first floor. ▪ Operation 24 hours per day seven days per week. ▪ Providing employment to 275 full-time equivalent construction jobs and 406 operational jobs.
Project Address	42 – 44 Boorea Street Lidcombe NSW 2141
Project Code	3658 *(ADCO Constructions Project Reference)*
Client	Hale Capital Partners
Certifier	Certatude
Project Period	18 Months
Separable Portions	1

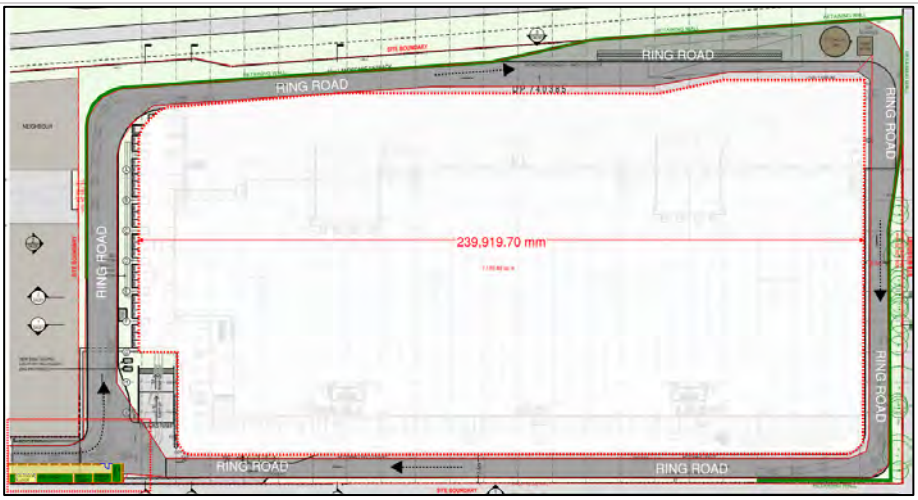
Overall Future Development Location in Context of Surrounding Suburbs (Auburn, Lidcombe & Newington)

2.6 Project Site Requirements

Site Access

Main Site Entry Location	**Main Vehicular Sliding Gate #1** – 42 Boorea Street Lidcombe NSW 2141
Other Entry Points	*None*
Worker Entry Locations	**Main Pedestrian Swing Gate #1** - 42 Boorea Street Lidcombe NSW 2141
Visitor Entry Locations	**Main Pedestrian Swing Gate #1** - 42 Boorea Street Lidcombe NSW 2141
Site Plan	*Refer to below excerpt of Site Plan of Site Compound & Overall Site.*
	

Detailed Plan of Site Compound Amenities



Overall Site Plan Excerpt Showing Site Compound Location

Image of Overall Site Proposed Development Render

Approved Work Hours

Monday – Friday	7:00am to 6:00pm
Saturday	8:00am to 1:00pm
Sunday / Public Holidays	Generally, not allowed. Refer to Condition B25 for circumstances of application.
By Exception	The Project Manager's approval is required for work outside of the normal construction hours listed above. No person is permitted to work on site alone or without at least one member of the ADCO site management team in attendance.

3. VISION AND LEADERSHIP

ADCO is committed to protecting the natural environment by adopting and implementing responsible environmental management practices in all our business undertakings. We recognise our social and legal duty to design, plan and manage our activities, products and services in a manner that protects and enhances the environment and communities in which we work.

The ADCO Environmental Management Policy and ADCO Environmental Social Governance Policy are located on The Hub. The ADCO Environmental Management Policy must be clearly displayed in a prominent location(s) at ADCO workplaces, including the project site/workplace office and project/workplace notice board(s) so they are accessible to all employees, site trade partners and other workers or interested parties, including visitors to the project.

The policies and their commitments must be clearly communicated through the project / workplace induction to all persons working at an ADCO Project Site. Key ADCO environmental policies and the ADCO Environmental Social Governance Framework are also publicly available to interested parties at https://www.adcoconstruct.com.au/commitments/#environment-social-and-governance.

4. PLAN

4.1 Risk Management, Identifying Aspects and Impacts & Application of Environmental Management Sub Plans

All personnel working with or for ADCO are required to incorporate the requirements of the ADCO Procedure Risk Management and the HSEQ Management System into their operational activities and implement the management system consistent with the requirements of environmental protection legislation and ISO14001.

4.1.1 RISK MANAGEMENT

Risk management is a proactive process by which ADCO responds to change and facilitates continuous improvement across its business undertakings. The core to effective risk management is a comprehensive understanding of the environmental aspects and impacts associated with the workplace/project site and its related scope of works.

The Project Risk Register and related management plans and management sub plans developed by the Project Manager at the start of the project, provide project specific information on identified high risk construction works, aspects and related impacts and specific control measures consistent with the Hierarchy of Control.

The Project Risk Register and related management plans and management sub plans must be reviewed by the site team to familiarise themselves with any identified high-risk construction works related to environmental aspects and significant impacts to be undertaken at a project site. Throughout the project delivery the Risk Register is reviewed at maximum monthly intervals. Management Sub Plans must be reviewed at maximum three-month intervals where material change is likely to occur, e.g., stormwater, erosion and sediment control.

Copies of the Risk Register and Environmental Management Plan and related management sub plans are made available to relevant workers and interested parties (including Hale Capital Partners and the Planning Secretary of DPHI).

The identification of environmental aspects and related impacts in all ADCO workplaces considers:

- Situations, events or work activities that could give rise to potential for significant environmental impacts such as spills or other pollution, or material harm to the environment.
- The nature of potential environmental impact relevant to the activity, product or service and related temporary or other works associated with the supply of the activity, product or service.
- Past incidents, audit reports, inspections or other assurance activities.

The identification process considers but is not limited to:

- The way work is arranged, managed, and completed including potential environmental aspects and impacts.
- The fabrication, installation, commissioning and handling and disposal (of materials, plant, machinery and equipment).
- The purchasing of goods and services and related temporary or other works.
- The inspection, maintenance, testing, repair and replacement of plant, machinery, and equipment.

Further to the above and in accordance with Conditions C7 & C8 of the approved SSD for this development, the ADCO CEMP must be revised within three months of:

a) the submission of an incident report under condition C9;

b) the approval of any modification of the conditions of this consent; or

c) the issue of a direction of the Planning Secretary under condition A2(b) which requires a review, the strategies, plans and programs required under this consent must be reviewed.

If necessary to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review required under condition C7 or such other timing as agreed by the Planning Secretary.

***Note:** This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.*

4.1.2 ENVIRONMENTAL MANAGEMENT COMMITMENTS

Environmental aspects with the potential to be impacted through the construction of the warehouse and distribution facility are addressed in this sub-section. These issues have specific regulatory requirements imposed by **SSD-36464788** and / or are considered to have the highest potential to result in a non-compliance with a legislative requirement or generate community complaints.

The tables in this section (4.1.2) are a compliance management tool outlining how controls are to be implemented.

Table 4.1.2.1 lists the general environmental controls that will be implemented throughout the construction of the manufacturing facility to minimise the potential for adverse impacts on the local environmental and surrounding receptors.

TABLE 4.1.2.1 – GENERAL CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS

ENVIRONMENTAL MANAGEMENT CONTROL	RESPONSIBILITY	TIMING / FREQUENCY	REFERENCE / NOTES
All reasonable and feasible measures will be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from construction.	**ADCO Constructions**	Ongoing	**SSD-36464788** Condition A1
All licences, permits, approvals and consents will be obtained and maintained as required for the development.		Prior to commencing construction and ongoing	**SSD-36464788**
ADCO will obtain relevant approvals, as well as access to, diversions, protection and support of the affected services or infrastructure from service providers before the construction of any utility works.		Prior to commencing construction	**SSD-36464788** Condition A11
All plant and equipment will be maintained in a proper and efficient condition and operated in a proper and efficient manner as per **ADCO Construction Environmental Management Plan**.		Ongoing	**SSD-36464788** Condition A24 **ADCO CEMP**
The information listed in Condition C14 (a) will be uploaded to the website and kept up to date.		At least 48 hours prior to commencing construction and ongoing	**SSD-36464788** Condition C14
The incidents and complaints management strategies contained within **Appendix A-21** will be implemented to ensure that any incidents and/or complaints relating to the construction activities are promptly and effectively addressed.		Ongoing	**ADCO CEMP** Section 5.4.3 **Appendix A-21**
Construction employees and contractors will be suitably inducted and trained prior to commencing any work on site.		Prior to commencing construction and ongoing	**ADCO CEMP** Section 2.2

A **Construction Noise & Vibration Management Plan (CNVMP)** was prepared by Pulse White Noise Acoustics in accordance with Condition B27 and is attached as **Appendix A-16**. The environmental management controls contained within **Table 4.1.2.2** will be implemented to minimise the potential for adverse noise and vibration emissions from the construction of the project.

TABLE 4.1.2.2 – NOISE AND VIBRATION CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
Construction will only be undertaken during the hours specified in **SSD-36464788**.	**ADCO Constructions**	Ongoing	**SSD-36464788** Condition B24
The project will be constructed to achieve the construction noise management levels detailed in the *Interim Construction Noise Guideline* (Department of Environment and Climate Change 2009) (as may be updated or replaced from time to time).			**SSD-36464788** Condition B26
All feasible and reasonable noise mitigation measures will be implemented and any activities that could exceed the construction noise management levels will be identified and managed.			
The CNVMP approved by the Planning Secretary will be implemented for the duration of construction.			**SSD-36464788** Condition B28
Notification detailing work activities, dates and hours, impacts and mitigation measures, indication of work schedule over the night-time period, any operational noise benefits from the works (where applicable) and contact telephone number will be issued a minimum of 7 calendar days prior to the start of works.		During construction	**SSD-36464788** CNVMP (Section 6) **Appendix A-16**
All employees, contractors and subcontractors will receive an environmental induction including all project specific and relevant standard noise and vibration mitigation measures.		Prior to construction and ongoing	
Where specified, a noise verification program will be carried out for the duration of the works in accordance with the Construction Noise and Vibration Management Plan and any approval and licence conditions.		During construction	
Where feasible and reasonable, construction will be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels should be scheduled during less sensitive time periods. Very noise activities should be scheduled for normal working hours. If the work cannot be undertaken during the day, it should be completed before 11:00 pm. Respite Offers will be considered where there are high noise and vibration generating activities near receivers.		During high noise generating works	

TABLE 4.1.2.2 – NOISE AND VIBRATION CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS			
Use quieter and less vibration emitting construction methods where feasible and reasonable.	**ADCO Constructions**	During construction	**SSD-36464788** CNVMP (Section 6) **Appendix A-16**
The offset distance between noisy plant and adjacent sensitive receivers will be maximised. Plant used intermittently will be throttled down or shut down.			
Noise-emitting plant will be directed away from sensitive receivers, and only necessary equipment will be operating on site, including of the necessary size and power.			
Noise generating equipment will be regularly checked and effectively maintained, including checking of hatches/ enclosures regularly to ensure that seals are in good condition and doors close properly against seals. Only have necessary equipment on site.		Ongoing	
Compounds will be located away from sensitive receivers and discourage access from local roads. Compounds and worksites will be designed to promote one-way traffic and minimise the need for vehicle reversing. Select site access points and roads as far as possible away from sensitive receivers. Dedicated loading/unloading areas to be shielded if close to sensitive receivers. Delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible. Avoid or minimise these out of hours movements where possible.		Prior to construction and ongoing	
Traffic flow, parking and loading/unloading areas will be planned to minimise reversing movements within the site.			
Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.		During construction	
The use of ambient sensitive alarms that adjust output relative to the ambient noise level will be considered.			
Limit the use of engine compression brakes in residential areas.			
Ensure vehicles are fitted with a maintained Original Equipment Manufacturer exhaust silencer or a silencer that complies with the National Transport Commission's 'In-service test procedure' and standard.			

TABLE 4.1.2.2 – NOISE AND VIBRATION CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS			
Stationary noise sources will be enclosed or shielded where feasible and reasonable whilst ensuring that the occupational health and safety of workers is maintained. Please refer to Appendix D of AS 2436:2010 lists materials suitable for shielding.	**ADCO Constructions**	During construction	**SSD-36464788** CNVMP (Section 6) **Appendix A-16**
Where practicable, work compounds, parking areas, and equipment and material stockpiles will be positioned away from noise-sensitive locations and take advantage of existing screening from local topography.		Prior to construction and ongoing	
Swearing and unnecessary shouting will be avoided, as well as dropping materials from height, throwing metal items, and slamming doors. Loud music from radios and stereos will not be permitted.		Ongoing	
Where required attended vibration measurements will be undertaken at the commencement of vibration generating activities to confirm that vibration levels are within the acceptable range to prevent cosmetic building damage.		At the commencement of vibration generating activities	
Pre-construction surveys of the structural integrity of vibration sensitive buildings may be warranted. At locations where there are high-risk receptors, vibration monitoring should be conducted during the activities causing vibration.		Prior to construction	
Where possible construction works will be staged to erect solid external walls first and utilising them to provide noise shielding to the noise sensitive receivers.		During construction	**SSD-36464788** CNVMP **Appendix A-16**

A **Construction Traffic Management Plan (CTMP)** was prepared by ptc. consultants in accordance with Condition B1 and is attached as **Appendix A-13**. The environmental management controls in **Table 4.1.2.3** will be implemented to ensure road safety and network efficiency during construction.

TABLE 4.1.2.3 – TRAFFIC CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
The CTMP approved by the Planning Secretary will be implemented for the duration of construction.	**ADCO Constructions**	Ongoing	**SSD-36464788** Condition B2
Heavy vehicles and site personnel will park on site during construction.		During Construction	**SSD-36464788** Condition B5
A temporary construction fence will be provided and maintained for the duration of the construction program associated with the stage of works being undertaken, along site boundaries / works area boundaries to provide safe pedestrian access.			**SSD-36464788** Appendix A-13
Traffic control is required to manage and regulate traffic movements into and out of the site during construction, with pedestrian priority provided during peak hour periods and to maintain accessibility to public transport facilities.			
Delivery will occur outside of road network peak hours to minimise disruption to road users.			
Supervised traffic control will be in place where two-way flow is restricted over any length of the roadway, depending on the number of truck movements required and would be managed outside of peak hour vehicle and pedestrian activity.			
All vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, dust or dirt particles depositing onto the roadway during travel to and from the site.			ptc. CTMP Section 3.5
No tracked vehicles will be permitted or required on any paved roads. Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances. No construction vehicles are permitted to double park, or park on the public road.			
No building, demolition, excavation or material of any nature and no hoist, plant and machinery (crane, concrete pump or lift) shall be placed on Council's footpaths, roadways, parks or grass verges without Council approval.		During heavy vehicle movements	

TABLE 4.1.2.3 – TRAFFIC CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS			
Where possible, deliveries are to be scheduled to occur outside of the peak commuter periods.	**ADCO Constructions**	During construction	ptc. CTMP Section 3.8
Approval will be sought from Cumberland City Council for the use of oversized vehicles on any Cumberland City Council Road.		Prior to construction	
No queuing or marshalling of trucks is permitted on any public road and all loading and unloading of materials will be undertaken within the site.		During construction	ptc. CTMP Section 3.10
Traffic control as required at all site entry and exit points, to control entering and exiting vehicles and two-way passing is not permitted at the entry and exit points.		When entering and existing site	CTMP Section 5.3
No Works Zones will be implemented at any stage throughout the proposed construction work. Should a Works Zone be required at any point, an application will be sought from the Cumberland City Council prior to commencing works.		Ongoing	ptc. CTMP Appendix 5 – Authority Consultation
Site perimeter fences will be always maintained in a clean and safe manner to ensure no pedestrian access is achieved from the public.			ptc. CTMP Section 3.16
National Heavy Vehicle Regulator (NHVR) and Council approval will be obtained for oversize and over-mass vehicles to travel on Local Roads on a one-off occasion.		When required	ptc. CTMP Section 3.8
The delivery and removal of plant and equipment to and from the site will be undertaken from the on-site materials handling/loading area.		During construction	ptc. CTMP Section 3.4
All sediment and loose material shall be removed from construction vehicles before returning to public roads.			
All workers and visitors on the site will be subject to a formal site induction process which included instruction regarding the requirements of the CTMP.			ptc. CTMP Section 3.17
Must provide sufficient parking facilities on-site, including for heavy vehicles and for site personnel, to ensure that traffic associated with the development does not utilise public and residential streets or public parking facilities			ptc. CTMP Section 3.15
The roads and footpaths along the route of travel will be always kept in a serviceable state.		Ongoing	ptc. CTMP Section 3.24

As required by Condition C3(b), an **Erosion and Sediment Control Plan (ESCP)** was prepared by Costin Roe Consulting (2023) and is attached as **Appendix A-14**. While the ESCP should be referred to for specifics, the environmental management controls are summarised in **Table 4.1.2.4**.

TABLE 4.1.2.4 – SOIL AND WATER CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
Only Virgin Excavated Natural Material (VENM), Excavated Natural Material (ENM), or other material approved in writing by EPA will be brought onto the site.	**ADCO Constructions**	Ongoing	**SSD-36464788** Condition B11
Accurate records of the volume and type of fill used will be kept and made available to the Planning Secretary upon request.			
Suitable erosion and sediment control measures will be installed and maintained on-site, in accordance with the relevant requirements of the *Managing Urban Stormwater: Soils and Construction - Volume 1: Blue Book* (Landcom 2004) guideline and the ESCP.		Prior to commencing construction and ongoing	**SSD-36464788** Condition B12 & **Appendix A-14**
ADCO Constructions will comply with Section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL.		Ongoing	**SSD-36464788** Condition B14
The detailed design of the stormwater management system for the development will be finalised. The system will be designed by a suitably qualified and experienced person(s), be generally in accordance with the conceptual design in the EIS and applicable Australian Standards and will ensure that the system capacity has been designed in accordance with *Australian Rainfall and Runoff* (Engineers Australia, 2016) and *Managing Urban Stormwater: Council Handbook* (EPA, 1997) guidelines and City of Sydney *Streets Technical Specifications, Stormwater Drainage Design*.		Prior to commencing construction	**SSD-36464788** Condition B15 & **Appendix A-14**

As required by Condition B18, a **Flood Emergency Response Plan (CFERP)** was prepared by Costin Roe Consulting (2023) and is attached as **Appendix A-15**. Whilst the CFERP should be referred to for specifics, the flood management controls are summarised in **Table 4.1.2.5**.

TABLE 4.1.2.5 – CONSTRUCTION FLOOD MANAGEMENT CONTROLS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
The Construction Flood Emergency Response Plan will be designed by a suitably qualified and experienced person(s) and be prepared in consultation with the NSW State Emergency Service.	**ADCO Constructions**	Prior to commencing construction.	**SSD-36464788** Condition B18 & **Appendix A-15**
The Construction Flood Emergency Response Plan will address the provisions of the Floodplain Development Manual (2023) and associated guidance in the Department's 'Flood risk management toolkit. The CFERP must include details of: (i) the flood emergency responses for construction of the development. (ii) predicted flood levels. (iii) flood warning time, flood notification, signs, and depth indicators. (iv) assembly points and evacuation routes. (v) evacuation and refuge protocols. (vi) awareness training for employees and contractors.			
ADCO must not commence construction until the CFERP required by condition B18 is approved by the Planning Secretary and implement the most recent version of the CFERP approved by the Planning Secretary for the duration of construction.		Prior to commencing construction and ongoing	**SSD-36464788** Condition B19 & **Appendix A-15**
All floor levels must be no lower than the 1% Annual Exceedance Probability flood plus 500 mm of freeboard.		Prior to commencing construction	**SSD-36464788** Condition B22 & **Appendix A-15**
Any structures below the 1% Annual Exceedance Probability plus 500 mm of freeboard must be constructed from flood compatible building components and to withstand flood velocities.		Prior to commencing construction	**SSD-36464788** Condition B23 & **Appendix A-15**

The environmental controls in **Table 4.1.2.6** will be implemented to minimise the potential for **Adverse Air Emissions and Impacts** during the construction.

TABLE 4.1.2.6 – AIR QUALITY CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
All reasonable steps will be taken to minimise dust generated during construction.	**ADCO Constructions**	Ongoing	**SSD-36464788** Condition B55
Exposed surfaces and stockpiles will be suppressed by regular watering.			**SSD-36464788** Condition B56
All trucks entering or leaving the site will have their loads covered.			
Trucks will not track dirt onto the public road network.			
Public roads used by construction trucks will be kept clean.			
Land stabilisation works will be carried out progressively on site to minimise exposed surfaces.			
All equipment will be installed and operated in line with best practice, in line with best practice to ensure that the development complies with all load limits, air quality criteria/air emission limits and air quality monitoring requirements as specified in the Protection of the Environment Operations (Clean Air) Regulation 2021.			**SSD-36464788** Condition B57

As required by conditions B58, B59 & B60, the following controls in **Table 4.2.1.7** will be implemented should any **Aboriginal or Historic Heritage items** or objects be identified on site.

TABLE 4.1.2.7 – ABORIGINAL & HISTORIC HERITAGE PROTOCOL			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
As required by Condition B58, if any item or object of Aboriginal heritage significance is identified on site: ▪ All work in the immediate vicinity of the suspected Aboriginal item or object must cease immediately. ▪ A 10 m wide buffer area around the suspected item or object must be cordoned off. ▪ Heritage NSW must be contacted immediately.	**ADCO Constructions**	Ongoing	**SSD-36464788** Condition B58
Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the *National Parks and Wildlife Act 1974.*			**SSD-36464788** Condition B59
If any non-Aboriginal archaeological relics are uncovered during any works being carried out for the development: a. all work in the immediate vicinity of the suspected relic(s) must cease immediately. b. Heritage NSW must be contacted immediately. c. the suspected relic(s) must be evaluated, recorded and, if necessary, excavated by a suitably qualified and experienced expert in accordance with the requirements of Heritage NSW.			**SSD-36464788** Condition B60

Further to the below, **Table 4.1.2.8** lists the environmental controls that will be implemented to minimise the potential for adverse impacts as a result of demolition & construction waste generated during the construction of the project.

TABLE 4.1.2.8 – DEMOLITION & CONSTRUCTION WASTE MANAGEMENT			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
A Constructions and Demolition Waste Management Plan is to be developed with details of the quantities of each waste type generated during construction and the proposed reuse, recycling & disposal locations and must be implemented for the duration of construction works.	**ADCO Constructions**	Prior to commencing construction & ongoing	**SSD-36464788** Condition B62 **Appendix A-17**
All liquid and non-liquid wastes will be assessed and classified to be taken off site in accordance with the latest version of EPA's *Waste Classification Guidelines Part 1: Classifying Waste* (EPA, 2014) and disposed of at a facility that may lawfully accept the waste.		Ongoing	**SSD-36464788** Condition B63
All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.			**SSD-36464788** Condition B64
Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal.			**SSD-36464788** Condition B65
Waste must be always secured and maintained within designated waste storage areas and must not leave the site onto neighbouring public or private properties.			**SSD-36464788** Condition B66
Suitable measures will be implemented to manage pests, vermin and declared priority weeds.		Ongoing	**SSD-36464788** Condition B67
The site will be inspected on a regular basis to ensure that these measures are working effectively, and that pests, vermin or priority weeds are not present on site in sufficient numbers to pose an environmental hazard or cause the loss of amenity in the surrounding area.			

TABLE 4.1.2.9 – UST, UNEXPECTED FINDS AND POTENTIAL ASBESTOS CONTAMINATION MANAGEMENT			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
Underground Storage Tank Prior to the commencement of site demolition, ADCO are to decommission, remove and dispose of the underground storage tank identified as part of the Detailed Site Investigation prepared by JBS&G Australia Pty Ltd dated 10 May 2022 (Appendix W of the EIS), in accordance with the relevant requirements of the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019.	**ADCO Constructions**	Prior to commencing construction & ongoing	**SSD-36464788** Condition B68 **Appendix A-19** Appended JBS&G Detailed Site Investigation Plan
Unexpected Finds An unexpected contamination finds procedure has been prepared which details how potentially contaminated material is to be appropriately managed. Any material identified as contaminated is disposed of in accordance with the POEO Act and its associated regulations. It is mandatory that the details of the final disposal location and the results of any associated testing must be submitted to the Planning Secretary prior to removal of the contaminated material from the site.			**SSD-36464788** Condition B69 **Appendix A-19**
Asbestos ADCO will ensure that any asbestos encountered during the demolition and construction works for the development is monitored, handled, transported, and disposed of by appropriately qualified and licensed contractors in accordance with the requirements of SafeWork NSW and relevant guidelines, including: a. Work Health and Safety Regulation 2017. b. SafeWork NSW Code of Practice – How to Manage and Control Asbestos in the Workplace December 2022. c. SafeWork NSW Code of Practice – How to Safely Remove Asbestos December 2022. d. Protection of the Environment Operations (Waste) Regulation 2014.		Ongoing	**SSD-36464788** Condition B70 **Appendix A-17** **Appendix A-19**

Table 4.1.2.10 outlines the mitigation measures to be implemented during construction to manage any potential impacts from the visual amenity, Haslams Creek Riparian Corridor, Lighting and Signage & Fencing.

TABLE 4.1.2.10 – VISUAL AMENITY, HASLAMS CREEK, LIGHTING AND SIGNAGE & FENCING MANAGEMENT			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
Prior to the commencement of operations and during the construction phase, ADCO will ensure all landscape elements are installed consistent with the Landscape Plans prepared by Geoscapes (Appendix D of the RTS) dated 27 October 2022, the 'Arboricultural Impact Assessment Report' prepared for the development by Canopy Consulting, dated 8 November 2022, Version 3 - Final (see Appendix J of the RTS) and correspondence dated 3 March 2023 from Geoscapes and 8 March 2023 from Canopy Consulting. Further, the following will be accommodated for by ADCO Constructions during the Construction Phase and prior to handover to operation of the development by HALE Capital Partners: ▪ detail the species, size, quantity and location of all trees, shrubs, and groundcover species to be planted on-site incorporating local native species. detail the number of trees and location to be removed, the tree replacement ratio and number and location of trees to be planted. ▪ include a tree maintenance schedule that demonstrates: o all replacement trees will be maintained for a minimum period of two years following planting. o any replacement trees that do not survive are to be replaced by the same plant species. o replacement plantings are of the same growth form (i.e., tree for a tree, shrub for a shrub) and must not decrease species diversity. o newly planted vegetation is to be maintained for a minimum of 12 months following planting. ▪ where practicable, reuse native trees removed from the site, including tree trunks, root balls and logs on the ground, to enhance habitat within the site, or provide details of the potential for removed native trees to be used in habitat enhancement and rehabilitation works off-site. ▪ describe the monitoring and maintenance measures to manage revegetation and landscaping works; and ▪ include details of fencing along Haslams Creek in accordance with Sydney Water requirements, as required under condition B49.	**ADCO Constructions**	Ongoing & During Construction	**SSD-36464788** Conditions B43, B44 & B49

TABLE 4.1.2.10 – VISUAL AMENITY, HASLAMS CREEK, LIGHTING AND SIGNAGE & FENCING MANAGEMENT			
During construction activities, ADCO are to establish a 10-metre-wide vegetated riparian corridor along the eastern bank of Haslams Creek. Landscaping of the riparian corridor must: ▪ be carried out in accordance with the approved Landscape Management Plan required under condition B43. ▪ minimise removal of local native trees, including Casuarina glauca. ▪ be maintained for the life of the development.	**ADCO Constructions**	During Construction	**SSD-36464788** Condition B46
Lighting will comply with the latest version of *AS 4282- 2019 - Control of Obtrusive Effects of Outdoor Lighting.*		Ongoing	**SSD-36464788** Condition B46
Lighting will be mounted, screened, and directed so that it does not create a nuisance to surrounding properties or the public road network.		During Construction	
All signage and fencing must be erected in accordance with the approved plans as required in Condition B6.			**SSD-36464788** Condition B47 **Appendix A-29**

The environmental controls that will be implemented to minimise the potential for environmental incidents relating to biodiversity and are presented in **Table 4.1.2.11**.

TABLE 4.1.2.11 – BIODIVERSITY CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
HALE Capital must purchase and retire one ecosystem credit to offset the removal/disturbance of Plant Community Type 1234 at the site. The ecosystem credits must be retired in accordance with the requirements of EHG's Biodiversity Offsets Scheme and the Biodiversity Conservation Act 2016.	**HALE Capital Partners**	Prior to commencing construction	**Undertaken by HALE Capital Partners** Conditions B34, 35 & 36
The requirement to retire one ecosystem credits (see condition B34) may be satisfied by payment to the Biodiversity Conservation Fund of an amount equivalent to the number and classes of ecosystem credits, as calculated by EHG's Biodiversity Offsets Payment Calculator.			
The Applicant must provide the Planning Secretary with evidence that: (a) the retirement of ecosystem credits has been completed (see condition B34); or (b) a payment has been made to the Biodiversity Conservation Fund (see condition B35), prior to undertaking any clearing or construction works for the development.			

TABLE 4.1.2.11 – BIODIVERSITY CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS			
ADCO are to carry out a pre-clearance survey and assessment of all vegetation to be cleared in accordance with the mitigation measures identified in the 'Biodiversity Development Assessment Report' prepared for the development by Ecologique dated 31 May 2022 Revision No.03. <u>The pre-clearance survey must:</u> (a) delineate the extent of clearing permitted. (b) identify, mark, and map any habitat features present in trees and shrubs that will require a two staged clearance process. (c) locate nearby habitat suitable for the release of fauna that may be encountered during the clearing stage. (d) identify and map any areas of weed infestations that must be cleared separately and not be chipped for reuse on site. (e) identify and map any areas where large woody debris generated from clearing of native vegetation can be feasibly reused on site.	**ADCO Constructions**	Prior to commencing construction	**SSD-36464788** Conditions B37 & B38
Where fauna residing in vegetation to be cleared is identified in the pre-clearing survey carried out under condition B37, an experienced ecologist must be present to supervise the process, act as fauna spotter and relocate any fauna captured.		When Required	
Clearing of trees and shrubs on the site must be avoided in late winter/spring during the breeding and nesting period for birds, unless the preclearance surveys carried out in accordance with condition B37 find no breeding or nesting activity present.		Noted. Prior to Construction	**SSD-36464788** Condition B40
All tree protection mitigation and management measures identified within the 'Arboricultural Impact Assessment Report' prepared for the development by Canopy Consulting dated 8 November 2022, Version 3 – Final (Appendix J of the RTS), must be implemented prior to the commencement of construction of the development and maintained for the duration of construction.		Prior to commencing construction and during construction	**SSD-36464788** Condition B41
All trees identified for retention within the site are to be retained and protected in accordance with the recommendations of the 'Arboricultural Impact Assessment Report' prepared for the development by Canopy Consulting, dated 8 November 2022, Version 3 - Final (see Appendix J of the RTS) and with the latest version of Australian Standard 4970:2009 – Protection of Trees on Development for the duration of the development		Prior to commencing construction and during construction	**SSD-36464788** Condition B42

The environmental controls that will be implemented to minimise the potential for environmental incidents relating to the hazardous goods and emergency are presented in **Table 4.1.2.12**.

TABLE 4.1.2.12 – HAZARDOUS GOODS & CONSTRUCTION ENVIRONMENTAL MANAGEMENT CONTROLS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
The quantities of dangerous goods stored and handled at the site will be below the threshold quantities listed in the Department's *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 at all times.*	**ADCO Constructions**	Ongoing	**SSD-36464788** Condition B53
Dangerous goods, as defined by the Australian Dangerous Goods Code, will be stored and handled strictly in accordance with all relevant Australian Standards.			
All chemicals, fuels and oils used on-site will be stored in appropriately bunded areas in accordance with all relevant Australian Standards, and/or EPA's *Storing and Handling of Liquids: Environmental Protection – Participants Manual* (Department of Environment and Climate Change, 2007).			**SSD-36464788** Condition B54
Unexpected contamination finds procedure will be followed to appropriately manage potentially contaminated material.			**SSD-36464788** Condition B69
Any material identified as contaminated will be disposed of off-site, with the disposal location and results of testing submitted to the Planning Secretary, prior to its removal from the site.			**SSD-36464788** Condition B69
The Project Manager will be notified of any suspected or potential contamination exposed during construction activities and cease all work activities within the vicinity of actual or suspected contaminated land.	**Employees & Contractors**	Immediately	**Best Industry Practice**
Emergency spill kits will be kept on site at all points of transfer for fuels and hydrocarbons, and at all other locations deemed necessary.	**ADCO Constructions**	Ongoing	
Safety Data Sheets (SDS) will be kept in the Site office and/or safety system for any potentially hazardous goods stored and/or used on site.			
The actions specified on the respective SDS will be implemented in the event of a minor chemical or fuel spill.			
All employees and contractors required to use potentially dangerous goods will be appropriate trained in the proper storage, use and handling.		Prior to commencing construction	

4.1.3 MONITORING & REPORTING

The below **Table 4.1.3.1** summarises the **Monitoring Requirements** for the construction of the manufacturing facility as set out in **SSD-36464788** and relevant management plans.

TABLE 4.1.3.1 MONITORING REQUIREMENTS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
GENERAL			
General environmental inspections will be undertaken.	**ADCO Constructions**	Weekly	**Best practice**
Meteorological data including rainfall will be monitored.		Daily	
NOISE AND VIBRATION			
Noise monitoring will be conducted as required using a risk-based approach or in response to any complaints for works constructed during standard construction hours. Noise monitoring for the construction works will be undertaken at the closest, potentially most affected residences using statistical noise loggers. This monitoring would be supplemented by attended monitoring to differentiate between construction noise sources and other sources (such as road traffic and aircraft noise) and to observe and identify any abnormally noisy construction equipment or operations. During attended monitoring, typical maximum noise levels associated with operations and/or plant items will be noted. Extraneous noise events such as road and air traffic noise will be excluded from the results or highlighted in accompanying notes.	**ADCO Constructions**	Following a complaint	**CNVMP Section 6**
LANDSCAPING AND VISUAL AMENITY			
The site will be inspected on a regular basis to ensure that measures are working effectively, and that pests, vermin or priority weeds are not present on site in sufficient numbers to pose an environmental hazard or cause the loss of amenity in the surrounding area.	**ADCO Constructions**	Ongoing	**SSD-36464788** Condition B67
EMERGENCY			
The Emergency Management Plan will be tested regularly including potential Task Specific Emergencies, and emergency equipment.	**ADCO Constructions**	1 month after construction commencement followed by 3-month intervals	**Emergency Management Plan**

TABLE 4.1.3.1 MONITORING REQUIREMENTS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
SOIL AND WATER MANAGEMENT			
The suitably qualified professional practicing in Erosion and Sediment Controls will complete a monthly inspection. The suitably qualified professional will prepare a monthly written report that will provide recommendations for site implementation of measures.	**ADCO Constructions**	Monthly Intervals	**Best practice**
All sediment trapping structures and devices will be inspected after storms or high rainfall for structural damage or clogging, trapped material will be removed to a safe, approved location.		Following storms or heavy rain	

Table 4.1.3.2 summarises the **Reporting Requirements** for the construction of the warehouse and distribution facility as set out in **SSD-36464788** and relevant management plans.

TABLE 4.1.3.2 REPORTING REQUIREMENTS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
GENERAL			
Once becoming aware of an incident, ADCO Constructions will notify the DPHI, via the Major Projects website, and other relevant agencies if an incident, or potential incident, causes (or may cause) harm to the environment.	**ADCO Constructions**	Immediately (Within 24 hours)	**SSD-36464788** Condition C9
DPHI will be notified of a non-compliance via the Major Projects website within seven days of becoming aware of any non-compliance.		Within 7 days	**SSD-36464788** Condition C10
A register of all complaints, incidents and non-compliances will be kept.		For at least 5 years after completion	**ADCO CEMP** Section 5.4.3 **Appendix A-21**
ADCO Constructions will record environmental performance during regular management meetings and/or 'toolbox talks'. Items to be discussed include: ▪ Results of any monitoring activities undertaken. ▪ Any environmental incidents that have occurred during the previous period, including the management / corrective actions taken. ▪ Any complaints that have been received during the previous period, including any management / corrective actions taken.		Weekly	**ADCO CEMP** Section 5.4.3

TABLE 4.1.3.2 REPORTING REQUIREMENTS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
A copy of all environmental records will be maintained, including: ▪ Site environmental inspection reports ▪ Environmental monitoring data ▪ Internal and external audit reports ▪ Reports of environmental incidents, environmental, associated actions taken, and follow-up actions ▪ Minutes of management review meetings ▪ Induction and training records	**ADCO Constructions**	For at least 5 years after completion	**Best practice**
NOISE & VIBRATION			
Where monitoring has occurred within the preceding week, reports will be submitted to the Project Manager at weekly intervals and will include the following: ▪ Location of unattended monitoring instruments. ▪ Unattended monitoring results. ▪ Attended monitoring locations. ▪ Tabulation of attended noise measurement results together with notes identifying the principal noise sources. ▪ Vibration monitoring results summary together with notes describing any vibration-intensive activities (if applicable). ▪ Summary of measurements exceeding the criteria levels and descriptions of the plant or operations causing these exceedances (if available). ▪ Details of corrective action applicable to criteria exceedances and confirmation of its successful implementation. Where corrective action has not yet been implemented, it may be shown as pending and the status of its implementation shall be carried forward to following reports.	**ADCO Constructions**	Weekly	**CNVMP Section 8**
Notifications will be provided to the affected community where high impacts are anticipated or where out of hours works are required.		Five days prior to commencing	**CNVMP Section 11**
A Waste Management Register will be recorded and maintained, and will include: ▪ Type of waste and its classification (according to the POEO Act and Waste Classification Guidelines); ▪ Quantities of waste, measured in tonnes; ▪ How and where the waste was reused, recycled, stockpiled or disposed of; ▪ Date when the waste was reused, recycled, stockpiled or disposed of; and ▪ Name and waste transport licence (if applicable) of the transporter used.		Ongoing	**Best Practice**

TABLE 4.1.3.2 REPORTING REQUIREMENTS			
ENVIRONMENTAL MANAGEMENT CONTROL	**RESPONSIBILITY**	**TIMING / FREQUENCY**	**REFERENCE / NOTES**
NOISE & VIBRATION			
Any material identified as contaminated will be disposed off-site, with the disposal location and results of testing submitted to the Planning Secretary, prior to its removal from the site.	**ADCO Constructions**	Prior to removal	**SSD-36464788** Condition B69
The Project Manager will be notified of any suspected or potential contamination exposed during construction activities and cease all work activities within the vicinity of actual or suspected contaminated land.	**Employees / Contractors**	Immediately	**Best Practice**
NOISE & VIBRATION			
All Emergency Management Plan drills will be recorded and 'Lessons Learnt' will be reported during the Toolbox Talks.	**ADCO Constructions**	Ongoing	**Emergency Management Plan**

4.1.4 CONTINGENCY MANAGEMENT PLAN

The Contingency Management Plan lists the actions to be implemented if inspections, monitoring and/or auditing indicate that the mitigation measures listed, and the specialist management plans are not effective in managing environmental impacts.

All Condition Amber and Condition Red occurrences will be recorded and discussed during the toolbox talks.

Key Element	Prompt / Response	Condition Green	Condition Amber	Condition Red
Noise impacts at sensitive receiver locations	Prompt	Noise levels do not exceed applicable NMLs.	Noise levels exceed applicable NMLs.	Noise levels exceed Highly Noise Affected criteria.
	Response	Ongoing best practice management measures to minimise noise emissions.	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts.	Undertake all feasible and reasonable mitigation and management measures to ensure noise levels are below Highly Noise Affected criteria. If noise levels cannot be kept below applicable limits, then a different construction method or equipment will be utilised.

Key Element	Prompt / Response	Condition Green	Condition Amber	Condition Red
Vibration impacts at sensitive receiver locations	Prompt	Vibration intensive works undertaken outside minimum working distance for the specific equipment in use.	Vibration intensive works undertaken within minimum working distance for the specific equipment in use.	Vibration levels exceed applicable vibration limits.
	Response	Ongoing best practice management measures to minimise vibration emissions.	Undertake vibration monitoring for the duration of the works to confirm vibration levels.	Stop work. Undertake all feasible and reasonable mitigation and management measures to ensure vibration levels are below applicable limits. If vibration levels cannot be kept below applicable limits, then a different construction method or equipment will be utilised.
Visible dust leaving the site	Prompt	Daily inspections show that there is no visible dust leaving the site.	Daily inspections show that there is visible dust leaving the site.	Daily inspections show that there is visible dust leaving the site multiple times during a day OR from multiple locations within the site.
	Response	Continue monitoring program as normal.	Review and investigate construction activities and respective control measures, where appropriate. Implement additional remedial measures, such as deploying additional water sprays, water trucks etc.	Undertake an investigation of the dust generating activities, and if necessary, temporarily halt the dust generating activities.
Queuing	Prompt	No queuing identified.	Queuing identified within site.	Queuing identified on the public road.
	Response	No response required. Continue monitoring program.	Review the delivery schedule prepared by the builder. If drivers are not following the correct schedule, then they should be provided with additional training and an extra copy of the Driver Code of Conduct.	Review and investigate construction activities. If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report. Where appropriate, implement additional remediation measures such as: ▪ Temporary halting of activities and resuming when conditions have improved. ▪ Stop all transportation into and out of the site. ▪ Review CTMP and update where necessary. ▪ Provide additional training.

Key Element	Prompt / Response	Condition Green	Condition Amber	Condition Red
Erosion	Prompt	No evidence of erosion.	Minor gully or tunnel erosions present. Evidence of sediment or sediment laden water leaving the site.	Significant gully or tunnel erosions present. Evidence of sediment or sediment laden water leaving the site.
	Response	Continue as per the CEMP requirements.	A suitably trained person to inspect the site. Review of erosions and sediment structures. Remediate as appropriate.	A suitably trained person to inspect the site. Review of erosion and sediment structures. Remediate as soon as practical.
Water Management	Prompt	Water management structures have been designed, constructed, and managed in accordance with the Blue Book and the ESCP.	Inspections indicate that water management structures illustrate minor non-compliance with the Blue Book and the ESCP.	Inspections indicate a failure of the water management structures.
	Response	Continue as per the CEMP requirements.	A suitably trained person to inspect the site. Review of water management structures. Remediate as appropriate.	A suitably trained person to inspect the site. Remediate as soon as practical. Review of engineering design and revise ESCP.
Slope failure	Prompt	No significant erosion is present that would constitute a safety hazard or compromise the capability of supporting the end land use. Monitoring verifies there are no gully or tunnel erosion features, or erosion >200mm deep.	Monitoring verifies there is gully or tunnel erosion features, or rill erosion 200mm deep.	Monitoring verifies there is gully or tunnel erosion features, or erosion > 200mm deep.
	Response	No response required. Continue to monitor.	A suitably trained person to inspect the site. Investigate opportunities to install water management infrastructure to address erosion. Remediate as appropriate.	Undertake a review of the drainage of the area and provide recommendations to appropriately remediate the erosion. Remediate as soon as practicable.
Aboriginal Heritage	Prompt	No unknown heritage items uncovered.	Potential heritage item uncovered.	Potential heritage item uncovered causing significant delays to project.
	Response	Continue as per the CEMP requirements.	Stop work and implement the unexpected finds protocol.	Stop work and implement the unexpected finds protocol. Heritage item to be salvaged and removed from site by a qualified archaeologist, if requested by DPHI.
Unexpected Contamination	Prompt	No contamination uncovered during earthworks.	Areas of possible contamination uncovered.	Areas of contamination uncovered.
	Response	Continue as per the CEMP requirements.	Stop work immediately and assess the contamination with the applicable guidelines and advice from a suitably qualified environmental consultant.	Stop work immediately and engage a specialist consultant. A validation report with clearance certificates is to be prepared following remediation by a suitably qualified environmental consultant.

4.1.5 ENTERPRISE RISK / OPPORTUNITIES

The Head of Health Safety Environment for ADCO maintains a register of environmental aspects, impacts and opportunities across ADCO at an enterprise level. These are outlined in the ADCO Strategic Risk Register, which is reviewed and updated at maximum yearly intervals. The enterprise aspects and impacts, which includes management plan templates, are cascaded to State Business Units for consideration and inclusion in local or project related risk management processes, where applicable.

4.1.6 EARLY / MINOR WORKS

The requirements of the ADCO Procedure Early or Minor Works Contractor Management is implemented where:

- ADCO has management or control of a workplace, or temporary access and control is granted by a Client to a specific area to enable preliminary investigation and related works to be carried out for an ADCO business undertaking, i.e., a construction project yet to be commenced or a construction project that has achieved practical completion. Examples include geo technical boring or other preliminary site investigation and related environmental aspects or impacts arising from such works.
- Other minor works that do not meet the definition of a construction project as defined by legislation and involve high risk construction works with the potential for significant environmental impacts, e.g., defect rectification.

4.1.7 BID / OPPORTUNITY REVIEW

The process of risk management at ADCO commences in the conversion of a new project bid or opportunity. The T-28 Day Tender for new work and investment opportunities includes a preliminary health, safety and environment risk review, including a determination if health, safety or environment risks or impacts are ‘significant’ and require an internal independent review.

Significant project and investment opportunities undergo an internal independent review because of high or complex environmental aspects and impacts and the review is completed before construction commencement (e.g., widespread contamination, protected species, acid sulphate soils, work adjacent to a significant waterbody, e.g., marine environment or other considerations).

4.1.8 PRE-CONSTRUCTION & DESIGN

Pre-Construction Review

The Project Manager and relevant ADCO stakeholders undertake further review(s) of the design through the implementation of ADCO Procedure Risk Management process and review the existing Project Risk Register to ensure that environmental aspects and impacts identified in pre-construction and design that have not been eliminated are tracked and controls measures implemented in the construction delivery phase.

Design Change

Design change throughout design and construction is managed in accordance with the ADCO Change Management Procedure and further evaluated during project review meetings. Where the proposed design change (including design of temporary works) has the potential to significantly (medium or above risk ranking) affect the environment, the design is reviewed to determine a more effective design solution to eliminate environmental aspects and impacts where reasonably practicable. Where this cannot be achieved the aspects and impacts are included in the Project Risk Register or management sub plans to ensure effective management.

4.1.9 PROJECT / WORKPLACE ASPECTS AND IMPACTS IDENTIFICATION

The Project Manager (or nominated representative) in consultation with the Site Manager and members of the project team develop a Project Risk Register prior to commencement of the construction stages of the project. The risk register includes any open (unresolved) environmental aspects and impacts that require management in the construction delivery stages of a project that were identified in the preconstruction / design stages, e.g., contamination.

The completion of the Risk Register is conducted in accordance with the methodology outlined in the ADCO Procedure Risk Management, which requires all key environmental aspects and impacts rated as medium or greater specific to the project to be included in the Risk Register. Control measures related construction works with a high risk of significant or material harm environmental impacts must implement at least one engineering control or better and one mitigating control, consistent with the Hierarchy of Control.

Note: Environmental Aspects and Impacts assessed with a risk ranking of less than medium is not listed in the Risk Register but are controlled using routine standards and procedures as outlined in the ADCO Health Safety Environment Requirements provided with Tender Documents to each Trade Partner/Site trade partner Company that tenders for work with ADCO.

The Project Risk Register is also used to identify:

- the need for additional specific environmental management sub plans listed in Appendix 1; e.g., stormwater, erosion and sediment management, air quality management, contamination management or other; where identified as a medium or above risk ranking;
- aspects and impacts that relate to High-Risk Construction Work that could cause significant or material harm to the environment, require a management sub plan or equivalent and if requested an Environmental Work Method Statement (WMS) is provided that outlines control measures consistent with the Hierarchy of Control and the ADCO Health Safety Environment Requirements Section 24.
- High risk construction works specific to environmental aspects or impacts for which a High-Risk Methodology Review has been nominated in the Risk Register must be undertaken in project delivery before the works commence.

4.2 Legal and Other Compliance Requirements

ADCO identifies and maintains access to all environmental law updates and other compliance requirements (e.g., standards, codes, conditions, approvals and others), which are available at ADCO workplaces and on the Intranet (see Appendix 2 for further information). Environment protection legislation and other compliance requirements, e.g., codes or standards, planning or development approvals.

Client conditions, development planning or local government approvals, noise threshold limits, hours of work, trade waste or other discharge approvals, agreements and standards that apply to this workplace, are listed in the Project Risk Register.

Access to current legal and other compliance requirements (either electronic or paper based) is available at all ADCO workplaces and key Intranet sites for access to principal environmental legislation are listed in Appendix 2.

4.3 Site Rules

The Project Team develops Site Rules for the project site from the ADCO Site Rules template provided on The Hub. The rules are displayed at the workplace and in a prominent location to:

- inform all worker, visitors and other stakeholders of the minimum requirements to be implemented at the workplace to meet specific client, legislative, regulatory and other environment requirements.
- define project specific expectations.
- address the project's management of environmental aspects and impacts including any protection areas and waste recycling expectations.
- address any specific client, legislative and regulatory requirements.
- ensure visitors to the project are made aware of any Site Rules relevant to the site and any areas they will visit, e.g., environmental protection areas, noise or other.

4.4 Objectives and Targets

The ADCO HSE Strategic Plan 5 Year Horizon outlines objectives and targets for the financial year and these are cascaded to ADCO State Business Units for implementation by the state leadership group and projects.

Objectives and Targets related to environment management specific to this project are outlined in Appendix 3.

The ADCO Project Set Up Guidelines also outline specific environmental initiatives to be implemented for a project.

4.4.1 ACHIEVEMENT OF OBJECTIVES AND TARGETS

Progress against specific objectives and targets for environment may be monitored by a project team member(s) (where nominated in the Table at Appendix 9) in consultation with the Project Manager, HSE Advisor, State HSE Manager and State Manager for the State Business Unit Manager/General Manager Special Business Unit. The Project Manager reports on progress against environmental objectives and targets monthly in Project Control Reviews.

Business updates, distributed by the ADCO Head of Health Safety Environment, also outline progress against specific objectives and targets related to incidents or other environmental measures at six monthly intervals.

4.4.2 PROJECT OBJECTIVES AND TARGET MONITORING

The Project objectives and targets for environment as listed in Appendix 3 are monitored by:

- Monthly through Project Control Review (PDC) reporting.
- Selective Project internal independent audits at the frequency outlined in the ADCO Procedure Performance Management.
- Annual internal and external audits of selective projects.
- Evaluation of employee, site trade partner and worker performance by reviewing and monitoring: workplace activities, environmental management sub plans or Environmental Work Method Statements (if requested), or equivalent, implementation through regular observations and inspections by ADCO personnel, site trade partners and the workplace HSE Committee, if a committee is requested.
- Review of training completion rates.
- Review of internal issue notifications or external complaints from sensitive receivers or other interested party contacts.
- Incident reporting, investigation and effective communication and evaluation of implemented corrective actions and preventative actions.

ADCO personnel, where tasked with implementing selective environmental objectives and targets, are detailed in Appendix 9.

4.5 Procurement of Goods and Services

Tendering for the provision of goods and services is undertaken consistent with the requirements of the Business Rules outlined in The ADCO Way and is the responsibility of the Project Manager or nominated representative. The suitability of trade partner/site trade partner companies and suppliers (new and existing) is assessed against:

- Their company profile, expertise and previous work history.
- Internal recommendations of capability and reputation.
- Local procurement opportunities, including proximity to the project site and local manufacture.
- Aboriginal and Torres Strait Islander employee engagement and participation.
- Commercial and financial viability.
- Compliance with regulatory / legislative requirements.
- Industry participation.
- New and retained apprentices and trainees.
- Construction methodology and value engineering.
- Proposed personnel.
- Project resourcing.
- Compliance with ADCO management plans and the ADCO Health Safety Environment Requirements for site trade partners provided with the Supply Agreement, specifically applicable environmental management required specified in section 24.

- Quality management.
- Ability to meet project timeframes.
- Cost of money for payment terms.
- Environmental management performance such as incident data, regulatory notices and fines or prosecutions, high risk construction work experience and methods.
- Ability to meet ADCO Sustainable Development goals for the project outlined within the ADCO Supplier Code of Conduct.
- Overall risk profile.

The management of environment in relation to procurement includes the following requirements:

4.5.1 GOODS

Procured goods must conform with the requirements of applicable Australian standards and legal requirements including the National Construction Code and must meet the requirements of approved codes of practice, compliance codes, product specifications, design standards and guidance notes published by the relevant government regulators or industry organisations when those goods are used, installed, or commissioned for use. Changes to procurement are managed in accordance with the ADCO Change Management Procedure.

Preference will be given to goods with recognised product certification schemes and standards, which support ADCO sustainable development goals for the project.

4.5.2 SERVICES

Procured services include the following documented activities prior to Tender Award:

Prequalification

All prospective tenderers must either have been:

1. capability assessed by completing the ADCO Trade Partner Tender Evaluation Report and ADCO Project Review Part A Assessment; or
2. where this system has not yet been implemented for a particular region, the ADCO Procedure Tendering is followed before being invited to tender; to ensure that prospective tenderers have an Environmental Management System or equivalent procedures or plans that can achieve the requirements established by this Plan and the ADCO Health Safety Environment Requirements issued to site trade partners at Tender.

Request for Tender

Request for Tenders must include:

- The Scope of Works; and
- The ADCO Health Safety Environment Requirements; and
- The ADCO Project specific Site Rules; and
- The Project Risk Register; and
- The Supplier Code of Conduct; and
- The Project Environmental Management Plan and any related management sub plans specific to the scope of work.

Site Trade Partner Interview Checklist

This ADCO Trade Partner Tender Evaluation Report is completed during tender interviews to ensure that the tenderer has properly prepared their tender submission to meet the ADCO Health Safety Environment Requirements section 24 and that they understand their obligations for the management of environmental aspects and impacts, including the ADCO Health Safety Environment Requirements in section 24, that are relevant to their works, if their submission is to be successful.

Tender Evaluation Template

The vetting and analysis of each tender is undertaken by completing the above Tender Evaluation and ADCO Project Review Part A Assessment, to ensure that each tender submission meets the requirements of the ADCO HSE MS.

4.5.3 MANAGEMENT OF SITE TRADE PARTNER ENVIRONMENTAL ASPECTS & IMPACTS

Each Site Trade Partner Company and other workers must plan and adequately identify any environmental aspects and impacts related to the scope of works they are undertaking at the workplace. The Project Manager or nominated representative provides the documents as outlined above in Part 3.5.2 (request for Tender) to each Site trade partner Company at Tender. An itemised list of inclusions in tender/contractor packages and evidence of communication (document

transmittal) of the project environmental information, e.g., Risk Register, ADCO Health Safety Environment Requirements is maintained by SIMPEL or other approved communication database.

The list of any environmental information required to be provided by each Tenderer is included by the Project Manager or nominated representative in pre-tender or pre-contract interviews as determined by the ADCO Supply Agreement (contract) conditions, including records of discussion of project environmental management related information including the ADCO Health Safety Environment Requirements issued at Tender to site trade partners, and verification of site trade partner compliance to environmental requirements by completion of the ADCO Project Review Part A Assessment.

5. IMPLEMENT

5.1 Structure, Responsibility and Accountability

The Project Manager, or nominated representative prepares a project specific project management reporting structure (i.e., organisational chart) to define lines of reporting and key names and positions for roles with environmental responsibilities specific to a workplace or a project site. The Organisational Chart is outlined in Appendix 4.

Individual roles and responsibilities statements for each workplace may differ. Appendix 5 outlines the Environmental Responsibility/Accountability Matrix relevant to this Project Environmental Management Plan and key responsibilities and accountabilities for environmental management on the project site.

For all roles detailed in the project specific organisation chart, the responsibilities statement is agreed between the person employed in that role and their Project/Line Manager. On commencement of a job role outlined in the project organisational chart each person employed in a role meets with the Project Manager or their appointed line manager to review, discuss and where required agree their roles and responsibilities statement and any amendments to that statement. Appendix 6 outlines the statements in brief. Where consultation and agreement of each statement and its specific content differs, the statements are updated and retained in ADCO Bamboo HR or in the project filing system.

In addition, all site trade partners, consultants, suppliers and other contractors (i.e., workers) are also required to comply with their employer's Environmental Management System or equivalent and any related environmental Work Method Statement(s) or equivalent where requested, the project Site Rules, the ADCO Health Safety Environment Requirements s24, any environmental sub plans related to their work activities and applicable legislative requirements.

5.2 Project Specific Environmental Management Innovation Initiatives

At least two project specific environmental leading industry practice initiatives, e.g., innovation or other initiatives, should be nominated annually throughout the delivery of a project at the discretion of the Project Manager, or a nominated representative, in consultation with the Project HSE Advisor or other relevant key stakeholders.

Outline leading practice innovation or other initiatives below:

Brief Description of Initiative	Expected Launch Date	Evaluation Method for the Initiative	Expected Evaluation Date	Related Document (e.g., Plan or other)
Water and Power Meter i.e., Watt/Watcher reading to track consumption and sustainability targets.	Project set up.	Monthly reporting through internal PCR.	6 monthly	Nil
Wash Box – contractor wash out system	Fit-out stage	Weekly post installation via Weekly Site Inspections.	End of project.	Nil

5.3 Training

The Project Manager has overall accountability for any project specific training required for any ADCO employees at a project site level and for new employees' induction and other required training must be completed within 14 days of employment commencement at an ADCO workplace.

5.3.1 NATIONAL TRAINING PLAN

Environmental awareness is a training requirement for selected ADCO employees as outlined by the National Training Plan. Personnel with specific roles and responsibilities for environmental management must have undertaken more detailed

environmental training, including spill response. The ADCO National Training Plan identifies key ADCO environmental training needs related to employees or others with environmental responsibilities, some of which is tailored to project site specific requirements outlined in management sub plans. In addition, some new employees to ADCO are required to undertake and satisfactorily complete training in key elements of the Health Safety Environment & Quality Management System, within 14 days of employment commencement at an ADCO workplace.

The Project Manager/Workplace Manager may choose to review the status of training through the development of a Training Needs Analysis for ADCO employees specific to the project site and ensure a program of completion of required training is in progress, e.g., new employees to ADCO or specific targeted training. The Training Needs Analysis is provided as Appendix 10.

Alternatively, the ADCO National Learning and Development Manager also provides reports on the status of employee training completion at routine monthly intervals.

5.3.2 SITE TRADE PARTNERS & OTHER WORKERS

The minimum environmental training requirements for site trade partners and other workers at this workplace include:

- Work activity consultation training in high-risk construction work tasks that have the potential for significant or material environmental harm, e.g., training in their Work Method Statement or an ADCO environmental management sub plan, or participation in a High-Risk Methodology Review.
- ADCO project site induction and environmental aspects and impacts related to the project, e.g., storage of hazardous chemicals, emergency spill response, sediment or erosion control, noise and hours of work, waste management, spills and emergency response, hours of work and nearby sensitive receivers and plant and equipment maintenance to minimise air quality impacts.
- Environmental management sub plans related to the project and specific to site trade partner work activities, e.g., contamination, erosion and sediment control, cultural heritage protection or other.
- Relevant certificates of competency or qualifications for a work activity or environmental advice, e.g., soil sampling and classification, water quality testing, and cultural heritage assessment.
- Any other training as identified in the Training Needs Analysis located at Appendix 10 specific to site trade partners.

5.3.3 RECORDS OF TRAINING

Records of ADCO employee training are retained by ADCO under the management of the ADCO National Training Coordinator and for individual employees are retained within their individual profile within ADCO Bamboo HR.

Records of required qualifications, competencies and specific industry induction requirements for workers other than ADCO employees (as required) are recorded at the time of induction and retained in ADCO electronic reporting system or other agreed communication medium.

5.3.4 WORKER INDUCTION

All workers must complete the ADCO Site Induction prior to or at the time of attending a project site for the first time, before their work at the ADCO project site is commenced.

The induction will generally include participation and consultation arrangements at the workplace; personal protective equipment requirements, designated smoking areas (if permitted); incident reporting, emergency response planning and key personnel at the workplace, exclusion zones, worker competency, access and egress, workplace specific hazards and risks, noise and hours of work, nearby sensitive receivers, any specific environmental awareness and protection requirements at the project site and any Client specific requirements.

5.3.5 VISITOR INDUCTION

All ‘one-off’ visitors (unlikely to return) to the workplace must be accompanied by a person that has undertaken the workplace induction. All visitors sign the ADCO Project Site Register Visitors upon arrival and departure (including time of entry and exit) or the equivalent visitors register within ADCO electronic reporting system.

Visitors must be informed of and observe restrictions related to any environmentally sensitive areas specific to the project, noise restrictions or other environmental protection requirements.

5.4 Consultation, Participation, Communication and Reporting

Consultation, participation and issue resolution is managed in accordance with the ADCO Procedure Consultation and Communication. Project personnel are required to consult, participate, share and supply relevant project or other information with all workers or their representatives and persons conducting a business or undertaking or other site trade partners or service providers with management or control of work to ensure environmental management or potential impacts are appropriately discussed and communicated.

Communication, consultation and participation of managerial and non-managerial workers on the project is also undertaken and documented through a combination of project meetings. These meetings can include (but are not limited to) Project Team briefings, Site trade partner and Toolbox Meetings or Pre-Start Meetings, in which any important environmental management or protection requirements or incident reporting is communicated.

Trade Partner / Site trade partner Company(s) and other persons with management or control of a business or undertaking at ADCO workplaces are required to consult e.g., a Toolbox Meeting or Pre-Start Meeting, with their employees or other workers on issues that have the potential to significantly impact the environment and a record of this consultation is maintained, and copies forwarded to the Project Manager or a nominated representative or entered in the ADCO electronic reporting system.

5.4.1 DISPLAY OF ENVIRONMENTAL INFORMATION

To ensure all workers have opportunity to view, discuss and take note of environmental information, the HSE Advisor, or nominated representative, displays the following information (as a minimum) at a prominent location(s) at the workplace, including notice board(s):

- Environmental Management Policy
- Environmental Social Governance Policy
- Emergency response requirements
- Site Rules.
- HAZCHEM or other signage related to the storage or hazardous chemicals or dangerous goods at the workplace.
- Any environmental notices/infringements issued within the past 30 days.
- Location Concrete Wash Out Area
- The location of spill kit(s).
- Dedicated diagram identifying any environmental protection areas, e.g., flora and fauna, aboriginal heritage, tree protection or other.
- Hours of Work and noise restrictions.
- Located on Hazardous Chemical storage

5.4.2 TOOLBOX MEETINGS, PRE-START MEETINGS, OTHER PARTICIPATION / CONSULTATIVE ARRANGEMENTS

Workers and their supervisors conduct Tool Box Meetings, Pre Start Meetings or other participation and consultative arrangements with those employees or workers under their direct supervision and record the meetings on the ADCO General Tool Box/Site Meeting Record, Pre-Start Meeting Record, or equivalent site trade partner document or electronic equivalent used by ADCO.

ADCO conduct a daily Pre-Start Meeting to discuss health, safety and any environment matters with trade partners / site trade partner companies and supervisors including the current day's activities, interfacing trade activities, changes to emergency access and related control measures and other relevant matters. The meeting is recorded on the ADCO Pre-Start Meeting Record

Other environment related meetings are recorded formally where required by completing the ADCO form General Tool Box/Site Meeting Record, e.g., where discussing WMS for high risk construction work or other relevant environmental management matters. Toolbox Meetings are undertaken at intervals that keep employees and other workers informed of conditions and changes to the workplace that may affect health and safety.

A copy of pre-start meetings, tool box meetings or other consultation meetings are retained in accordance with the ADCO document retention and filing rules outlined in the ADCO Corporate Management Plan. Items listed for action are reviewed and progress is tracked in the ADCO electronic reporting system until they are corrected.

ADCO will ensure that communication, participation and consultation on environmental management matters occurs with all workers, including those with limited English or English as a second language. Where required, ADCO in consultation with site trade partner company employers will develop appropriate communication to consult with workers with limited English or English as a second language.

5.4.3 ENVIRONMENTAL REPORTING

The project team undertakes recording and reporting of environmental matters in ADCO electronic reporting system, which provides relevant reporting to the State Business Unit and the Head of Health Safety Environment through the ADCO Power BI intranet portal. Power BI reports provide environmental statistics used to assist the State business unit and Head of Health Safety Environment to identify trends in environmental management performance, track progress against annual objectives and targets outlined in Appendix 3 and identify environmental impacts and incidents (medium or greater risk ranking) across all projects and track corrective action and preventative actions implemented.

The Project Manager also ensures the following reporting activities occur and records and reports are compiled and retained by relevant ADCO personnel for audit purposes:

Environmental Reporting Requirements are listed below or at Appendix 11.

- Establish project reporting functionality within ADCO electronic reporting system or other agreed electronic medium immediately once construction authorisation has been given.
- Special conditions and project specific requirements for the environment (if any) are documented in Part 1.6 of this Plan and in the Project Risk Register where related to an environmental aspect or impacts and potential for noncompliance exists, or the condition or requirement requires tracking, e.g., dewatering and water quality criteria.
- Completed daily, weekly and monthly inspections and monitoring of environmental matters and project compliance to relevant legislation within ADCO electronic reporting system.
- Identify key trades and implement a High-Risk Methodology Review recorded within ADCO electronic reporting system where environmental aspects and impacts have potential significant or material harm impacts.
- Reporting of all environmental incident events and observations in the ADCO electronic reporting system or other agreed electronic medium.
- Immediate notification to the State HSE Manager for all environmental incident events that:
  - are a potential or actual critical incident event; with notification via telephone and ClickSend to facilitate early warning information dissemination by senior management to other projects nationally and identify project support needs.
  - have potential to be Notifiable to the relevant environmental protection regulator, e.g., potential or actual material harm to the environment.
  - have potential to trigger a crisis management event including high level media interest.
  - have potential to involve attendance at the site by any emergency service or a regulatory authority.
- Report the incident immediately to the State HSE Manager and record the incident details within the ADCO electronic reporting system within 24 hours that have the potential to be classified as a Critical Incident; to enable a related incident alert to be published within 5 days after the incident.
- Complete critical incident investigation reports, including senior management findings review and corrective and preventative action implementation within a maximum period of 30 days after the incident date.
- Ensure ADCO project personnel complete outstanding actions in ADCO electronic reporting system within the required timeframe.

- Report project productivity hours and personnel numbers weekly for ADCO and site trade partner personnel within ADCO electronic reporting system by the 2nd day after the end of the reporting month to facilitate accurate reporting in Power Bi.
- Report on and provide all regulatory authority notices, fines, show cause or other correspondence provided by regulatory authorities, local government or other; on the ADCO electronic reporting system within 5 working days and inform the State HSE Manager on receiving the correspondence.
- Report to senior management on consolidated monthly data and progress against ADCO Objectives & Targets at project control review meetings, including upcoming or completed High Risk Methodology Reviews in Project Control Review Reporting.
- Report on environmental aspects and impacts or other nonconformities and incidents or observations in accordance with the following reporting table.

Table 1 – Incident Reporting

Incident reporting and related management of events and corrective and preventative actions are carried out in accordance with the ADCO Procedure Incident Management. A summary is provided below. Where any inconsistency between Table 1 and the requirements of the ADCO Procedure Incident Management exists, the requirements of the Procedure prevail.

Occurrence / Incident / Report	Initiator	Action	Overall Responsibility
All incidents of 'actual' or 'potential' for material harm to the environment.	Project Team Members	• Report immediately to the Project Manager (PM) or nominated representative. **Note:** Notification to Regulators to be made only after consultation with the State HSE Manager has occurred. • ClickSend for actual or potential critical incident events.	Project Manager
Incident Event Reports	PM/HSE Advisor	• All environmental incident events are to be entered in ADCO electronic reporting system. • Incident Investigation Report medium or above risk ranking.	Project Manager
Observations	Project Personnel	• High Risk Construction Work observations entered in ADCO electronic reporting system. • Environmental controls and barriers. • Environmental Management Sub Plans and related controls	Foremen / Supervisors / Project Personnel
Identified incident events/ observations with potential consequence of large or very large consequence outcome	All project personnel	• Incident event or observation entered reporting in ADCO electronic reporting system and close out tracked to completion. • Observations with Extreme/High potential nominated must have priority close out actions assigned and tracked to completion.	Project Manager
Notices, Infringements or related show cause or similar correspondence served from a Government or Regulatory Authority	Regulatory Authority/Other	• Record in ADCO electronic reporting system within 5 working days and inform State HSE Manager immediately on receiving the correspondence.	Project Manager State HSE Manager

5.5 Document and Data Control

Environmental documents are identified and controlled in accordance with the document identification and control process outlined by The ADCO Way and the Corporate Management Plan. The current version of all health, safety, environment or quality documents only, are used at the workplace and are available from The Hub wherever required.

Procedures become 'uncontrolled' from the date of retrieval, downloading or printing from The Hub. The Head of Health Safety Environment circulates document additions, changes or deletions by email of revision updates.

5.6 Aspect Identification, Risk Assessment and Impact Control

All work activities undertaken by ADCO employees, trade partners, site trade partners or other workers at the project workplace are carried out in accordance with ADCO HSEQ Management System requirements, policies, procedures, management plans and related management sub plans, legislation and relevant standards and codes. These requirements, as related to a specific high risk construction work activity and related aspects and impacts identified in the Project Risk Register are included in the related management sub plan or a Site trade partner Environmental Work Method Statement(s) or other document specific to the works to be carried out, where requested. High risk construction work is defined in the ADCO Procedure Site trade partner Management.

5.6.1 SITE TRADE PARTNER ENVIRONMENTAL MANAGEMENT

All Trade Partner / Site trade partner Companies must provide the following documents prior to commencement of works:

- An Environmental WMS or equivalent, where requested for any work classified as high-risk construction work that has the potential for significant impacts to the environment, e.g., potential for material harm if not adequately planned and controlled; or compliance with any management sub plan requirements.
- A Plant, Machinery & Equipment Register made available on ADCO electronic reporting system for all items of plant, machinery and equipment to be brought to the site outlining and uploaded to ADCO electronic reporting system the inspection and maintenance of that plant and equipment to the manufacturer's requirements and relevant Australian standards all loaded onto ADCO electronic reporting system. Appendix 8 of this Plan, Plant Equipment & Processes Inspection & Testing Schedule outlines key requirements.
- A Safety Data Sheet (or Material Safety Data Sheet) for all hazardous chemicals, products, goods, substances or dangerous goods to be brought to the site for use loaded onto the ADCO electronic reporting system.
- A Hazardous Chemicals Register for all materials, products, substances or dangerous goods to be brought to site that are classified as hazardous by the Safety Data Sheet or Material Safety Data Sheet loaded onto ADCO electronic reporting system.
- Additional environmental management sub plans where requested by ADCO, (e.g., sediment and erosion control, vibration control or other), as identified in the Project Risk Register as a medium or above risk ranking and specific to the site trade partner's scope of work and related work activity.

Review of the above requirements is undertaken by completing the ADCO Trade Partner Tender Evaluation Report.

Specific high risk work activities as defined by the ADCO Procedure Site trade partner Management.

5.6.2 WORK METHOD STATEMENTS OR EQUIVALENT

Where requested by ADCO an Environmental WMS or equivalent provided by a Site trade partner Company must be developed for high-risk construction work that has the potential for significant impacts to the environment, i.e., potential for material harm if uncontrolled. The WMS or equivalent must be reviewed by ADCO to ensure that it meets the requirements outlined in the ADCO Health Safety Environment Requirements s24 or stipulated in the relevant environmental management sub plan. This includes any works carried out by ADCO.

Alternatively, a management sub plan or equivalent prepared for the works that includes any construction related medium or greater (risk ranked) aspects and impacts specific to the works under the supply agreement (contract). Control measures must be consistent with the Hierarchy of Control.

5.6.3 CONSULTATION IN WORK METHOD STATEMENTS OR OTHER PLANS

Site trade partner Company employees or their agents (other workers) must undertake participation and consultation inclusive of training in the contents of any site-specific WMS(s), or management sub plan or other document prepared for their high-risk construction work activities that have the potential for significant environmental impacts (Part 4.4.2 of this Plan). Site trade partner Company employees or their agents (other workers) are required to sign their acknowledgement of this consultation, participation and training as part of the WMS implementation process or any other consultative forum.

Foremen/Supervisors must review and sign all WMS(s) or management sub plan(s) that apply to work activities and workers under their management or control. This requirement is to ensure that Foremen/Supervisors are aware of the work methods and related control measures for all high-risk construction work activities for which they have oversight and supervision.

5.6.4 REVIEW OF WORK METHOD STATEMENTS AND CHANGE MANAGEMENT

The WMS, management sub plan or equivalent for high-risk construction work that could cause significant and material harm to the environment must be reviewed by the Project Manager, or nominated representative(s), in conjunction with the ADCO Site Supervisor or Area Supervisor that will oversee the high-risk construction work. The review is undertaken by with emphasis on environmental aspects and impacts and related controls identified in the Project Risk Register and any related environmental management sub plan.

Consultation on construction work activities is outlined in Part 4.4.2 of this Plan and Appendix 7.

NOTE: Where a change in the scope of work is proposed or an environmental incident occurs that relates to high-risk construction work with the potential to cause significant or material harm to the environment a WMS or applicable environmental management sub plan must be reviewed and amended where applicable before the works can proceed.

5.6.5 ASPECT IDENTIFICATION, CONTROL AND MONITORING

Aspects and impacts related to the workplace are recorded in the Project Risk Register and related environmental management sub plans. To ensure these remain current it must be reviewed:

- Prior to each monthly project control review when reviewing the next 4-6 weeks of activities and any upcoming high risk construction work; and
- To ensure High Risk Methodology Reviews are nominated in the Risk Register and following completion are tabled at the next upcoming HSE Committee Meeting (if established) or another consultative forum as agreed.

Workers are encouraged through the workplace specific induction, toolbox meeting/pre-start meeting and other participation and consultative forums to identify and control environmental aspects and impacts on a ‘see and fix’ basis where reasonably practicable to do so and to immediately report potential or actual impacts to the environment to their supervisor or ADCO personnel. The ADCO Form Notification of an Issue can be used for this purpose.

Monitoring of the workplace is carried out in accordance with Part 5 of this Plan.

Where high risk impacts presenting an imminent or immediate risk of material harm to the environment, are identified that specifically relate to a work area or work task under the control of ADCO, a trade partner / site trade partner or other worker due to ineffective or inadequate control measures, the work task shall be stopped. Consultation must then be undertaken with key stakeholders including relevant workers involved in the task to achieve the required environmental management control measures as defined by Part 4.4.2 of this Plan and Appendix 7.

All incident events and observations must be entered in ADCO electronic reporting system and related nonconformities must be issued by the Site Supervisor/Area Supervisor with corrective action instigated and agreed by the relevant trade partner / site trade partner supervisor, which is then tracked to completion in the ADCO electronic reporting system.

5.7 Emergency Response and Evacuation

A project specific Construction Flood Emergency Response Plan has been developed by the Civil Engineering Consultant, Costin Roe Consultant, for the Lidcombe Multi Storey Warehouse Project (Please refer to Appendix A-15).

This plan outlines all site responses to flooding during the constriction and operational phases of the development, including predicted flood levels, flood warnings and flood notifications, evacuation and refuge protocols and awareness training for employees and contractors on the project – consistent with the provisions of the *NSW Flood Risk Management Manual (2023)*.

Further to the Construction Flood Emergency Response Plan, the Project Manager, or a nominated representative, in conjunction with other appointed ADCO personnel develops an Emergency Response Management Sub Plan (ERMSP) for the workplace which includes any credible environmental emergency scenarios and related emergency response equipment specific to the project site, an emergency contact list to be displayed on the workplace notice board and at other prominent locations and appointed members of the Emergency Control Organisation and Emergency Response Team.

Each ADCO workplace has a documented site specific Emergency Response Management Sub Plan (ERMSP) prepared in accordance with ADCO Procedure Emergency Management and regularly tested. The ADCO Emergency Response Management Sub Plan Template available on The Hub is used as a basis to develop the required workplace specific ERMSP which covers scenarios related to environmental and health and safety under the one ERMSP.

6. IMPROVE

6.1 Monitoring of the Workplace

Monitoring of the workplace includes those actions required to verify that management of environmental aspects and impacts conforms to the ADCO HSEQ MS, legislation and related codes or standards and other compliance requirements applicable to the workplace, such as Development Approvals and Development Conditions.

The project workplace is monitored and inspected as follows:

Workplace Monitoring Schedule				
Task	**Type of Monitoring**	**Monitoring By**	**Frequency**	**Record**
General work areas	Aspect / Impact Observations	Project Personnel	Ad-hoc	ADCO electronic reporting system Observations
Risk Register	Project Control Measure reviews	Project Manager / HSE Advisor	Monthly	Monthly PCR Meeting Environment items listed PCR Report Updated Risk Register
High Risk Construction Work	Observations of environmental management aspect and impact controls	Area Supervisor / Supervisor	Daily	ADCO electronic reporting system Observation/ Inspection
Site Trade partner work activities	Work Activity Inspection	Trade Partner Area Supervisor /Supervisor	Weekly	Completed Site trade partner Company Form
All general work areas including plant, machinery and equipment	Weekly Inspection	Project Manager; HSE Advisor / HSE Committee Weekly inspections by ADCO to include Site trade partner participation for the entire inspection.	Weekly	HSE Inspection in ADCO electronic reporting system Inspections / Observations raised, and actions closed.
Monitoring DA Conditions or other approval	Environmental monitoring identified in the Project Risk Register, e.g. air, noise, water quality testing, vibration, health, e.g., dust.	Competent person	As required	Completed ADCO electronic reporting system Observations. Monitoring Register Monitoring outlined in management sub-plans.
Calibration of Monitoring equipment	Noise, dust, water or other	Competent Person	As required	Calibration Certificate (annual)
High Risk Construction Work	Senior Leadership ADCO + Site trade partners	Site Inspection (Safety Pulse) Senior Leadership Inspection	Quarterly	ADCO electronic reporting system Inspection/Observation
Site Trade partner Works	Internal Audit including environmental management	State HSE Manager	High Risk Construction Work and/or trending of Negative At-Risk Observations related to a site	Completed National Schedule of Project Audits. Completed Audit report with actions raised and tracked in ADCO electronic reporting

Workplace Monitoring Schedule				
			trade partner's performance.	system, incl. root cause of nonconformities and trends.

6.2 Monitoring of Plant, Goods, Equipment and Processes

The monitoring of plant, machinery or equipment and processes to determine the effective management air quality and potential for spills or other environmental impacts at this workplace is determined in accordance with the schedule outlined in Appendix 8 of this Plan, i.e., Plant, Equipment & Processes Inspection & Testing Schedule and the ADCO Procedure Static Plant and the ADCO Procedure Operating Plant.

6.2.1 INCOMING PLANT, MACHINERY AND EQUIPMENT

Incoming plant, machinery or equipment must be approved for use by ADCO Management and undergo a pre-entry induction/inspection including:

- Completion of a Plant Checklist through the (ADCO electronic reporting system) portal.
- Confirmation of operator competence requirements as outlined in Part 4.3.2 of this Plan.
- Review of compliance requirements (e.g., public road registration, maintenance records, plant specific logbook.
- Inspection and maintenance of plant, machinery or equipment must be carried out at the specified intervals recommended by the manufacturer and relevant Australian standards.

Incoming plant, machinery or equipment will be denied entry if induction compliance conditions listed above and further outlined in Appendix 8 have not been met.

- Plant, machinery, or equipment that is 'rejected' by ADCO must be locked out and removed from service (i.e., not be operated) until approved by ADCO.

6.2.2 INCOMING GOODS

Procurement of Goods is managed to the requirements of Part 3.5.1 and 3.5.2 of this Plan.

Incoming purchased goods (including products or materials) with the potential to impact the environment must conform with the National Construction Code and applicable Australian or international standards.

Goods identified as non-conforming are removed from service, secured against further use, recorded in SIMPEL as part of The ADCO Way Quality System, then returned to the supplier. If the goods remain on-site pending verification by the supplier or rectification, they are quarantined to prevent inadvertent use and marked or otherwise identified as quarantined and not for use.

6.2.3 CALIBRATION

Calibration of measuring and testing equipment used for health, safety and environmental monitoring is carried out in accordance with the manufacturer's requirements and evidence is provided to ADCO. Calibration ensures that the precision of ADCO and site trade partner measuring, and testing equipment is accurate, is of the proper range and type and can verify conformance to company, client and legislative requirements.

6.2.4 PLANT, MACHINERY AND EQUIPMENT INSTALLATION / DISMANTLING / INSPECTION / MAINTENANCE

Proposed maintenance, servicing or dismantling of any plant, machinery or equipment (including hired) on a project site must be assessed to determine if the works can be undertaken off the project to protect against the potential for environmental impacts, e.g., spills, leaks, oils or other impacts. Where this is not reasonably practicable the potential aspects and impacts related to the works must be assessed and controls implemented to prevent impacts to the environment. This includes protection of work areas to capture spills or other components and removal of all waste parts or products, e.g., engine oil and oil filter, by the Fitter/Mechanic undertaking the works.

Faulty or defective plant, machinery and equipment, which has the potential to impact the environment must be removed from service by a worker or their supervisor who has identified the fault and is subsequently locked out and tagged out to prevent inadvertent or unauthorised use.

6.3 Noncompliance's and Corrective / Preventative Action

The Planning Secretary **MUST** be notified in writing via the Major Projects website immediately after becoming aware of an incident on site. The notification **MUST** identify the development (referenced as Development No: SSD-36464788 | Project Name: Boorea Street Warehouse & Distribution Centre) and set out the location and nature of the incident clearly to the Planning Secretary (photos appended with a site plan identifying the location of the incident). Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 3 (Incident Notification and Reporting Requirements) as outlined within the Approved SSD Consent (Please refer to Appendix A-22 & the excerpt below provided).

Further to the above, the Planning Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance. A non-compliance notification **MUST** identify the development and the application number for it (referenced as Development No: SSD-36464788 | Project Name: Boorea Street Warehouse & Distribution Centre) and set out the specific condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

For clarity, a non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

On a project level, all nonconformities / non-compliances or other defects and related corrective action and preventative actions identified at ADCO workplaces must be implemented in a timely manner to prevent recurrence of the nonconformity or defect and tracked to resolution in ADCO electronic reporting system by the Project Manager or a nominated representative.

Corrective and preventative actions must be consistent with the requirements of the ADCO HSEQ MS, the Hierarchy of Control and reviewed to determine the effectiveness of any action taken. This includes environmental management action items from reviews, audits, workplace inspections/ assessments, external and stakeholder complaints, issue notification reports, opportunities for improvement, incidents and observations. Actions are tracked in ADCO electronic reporting system, or another agreed electronic medium.

Action items raised because of incidents, observations and audits entered in ADCO electronic reporting system must be corrected in a timely manner (to the requirements of annual objectives and targets) to prevent recurrence. Project teams should also review Site Trade Partner Company performance based on negative 'at risk' or 'unsafe' observations and audit nonconformities to determine if the project site audit, inspection, or other assurance activity frequency should be increased based on the risk profile. Refer to Part 5.1 of this Plan.

Actions implemented as a result of a critical incident or major nonconformity audit finding within ADCO must be monitored to evaluate their effectiveness for a period of 30 to 60 days after the conclusion of the incident investigation or audit finding corrective action. The root cause of the incident/major nonconformity and its contributory factors must be clearly outlined in the incident investigation / audit findings.

State HSE Managers shall monitor and track the closure of internal and external nonconformities within ADCO electronic reporting system, including identification of the root cause and contributory factors of nonconformities, nonconformity trends across the State and review of the effectiveness of any corresponding corrective or preventative actions raised from incidents, inspections, observations and audit nonconformities. Where nonconformities remain unresolved (i.e., corrective/ preventative actions implemented) for more than 30 days they shall be elevated to the ADCO Head of Health Safety Environment for resolution.

Appendix A-22 Approved SSD Consent (Appendix 3 – Incident Notification and Reporting Requirements):

WRITTEN INCIDENT NOTIFICATION REQUIREMENTS

1. *A written incident notification addressing the requirements set out below must be submitted to the Planning Secretary via the Major Projects website within seven days after the Applicant becomes aware of an incident. Notification is*

required to be given under this condition even if the Applicant fails to give the notification required under condition C9 or, having given such notification, subsequently forms the view that an incident has not occurred.

2. *Written notification of an incident must:*

   (a) identify the development and application number;

   (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);

   (c) identify how the incident was detected;

   (d) identify when the applicant became aware of the incident;

   (e) identify any actual or potential non-compliance with conditions of consent;

   (f) describe what immediate steps were taken in relation to the incident;

   (g) identify further action(s) that will be taken in relation to the incident; and

   (h) identify a project contact for further communication regarding the incident.

INCIDENT REPORT REQUIREMENTS

3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.

4. The Incident Report must include:

   (a) a summary of the incident;

   (b) outcomes of an incident investigation, including identification of the cause of the incident;

   (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and

   (d) details of any communication with other stakeholders regarding the incident.

6.4 Monitoring & Actions Arising

Where the results of monitoring of the workplace and related plant, machinery, equipment, processes, goods, conditions or a critical incident occurrence identifies risks or environmental impacts that are ranked as medium or above the Project Manager, or a nominated representative, reviews the Project Risk Register to determine:

- the adequacy of the content of the risk assessment, i.e., if the environmental aspect and impact related to the nonconformity or other monitoring is included in the risk assessment and its related Risk Register; and
- the effectiveness of control measures consistent with the Hierarchy of Control; for short term and long-term duration; and
- the effectiveness of monitoring activities related to each aspect or impact listed in the Project Risk Register.

The timeframe for rectification of actions raised by any inspection, audit, nonconformity or other monitoring activity, or a critical incident occurrence is determined by the State HSE Manager and the ADCO Procedure Performance Management and shall not exceed 30 days.

6.4.1 INCIDENTS AT THE WORKPLACE

Workplace environmental incidents are reported immediately on becoming aware of the incident and within two hours of the incident occurrence. Information regarding the incident event must be entered into the ADCO reporting system ADCO electronic reporting system.

Incidents involving actual or potential material harm to the environment are managed in accordance with the ADCO Procedure Incident Management and must be reported immediately to the State HSE Manager.

Where an incident meets the criteria of notifiable to a Regulator, the incident scene must be protected (preserved) and not disturbed until the Regulator formally advises release of the area. This notification must occur in a timely manner as required by legislation and except in exceptional circumstances, would normally occur immediately after discussion with the ADCO State HSE Manager.

Critical incidents and notifiable incidents involving emergency services and the regulatory authority(s) require immediate notification (Click Send) to senior management by the Project Manager or nominated representative, to the Construction Manager, the State HSE Manager and Head of Health Safety Environment and other senior management.

Where an incident at the workplace may be classified as a Crisis the Project Manager immediately notifies the incident to the Construction Manager and State HSE Manager and in accordance with the reporting structure outlined in ADCO Crisis Management Site Response Guideline. The State HSE Manager immediately notifies the State Business Unit (RBU) Operations Manager and the Head of Health Safety Environment in accordance with this Protocol.

Notices, fines or show cause correspondence issued by any Regulatory / Local Authority to any ADCO workplace are reported and forwarded to ADCO personnel as outlined in Part 4.4.3 of this Plan. Copies of Regulatory Notices issued must be displayed prominently in the workplace as outlined in Part 4.4.1 of this Plan.

6.4.2 UNACCEPTABLE BEHAVIOUR

Where unacceptable behaviour by a worker(s), including employees or site trade partners, is observed and presents an imminent or immediate risk of potential or actual material harm to the environment; the work activity must be stopped. The incident is then elevated to the immediate supervisor of the works and other relevant stakeholders.

The incident must be managed by the Project Manager, or a nominated representative, in consultation with the State HSE Manager and Construction Manager.

Employees or site trade partners may be removed from an ADCO project site following a single unacceptable ‘at risk’ behaviour (i.e., with a large or greater potential outcome for actual or potential material harm to the environment). A determination of the consequence management related to an incident and its potential outcome is carried out in consultation with worker’s employer, supervisor and any Employee Representative.

Alternatively, the consequence management issued to a worker may be a first warning in relation to an incident and removal from site following any repeated incident of unacceptable ‘at risk’ behaviour, which presents a significant imminent or immediate risk of material harm to the environment.

A nonconformity related to the observed ‘at risk’ behaviour must be recorded in ADCO electronic reporting system and the potential outcome of the behaviour, e.g., potential discharge of hazardous substance into local water course along with the management actions implemented.

APPENDIX

A-1 Environmental Management Sub Plans

Management sub plans are identified in the Project Risk Register as outlined in Section 3.1 of this Plan. The Project Manager or nominated person is responsible for implementing and maintaining the management sub plan(s) and their requirements.

 # Identifies those plans that cover both health, safety and environment requirements, i.e., one management sub plan only

Management Sub-Plan Name	Required	Reason
Asbestos and Hazardous Building Materials Management Sub Plan	☒	Refer to Appendix A-26 - Hazardous Building Materials Report by WSP Environmental
Acid Sulphate Soil Management Sub Plan	☒	Refer to Appendix A-20 - Acid Sulfate Soils Management Plan by JBS&G.
Air Quality Management Sub Plan	☐	Nil required
Conservation and Habitat Management Sub Plan	☐	Nil required
Contamination Management Sub Plan	☒	Refer to Appendix A-25 - Additional Contamination Assessment by JBS&G.
Emergency Response Management Sub Plan	☒	Mandatory
Hazardous Chemicals / Dangerous Goods Management Sub Plan	☒	Mandatory
Heritage and Archaeological Management Sub Plan	☒	Refer to Appendix A-24 Statement of Heritage Impact by Austral Archaeology.
PFAS Management Sub Plan	☐	Nil required
Stakeholder Engagement Management Sub Plan	☐	Nil required
Stormwater Erosion and Sedimentation Management Sub Plan	☒	Refer to Appendix A-14 Erosion Sediment Control Plans
Sustainability Management Sub Plan	☐	Nil required
Waste Management Sub Plan	☒	Mandatory

A-2 Key Environment Legislation

The construction works are to be conducted in accordance with all relevant state legislation including, but not limited to, the legislation listed below, identified in the completed project ADCO Project Risk Register and nominated in specific management sub plans, WMS or other environmental management documentation as required.

State/Region	Principal Legislation	Authority	Internet Address
Commonwealth	Environment Protection and Biodiversity Conservation Act 1999 National Greenhouse and Energy Reporting Act 2007	Department of the Environment Clean Energy Regulator National	https://www.environment.gov.au/epbc http://www.cleanenergyregulator.gov.au/NGER
New South Wales	Protection of the Environment Operations Act 1997	Office of Environment & Heritage Environment Protection Authority NSW NSW Office of Water	http://www.environment.nsw.gov.au/ https://www.epa.nsw.gov.au/ https://www.dpie.nsw.gov.au/
	Environmental Planning and Assessment Act 1979		
	Water Management Act 2000		
	Water Act 1912		
	POEO (Penalty Notices) Regulation 2004		
	POEO (Clean Air) Regulation 2010		
	POEO (Waste) Regulation 2014 Waste Avoidance & Recovery Act 2001 Heritage Act 1977		

A-3 Objectives and Targets (Project)

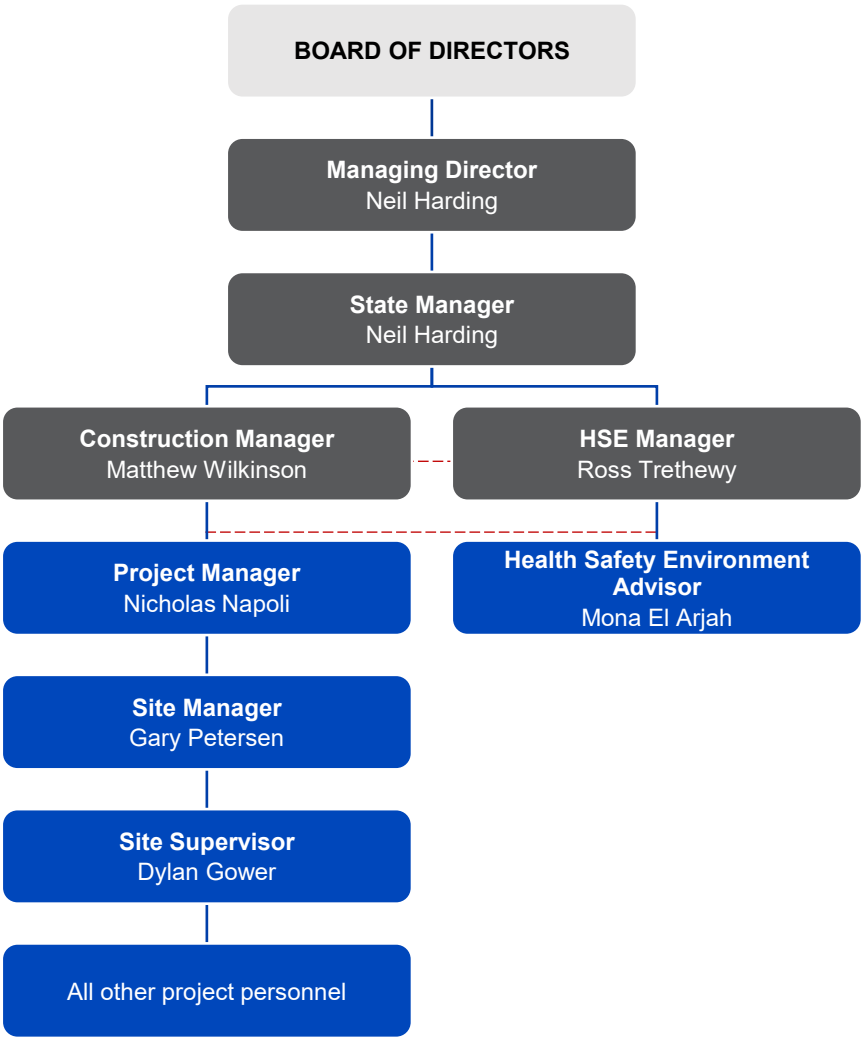
FY23 ADCO Performance Objectives	Performance Targets	Responsibility
LEAD INDICATORS i.e., the measurement of processes, activities and conditions that define specific performance and predict future results.		
1) Identify key high risk construction work trades with significant potential for material harm to the environment and implement a High Risk Methodology Review with key site trade partner / suppliers, internal subject matter specialists and others as determined to promote design and buildability outcomes that reduce environmental aspects impacts in delivery, e.g., contamination and remediation, demolition; excavation, clearing and grubbing or other related high risk trades as identified in the Project Environmental Risk Register.	100%	PM / CM / SM / HSEA
2) National Training Matrix implemented for ADCO Way, HSE Induction, HSE training assigned for new starters and all employees within 14 days of employment start date.	≤14 days	PM / CM / SM / HSEA
3) Implement the ADCO Management System across the Projects/Operations consistent with the requirements of legislation, AS/NZS ISO14001 (environment) - monitored by an annual assurance program.	Annual No Major Project NCRs	PM / CM / SM / HSEA
4) Critical incident notification by any project/operation (via Click Send) to facilitate early warning information dissemination to other projects nationally and project support needs.	<2hrs	PM / CM / SM / HSEA
5) Critical incident learnings are provided by project/operation personnel to facilitate the issue of a national alert within 5 days, e.g., summary of events, photos and other information.	≤5 days	PM / CM / SM / HSEA
6) Critical incident investigation completed within 30 days and close out to include senior management, i.e., Construction Manager; Project Manager/ Site Manager; HSE Manager and Head of HSE. Controls measures are monitored to determine their effectiveness in a separate Action Plan for 30 to 60 days.	100%	PM / CM / SM / HSEA
7) Project Leadership Group members (e.g., PM, CA, SM, HSEA) each undertake leadership health, safety and environment engagement activities annually at a project level, e.g., Safety Pulse, participate in methodology reviews; project inspection/high risk work review or other project in delivery interaction as determined and activities are formally recorded in ADCO electronic reporting system.	12	Project Manager; Contracts Administrator; Site Manager; HSE Advisor
8) Actions assigned to project/operation HSE observations; inspections, audits, incidents or other assurance are closed out in a timely way, i.e., where HSE MS does not prescribe alternative timeframe.	≤14 days	PM / CM / SM / HSEA ADCO Assigned Personnel
11) Innovation – Project seeks out, supports and implements innovation that directly or indirectly improves environment or sustainable development standards. Submits to the State Business Unit General Manager/ HSE Manager for eligibility for ADCO national award consideration.	Min. 2 per year	PM / CM / SM / HSEA
12) Project Recognition & Rewards Program – individual recognition employee / worker in environment management or sustainable development.	Quarterly	PM / CM / SM / HSEA

FY23 ADCO Performance Objectives	Performance Targets	Responsibility
LAG INDICATORS: i.e. The measurement of processes linked to the outcomes of past events that provide data on past performance that is not predictive.		
1) Environment Incident Frequency Rate (EIFR) medium risk ranking or above consequence potential / actual environmental harm per million productivity hours.	≤2.0	Project Manager / Construction Manager
2) Waste management projects - recycling of waste and diversion from landfill; (#) reporting of hazardous waste removed from site (and nominated categories, e.g., PFAS and other), is reported separately and is not included in the recycle/diversion figures; all reported in ADCO electronic reporting system.	>90% Diversion from landfill	Project Manager / Construction Manager
3) Environmental Reporting: Energy Consumption, Fuel, Potable Water Use & Waste Disposal on Projects, project offices and State Business Units offices/premises record ADCO related energy consumption (kWh), fuel, e.g., petrol/diesel/gas use (litres), potable water use (kL), waste disposal (cubic metres/tonnes). Reported in monthly Project Control Review Meetings	100%	Project Manager / Construction Manager

A-4 Project Management Structure (Organisational Chart)

ADCO will provide a competent project team to effectively communicate and allow for sufficient time and resources to effectively implement the requirements of the Health Safety Environment Management System.

Dotted lines denote indirect reporting lines.



A-5 Environmental Management Responsibility / Accountability Matrix

	Head of Health Safety Environment	State HSE Manager	HSE Advisor	Construction Manager	Project Manager	Project Engineer	Site Manager	Supervisor/Supervisor	Site trade partner Principal	HSE Committee/ Consultation Group	Construction Worker
Environmental Management System	A	I	R	R	R	I	R	R	I	C	I
Environmental Management Policy	A	I	R	R	R	I	R	R	I	C	I
Environmental Social Governance Policy	A	I	R	R	R	I	R	R	I	C	I
Project Environmental Management Plan	A	C	C	I	R	I	R	R	I	C	I
Project Risk Register (Environment)	A	C	C	I	A/R	R	R	C	I	I	I
Environmental Management Sub Plans	A	C	C	I	R	I	R	R	I	C	I
Legislation and Regulatory Changes	A	A	C	C	R	C	C	I	I	I	I
Site Rules	-	I	C	-	A/R	C	C	C	I	I	I
HSE Objectives & Targets	A	C	I	-	I	I	I	I	I	I	-
Project HSE Objectives and Targets & Initiatives	A	I	C	R	A/R	C	C	I	I	I	-
Workplace HSE Audits	-	R	C	-	A	-	-	-	-	-	-
Organisational Chart	-	I	C	-	A/R	C	C	I	I	I	-
HSE Roles and Responsibilities	C	I	I	-	A/R	C	C	I	-	-	-
Training Plan	I	C	C	R	R	I	C	I	-	-	-

	Head of Health Safety Environment	State HSE Manager	HSE Advisor	Construction Manager	Project Manager	Project Engineer	Site Manager	Supervisor/Supervisor	Site trade partner Principal	HSE Committee/ Consultation Group	Construction Worker
Site trade partner Work Method Statements or equivalent document outlining env. controls	-	-	C	-	R	I	C/A	C	R	-	-
Worker Induction	-	C	R	-	A	-	-	-	-	-	-
Visitor Induction	-	C	R	-	A	-	-	-	-	-	-
Consultation incl. alerts, lessons learned or other	-	-	C	-	R	I	I	I	R	C	I
HSE Reporting	I	-	R	-	A	-	I	-	-	-	-
Emergency Response Management	-	C	R	I	A	I	I	I	I	I	I
Hazardous Chemicals and Safety Data Sheets	-	-	R	R	-	A	I	I	I	I	I
Plant, Machinery and Equipment	-	I	C	I	R	-C	-	A	R	A	-
Permits to Work	-	-	C	C	-	-	-	A	-	R	-
Site trade partner HSE Reporting	-	-	-	-	A	A	R	R	R	R	-
HSE Weekly Inspection	-	-	I	I	-	R	-	R	R	C	-
HSE Monthly Inspection	-	-	-	-	-	R	I	I	I	I	-
HSE Committee Weekly Inspection	-	-	C		A	I	-	I	-	C	
HSE Audit & Schedule	I	R	I	I	A	I	R	C	C	-	-
Nonconformities and defects	-	I	C	C	A	C	R	R	R	C	-

	Head of Health Safety Environment	State HSE Manager	HSE Advisor	Construction Manager	Project Manager	Project Engineer	Site Manager	Supervisor/Supervisor	Site trade partner Principal	HSE Committee/ Consultation Group	Construction Worker
Incident notification, investigation & reporting	-	C	R	C	R	I	R	C	C	C	I
Toolbox meetings	-	-	I	C	A	I	R	R	R	R	-
Daily pre-start meetings	-	-	I	-	A		R	R	R	C	I
Display EHS Information	-	-	A	-	-	R	-	-	-	-	-
High Risk Construction Work	-	-	-	-	-	A	-	A	R	-	-
High Risk Methodology Reviews	I	C	C	I	A	I	C	C	R	I	-
HSE Monitoring / Calibration	-	A	R	R	-	A	R	R	-	-	-
Incident Management	-	-	I	C	A	I	R	R	R	C	I
HSE System Audits	I	R	C	C	A	C	-	C	-	-	-

R	**Responsible** The person who is assigned to do the work	**A**	**Accountable** The person who makes the final decision and has the ultimate ownership	**C**	**Consulted** The person who must be consulted before a decision or action is taken	**I**	**Informed** The person who must be informed that a decision or action has been taken

A-6 Roles and Responsibilities

Managing Director

Provide commitment, leadership and direction in the development, implementation and management of the Corporate Management Systems, including but not limited to:

- Participate in the Health Safety Environment Leadership Group.
- Facilitate the development of a corporate Health Safety Environment Strategic Plan incorporating management risks and controls and related objectives and targets to drive industry leading performance outcomes.
- Undertake project site-based Leadership activities, e.g., Safety Pulse, HSE Leadership Inspection or other to review and drive project HSE performance.
- An assessment of the effectiveness of the Corporate Management Systems. (e.g., review of incidents and nonconformities and other assurance to identify trends and opportunities for review and improvement to the Corporate Management System)
- Full management obligations including continual improvement of the Corporate Health Safety Environment and Quality Management System.
- Ensure that appropriate resources are allocated to comply with legislative requirements and the requirements of the Corporate Management System.
- Ensure that resources are competent to deliver the requirements of the Corporate Management System.

State Manager

- Participate in the Health Safety Environment Leadership Group.
- Implement the Corporate Management System at all levels in State operations consistent with The ADCO Way, accreditation and certification requirements and HSE legislative requirements.
- Implement the requirements of the ADCO HSE Strategic Plan incorporating management risks and controls and related objectives and targets to drive industry leading performance outcomes.
- Undertake project site-based Leadership activities, e.g., Safety Pulse, HSE Leadership Inspection or other to review and drive project HSE performance.
- Allocate appropriate resources to project teams to achieve compliance with legislative requirements and the requirements of The ADCO Way Corporate Management System.
- Facilitate compliance with applicable state or federal legislation by project operations and review assurance program verification.
- Implement assurance programs to review health, safety, environment, and quality management performance of the State regularly to identify nonconformances, trends and areas of improvement.
- Facilitate bid and opportunity reviews to integrate HSE risk elimination/mitigation management processes in pre-construction phases.

Construction Manager

- Implement the Corporate Management System at all levels in State operations consistent with The ADCO Way, accreditation and certification requirements and HSE legislative requirements.
- Implement the requirements of the ADCO HSE Strategic Plan incorporating management risks and controls and its objectives and targets to drive industry leading performance outcomes across State projects.
- Participate in bid and opportunity reviews to facilitate integration of HSE risk elimination/mitigation management processes in the pre-construction phases.
- Facilitate and evaluate HSE requirements throughout project tender processes.
- Maintain a general overview of site health safety environment systems, resourcing and support and overview of implementation.
- Undertake project site-based Leadership activities, e.g., Safety Pulse, HSE Leadership Inspection, High Risk Methodology Review or other to review and drive project HSE performance.
- Facilitate compliance with applicable state and federal legislation by project operations and review assurance program verification.

- Allocate appropriate resources to project teams to achieve compliance with legislative requirements and the requirements of The ADCO Way Corporate Management System.
- Maintain oversight of Project team personnel and their completion of training to fulfil their roles and responsibilities within the Corporate Management System.
- Facilitate regular review of the health, safety, environment, and quality management performance for the State to identify non-conformities, trends and areas of improvement.
- Review of health and safety management system implementation and participate in internal/external audits and other assurance.

Health, Safety Environment (HSE) Manager

- Facilitate compliance with applicable state or federal legislation by project operations and review assurance program verification.
- Implement the Corporate Management System at all levels in State operations consistent with The ADCO Way, accreditation and certification requirements and HSE legislative requirements.
- Implement the requirements of the ADCO HSE Strategic Plan incorporating management risks and controls and its objectives and targets to drive industry leading performance outcomes across State projects.
- Where required, project HSE requirements and risks are identified during project tender and/or trade tender processes and incorporated into project management plans.
- Review HSE performance on all projects to ensure compliance with legislative and corporate requirements.
- Review health safety and environment management system implementation and carry out scheduled internal audits and facilitate external audits.
- Participate in bid and opportunity reviews to facilitate integration of HSE risk elimination/mitigation management processed in the pre-construction phases.

Project Manager

- Implement the Corporate Management System at all levels in State operations consistent with The ADCO Way, accreditation and certification requirements and HSE legislative requirements.
- Implement the requirements of the ADCO HSE Strategic Plan incorporating management risks and controls and its objectives and targets to drive industry leading performance outcomes across the project.
- HSE requirements are identified and assessed during trade partner tender evaluations.
- Maintain oversight of Project team personnel and their completion of training to fulfil their roles and responsibilities within the Corporate Management System and National Training Plan.
- Participate in bid and opportunity reviews to facilitate integration of HSE risk elimination/mitigation management process in the pre-construction phases.
- In conjunction with the HSE Manager, develop project management plans and management sub plans for implementation on projects.
- Undertake project site-based Leadership activities, e.g., Safety Pulse, HSE Leadership Inspection, High Risk Methodology Review or other to review and drive project HSE performance.
- Facilitate High Risk Methodology Reviews and involve relevant peer or health safety environment subject matter specialists where available.
- Facilitate adequate resource allocation to implement and maintain the HSE requirements on the project.
- Keep project personnel informed of HSE legislation and their obligations.
- Review HSE performance on the project to ensure compliance with legislative and corporate requirements and non-compliant activities by employees and site trade partners are corrected to prevent recurrence.
- Review health safety environment management system implementation and participate in internal audits and external audits.
- Communicating project information and requirements through participation and consultative forums.

- Ensure environmental management sub plans and the EMP are implemented consistent with the management system and ISO14001.

Site Manager

- Implement the Corporate Management System at all levels in State operations consistent with The ADCO Way, accreditation and certification requirements and HSE legislative requirements.
- Implement the requirements of the ADCO HSE Strategic Plan incorporating management risks and controls and its objectives and targets to drive industry leading performance outcomes across the project.
- Implement the requirements of project HSE Management Plans and related management sub plans and manage compliance on the project.
- Facilitate and resolve issues which may arise over HSE requirements (legislative or Corporate) on the project site.
- Maintain oversight of employees and site trade partner workers and the compliance of their work activities and tasks with legislative and ADCO Management System requirements.
- Maintain open lines of communication, participation and consultation with the HSE Advisor and other interested parties (e.g., site trade partners, employee representatives) to ensure that the site operates in a healthy, safe and environmentally sensitive manner in compliance with regulatory and corporate requirements.
- Review health safety environment management system implementation and participate in internal audits and external audits and any non-conformities by employees and site trade partners are addressed.
- Facilitate communication of project information and requirements through participation and consultation forums.
- Ensure environmental management sub plans and the EMP are implemented consistent with the management system and ISO14001.

HSE Advisor

- Facilitate compliance with applicable state or federal legislation by project operations and review assurance program verification.
- Maintain oversight and update of the Project Risk Register.
- Assist with the facilitation of High-Risk Methodology Reviews and involve relevant internal /external peer or health safety environment subject matter specialists where available.
- Implement the HSE Management System at all levels in project operations consistent with The ADCO Way, accreditation and certification requirements and HSE legislative requirements.
- Implement the requirements of the ADCO HSE Strategic Plan incorporating management risks and controls and its objectives and targets to drive industry leading performance outcomes across State projects.
- Review health safety environment management system implementation and participate in internal audits and external audits and ensure any non-conformities by employees and site trade partners are addressed in a timely way.
- Communicate project information and requirements through participation and consultation forums.
- Where required, ensure project HSE requirements and risks are identified during project tender and/or trade tender processes and incorporated into project management plans.
- Review HSE performance on the project to ensure compliance with legislative and management system requirements.
- Review the management system implementation and participate in scheduled internal audits and facilitate external audits.
- Maintain oversight of environmental monitoring on the project.
- Maintain oversight of environmental management sub plans and related control measures and their review at maximum 3 monthly intervals.

Workers

All personnel are responsible for actively promoting and complying with Health, Safety and Environment management requirements as determined / advised / required by ADCO and outlined in the ADCO Health Safety Environment Requirements and those requirements outlined in this Environmental Management Plan and its related management sub plans. Activities that all personnel are required to participate in include, but are not limited to:

- Attend pre-start meetings.
- Conduct pre-start tasks analysis.
- Adhere to all authority to work permit requirements.
- Report all hazards and incidents of injury, property or equipment damage, potential or actual harm to the environment.
- Immediately stop any “at risk behaviour” identified during daily work activities.
- Attend health safety environment presentations and toolbox meetings.
- Assist in achieving project HSE objectives and targets.

A-7 Consultation & Participation Arrangements

Event	Frequency / Requirement	Those Participating	Record / Evidence
Workplace induction	Prior to commencing work at the workplace	All workplace employees and other workers. Visitors frequenting the workplace more than twice a month.	Induction records on Workplace Induction Register
Stand Down	At intervals to be determined by ADCO incident trends, lessons learned or other	ADCO employees, site trade partners and all workers.	Stand Down Record
Pre-start Meeting	Daily intervals content, high risk construction work activities, high risk work requiring a licence and interfacing work activities for the day, changes to emergency egress/ work areas, weather and other; environmental protection requirements, and When there is a new or change to, or out of sequence, work tasks that are classified as high-risk construction work.	Site trade partners and other workers including site trade partner foremen/supervisors.	Daily Pre-start Meeting Record
Toolbox Meeting	Site trade partner meetings as required with participation in discussions e.g., high risk construction work activities, changes to or out of sequence work tasks that are high risk construction work, alerts, Lessons Learned, Issued Notices and incidents plus changes to legislation and codes or standards.	Site trade partners and other workers including site trade partner foremen/supervisors.	Toolbox Meeting Template
Project Control Review	At maximum four weekly intervals or as required including upcoming high risk construction work activities, critical and business reportable incident outcomes and lessons learned and management of design or other changes with the potential to significantly affect environmental aspects or impacts	Project Manager, Construction Manager/Workplace Manager/ Service Providers/ Site trade partners, Client Representative and others.	Minutes of meeting PCR online portal reporting
Training	Commencement of project; and Annually in line with existing ADCO National Training Plan or Project Training Needs Analysis (TNA) Appendix 10	ADCO salaried and award staff	National Training Plan Project TNA
Interested Parties	External consultation with authorities/stakeholders and other interested parties, as required by conditions, licences or public consultation	As agreed with State HSE Manager input.	Meeting minutes and relevant correspondence.

A-8 Plant, Equipment and Processes Inspection & Testing Schedule

Inspection and test requirements to ensure efficient operation and related air quality.

Item	Inspection By	Aust. Standard / Code	Inspection / Records / Other Required
Atmospheric testing and monitoring equipment.	Competent Person	AS 2865	# Prior to each Confined Space entry, #Yearly. **Calibration of equipment required
Backhoe	Competent Person	Manufacturer Manual	#(D) Daily Pre-start, #250 hrs, #2,000 hrs (2 yearly) or maintenance as per manufacturer. (M) Mobile Plant Operator
Concrete Line Pump ® Concrete Boom Pump	Competent Person	AS 1418.15 AS 2550.15	#(D) Daily Pre-start, #Monthly, #0-5 Yrs every 1000hrs/ Min yearly, #5-10 Yrs every 500hrs/Min yearly, # >10 Yrs old every 250hrs/Min yearly #High Risk Work Licence
Concrete / Quick Cut Saw	*Competent Person	-	#Formal Operator Training, guarding # Maintenance as per the manufacturer
Crane–mobile<10t ® Crane–mobile>10t ® Crane – Self Erecting ® Crane – Gantry >10t	Competent Person	AS 2550 AS 1418	#(D) Daily Pre-start, #monthly, #yearly, #10 yearly. (M) Mobile Plant Operator #High Risk Work Licence
® Crane–tower	#Competent Person	AS 2550 AS 1418	#(D) Daily Pre-start, #monthly, #yearly, #10 yearly. #High Risk Work Licence #Operators must provide evidence of ticket/licence. ## Independent Engineer Design Review and Inspection in the Supplier's Yard
Electrical – temporary switchboards and portable electrical equipment	Licensed Electrician	AS 3000 AS 3012 AS 3760	# ADCO Procedure Electrical Equipment Inspection and Testing and Register or equivalent
Elevating work platforms ® Boom type EWP	Competent Person	AS 2550.10	#(D) Daily Pre-start, #3 Monthly, #yearly, #10 Yearly #High Risk Work Licence #(M) Mobile plant Operator
Excavator	Competent Person	Manufacturer Manual	#(D) Daily Pre-start, #250 hrs, #2,000 hrs (2 yearly) or maintenance as per manufacturer. #(M)Mobile Plant Operator
Fire Fighting Equipment	Competent Person	AS 1851	Regular inspection, #6 monthly test; #Register where > 10 extinguishers are installed. >12m effective height of building – see ADCO Emergency Response Management Sub Plan
Forklift Truck/ Telehandler/ Manitou/ motorised (self-propelled) Pallet Trolleys/ Lift Trucks	Competent Person	AS 2359.2	#(D) Daily Pre-start, #250 hrs, #2,000 hrs (2 yearly) or maintenance as per manufacturer. #High Risk Work Licence (M)Mobile Plant Operator #Operators must ticket/licence/ competency attained.
Front End Loader	Competent Person	Manufacturer Manual	#(D) Daily Pre-start, #250 hrs, #2,000 hrs (2 yearly) or maintenance as per manufacturer. (M)Mobile Plant Operator

Item	Inspection By	Aust. Standard / Code	Inspection / Records / Other Required
Hazardous Chemicals - products, materials, or substances /Dangerous Goods	Health & Safety Precautions	Safe Work Australia	#Risk Assessment; #Safety Data Sheet; #Register, training. #Health Monitoring – Sch14 WHS Regulations
Mobile Plant (All motorised self-propelled)	Competent Person		#(D) Daily Pre-start inspection and maintenance to manufacturer's requirements or Aust. Standards. #(M)Mobile Plant Operator
Oxy/Acetylene/ Flashback arresters	Competent Person	AS 4332 AS4603 AS4289	Regular inspection and adequate separation and storage. # Flashback arrester 12-month test #Hoses, gauges, and other reticulation items 6 monthly.
Piling Rig	Competent Person	AS2550.1	#(D) Daily Pre-start, #monthly, #yearly, #10 yearly. #(M) Mobile Plant Operator ## Independent Engineer Foundation Design Review
Work Method Statement High Risk Construction Work with potential for material harm to the environment	Competent Person	N/A	# Record of review by Competent Person # Training or Toolbox Talk Record. # Monitoring by principal contractor and site trade partner to ensure compliance. #Daily Observation by ADCO Supervisor
Scissor Lift/Boom lift	Competent Person	AS 2550.10	#(D) Daily Pre-start, #3 Monthly, #yearly, #10 Yearly. # (M) Mobile Plant Operator
Skid steer Loader (Bobcat)	Competent Person	Manufacturer Manual	#(D) Daily Pre-start, #250 hrs, #2,000 hrs (2 yearly) or maintenance as per manufacturer. # (M) Mobile Plant Operator

Key:

Ⓡ Means items of plant, machinery or equipment, which require registration of the design or the specific item of plant itself or both. Plant which requires 'item' registration, i.e., for the specific piece of plant which arrives at a construction project typically; includes: concrete pumps (boom type); mobile cranes > 10 tonnes SWL; tower cranes; air compressors, building maintenance units and boom type elevated work platforms.

Note: As of 1 July 2014, Victoria removed the legislative requirement for 'item' registration of specific high-risk plant. Design registration of specific high-risk plant is still required as denoted by ®

(#) Means records required.

(D) Means Daily prestart inspection required

** Means calibration of measuring and testing equipment is required in accordance with the requirements of Part 5 of this Pan.

(M) **Mobile Plant Operator** means the Operator is required to evidence either a licence/certificate issued by a State/Territory; **OR** if a licence is not a State/Territory requirement then a Statement of Attainment /Certificate issued by a Registered Training Organisation; **OR** evidence of a formal Verification of Competency assessment against defined competency standards.

A-9 Objectives and Targets Implementation

The table below is populated where project /workplace personnel are tasked with implementing the requirements of the objectives and targets related to environmental management as outlined in Appendix 3.

Nominated Person(s)	Position	Objectives & Targets Task	Frequency
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Identify key high risk construction work trades with significant potential for material harm to the environment and implement a High-Risk Methodology Review**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**National Training Matrix implemented for ADCO Way**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Implement the ADCO Management System**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Critical incident notification**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Critical incident learnings**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Critical incident investigation completed within 30 days**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Project Leadership Group members**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Actions assigned to project/operation**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Innovation**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Project Recognition & Rewards Program**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Environment Incident Frequency Rate (EIFR)**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Waste management projects**	Monthly PCR
Construction Manager, Project Manager, Site Manager, Site Supervisor, Contracts Administrator & HSE Advisor	Various	**Environmental Reporting: Energy Consumption, Fuel, Potable Water Use & Waste Disposal on Projects**	Monthly PCR

A-10 Additional Training Needs Analysis

The following outlines any specific training needs identified for the Project Site. Note that this list is not conclusive as each Site trade partner Company or Service Provider must complete its own internal training and skills development for its employees or other workers.

Course / Competency Description	Position	Date to be Completed by	Provider
Project Specific Induction including environmental awareness and incident reporting	All workers	Prior to start	Construction Manager / Site Supervisor / HSE Advisor.
Emergency Warden (ADCO)	Emergency Wardens	Prior to start	Accredited Training Provider
Spill Response	Emergency response team	Prior to start	Spill Kit Provide/Tap into Safety
Environmental Aspects & Impacts Awareness	ADCO employees	Within 14 days of employment commencement	Tap into Safety
Environmental Management	ADCO employees with environmental management as a key responsibility, e.g., HSE Advisor	Within 12 months of commencement	Three Leaf Solutions
Environmental Management Sub Plans	ADCO employees with environmental management as a key responsibility	Within 30 days of project commencement	Internal Induction

A-11 Client Requirements

[Insert any additional Client Requirements not listed under Part 4.4.3 of this plan]

A-12 Plan Signatures

We, the undersigned, confirm that we have participated in consultation on the contents of this document, read and understood its contents, and agree to implement the requirements of this Plan on this project site.

Note: Refer to HammerTech Toolbox Talk in relation to the acknowledgement of this Health and Safety Management Plan including other assorted Sub Plans and Risk Registers.

Name	Position	Signature	Date
Matthew Wilkinson	Construction Manager	M. Wilkinson	20 May 2024
Paul Cassimatis	Senior Design Manager	P. Cassimatis	20 May 2024
Nicholas Napoli	Project Manager	N. Napoli	20 May 2024
Gary Petersen	Site Manager	G. Petersen	20 May 2024
Brandon Provenzano	Contracts Administrator	B/Provenzano	20 May 2024
Ahmed Farzan	Senior Project Engineer	A. Farzan	20 May 2024
Hassan Haydar	Project Engineer	H. Haydar	20 May 2024
Mona El Arjah	HSE Advisor	M.El Arjah	20 May 2024
Dylan Gower	Site Supervisor	D.Gower	20 May 2024
Sharlat Jo	Cadet	S. Jo	20 May 2024
Hedieh Tizrou	Graduate	H. Tizrou	20 May 2024

A-13 Construction Traffic Management Plan

ptc. consultants (Traffic Engineering Consultant)

13th May 2024

Multi-Level Warehouse

ADCO

Construction Traffic Management Plan;

For: **ADCO**

Site Address: **42 - 44 Boorea Street, Lidcombe NSW 2141**

Document reference number: **23-0799**

document control;

Issue:	Date	Issue details	Author	Reviewed
1	09/02/2024	Draft	Chiranjivi Pariyar – TCT5140491 (PWZ)	Jake Jansen - TCT1027562 (PWZ) Steve Wellman
2	04/03/2024	Final	Chiranjivi Pariyar – TCT5140491 (PWZ)	Jake Jansen - TCT1027562 (PWZ) Steve Wellman
3	13/05/2024	Final (amended to address DPIE comments)	Chiranjivi Pariyar – TCT5140491 (PWZ)	Jake Jansen - TCT1027562 (PWZ) Steve Wellman

For the attention of:

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1. Introduction

ptc. has been engaged by ADCO to prepare a Construction Traffic Management Plan (CTMP) associated with the construction of a multi-level warehouse in Lidcombe.

This report addresses the construction works related to the proposed works.

The location of the subject site is outlined in Figure 1.

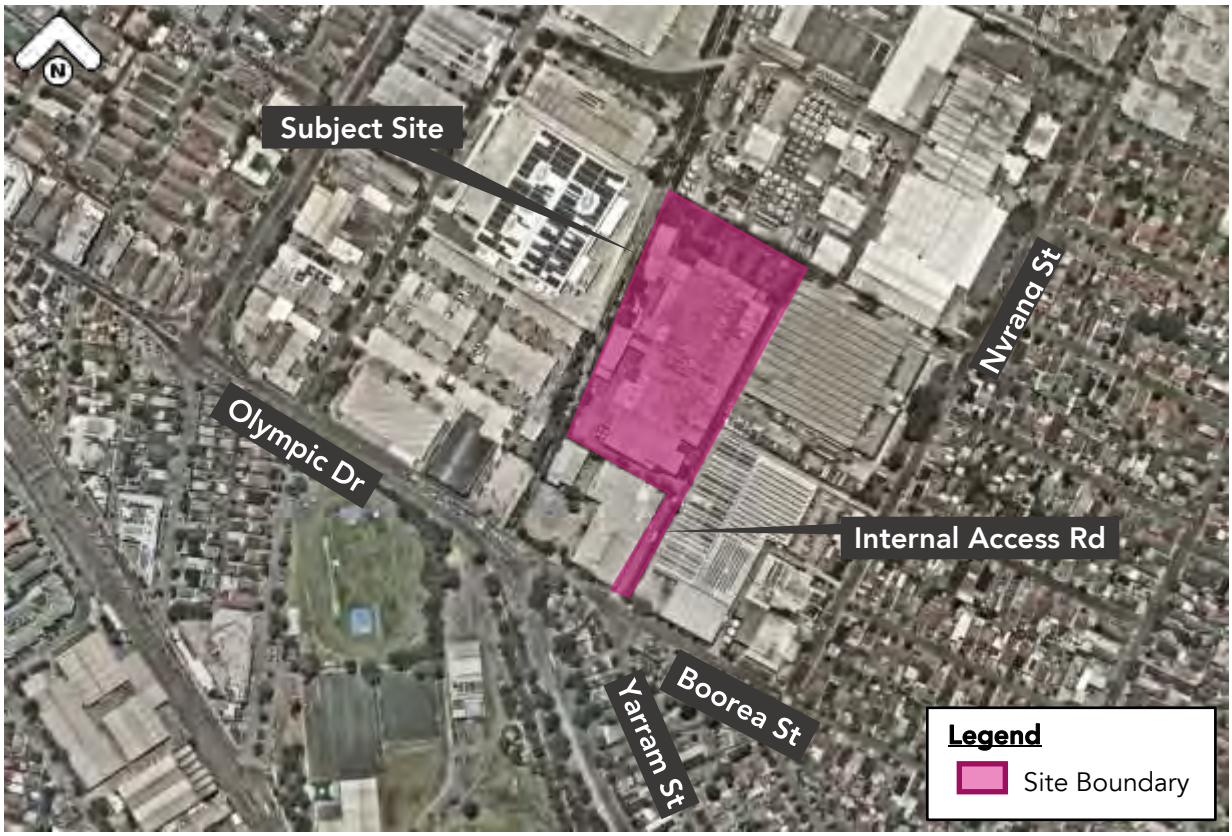


Figure 1: Multi-level Warehouse location (Source: Nearmap)

The proposed Multi-level Warehouse is located at 42 Boorea Street, Lidcombe NSW 2144, in the Local Government Area (LGA) of Cumberland Council.

The warehouse is bounded by other industrial warehouses in all sides. As the frontage road, Boorea Street serves the proposed warehouse as the sole access.

1.1. Project Summary

The proposed development will comprise the following:

- Warehouse comprising a total 35,111m^2 Gross Floor Area, with 17,342 m^2 of ground floor area and 17,769 m^2 of first floor, including:
    - Gross Floor Area of 24,740m^2
    - 153m^2 of Ancillary Dock Office

- 10,218m^2 of internal loading area

- 4,138m^2 of Office space including 176m^2 of Lobby
- Total parking provision of 191 spaces on ground floor and 2 parking deck levels above

1.2. Land Use

With reference to the NSW Planning Portal Spatial Viewer, the warehouse site appears to be on land Lot 1, Deposited Plan (DP) 740385.

The development site is located in General Industrial (E4) Zone as shown in Figure 2. The immediate surroundings of the site are Productivity Support (E3) Zone, High Residential (R4) Zone, Low Density Residential (R2) Zone, Public Recreational (RE1) Zone and Infrastructure (SP2) Zone (Classified Road)

The land use zoning in the vicinity is complex, this determines the existing local traffic generation has the following features:

- Generally associated with the residential properties and general industries;
- Vehicular traffic (commercial, private and public transport) is expected to be the predominant mode share for the transport activities; and
- High traffic volumes.

Figure 2: Land Use (Source: NSW Planning Portal Spatial Viewer)

1.3. Conditions of Consent

The following relevant Conditions are applicable to the development, as identified in the Notice of Determination SSD-36464788.

Condition	Report Reference
Construction Traffic Management Plan	
B1. Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition C2 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) be prepared in consultation with Council; (c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction; (d) include details of: (i) heavy vehicle types, routes, access and parking arrangements; (ii) the strategies that would be implemented to minimise the number of construction workers who will drive to the site; and (iii) any potential impacts to general traffic, cyclists and pedestrians within the vicinity of the site from construction vehicles during the construction of the development; (e) include a Driver Code of Conduct and Induction Program to: (i) minimise the impacts of earthworks and construction on the local and regional road network; (ii) minimise conflicts with other road users; (iii) minimise road traffic noise; and (iv) ensure truck drivers use specified routes; (f) include a program to monitor the effectiveness of these measures; and (g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.	This Report Refer: Appendix 4 Section 1.4 Refer to Section 3.10 Refer to Section 3.18 Refer to Section 4 Refer to Section 3.22
B2. The Applicant must: (a) not commence construction until the Construction Traffic Management Plan required by condition B1 is approved by Planning Secretary: and (b) implement the most recent version of the Construction Traffic Management Plan approved by Planning Secretary for the duration of construction.	

1.4. Authority Consultation

This CTMP has been prepared in consultation with the relevant authority – Cumberland City Council – and has been approved subject to conditions in March 2024. The CTMP shall be implemented in accordance with the approval conditions outlined.

Details of this consultation are supplied in Appendix 5.

2. Existing Transport Facilities

2.1. Road Hierarchy

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

- **State Roads** Freeways and Primary Arterials (TfNSW managed)
- **Regional Roads** Secondary or sub arterials (Council managed, part funded by State)
- **Local Roads** Collector and local access roads (Council managed)

With reference to the TfNSW Road Network Classification Map, the surrounding roads comprise of Local and State Roads. The frontage road, Boorea Street, is a local road.

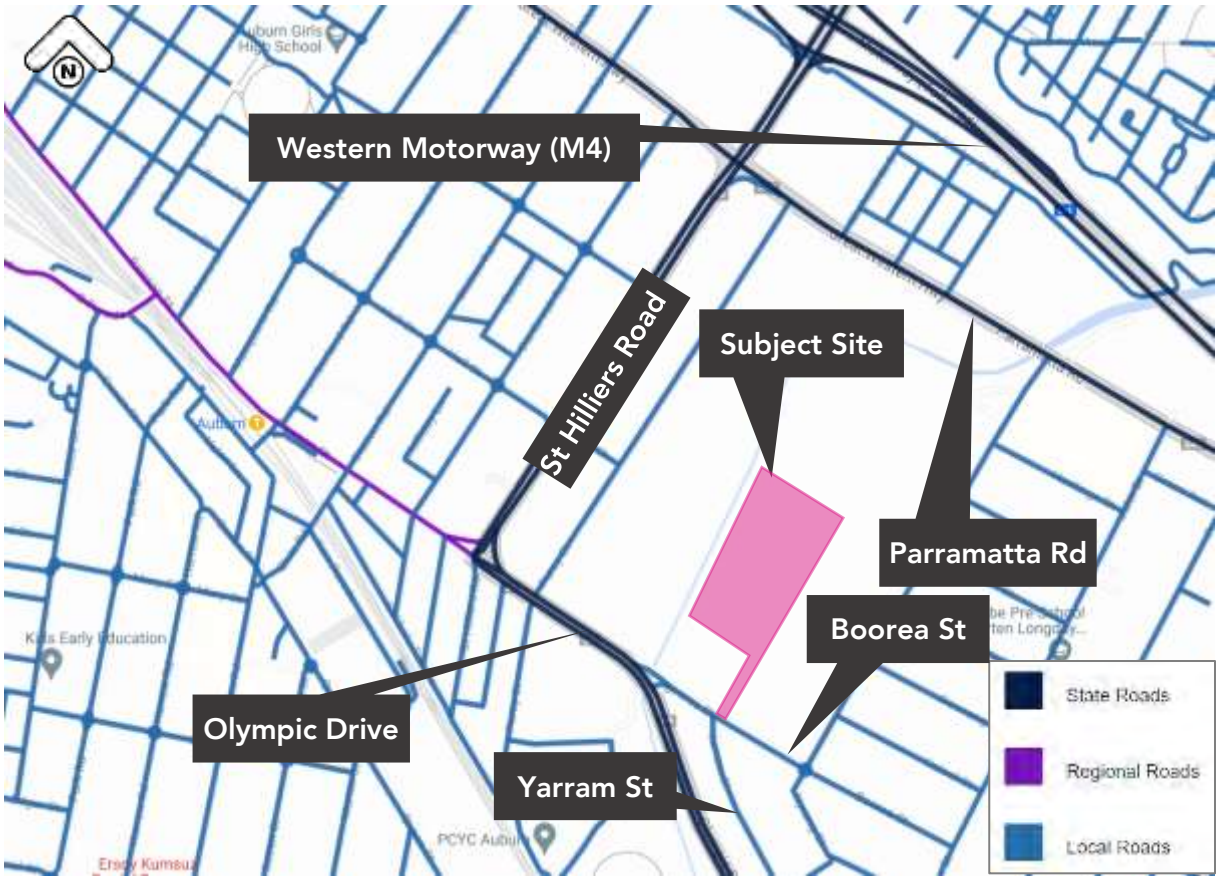


Figure 3: Road classification around the Site (Source: TfNSW Road Network Classification Map)

The details of the existing immediate road network servicing the warehouse site are analysed and summarised overleaf.

Table 1: Road network characteristics – Boorea Street

Boorea Street	
Road Classification	Local Road
Alignment	East - west
Number of Lanes	One lane each way
Carriageway Type	Divided
Carriageway Width	6.5 metres
Speed Limit	60km/h
School Zone	No
Parking Controls	No (Adjacent to the site)
Forms Site Frontage	Yes

Figure 4: Boorea Street eastbound (Source: Google Map)

Table 2: Road network characteristics – Olympic Drive

Olympic Drive	
Road Classification	State Road
Alignment	North - south
Number of Lanes	3 lanes each way
Carriageway Type	Divided
Carriageway Width	20 metres
Speed Limit	70km/h
School Zone	No
Parking Controls	Nil
Forms Site Frontage	No

Figure 5: Olympic Drive (Source: Google Map)

Table 3: Road network characteristics – Yarram Street

Yarram Street	
Road Classification	Local Road
Alignment	Northwest - southeast
Number of Lanes	2 lanes each way
Carriageway Type	Divided
Carriageway Width	7 metres
Speed Limit	50km/h
School Zone	No
Parking Controls	Parking lanes on both sides of the road
Forms Site Frontage	No

Figure 6: Yarram Street (Source: Google Map)

2.2. Public Transport

The NSW Planning Guidelines for Walking and Cycling (2004) suggests that an 800m (10 minutes' walk) catchment is an acceptable walkable distance for accessing public transport. Furthermore, the document also suggests a distance of 1500m is a suitable catchment for cycling to public transport facilities and local amenities.

Figure 7: Walking catchment in vicinity of the site (Source: Nearmap)

2.2.1. Train Service

Auburn Train Station is located approximately 950 metres north-west from the subject site which is outside the walking catchment as described by NSW Planning Guidelines for Walking and Cycling (2004). However, the station is in convenient location if construction personnel are willing to walk.

The train station is services by T1 Western and T2 Inner west. The summery of the train services is presented in Table 4 below.

Table 4:Summary of Train Services at Museum Station

Train Line	Station	Coverage	Approximate Frequency
T1	Auburn	Emu Plains or Richmond to City	Every 3-6 minutes during peak hours Every 5-10 minutes during off-peak
T2	Auburn	Parramatta or Leppington to City	Every 3-6 minutes during peak hours Every 6-12 minutes during off-peak

2.2.2. Bus Service

The nearest bus stops are located towards south-east along John Street as shown in Figure 8 below.

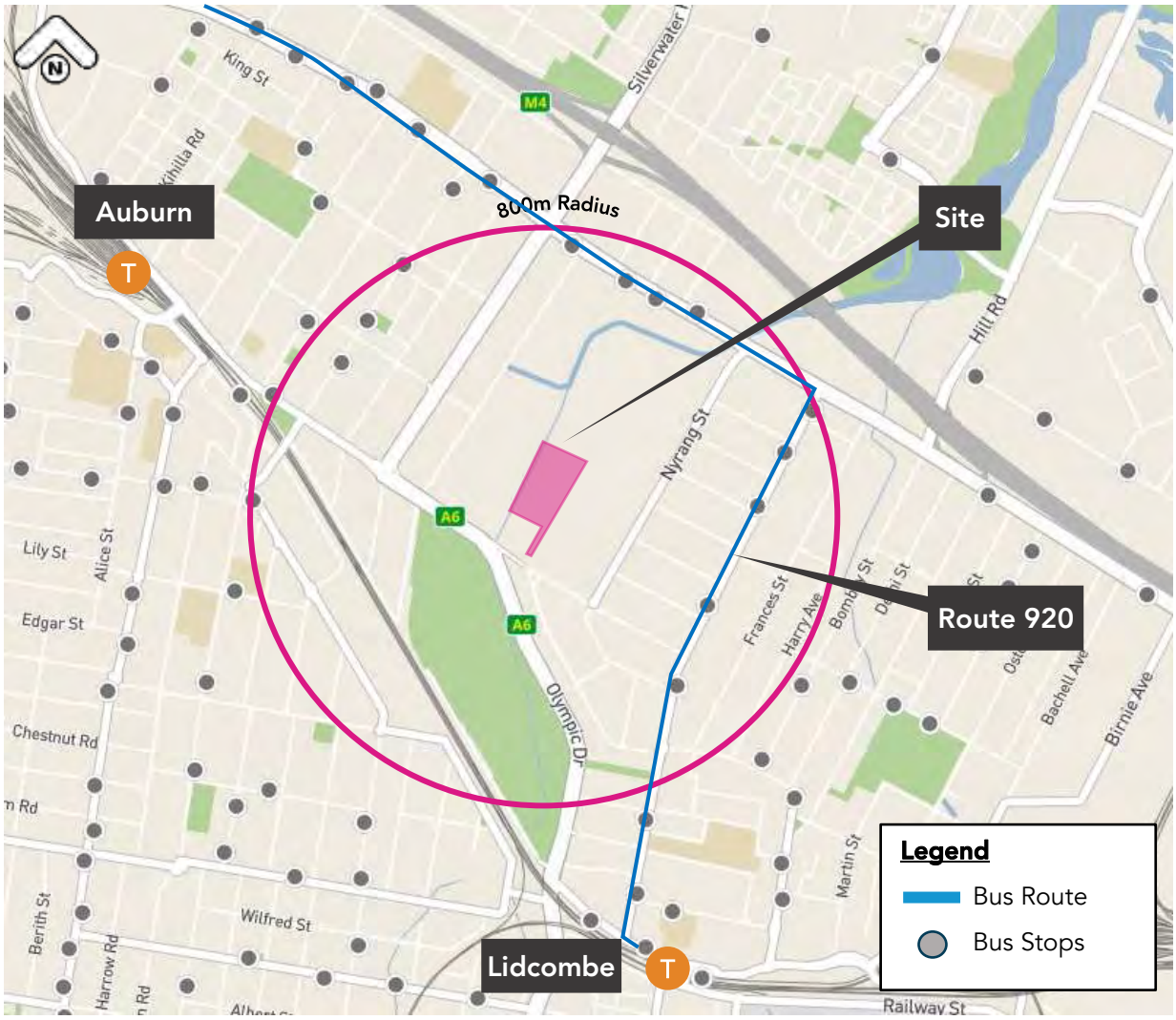


Figure 8: Nearest bust stops and bus route in the visitinity of site (Source: TfNSW)

The bus stops and routes are currently serviced by public bus route and the operation timetables for the stops are summarised in Table 5.

Table 5: Bus operation timetables (Source: TfNSW)

Routes	Direction	Timetable
920	Parramatta to Bankstown	Monday – Friday: Every 10 – 20 minutes Weekend & Public holidays: Every 20 - 30 minutes

2.3. Active Transport

The locality was reviewed for features that would attract active transport trips (walking and cycling), with reference to the NSW Guidelines for Walking and Cycling (2004).

A review of the local cycling infrastructure has been undertaken to determine the overall accessibility of the site by active transport. Figure 9 presents the existing bicycle routes within the surrounding area. The site has limited cycling facilities providing access to the surrounding suburbs.

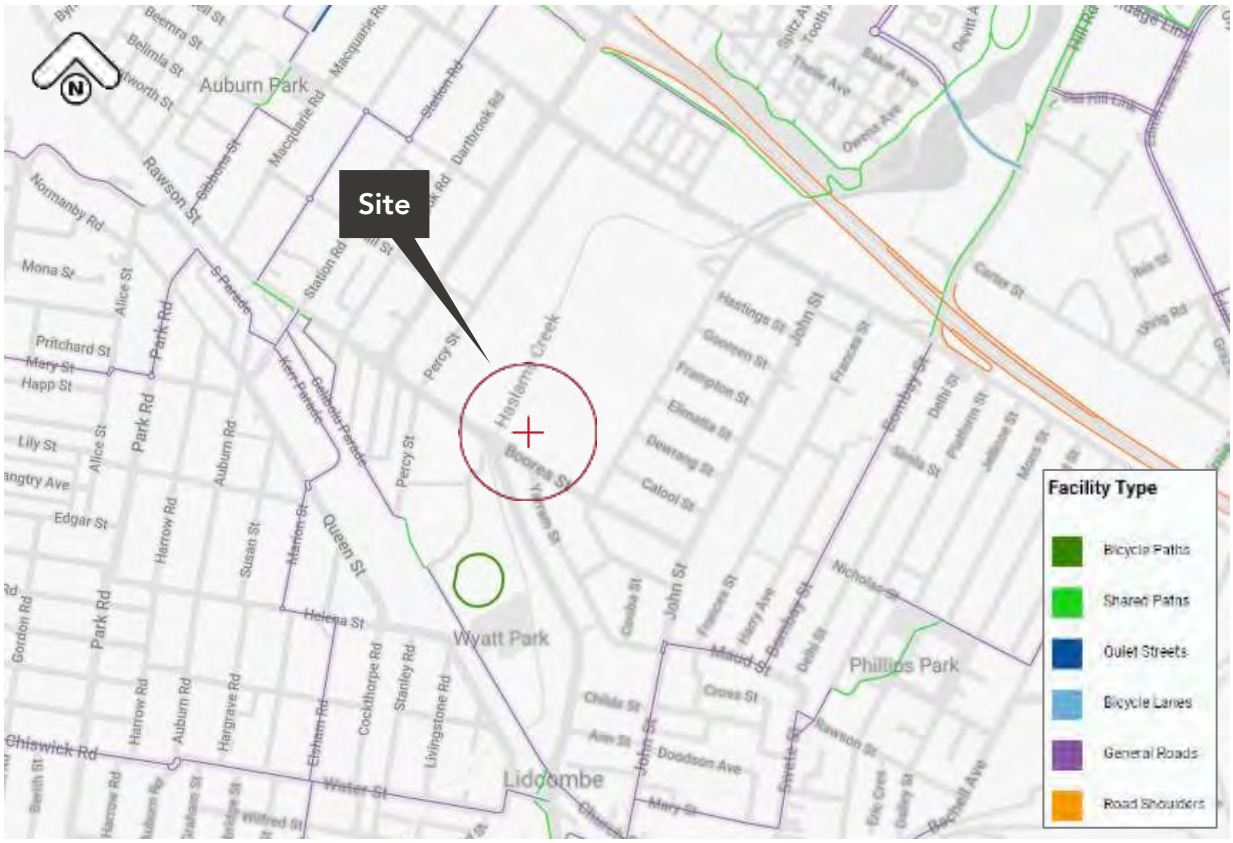


Figure 9: Active transport infrastructure around the Site (Source: TfNSW Cycleway Finder)

3. Traffic Management Plan

3.1. Objective

The following sections outline the proposed construction activity, anticipated timeline as well as the proposed management measures relating to vehicular access, pedestrian access and other key considerations for the duration of the works.

- To minimise the impact of the construction vehicle traffic on the overall operation of the road network;
- To ensure continuous, safe and efficient movement of traffic for both the general public and construction workers;
- Installation of appropriate advance warning signs to inform users of the changed traffic conditions;
- To provide a description of the construction vehicles and the volume of these construction vehicles accessing the construction site;
- To provide information regarding the changed access arrangement and also a description of the proposed external routes for vehicles including the construction vehicles accessing the site; and
- Establishment of a safe pedestrian environment in the vicinity of the site.

3.2. Traffic Management Planning Process

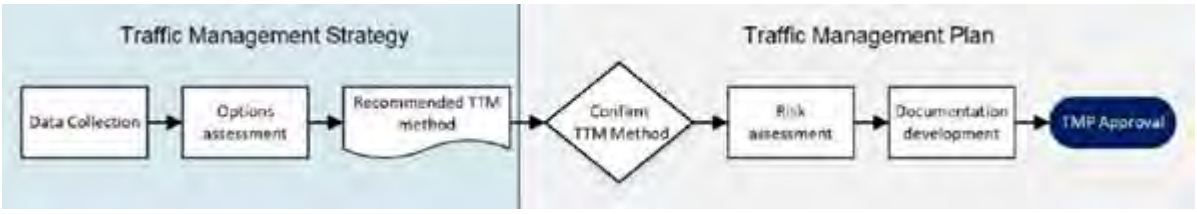


Figure 10: Traffic Management Planning Process

Temporary Traffic Management (TTM) for the project has been planned in accordance with Transport for NSW, *Traffic control at work sites – Technical Manual, Issue No.6.1,* March 2022 (TCAWS). The process is shown in Figure 10.

An iterative process is being adopted in collaboration with relevant stakeholders to adopt the most appropriate traffic management approach and develop the associated documents for the work.

3.3. Traffic Management Strategy

A traffic management strategy has been chosen to support the appropriate allocation of time, funds and resources for the project, and allow for consultation in determining the safest and most efficient way for road users to interact with the work site. The following have been considered in determining the TTM method:

Detour Options

No detours are necessary or proposed by the client and therefore, disproportionate disruption to the road users will not be introduced. A pedestrian detour and footpath closure is anticipated for early stages of work.

Site Location

The site of the works does contain existing street parking that may obstruct signs and devices needed for certain strategies. TGS should be set out by a certified Traffic Controller in accordance with TCAWS 6.1 to minimise these obstructions.

Work Area

The area needed to safely perform the work does not require the full closure of sections of road. All work and construction traffic shall enter the site to undertake duties. We note that high voltage upgrade works may require ROP depending on final design.

Vulnerable Road Users

Desire lines of pedestrians, cyclists, motorcyclists do not significantly impact on works or create undesired interaction between these road users and traffic. Consideration has been taken to minimise impact on the daily ongoing operations of the centre and its users while works are undertaken.

Community Facilities and Needs

Access to all nearby facilities will remain possible during these works. Signage or directions for any detours or changes are to be implemented where necessary. It is anticipated that there will be a reconfiguration of the traffic signals to suit new crossovers. This would require consultation and approval from TfNSW.

3.4. Decision of TTM Method

The method selected is Around (elimination) where all truck and excavation/construction activity will take place on site, including the delivery of plant and site goods. Traffic is fully separated from the works.

In any instances where work occurs outside the boundary of the site, the Past (isolation) methodology is to be approved by council prior to implementation, to safely guide traffic along an adjacent path to the work area.

3.5. General Requirements

In accordance with Transport for New South Wales (TfNSW) requirements, all vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the site. All subcontractors must be inducted by the lead contractor to ensure that the procedures are met for all vehicles entering and exiting the construction site. The lead contractors will monitor the roads leading to and from the site and take all necessary steps to rectify any road deposits caused by site vehicles.

Vehicles operating to, from and within the site shall do so in a manner, which does not create unreasonable or unnecessary noise or vibration. No tracked vehicles will be permitted or required on any paved roads. Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances.

Spoil shall be exported from site as progressively as the works occur. Spoil shall not be stockpiled and exported from the site in bulk.

The applicant/contractor is required to follow and abide by the any specific standard requirements for construction management as set out by the Cumberland City Council.

3.6. Hours of Work

All works, associated with the project will be restricted to the time periods, which are as follows:

- Monday to Friday – General Works 7:00am to 6:00pm;
- Saturday 8:00am to 1:00pm; and
- Sunday, Public Holidays No works to be undertaken without prior approval.

Deliveries may occur outside the hours of demolition and construction referred to above, but not before 6:30am or after 6:30pm.

Demolition and construction may be undertaken outside of the hours listed above if required:

(a) By the police or public authority for the delivery of vehicles or materials;

(b) In an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or where the works are inaudible at the nearest sensitive receivers

3.7. Construction Phasing

The delivery of the project will be undertaken in the following milestone phases as outlined in Table 6:.

Table 6: Schedule 1 Works Phasing Summary

Description	Approximate Timeframe
Site Establishment / Demolition	May 2024 – August 2024
Structure	August 2024 – July 2025
Structural & fit out works	May 2025 – November 2025
External Works	April 2025 – November 2025
Final Commissioning & Handover	October 2025 – January 2024

3.8. Construction Vehicle Types

It is anticipated that the works will involve the use of the following vehicle types:

Table 7: Vehicle Types used during individual phases

Description	Vehicle Type
Site Establishment / Demolition	19m Truck & Dog, 12.5m HRV
Structure	19m Articulated Vehicles
Structural & fit out works	19m Articulated Vehicles
External Works	19m Truck & Dog

Any oversized vehicle (including the use of mobile cranes) that is required to travel to the project into the vicinity of the site will be dealt with separately, with the submission of required permits to and subsequent approval from Council and TfNSW prior to any delivery being undertaken.

Refer to Section 3.14 for further details regarding special deliveries.

3.9. Construction Traffic Volumes

The frequency of the average and peak hour truck/deliveries are presented in Table 8.

Table 8: Construction Vehicle Volumes - Average and Peak

Description	Trucks/Deliveries Daily Avg	Trucks/Deliveries Peak
Site Establishment / Demolition	5	10
Structure	10	30 (125 at concrete pour days)
Structural & fit out works	10	30
External Works	5	10
Final Commissioning & Handover	3	10

3.10. Construction Vehicle Routes

The subject site is located in the suburb of Lidcombe and the proposed construction vehicle routes have regard for the surrounding traffic arrangements in the vicinity of the site. No queuing or marshalling of heavy vehicles is permitted on any public road and all loading and unloading of materials will be undertaken within the site.

All vehicle routes to the site are restricted to existing public roads that have the physical geometry to accommodate the turning movements.

A swept path assessment has been undertaken for all proposed vehicle routes and are below.

The vehicles approaching the site will travel via the Silverwater Road (from north), southbound along St Hilliers Rd, eastbound along Olympic Drive and finally along Boorea Street to enter the site.

The vehicles approaching the site will travel via the Western Motorway M4 (from east and west), southbound along Silverwater Road and St Hilliers Rd, eastbound along Olympic Drive and finally along Boorea Street to enter the site.

The vehicles approaching the site will travel via Olympic Drive (from south) and eastbound along Boorea Street to enter the site.

The loading and unloading activities are proposed to occur within the subject site. The vehicles will enter and exit via private access road through Boorea Street.

Vehicles will exit the subject site north-west along Boorea St and Olympic Dr, travel northbound along St Hilliers Rd and finally along Silverwater Rd towards north or along eastbound and westbound along Western Motorway M4 towards east and west respectively.

Vehicles will exit the subject site north-west along Boorea St and travel along Olympic Dr towards south.

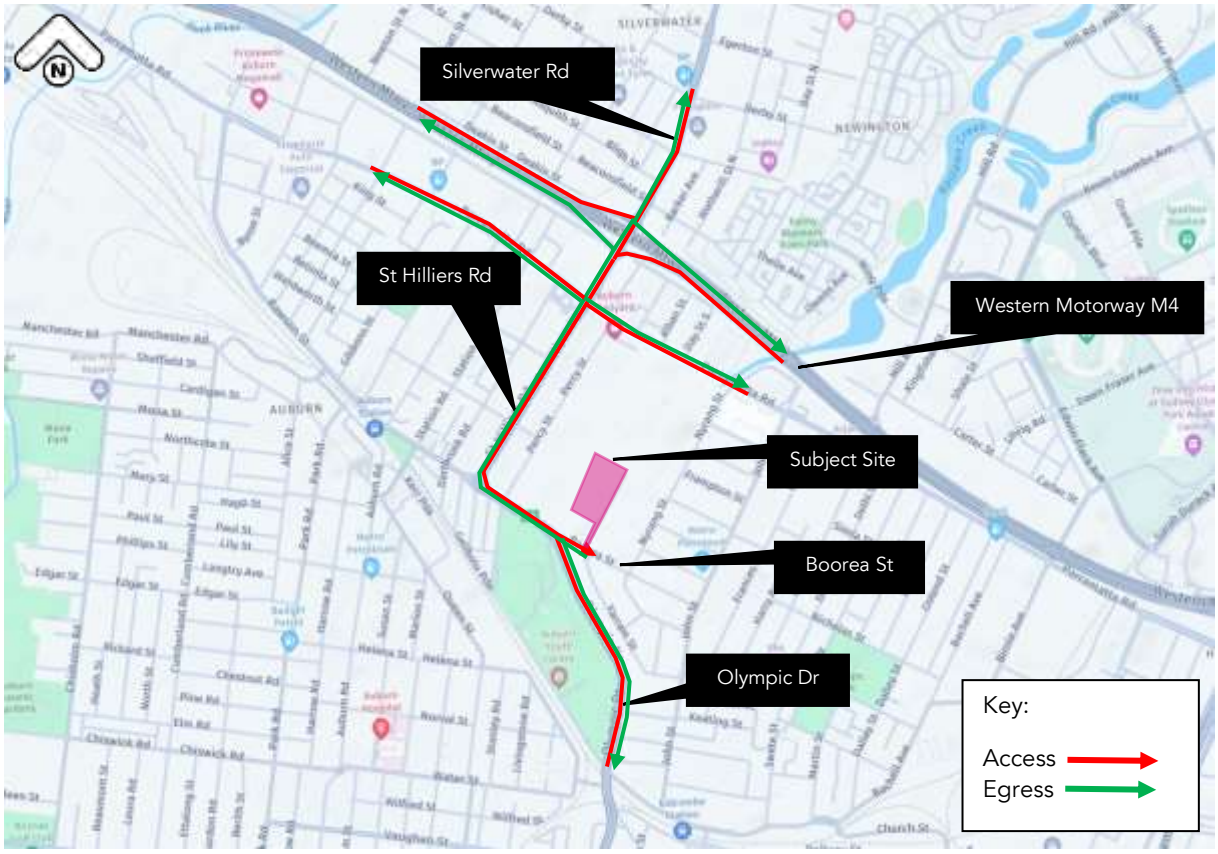


Figure 11: Construction Vehicle egress and ingress routes

The image shown below highlights the road network that allows 19m B-Double Vehicle movements.

Figure 12: 19m B-double Routes (Source: TfNSW)

A swept path assessment has been undertaken using a 19m AV to assess the capability of the existing road geometry to accommodate the turn manoeuvres of the largest anticipated vehicle. The swept paths for all turning manoeuvres required by the 19m AV to travel from the site are shown in Figure 13, Figure 14, Figure 15.The swept paths for largest anticipated vehicles for each phase (19m AV) are shown in Appendix 2. Any traffic management measures required are discussed in Section 3.11

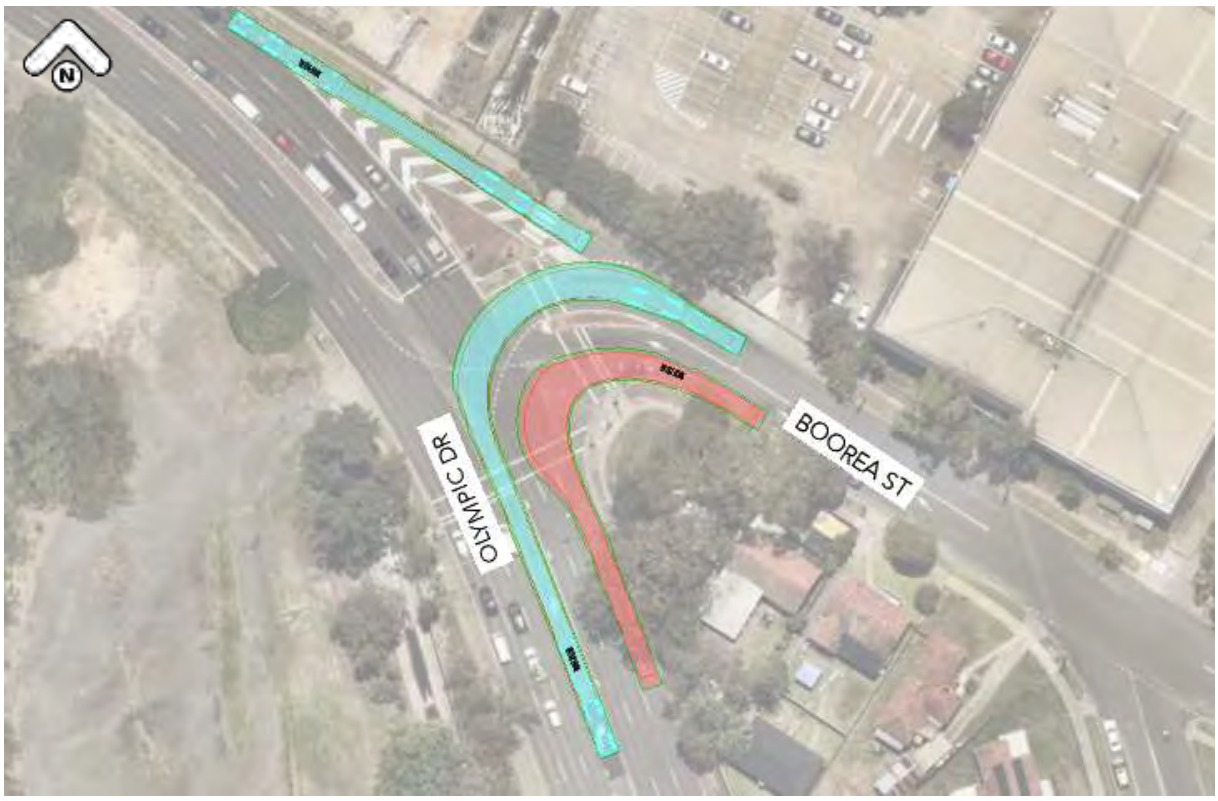


Figure 13: 19m Truck & Dog approcahing and leaving site to/from south via Olympic/Boorea St

Figure 14: 19m Truck & Dog approcahing and leaving site to/from north via Olympic/Boorea St

Figure 15: 19m Truck & Dog approcahing site via Boorea St/Internal Access Rd

Figure 16: 19m Truck & Dog leaving site via Boorea St/Internal Access Rd

Figure 17: 19m Truck & Dog accessing and egressing the construction site via Internal Access Rd

3.11. Traffic Control Measures

The Traffic Guidance Scheme (TGS) outlines the proposed traffic management to inform road users of the changed traffic conditions in the vicinity of the works site.

The TGSs have been set out in accordance with the TfNSW Traffic Control at Works Site.

It is noted that detailed TGSs are to be prepared by the appointed traffic management contractor prior to commencement of works and submitted to Council and TfNSW for approval. All Traffic Guidance Schemes associated with the CTMP must comply with the Australian Standards and Roads and TfNSW Traffic Control at Work Sites Guidelines Issue 6.1 (2022).

3.11.1.Access to Site (by vehicles larger than 12.5m long HRV)

The Principal Contractor shall provide appropriate traffic and pedestrian management at all site interfaces with the public road during construction. This will ensure truck movements and deliveries are received efficiently and safely.

The proposed TGS has been designed to be suitable for the construction work and location in accordance with Issue 6.1 of the traffic Control at Work Sites Technical Manual, 2022 (TCAWS).

Figure 18: TGS along Boorea Street and Yarram Street

3.12. Parking Controls

Boorea Street currently has no parking on both sides of the roadway adjacent to the site. The proposed construction vehicle routes require access to the site via Boorea Street. Therefore, there is no impact on parking scenario.

3.13. Pedestrian Management

The general public will not be allowed access to the site. The contractor will ensure that the proposed site fencing is maintained in a clean, well illuminated and safe manner at all times, throughout the duration of the project. Due to the nature of the site and the emphasis placed on materials handling, the efficient control and protection of pedestrian traffic is of utmost importance.

The site perimeter boundaries consist of site fencing, installed during the various construction phases. The site fencing will be established immediately following site possession and fitted with appropriate public directional signage.

It should be noted that Traffic Controllers are NOT to stop general traffic, pedestrians or cyclists on the public street(s) to allow trucks to enter or leave the site. They MUST wait until a suitable gap in traffic allows them to assist trucks to enter or exit the site. Special treatment is not to be given to trucks leaving a construction site - the vehicles already on the road and pedestrians on the footpath have right-of-way.

Pedestrians may be held only for very short periods to ensure safety when trucks are leaving or entering BUT the contractor must NOT stop pedestrians in anticipation i.e., at all times the pedestrians have right-of-way on the footpath, not construction vehicles.

3.14. Special Deliveries

Any oversized vehicle that is required to travel to the site will be dealt with separately, with the submission of required permits to and subsequent approval by Cumberland City Council prior to any delivery.

3.15. Staff Parking

The contractor staff volumes on site at any one time are as expected to be approximately 50 workers on average, with a maximum peak of 100 workers.

The staff are encouraged to use public transport to get to and from the site where possible. Street parking shall not be used by construction personnel. On-site parking shall be made available to contractors should parking be required.

Staff will be advised of the car pooling possibility to reduce the number of construction vehicles.

3.16. Work Site Security

As discussed in Section 3.13, to provide security to the work site and protection to the general public, it is proposed that the site perimeter boundaries consist of temporary fencing or hoardings. These boundaries will be established immediately following site possession and fitted with appropriate signage where required.

All gates are securely locked outside of working hours and may be regularly patrolled by security staff. This security network shall continue to work closely with the contractor to ensure that security is being maintained throughout construction.

The contractor shall maintain a site entry register requiring all visitors to sign in upon entry. All visitors are required to wear an identification "visitor" badge and wear appropriate PPE at all times whilst on site.

3.17. Staff Induction

All staff and subcontractors engaged on site will be required to undergo a site induction. The induction will include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, OH&S, driver protocols and emergency procedures. Additionally, the lead contractor will discuss TMP requirements regularly as part of toolbox talks and advise workers of public transport and carpooling opportunities.

3.18. Driver Code of Conduct

All construction vehicle drivers engaged as part of the work are required to follow the code of conduct. General principles of the code are detailed below, and all construction vehicle drivers travelling to and from the site must:

- Hold a current appropriate licence for the vehicle they are operating,
- Strictly comply with all traffic regulations,
- Comply with all maximum gazetted speed limits on all roads, or a lesser speed as dictated by the site-specific signage,
- Drive in a manner at all times that is in accordance with road conditions,
- Yield "right of way" whenever appropriate to ensure safe passage of other road users,
- At all times leave adequate distance between vehicles to allow safe passing by other road users, as required,
- Decrease vehicle speeds to minimise dust and noise around private dwellings, road works and stationary vehicles,
- Not use engine braking where noise is likely to adversely impact on residents,
- Remain calm and courteous when in contact with other road users, members of the public, landowners,
- Not use obscene language on radio or intercom communication,
- If required, accurately complete required paperwork prior to departure and follow specified routes.,
- Maintain vehicles in a clean and tidy condition,
- Ensure that there is no littering,
- Avoid any other noise emitting activities for example loud music or raised voices. Raised voices should be avoided. No shouting or yelling permitted. Radio volume to be turned down,
- Reverse movements to be minimised,
- Truck engines to be turned off during deliveries,
- Minimise the impacts of construction on the local and regional road network.

The driver code of conduct is illustrated in the Appendix 3.

3.19. Emergency Vehicle Access

The proposed traffic control arrangements do not propose the closure of any local roads. Any emergency vehicle requiring access to the subject site will do so via the site access along Boorea Street.

A detailed Emergency Management Plan will be further developed by the contractor prior to site establishment works.

3.20. Access to Adjoining Properties

Access to all adjoining properties will be maintained throughout the works.

3.21. Occupational Health and Safety

Any workers required to undertake works or traffic control within the public domain shall be suitably trained and will be covered by adequate and appropriate insurances. All traffic control personnel will be required to hold TfNSW accreditation in accordance with Section 8 of Traffic Control at Worksites.

3.22. Method of Communicating Traffic Changes

Traffic Guidance Schemes in accordance with the Australian Standards (AS 1742.3 – Traffic Control Devices for Works on Roads) and TfNSW Traffic Control at Worksites will advise motorist of upcoming changes in the road network.

During site operation the contractor shall, each morning, prior to work commencing, ensure all signage is erected in accordance with the TGS and clearly visible. Each evening, upon completion of work, the contractor is to ensure signage is either covered or removed as required. Sign size is to be size "A".

The associated TGS road signage will inform drivers of works activities in the area including truck movements in operation. Any variation to the layout of the TGS on site is to be recorded and certified by authorised SafeWork NSW accredited personnel. Amended TGSs must also be approved by Council prior to implementing any changes.

A minimum 14-day notification must be provided to adjoining property owners prior to the implementation of any temporary traffic control measures.

Road Occupancy License is required for any works which impact on the road corridor, in addition to any permits required by Council. These need to be submitted to the Transport Management Centre (via the OPLINC system) a minimum of 10 business days prior to commencement of works.

3.23. Contact Details for Onsite Enquiries and Site Access

Project Manager – Nicolas Napoli (0428 535 423)

Site Manager – Gary Petersen (0411 405 143)

3.24. Maintenance of Roads and Footpaths

The roads and footpaths along the route of travel will be kept in a serviceable state at all times. Any damage arising as a result of the proposed truck movements will be treated / repaired by the principal contractor at no cost to Council.

3.25. Hazard and Risk Identification

All construction projects entail a set of risks—from a transport perspective—that may need to be mitigated. Some of these hazards and risks are related to:

- Moving traffic;
- Queued traffic;
- Site vehicle access and egress points;
- Highly vulnerable road user activity;
- Other construction activity or roadworks in close proximity to the proposed work site; and
- Reduced lane and shoulder widths.

This is appropriate for the construction of the development because of the following:

Risk Matrix Reference: R1 – Conflict between construction traffic and the general public, especially vulnerable road users such as pedestrians and cyclists.

Risk Matrix Reference: R2 – Construction traffic creating localised negative impact to the surrounding road network.

A risk matrix has been prepared to assist with rating the risk of deviation to the procedures described in this report. The risk matrix is shown in using the following definitions:

Risk Rating

- Very High (VH)
- High (H)
- Medium (M)
- Low (L)

Consequence

- Insignificant: Illness, first aid or injury not requiring medical treatment. No lost time.
- Minor: Minor injury or illness requiring medical treatment. No lost time post medical treatment.
- Moderate: Minor injuries or illnesses resulting in lost time.
- Major: 1 to 10 serious injuries or illnesses resulting in lost time or potential permanent impairment.
- Severe: single fatality and/or 11 to 20 serious injuries or illnesses resulting in lost time or potential permanent impairment.
- Catastrophic: multiple fatalities and/or more than 20 serious injuries or illnesses resulting in lost time or potential permanent impairment.

Likelihood

- Almost certain: expected to occur multiple times (10 or more times) during any given year.
- Very likely: expected to occur occasionally (1 to 10 times) during any given year.
- Likely: expected to occur once during any given year.

- Unlikely: expected to occur once every 1 to 10 years.
- Very unlikely: expected to occur once every 10 to 100 years.
- Almost unprecedented: not expected to occur in the next 100 years.

The resulting level of risk and treatment approach is:

- Intolerable: Must be corrected.
- High: Should be corrected or the risk significantly reduced, even if the treatment costs is high.
- Medium: Should be corrected or the risk significantly reduced, if the treatment cost is moderate, but not high.
- Low: Should be corrected or the risk reduced if the treatment cost is low.

Table 9: Risk Matrix

Likelihood	Consequence						
		Insignificant	Minor	Moderate	Major	Severe	Catastrophic
	Almost certain						
	Very likely						
	Likely						
	Unlikely						
	Very unlikely		R2				
	Almost unprecedented						R1

Some recommended risk mitigation measures include:

- Implementation of traffic control where required to reduce potential conflict between road users.
- Adequate signage and warning of the ongoing construction activity at the site.

4. CTMP Approval, Monitoring and Review

This CTMP has been reviewed and endorsed by the designer's one-up manager who holds a current Prepare Works Zone Traffic Management Plan qualification. This approved CTMP has been used to inform the development of all TGSs for the work.

Regular monitoring and review are to be conducted throughout the life of the project to ensure that the CTMP remains current and addresses all risks at the work site for the duration of the project or activity.

To ensure that this CTMP is kept up to date, the activities identified in Table 10 will be undertaken to facilitate review and continuous improvement.

Table 10: Monitoring Activities

Stage	Activity	Purpose	Qualification	Tools and checklists
Planning	TGS verification	To ensure that the TGS selected or designed is suitable for the works and location.	ITCP or PWZTMP	TCAWS Appendix E.2 TGS verification checklist
During TTM	Weekly TTM inspections (includes preopening inspection)	To ensure that the CTMP and relevant TGS are appropriate and operating safely, effectively, and efficiently	PWZTMP	TCAWS Appendix E.3 Weekly TTM inspection checklist
	Shift TTM inspections	To ensure that the TGS is implemented as designed. This includes at a minimum, twice per shift and when: A TGS is installed, changed, or updated. At regular frequency afterwork commences, recommended every 2 hours; and Once after care arrangements have been installed if required	ITCP or PWZTMP	TCAWS Appendix E.4 Shift / Daily TTM inspection checklist
	CTMP review	To ensure that CTMP controls are achieving the required outcomes.	PWZTMP	Not provided
	Client inspections	Verification of TTM through the Transport Traffic Engineering Services, Work Health and Safety Branch, Surveillance Officers, or other client representatives.	Divisionally determined	Not provided
Post Completion	Post-completion inspection	To ensure that the site has been demobilised as planned and is safe for opening to traffic	ITCP or PWZTMP	Appendix E.5 Post completion inspection checklist

All relevant changes must be considered and recorded in the CTMP with any changes made by an appropriately qualified person. A copy of all documentation relating to the endorsement of the changes must be available to be accessed, either electronically or in hard copy, by the person responsible for the works.

5. TGS Confirmation and Approval

The Traffic Guidance Schemes (TGSs) shown in Appendix 1 outlines the proposed traffic management to inform road users of the changed traffic conditions in the vicinity of the works site. The TGSs must be set out in accordance with Issue 6.1 of the Traffic Control at Work Sites Technical Manual, 2022 (TCAWS).

TGSs are to be implemented throughout the project to warn road users that trucks will be turning into and out of the site, in accordance with TCAWS TGS D.4.7.

It is noted that any changes to the existing parking restrictions will require a minimum fourteen (14) days notification to adjoining property owners prior to the implementation of any temporary traffic control measures.

Any revisions or additional TGSs ones must be prepared by a SafeWork NSW qualified person upon engagement of the traffic management contractor and prior to commence of works on site.

5.1. TGS Verification

Site confirmation must be undertaken via the completion of the TGS verification. A TGS verification must be undertaken to confirm the selected or designed TGS is fit for purpose. A TGS verification must be completed in accordance with Section 8.1.2 TGS verification by an ITCP or PWZTMP qualified person. TGS verification must include an inspection of the work site where the TGS will be implemented.

5.2. TGS Approval

The SafeWork NSW qualified person who has designed or modified the relevant TGS has approved the TGS for use. Approval of the TGS includes:

- Review of the relevant TMP, risk assessment and associated TTM specific documentation;
- Design, redesign or modification of the TGS must be in accordance with the requirements of TCAWS;
- Confirmation that the TGS provides the relevant information for the ITCP person to safely implement on-site.

The one up manager of the SafeWork NSW qualified person has approved the TGS, including:

- Any non-standard or unaccepted signs or devices;
- Any departures from the requirements of TCAWS;
- If a manual traffic controller is proposed for use.

5.3. The Role of Traffic Controllers

Traffic Controllers (TCs) are not expected for the construction activities. However, if required on occasion, TCs are not permitted to stop oncoming traffic or hold pedestrians to assist a vehicle to leave the site.

It should be noted that Traffic Controllers are NOT to stop traffic on the public street(s), pedestrians, and cyclists to allow trucks to enter or leave the site. They MUST wait until a suitable gap in traffic allows them to assist trucks to enter or exit the site. The Roads Act does not give any special treatment to trucks leaving a construction site – the vehicles already on the road and pedestrians on the footpath have right of-way.

Pedestrians may be held only for very short periods to ensure safety when trucks are leaving or entering BUT you must NOT stop pedestrians in anticipation i.e., at all times the pedestrians have right-of-way on the footpath, not the trucks.

6. Summary

This CTMP has been prepared to outline the construction traffic measures to improve site safety to the public, workers and the construction process.

The construction activity is anticipated to have minimal disruption to the daily activities within the vicinity of the site with the measures described in the CTMP.

It is envisaged that this document will be continually reviewed and amended if required, due to changes in design, TfNSW, Councils or any other authority requirements. Should any changes be made, they will need to be reviewed and approved by the relevant road authority.

Appendix 1. Swept Path Analysis

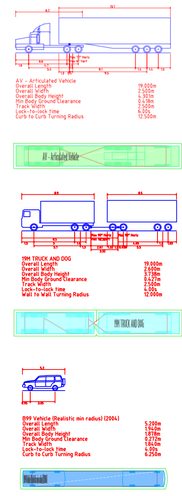
TRAFFIC GUIDANCE SCHEME

General Notes:

1. All information provided regarding traffic guidance schemes (TGS) is indicative
2. Detailed TGS are to be developed by the appointed traffic control company
3. All TGS revisions or adjustments must be made by a suitably accredited person with the appropriate safework NSW licence
4. This drawing is not to scale and is to be used for reference purposes only
5. All signage is to be in accordance with TCAWS v6.1 (2022) and set up in visible and appropriate locations
6. TGS signage to be spaced at dimension D in accordance with TCAWS.

Specific Notes:

1. Traffic controller is to be in place on any occasion where any (25 or 20m) articulated semi-trailers are entering or exiting the site.
2. On other occasions, where smaller vehicles are required, the traffic controller may not be required for access and egress swept paths but require a gate controller.



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P2	01/03/24	FOR INFORMATION	CP	JAJ/SW
P1	09/02/24	FOR INFORMATION	CP	SW/JAJ

DRAWING KEY

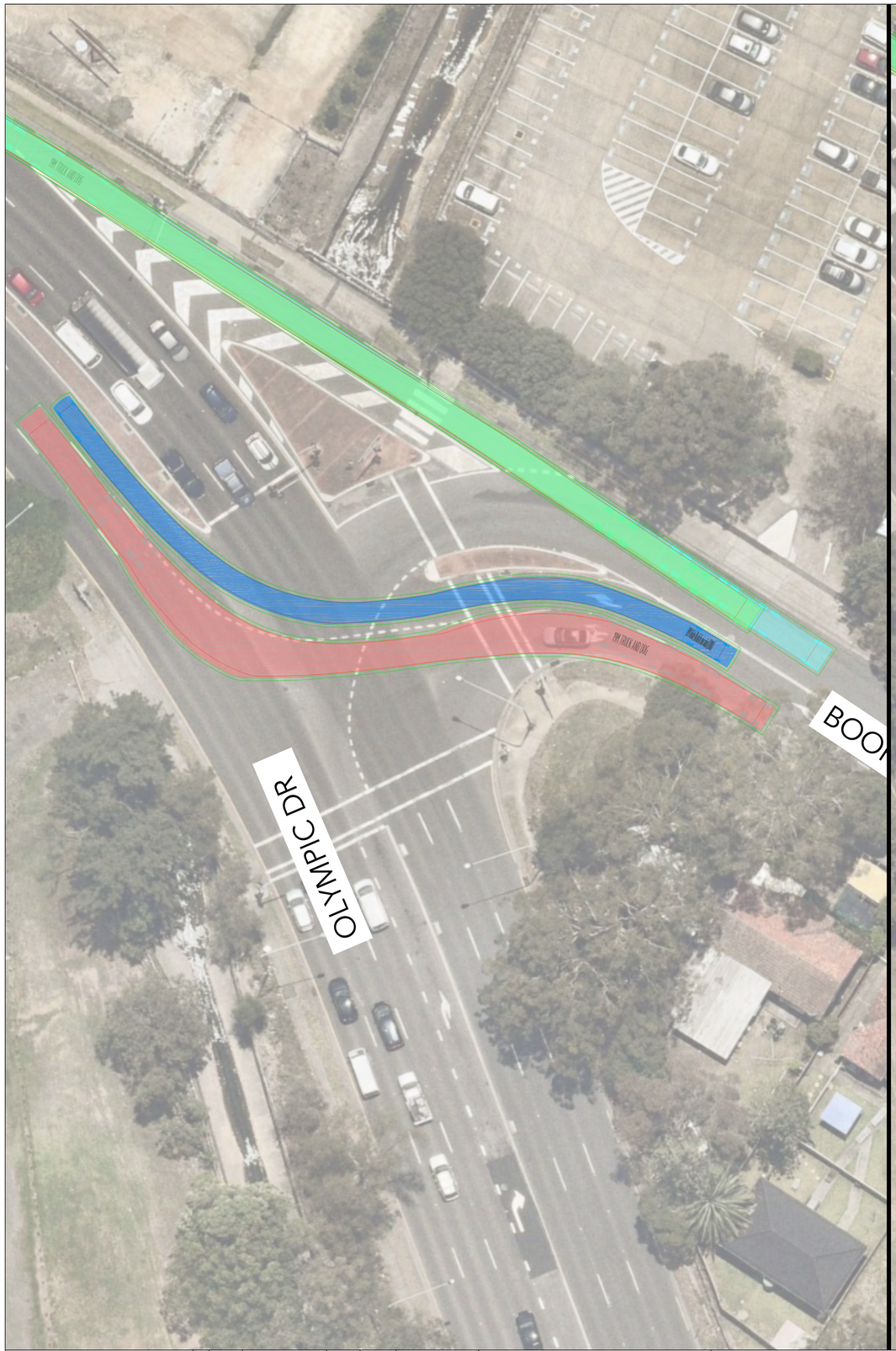
PROJECT
LIDCOMBE MULTI-LEVEL WAREHOUSE

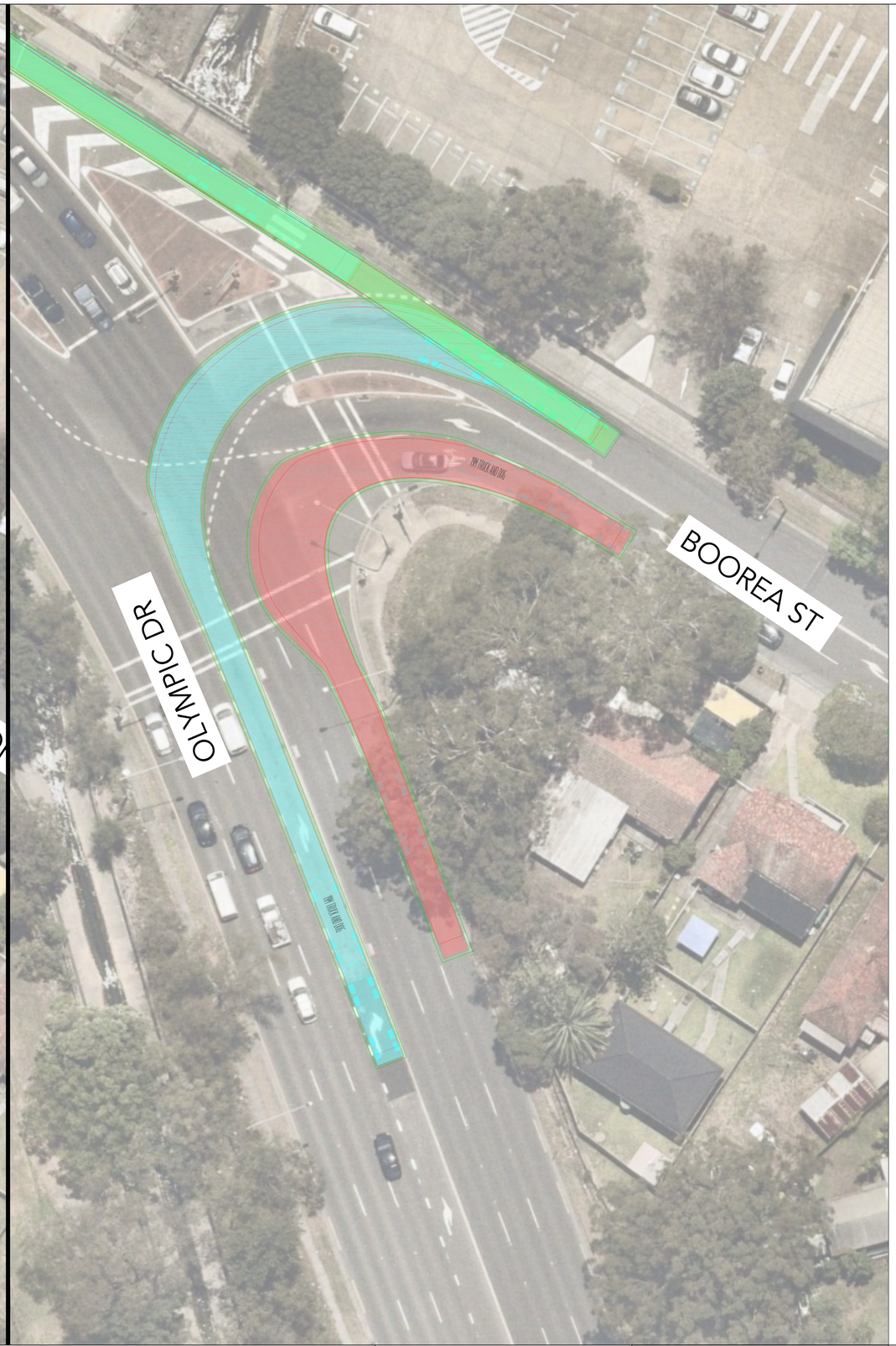
DRAWING TITLE
SWEPT PATH ASSESSMENT
19m Truck & Dog approaching site via Olympic Dr/Boorea St.
19m Truck & Dog accessing and egressing.

CLIENT	ADCO
DRAWING #	SK-001
PROJECT #	0799
SCALE #	1:1000

PRELIMINARY

REV P1





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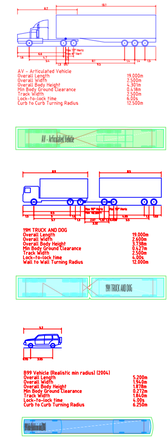

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DRAWING KEY

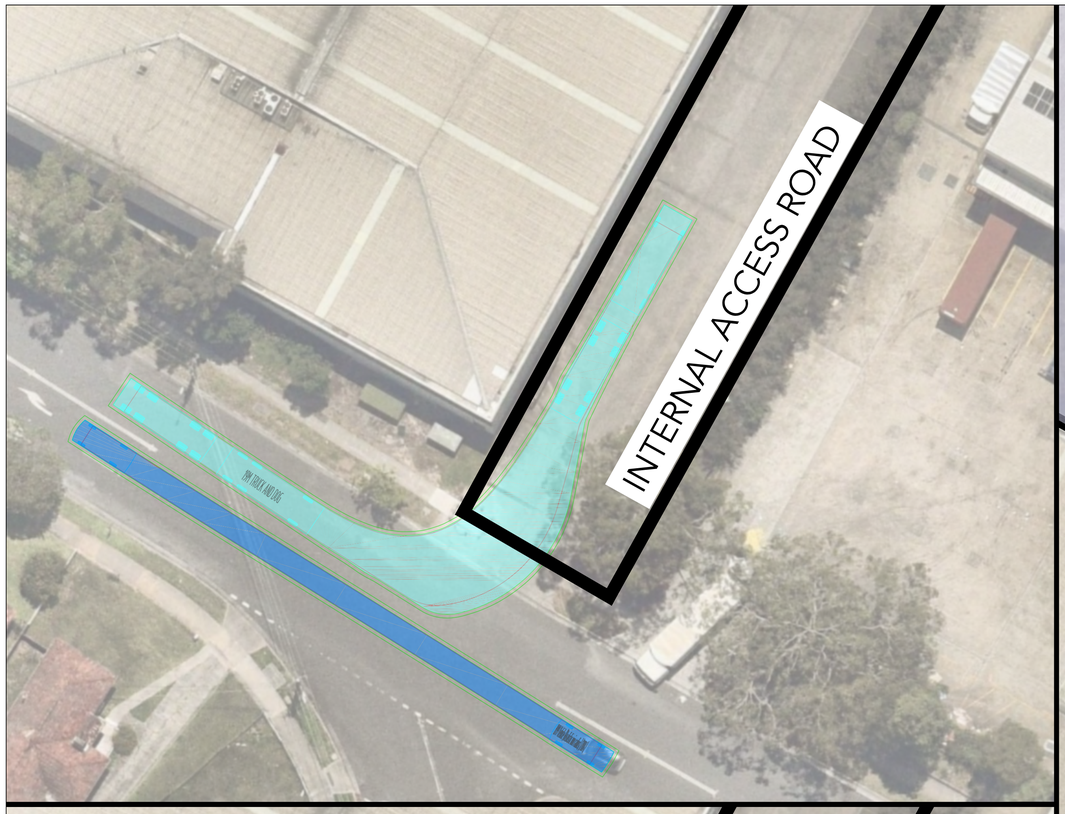
PROJECT
LIDCOMBE MULTI-LEVEL WAREHOUSE

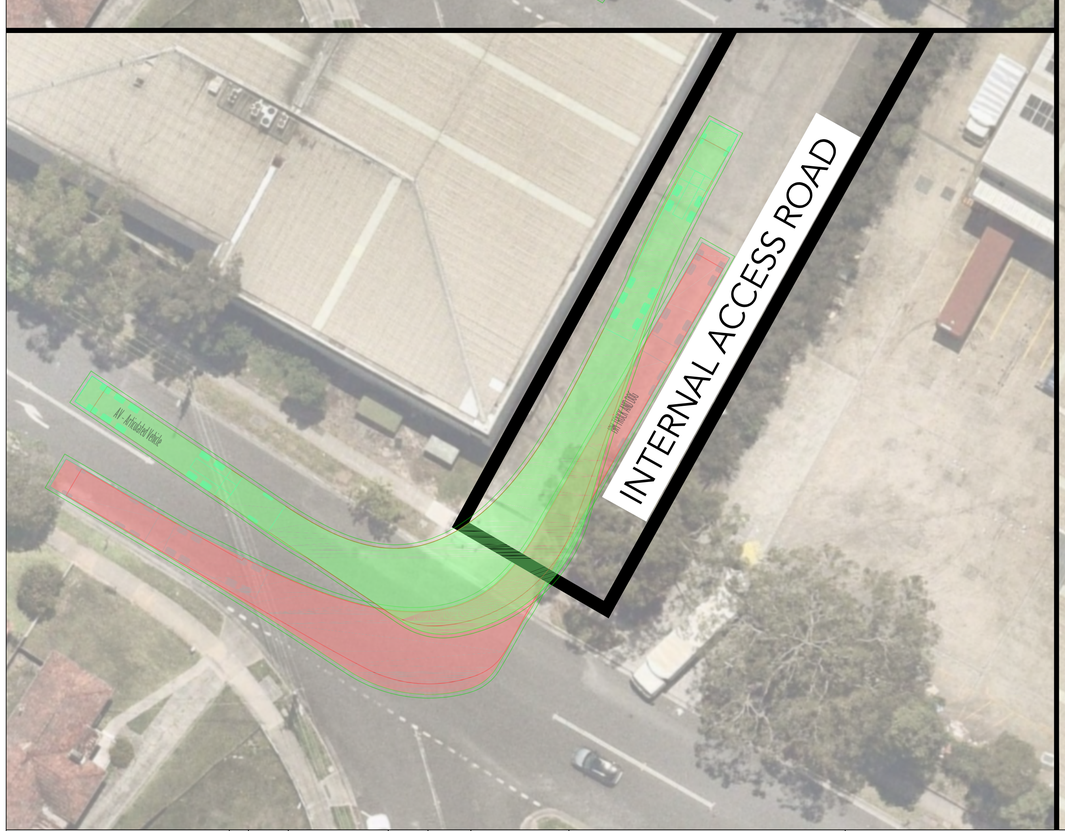
DRAWING TITLE
SWEPT PATH ASSESSMENT
19m Truck & Dog approaching and leaving site Olympic Dr/Boorea St

CLIENT	ADCO
DRAWING #	SK-001a
PROJECT #	0799
SCALE	1 : 250

PRELIMINARY

REV P1





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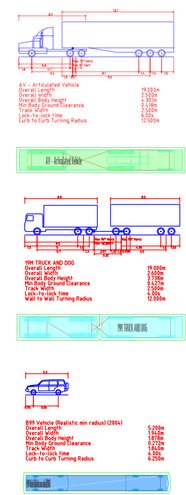

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DRAWING KEY

PROJECT
LIDCOMBE MULTI-LEVEL WAREHOUSE

DRAWING TITLE
SWEPT PATH ASSESSMENT
19m Truck & Dog approaching and leaving site Boorea St/Internal Access Rd.
19m Truck & Dog accessing egressing site

CLIENT	ADCO
DRAWING #	SK-001
PROJECT #	0799
SCALE	1 : 500

PRELIMINARY

REV P1

CONSTRUCTION SITE

BOOREA ST

OLYMPIC DR

INTERNAL ACCESS ROAD

YARRAMAN ST

TRAFFIC GUIDANCE SCHEME

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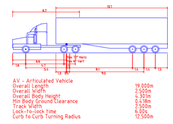

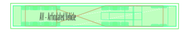

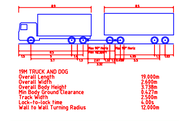

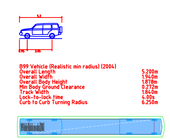

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REV	DATE	DESCRIPTION	DRAWN	REVIEWED
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X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
P2	01/03/24	FOR INFORMATION	CP	JAJ/SW
P1	09/02/24	FOR INFORMATION	CP	SW/JAJ

DRAWING KEY

PROJECT
LIDCOMBE MULTI-LEVEL WAREHOUSE

DRAWING TITLE
SWEPT PATH ASSESSMENT
19m AV approaching site via Olympic Dr/Boorea St.
19m AV accessing and egressing.

CLIENT	ADCO
DRAWING #	SK-001
PROJECT #	0799
SCALE #	1:1000

PRELIMINARY

REV P1

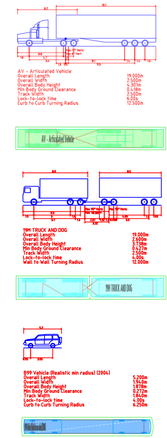
TRAFFIC GUIDANCE SCHEME

General Notes:

1. All information provided regarding traffic guidance schemes (TGS) is indicative
2. Detailed TGS are to be developed by the appointed traffic control company
3. All TGS revisions or adjustments must be made by a suitably accredited person with the appropriate safework NSW licence
4. This drawing is not to scale and is to be used for reference purposes only
5. All signage is to be in accordance with TCAWS v6.1 (2022) and set up in visible and appropriate locations
6. TGS signage to be spaced at dimension D in accordance with TCAWS.

Specific Notes:

1. Traffic controller is to be in place on any occasion where any (25 or 20m) articulated semi-trailers are entering or exiting the site.
2. On other occasions, where smaller vehicles are required, the traffic controller may not be required for access and egress swept paths but require a gate controller.



ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
P2	01/03/24	FOR INFORMATION	CP	JAJ/SW
P1	09/02/24	FOR INFORMATION	CP	SW/JAJ

DRAWING KEY

PROJECT
LIDCOMBE MULTI-LEVEL WAREHOUSE

DRAWING TITLE
SWEPT PATH ASSESSMENT
19m Truck & Dog approaching and leaving site Olympic Dr/Boorea St

CLIENT	ADCO
DRAWING #	SK-001a
PROJECT #	0799
SCALE	1 : 250

PRELIMINARY

REV P1

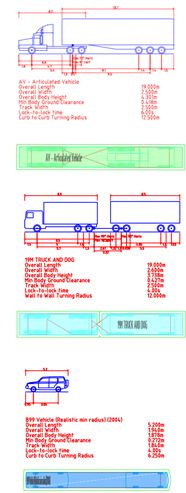
TRAFFIC GUIDANCE SCHEME

General Notes:

1. All information provided regarding traffic guidance schemes (TGS) is indicative
2. Detailed TGS are to be developed by the appointed traffic control company
3. All TGS revisions or adjustments must be made by a suitably accredited person with the appropriate safework NSW licence
4. This drawing is not to scale and is to be used for reference purposes only
5. All signage is to be in accordance with TCAWS v6.1 (2022) and set up in visible and appropriate locations
6. TGS signage to be spaced at dimension D in accordance with TCAWS.

Specific Notes:

1. Traffic controller is to be in place on any occasion where any (25 or 20m) articulated semi-trailers are entering or exiting the site.
2. On other occasions, where smaller vehicles are required, the traffic controller may not be required for access and egress swept paths but require a gate controller.



ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
P2	01/03/24	FOR INFORMATION	CP	JAJ/SW
P1	09/02/24	FOR INFORMATION	CP	SW/JAJ

DRAWING KEY

PROJECT
LIDCOMBE MULTI-LEVEL WAREHOUSE

DRAWING TITLE
SWEPT PATH ASSESSMENT
19m AV approaching and leaving site
Boorea St/Internal Access Rd.
19m AV accessing egressing site

CLIENT	ADCO
DRAWING #	SK-001
PROJECT #	0799
SCALE	1 : 500

PRELIMINARY

REV P1

Appendix 2. Traffic Guidance Scheme

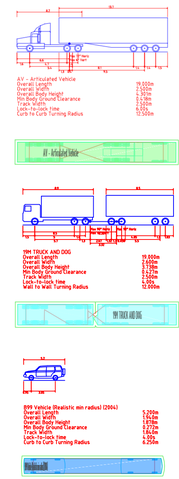
TRAFFIC GUIDANCE SCHEME

General Notes:

1. All information provided regarding traffic guidance schemes (TGS) is indicative
2. Detailed TGS are to be developed by the appointed traffic control company
3. All TGS revisions or adjustments must be made by a suitably accredited person with the appropriate safework NSW licence
4. This drawing is not to scale and is to be used for reference purposes only
5. All signage is to be in accordance with TCAWS v6.1 (2022) and set up in visible and appropriate locations
6. TGS signage to be spaced at dimension D in accordance with TCAWS.

Specific Notes:

1. Traffic controller is to be in place on any occasion where any (25 or 20m) articulated semi-trailers are entering or exiting the site.
2. On other occasions, where smaller vehicles are required, the traffic controller may not be required for access and egress swept paths but require a gate controller.



ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
P2	01/03/24	FOR INFORMATION	CP	JA/JSW
P1	09/02/24	FOR INFORMATION	CP	SW/JAJ

DRAWING KEY

NOTE:
Vehicles must enter and exit the site in forward direction.

PROJECT
LIDCOMBE MULTI-LEVEL WAREHOUSE

DRAWING TITLE
TRAFFIC GUIDANCE SCHEME

CLIENT	ADCO	PRELIMINARY
DRAWING #	TGS-001	REV P1
PROJECT #	0799	
SCALE	1 : 500	

Appendix 3. Driver Code of Conduct

Hours of Work

Monday - Friday	7am to 6pm
Saturday	8am - 1pm
Sunday & Public Holidays	No works to be undertaken without prior approval

Emergency Contact Numbers

TfNSW Transport Management Centre
131 700

Cumberland City Council
02 8757 9000

ADCO (Project Manager)
Nicolas Napoli
0428 535 423

ADCO (Site Manager)
Gary Petersen
0411 405 143

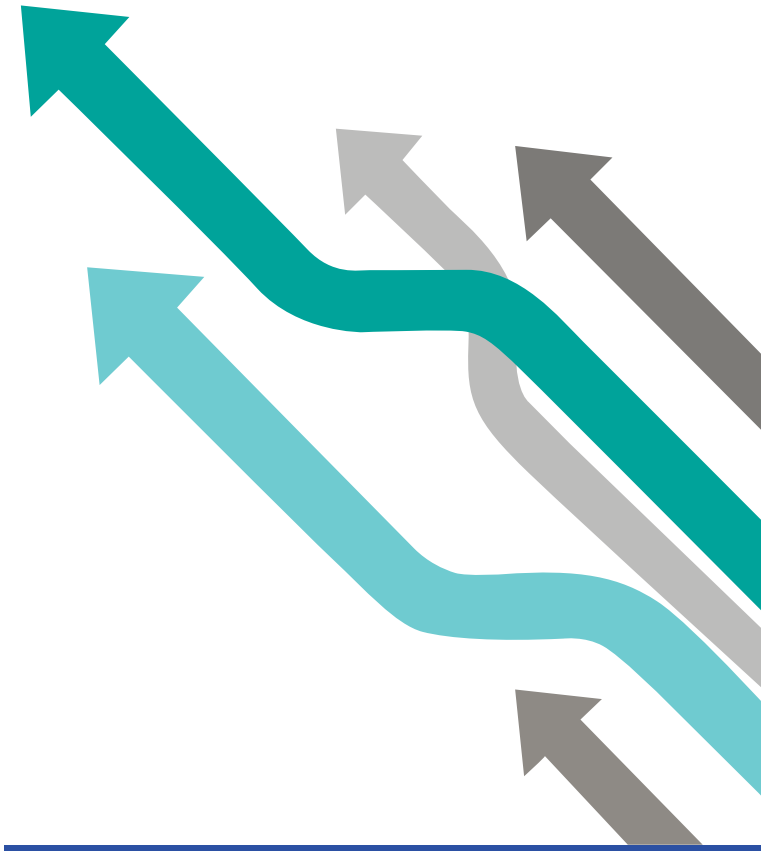
ADCO (Sydney)
02 8437 5000

All other Emergencies
000

ADCO CONSTRUCTIONS

Boorea Street Warehouse & Distribution Centre

42 Boorea Street, Lidcombe NSW



Driver Code of Conduct

This Driver Code of Conduct applies to all personnel and any other person conducting business for the Boorea Street Warehouse & Distribution Centre whether a direct employee of ADCO or employed by another organisation providing service or working with ADCO.

General Requirements

• As a driver you are required to know and comply with all the road rules pertaining to your vehicle;

• You are expected to hold a valid driver's licence for the class of the vehicle you are operating;

• Undertake a site induction carried out by an approved member of the construction staff or suitably qualified person;

• Participate in regular toolbox meetings with appropriate and qualified person; and

• You are to operate the vehicle in a safe manner within and outside the construction site and comply with the direction of authorised site personnel while inside the site.

Truck Routes

Heavy vehicle drivers are to carefully plan their routes so that state and regional roads are given priority for route selection, keeping in mind the certain restrictions during particular times of the day (i.e. approved Temporary Road Occupancy and/or Works Zone permit conditions).

Other Considerations

• Speed Limits – All heavy vehicle drivers are to observe the posted speed limits, within or outside of the construction site. Keep in mind that there may be changes in traffic conditions and altered speed limits are posted on approach to the site;

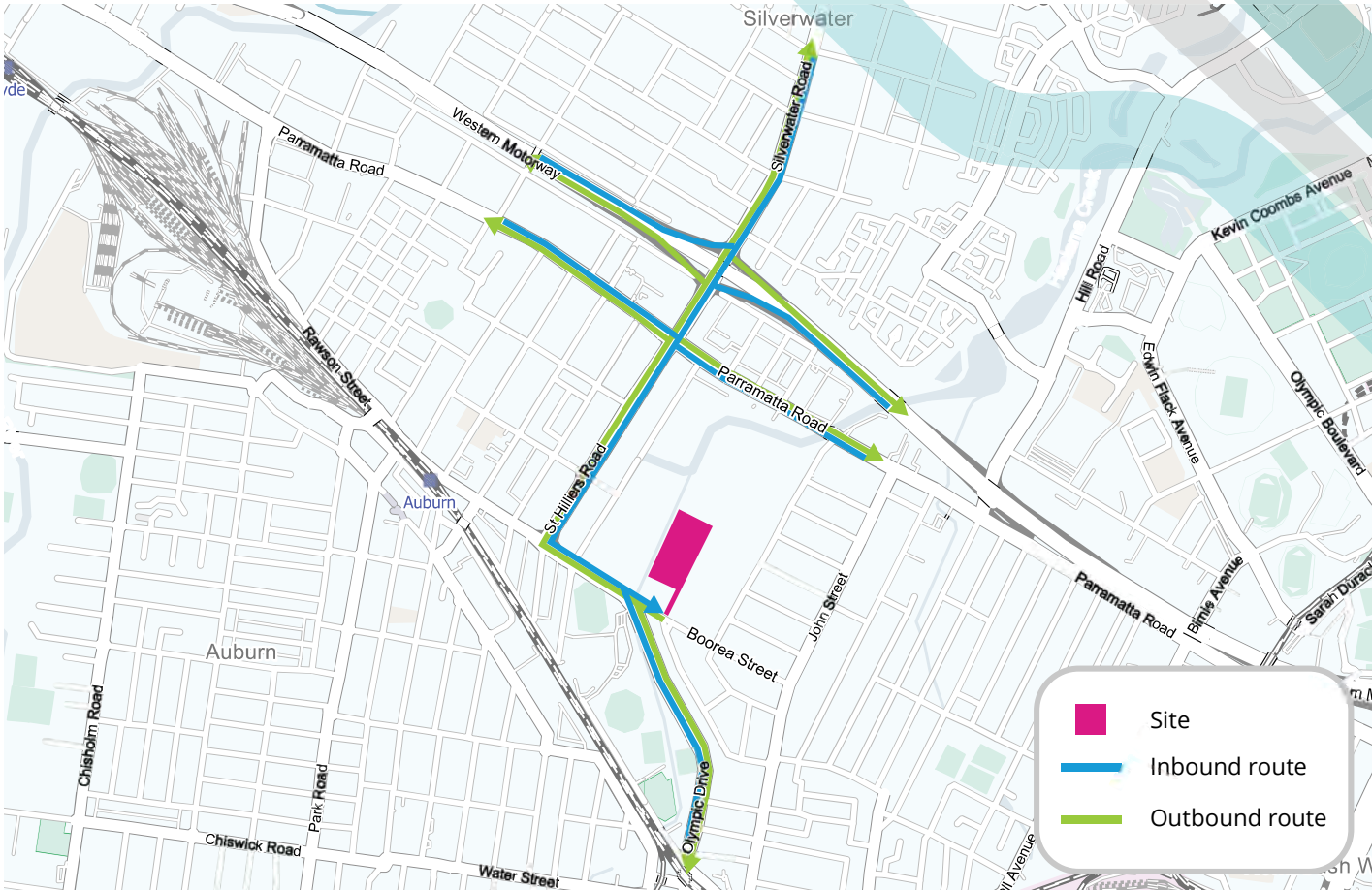
• Driver Fatigue – Driver fatigue is a road safety hazard and one of the biggest causes of accidents especially for heavy vehicle drivers. All drivers have a duty to not drive a vehicle while impaired by fatigue.

• Covering Loads – TfNSW requires all load covers to secure and contain all materials within the vehicle and trailer;

Other Considerations

• Heavy Vehicle Interval – To increase road safety, heavy vehicles leaving the construction site should be separated, as far as practicable, a minimum of a 10-minute interval;

• Vehicle Breakdowns – In the case of a breakdown, the vehicle must be towed to the nearest breakdown point as soon as possible and reported to the TfNSW Transport Management Centre (131 700)



Appendix 4. Author Qualifications

ptc.

experience
ptc.

Chiranjivi Pariyar
Traffic Engineer

- BE (Civil)-minor In Transportation Engineering, Tribhuvan University (Nepal)

Fields of Special Competence

- Traffic and transport Impact Assessment
- Traffic Engineering
- Vehicle Swept Path Assessment
- Car Park Design
- Traffic Network Modelling (SIDRA 9.0)
- Construction Traffic Management (TCT5140491 (PWZ))

Chiranjivi started his career in Nepal as a civil engineer and surveyor for clients in the private and public sectors. In Australia, he has worked as a site engineer and traffic engineer.

He has experience in in the preparation of traffic impact assessments, swept path analysis and car park compliance reviews for various types of developments including mixed-use, residential, childcare centres, boarding houses, industrial and community centres.

Experiences:

- 2023 – present: Traffic Engineer – **ptc.**, AUS
- 2022 – 2023: Traffic Engineer – ML Traffic Engineers, AUS
- 2022 – 2022: Civil Engineer – Empire Homes & Constructions, AUS
- 2020 – 2022: Customer Service Specialist – Eureka Operations, AUS
- 2017 – 2018: Civil Engineer – MAW Enterprises, NEPAL
- 2015 – 2017: Civil Engineer – Paragon Engineering Consultancy and Research Centre, NEPAL

experience
ptc.

Jake Jansen
Senior Traffic Engineer

- BE (Civil), University of New South Wales

Fields of Special Competence

- Vehicle Swept Path Assessment
- Car Park Design
- Traffic Engineering
- Feasibility Assessment
- Micro-Analytical Traffic Simulation (SIDRA Modelling)
- Transport Impact Assessment
- Construction Traffic Management and Traffic Guidance Schemes (TCT1027562 (PWZ))

Jake began working at **ptc.** as a graduate traffic engineer and progressed his career to reach Senior Engineer level in 2024. During his university studies, Jake worked at City of Sydney Council where he developed his passion and experience for traffic engineering and transport infrastructure.

He has experience from local council in the civil design of pedestrian and road infrastructure, and an understanding of the interconnectedness between infrastructure and traffic engineering.

At **ptc.**, Jake has worked on a variety of projects including Green Square, Zetland and Harbourside, Darling Harbour, which have granted him experience in the preparation of traffic impact assessments, SIDRA modelling and the assessment of car park design and compliance.

Additionally, Jake is qualified to prepare Construction Traffic Management Plans and has worked on a wide range of developments to expand his knowledge and experience in this field.

Experiences

- 2024 – present: Senior Traffic Engineer – **ptc.**, AUS
- 2023 – 2024: Traffic Engineer – **ptc.**, AUS
- 2022 – 2023: Graduate Traffic Engineer – **ptc.**, AUS
- 2018 – 2022: Driver – The Dinner Ladies, AUS
- 2019 – 2020: Civil Engineering Intern – City of Sydney Traffic Infrastructure Department, AUS
- 2016 – 2021: Warehouse Operator – Specific Freight, AUS

Appendix 5. Authority Consulation

Jake Jansen

From: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Sent: Thursday, 28 March 2024 7:14 AM
To: Sachin Kaul; Kamila Markiewicz
Cc: Ebrahim Nateghi; Nicholas Napoli; Brandon Provenzano; Ahmed Farzan
Subject: FW: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]
Attachments: RDA2024_0293 - 42 BOOREA ST LIDCOMBE.pdf

Morning Sachin,

FYI – please see below and attached our full approval from Council for the CTMP – we are just awaiting for the formal receipt / review of the CNVMP from them.

This will be appended in the revised CEMP and issued next week.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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BRISBANE
GOLD COAST
PERTH
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We value and encourage flexible working to ensure balance within our people's lives. If this is received outside of your working hours, please be assured I respect your working pattern.

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From: Thang Tran <thang.tran@cumberland.nsw.gov.au>
Sent: Wednesday, March 27, 2024 2:38 PM
To: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Cc: Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Matthew Wilkinson <mwilkinson@adcoconstruct.com.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Subject: RE: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

Hi Paul,

The CTMP has been assessed and approved by Council.

Please find the approval with conditions attached.

Regards

THANG TRAN
TRAFFIC AND TRANSPORT ENGINEER

16 Memorial Avenue, PO Box 42 Merrylands NSW 2160
T +61 2 8757 9534
E thang.tran@cumberland.nsw.gov.au
W www.cumberland.nsw.gov.au

From: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Sent: Monday, March 25, 2024 4:51 PM
To: Thang Tran <thang.tran@cumberland.nsw.gov.au>
Cc: Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Matthew Wilkinson <mwilkinson@adcoconstruct.com.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Subject: [EXTERNAL] RE: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Thanks Thang,

Just confirming the below invoice has been paid by Nicholas Napoli our Project Manager (attached confirmation) on Saturday morning (23/03) for the **Lidcombe Multi Storey Warehouse.**

Please let me know if you need anything on our end further.

We would like to receive a response this week if possible so we can lodge the overall CEMP to Department of Planning before the long weekend.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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From: Thang Tran <thang.tran@cumberland.nsw.gov.au>
Sent: Friday, March 22, 2024 4:05 PM
To: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Cc: Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Subject: FW: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

Hi Paul,

Council has received the Construction Traffic Management Plan (CTMP) for Condition B1. Council Officers are in the process of reviewing it.

As per Council's adopted Fees and Charges there is an assessment fee of $374 payable to Council for assessment of the CTMP.

Council's Customer Service will forward an invoice to you to pay shortly.

If you have further enquiry, please contact me on 8757 9534.

Regards

CUMBERLAND CITY COUNCIL

THANG TRAN
TRAFFIC AND TRANSPORT ENGINEER

16 Memorial Avenue, PO Box 42 Merrylands NSW 2160
T +61 2 8757 9534
E thang.tran@cumberland.nsw.gov.au
W www.cumberland.nsw.gov.au

From: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Sent: Tuesday, March 12, 2024 5:33 PM
To: Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>
Subject: [EXTERNAL] FW: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Afternoon Sarah,

Earlier this afternoon, I spoke with a representative over the phone at Cumberland City Council and we understand you are managing the request for the **Cumberland City Council Review** of the **CTMP** on our **Lidcombe MSW Project.**

If you require any information from our end, please feel free to reach out. Please note that due to file size, the CTMP is accessible via. the below DropBox Link:

Link to ADCO CTMP & Drivers Code of Conduct: https://www.dropbox.com/scl/fo/gy0n6vl4wixln836uaz9g/h?rlkey=dzkdr89i95gkxx9dlal0bmiwz&dl=0

In the background, we've already prepared our overall CEMP a couple of weeks ago, intended for submission to the Department of Planning.

Our client, Tactical Group & Hale Capital, has conducted a preliminary review, and we are currently incorporating their feedback.

We would greatly appreciate receiving your review, along with any commentary or endorsement, by the end of the week if possible.

Additionally, please refer to the attached document for the request regarding the **Cumberland City Council Review** of the **CNVMP**.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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From: Paul Cassimatis
Sent: Monday, March 4, 2024 12:58 PM
To: council@cumberland.nsw.gov.au
Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Gary Petersen <gpetersen@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Hedieh Tizrou <htizrou@adcoconstruct.com.au>
Subject: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

Dear City of Cumberland Council,

I hope this email finds you well.

Could this email please be directed to the **City of Cumberland Transport / Traffic Department**.

I would like to take this opportunity to introduce myself as one of the Senior Design Managers working for ADCO Constructions on the **Lidcombe - Boorea Street Warehouse & Distribution Centre Project [Approved SSD-36464788].**

I have also copied in our Project Manager (Nicholas Napoli) and our Site Manager (Gary Petersen) whom will be working on this project for your reference.

In line with the below SSDA Consent Condition regarding our Future Development (Lidcombe Multi-Storey Warehouse Project - SSD-36464788), please find attached our **Construction Traffic Management Plan** (prepared for ADCO by ptc. consultants) for Council Consultation - your review and comment.

Link to ADCO CTMP & Drivers Code of Conduct: https://www.dropbox.com/scl/fo/gy0n6vl4wixln836uaz9g/h?rlkey=dzkdr89i95gkxx9dlal0bmiwz&dl=0

Boorea Street Warehouse & Distribution Centre Project

SSDA Reference: SSD-36464788
Relevant Condition: B1

Condition B1:
Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary.
The plan must form part of the CEMP required by condition C2 and must:

a) be prepared by a suitably qualified and experienced person(s);
b) be prepared in consultation with Council;
c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction;
d) include details of:
    (i) heavy vehicle types, routes, access and parking arrangements;
    (ii) the strategies that would be implemented to minimise the number of construction workers who will drive to the site; and
    (iii) any potential impacts to general traffic, cyclists, and pedestrians within the vicinity of the site from construction vehicles during the construction of the development;
e) include a Driver Code of Conduct and Induction Program to:
    (i) minimise the impacts of earthworks and construction on the local and regional road network;
    (ii) minimise conflicts with other road users;
    (iii) minimise road traffic noise; and
    (iv) ensure truck drivers use specified routes;
f) include a program to monitor the effectiveness of these measures; and
g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.

Link to Planning Portal: https://www.planningportal.nsw.gov.au/major-projects/projects/boorea-street-warehouse-distribution-centre

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Should you have any further inquiries or require additional information, please do not hesitate to contact us.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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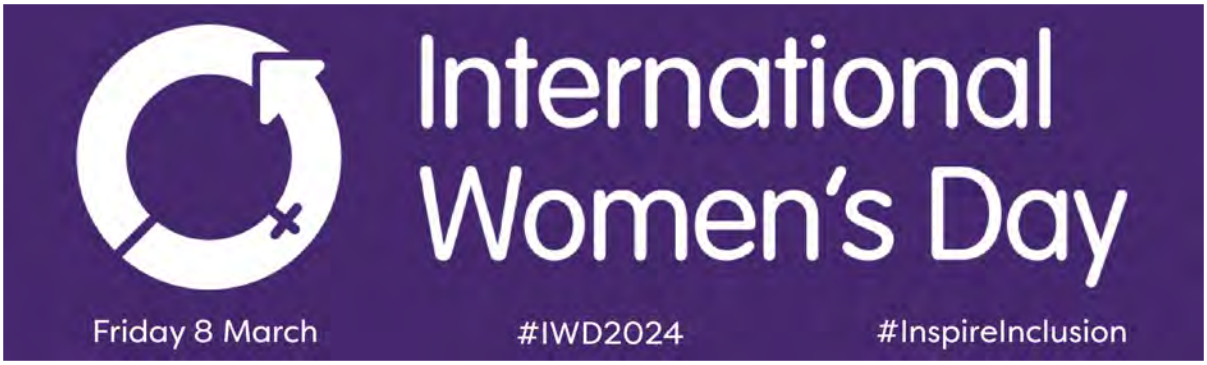

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CUMBERLAND
CITY COUNCIL

Ref: RDA2024/0293

27 March 2024

ADCO Constructions Pty Ltd
Level 2
7-9 West Street
NORTH SYDNEY NSW 2060

Dear Sir/ Madam,

Subject:	**Approval to Construction Traffic Management Plan (CTMP)**
Application No:	RDA2024/0293
Property Address:	42 Boorea Street LIDCOMBE NSW 2141
Determination Date:	27 March 2024

Under Section 138 of the Road Act, 1993, approval is hereby granted to the proposed CTMP subject to the following conditions:

- That all heavy vehicles must follow the truck route as indicated in the CTMP.
- That there will not be any temporary partial road and footpath closures fronting the development site during the construction period. In the event a temporary partial road and footpath closure is required (i.e. stand plant permit, concrete pour permit, utility connection works, driveway & footpath reconstruction works, etc.), then prior to undertaking any closure, the applicant shall submit the Temporary Roadside/lane Closure Application Form to Council for approval.
- That all deliveries such as steel, concrete pump, etc. shall be undertaken on site and not on the road or footway, unless otherwise approved by Council.
- That there will not be any construction materials be placed on the public road reserve without approval from Council.
- That if the site required a 'Works Zone' fronting the development site with 'Works Zone' signs, then a separate application must be submitted and subject to approval from the Cumberland Traffic Committee. It is advised that any such application be received at least 6 weeks in advance.
- That safe pedestrian access is maintained at all times.
- That all trucks shall enter/exit safely with adequate sight distance. Any traffic controllers will require a separate application and shall be submitted to Council for approval. It is advised that any such application be received with adequate notice to allow for Council processing times.

- That any damage to road pavement or footpath caused by construction activities shall be repaired by the applicant in no later than four weeks after the damage.

- That the contractors shall not bag or block any traffic signs in this area without Council or Police approval.

- That there shall be no queuing on public roads by trucks deliveries to the construction site, unless otherwise approved by Council.

- That any traffic or public issues that arise during the undertaking of the works shall be immediately notified to the Police and Council.

Council reserves the right to revoke an approval at any time.

Should you have any enquiries regarding this matter, please contact Thang Tran on 8757 9534 during normal business hours, Monday to Friday and quote reference RDA2024/0293.

Yours faithfully,

Thang Tran
Traffic and Transport Engineer

A-14 Erosion Sediment Control Plans

Costin Roe Consulting (Civil Engineer)

RUSLE CALCULATION CATCHMENT 1:

TOTAL CATCHMENT AREA = 1.75 ha
DISTURBED CATCHMENT AREA = 1.75 ha

A = R x K x LS x P x C

1. 2-yr, 6-hr ARI (S) = 9.10;
2. RAINFALL EROSIVITY FACTOR (R)
   R = 164.74(1.1177)^{S} $S^{0.6444}$ = 1881.76;
3. SOIL ERODIBILITY FACTOR (K) = 0.075;
4. LENGTH/GRADIENT FACTOR (LS) = 0.35;
5. EROSION CONTROL PRACTICE FACTOR (P) = 1.3;
6. COVER FACTOR (C) = 1.0

SOIL LOSS (A) = 64.12m^3/ha/yr
= 112.36m^3/yr

PER BLUE BOOK GUIDELINES SECTION 6.3.2.d, FOR SITES WITH AVERAGE ANNUAL SOIL LOSS (A) < 150m^3/yr, A SEDIMENT RETENTION BASIN MAY BE CONSIDERED UNNECESSARY.

RUSLE CALCULATION CATCHMENT 2:

TOTAL CATCHMENT AREA = 0.169 ha
DISTURBED CATCHMENT AREA = 0.169 ha

A = R x K x LS x P x C

1. 2-yr, 6-hr ARI (S) = 9.10;
2. RAINFALL EROSIVITY FACTOR (R)
   R = 164.74(1.1177)^{S} $S^{0.6444}$ = 1881.76;
3. SOIL ERODIBILITY FACTOR (K) = 0.075;
4. LENGTH/GRADIENT FACTOR (LS) = 0.25;
5. EROSION CONTROL PRACTICE FACTOR (P) = 1.3;
6. COVER FACTOR (C) = 1.0

SOIL LOSS (A) = 45.87m^3/ha/yr
= 7.75m^3/yr

PER BLUE BOOK GUIDELINES SECTION 6.3.2.d, FOR SITES WITH AVERAGE ANNUAL SOIL LOSS (A) < 150m^3/yr, A SEDIMENT RETENTION BASIN MAY BE CONSIDERED UNNECESSARY.

NOTES:

STAGE 1 INCLUDES DEMOLISHING OF BUILDING WITH FLOOR SLAB STILL IN PLACE. BUILDER TO CONFIRM WHETHER THE FLOOR SLAB IS TO BE DEMOLISHED.

DUST CONTROL NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE DUST CONTROL MEASURES ARE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN.
2. THE APPLICATION OF LIQUID BASED DUST SUPPRESSION MEASURES MUST BE SUCH THAT SEDIMENT LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD. (EG USING HAY BALES)
3. DUST GENERATION ASSOCIATED WITH WIND EROSION TO BE CONTROLLED USING WATER TRUCKS, DUST SUPPRESSING FOG, MIST GENERATORS, SEALANT PLACED OVER THE SOIL, SURFACE ROUGHENING OR RE-VEGETATION.
4. THE FOLLOWING ACTIVITIES SHALL BE ADOPTED, IF NECESSARY, TO MANAGE DUST CONTROL ON SITE:
   - LIMITING THE AREA OF SOIL DISTURBANCE AT ANY GIVEN TIME
   - REPLACING TOPSOIL AFTER COMPLETION OF EARTHWORKS.
   - PROGRAMMING WORK TO MINIMISE THE LIFE OF STOCKPILES.
   - TEMPORARILY STABILISING LONG-TERM STOCKPILES.
   - GRAVELLING UNSEALED ACCESS AND HAUL ROADS.
   - MINIMISING TRAFFIC MOVEMENT ON EXPOSED SURFACES.
   - LIMITING VEHICULAR TRAFFIC TO 15km/h.
   - RETAINING EXISTING VEGETATION AS WIND BREAKS.
5. OIL, LANDFILL GAS CONDENSATE OR ANY CONTAMINATED LEACHATE OR STORMWATER IS NOT TO BE USED FOR DUST SUPPRESSION.

EROSION CONTROL NOTES:

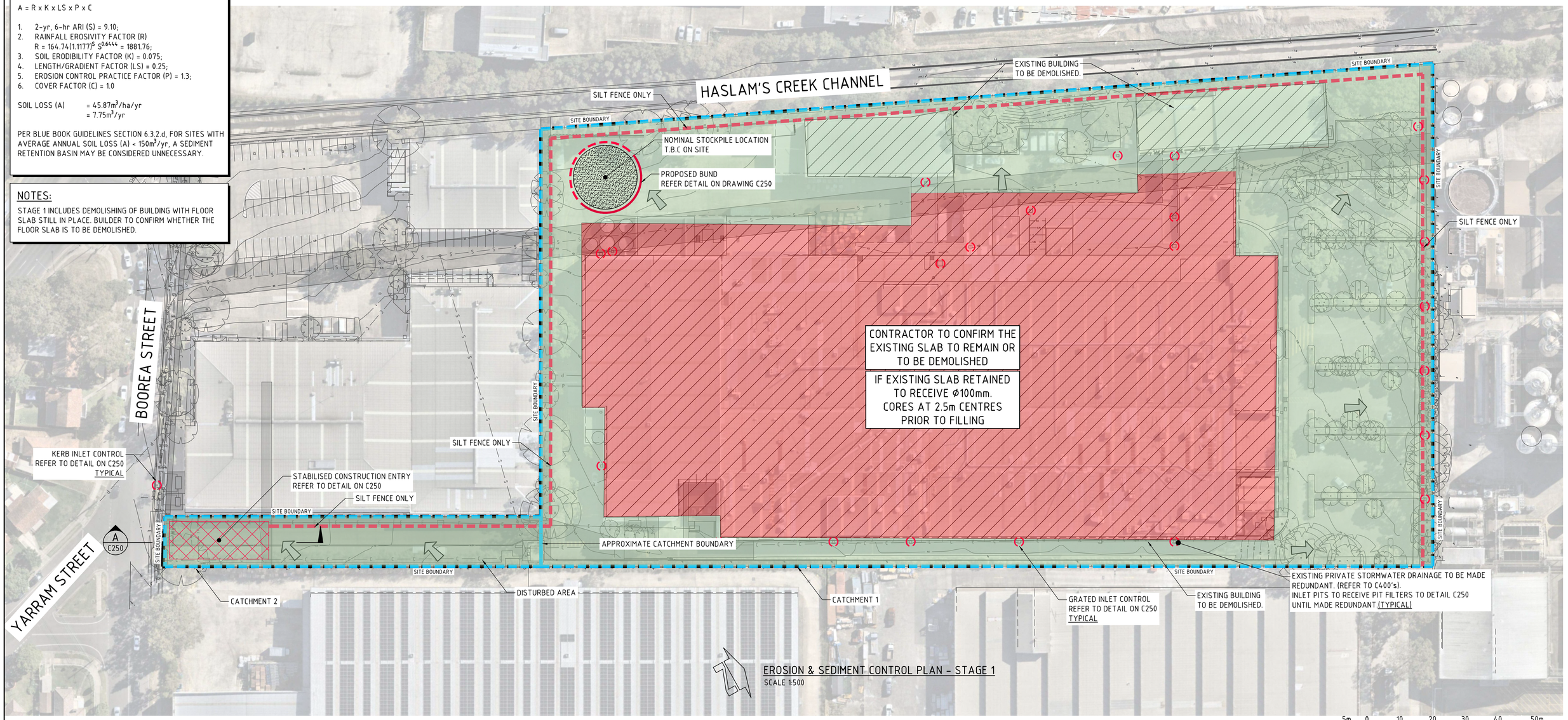
ALL CONTROL WORK INCLUDING DIVERSION BANKS AND CATCH DRAINS, V-DRAINS AND SILT FENCES SHALL BE COMPLETED DIRECTLY FOLLOWING THE COMPLETION OF THE EARTHWORKS.

1. SILT FENCES AND SILT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
2. HAY BALE BARRIERS AND GEOFABRIC FENCES ARE TO BE CONSTRUCTED TO TOE OF BATTER, PRIOR TO COMMENCEMENT OF EARTHWORKS, IMMEDIATELY AFTER CLEARING OF VEGETATION AND BEFORE REMOVAL OF TOP SOIL.
3. ALL TEMPORARY EARTH BERMS, DIVERSION AND SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED AND MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
4. CLEAR WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.
6. ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING, TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE, APPROVED LOCATION.
7. ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD.
8. ALL EARTHWORKS AREAS SHALL BE ROLLED ON A REGULAR BASIS TO SEAL THE EARTHWORKS.
9. ALL FILL AREAS ARE TO BE LEFT WITH A BUND AT THE TOP OF THE SLOPE AT THE END OF EACH DAYS EARTHWORKS. THE HEIGHT OF THE BUND SHALL BE A MINIMUM OF 200mm.
10. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND HYDROMULCHED WITHIN 10 DAYS OF COMPLETION OF FORMATION.
11. AFTER REVEGETATION OF THE SITE IS COMPLETE AND THE SITE IS STABLE IN THE OPINION OF A SUITABLY QUALIFIED PERSON ALL TEMPORARY WORK SUCH AS SILT FENCE, DIVERSION DRAINS ETC SHALL BE REMOVED.
12. ALL TOPSOIL STOCKPILES ARE TO BE SUITABLY COVERED TO THE SATISFACTION OF THE SITE MANAGER TO PREVENT WIND AND WATER EROSION.
13. ANY AREA THAT IS NOT APPROVED BY THE CONTRACT ADMINISTRATOR FOR CLEARING OR DISTURBANCE BY THE CONTRACTOR'S ACTIVITIES SHALL BE CLEARLY MARKED AND SIGN POSTED, FENCED OFF OR OTHERWISE APPROPRIATELY PROTECTED AGAINST ANY SUCH DISTURBANCE.
14. ALL STOCKPILE SITES SHALL BE SITUATED IN AREAS APPROVED FOR SUCH USE BY THE SITE MANAGER. A 6m BUFFER ZONE SHALL EXIST BETWEEN STOCKPILE SITES AND ANY STREAM OR FLOW PATH. ALL STOCKPILES SHALL BE ADEQUATELY PROTECTED FROM EROSION AND CONTAMINATION OF THE SURROUNDING AREA BY USE OF THE MEASURES APPROVED IN THE EROSION AND SEDIMENTATION CONTROL PLAN.
15. ACCESS AND EXIT AREAS SHALL INCLUDE SHAKE-DOWN OR OTHER METHODS APPROVED BY THE SITE MANAGER FOR THE REMOVAL OF SOIL MATERIALS FORM MOTOR VEHICLES.
16. THE CONTRACTOR IS TO ENSURE RUNOFF FROM ALL AREAS WHERE THE NATURAL SURFACE IS DISTURBED BY CONSTRUCTION, INCLUDING ACCESS ROADS, DEPOT AND STOCKPILE SITES, SHALL BE FREE OF POLLUTANTS BEFORE IT IS EITHER DISPERSED TO STABLE AREAS OR DIRECTED TO NATURAL WATERCOURSES.
17. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SLOPES, CROWNS AND DRAINS ON ALL EXCAVATIONS AND EMBANKMENTS TO ENSURE SATISFACTORY DRAINAGE AT ALL TIMES WATER SHALL NOT BE ALLOWED TO POND ON THE WORKS UNLESS SUCH PONDING IS PART OF AN APPROVED ESCP / SWMP.

LEGEND:

PROVIDE 1m RETURNS TO SILT FENCE AT 30m MAX. INTERVALS.
TYPICAL (N.S.O.P.)

- DENOTES SILT FENCE WITH CATCH DRAIN
- DENOTES SILT FENCE ONLY
- DENOTES DIVERSION DRAIN
- DENOTES CATCHMENT BOUNDARY
- DENOTES CONSTRUCTION ENTRY
- EXISTING FLOOR SLAB TO REMAIN
- DISTURBED AREA
- EXTERNAL STRUCTURES DEMOLISHED
- DENOTES OVERLAND FLOW PATH
- DENOTES PIT CONTROL



EROSION & SEDIMENT CONTROL PLAN - STAGE 1
SCALE 1:500

5m 0 10 20 30 40 50m
SCALE 1:500 AT B1 SIZE SHEET

FOR CONSTRUCTION

AMENDMENTS	DATE	ISSUE
ISSUED FOR CONSTRUCTION	10.04.24	0
REVISED AS CLOUDED	09.02.24	B
ISSUED FOR PRELIMINARY ONLY	07.02.24	A

AMENDMENTS DATE ISSUE

ARCHITECT: SBA ARCHITECTS
CLIENT: Hale

PROJECT: PROPOSED INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LDV	LDV	FEB'24	DS	B1	AS SHOWN	C014411.02-C201

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COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING No: CV-DWG-200G-C201
DRAWING TITLE: EROSION & SEDIMENT CONTROL PLAN STAGE 1
COSTIN ROE REFERENCE No: C014411.02-C201
ISSUE: 0

RUSLE CALCULATION CATCHMENT 2:

TOTAL CATCHMENT AREA = 0.169 ha
DISTURBED CATCHMENT AREA = 0.169 ha

A = R x K x LS x P x C

1. 2-yr, 6-hr ARI (S) = 9.10;
2. RAINFALL EROSIVITY FACTOR (R)
   $R = 164.74(1.1177)^S S^{0.6444} = 1881.76$;
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5. EROSION CONTROL PRACTICE FACTOR (P) = 1.3;
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SOIL LOSS (A) = $45.87m^3/ha/yr$
= $7.75m^3/yr$

PER BLUE BOOK GUIDELINES SECTION 6.3.2.d, FOR SITES WITH AVERAGE ANNUAL SOIL LOSS (A) < $150m^3/yr$, A SEDIMENT RETENTION BASIN MAY BE CONSIDERED UNNECESSARY.

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LEGEND:

PROVIDE 1m RETURNS TO SILT FENCE AT 30m MAX. INTERVALS. TYPICAL (N.S.O.P.)

- DENOTES SILT FENCE WITH CATCH DRAIN
- DENOTES SILT FENCE ONLY
- DENOTES DIVERSION DRAIN
- DENOTES CATCHMENT BOUNDARY
- DENOTES CONSTRUCTION ENTRY
- DISTURBED AREA
- PROPOSED SEDIMENT BASIN EXTENT
- DENOTES PIT CONTROL
- DENOTES OVERLAND FLOW PATH

SEDIMENT CONTROL BASIN NOTES:

FOR SEDIMENT & EROSION CONTROL DETAILS REFER TO DRAWING Co14411.01-C250.

SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER-THE BLUE BOOK'.

SEDIMENT BASIN 1:

CATCHMENT AREA	= 3.91ha
REQUIRED BASIN VOLUME	= $850m^3$
BASE DIMENSION (LxB)	= 28.0m x 14.0m
TOP DIMENSION (LxB)	= 37.0m x 23.0m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m
PROVIDED BASIN VOLUME	= $910m^3$

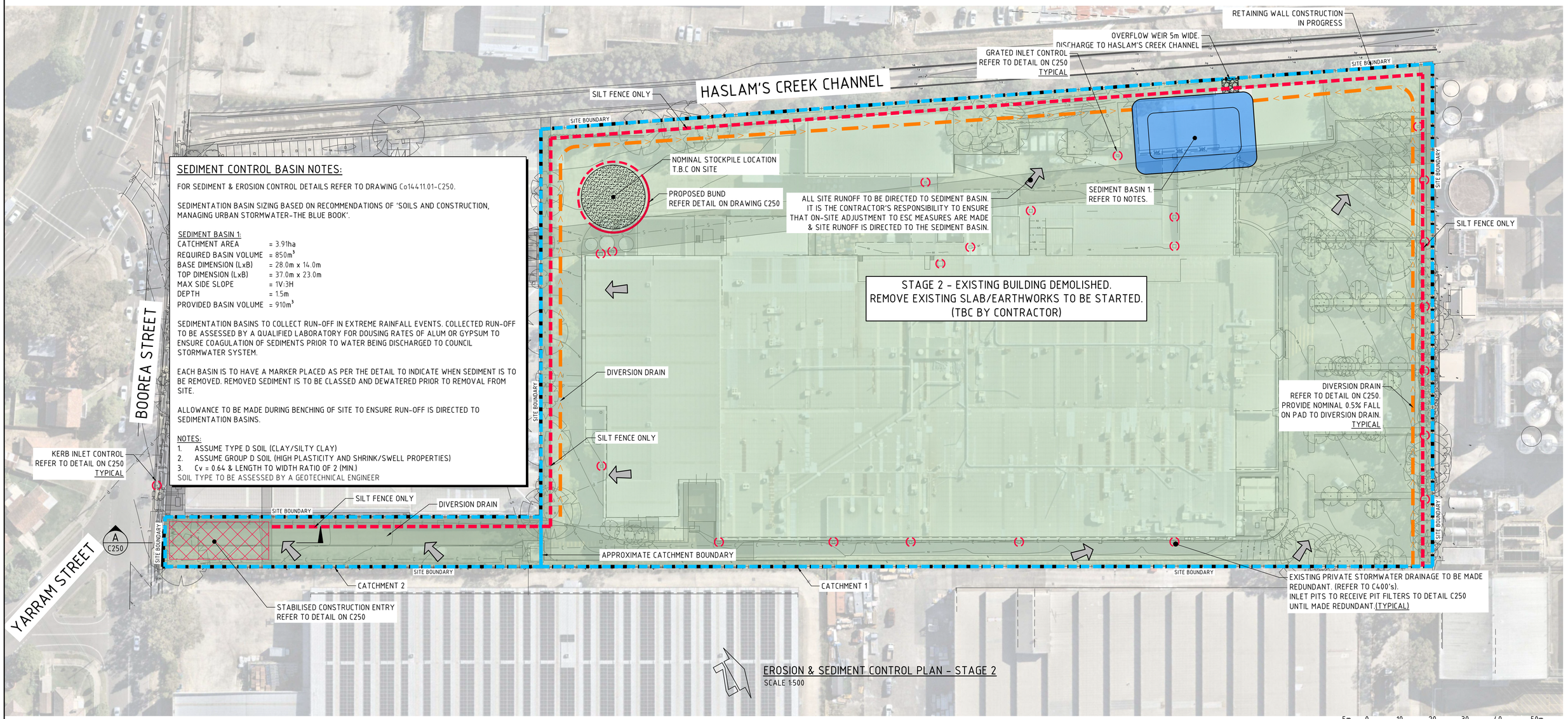
SEDIMENTATION BASINS TO COLLECT RUN-OFF IN EXTREME RAINFALL EVENTS. COLLECTED RUN-OFF TO BE ASSESSED BY A QUALIFIED LABORATORY FOR DOUSING RATES OF ALUM OR GYPSUM TO ENSURE COAGULATION OF SEDIMENTS PRIOR TO WATER BEING DISCHARGED TO COUNCIL STORMWATER SYSTEM.

EACH BASIN IS TO HAVE A MARKER PLACED AS PER THE DETAIL TO INDICATE WHEN SEDIMENT IS TO BE REMOVED. REMOVED SEDIMENT IS TO BE CLASSED AND DEWATERED PRIOR TO REMOVAL FROM SITE.

ALLOWANCE TO BE MADE DURING BENCHING OF SITE TO ENSURE RUN-OFF IS DIRECTED TO SEDIMENTATION BASINS.

NOTES:
1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)
3. Cv = 0.64 & LENGTH TO WIDTH RATIO OF 2 (MIN.)

SOIL TYPE TO BE ASSESSED BY A GEOTECHNICAL ENGINEER



EROSION & SEDIMENT CONTROL PLAN - STAGE 2
SCALE 1:500

5m 0 10 20 30 40 50m
SCALE 1:500 AT B1 SIZE SHEET

FOR CONSTRUCTION

AMENDMENTS	DATE	ISSUE
ISSUED FOR CONSTRUCTION	10.04.24	0
REVISED AS CLOUDED	09.02.24	B
ISSUED FOR PRELIMINARY ONLY	07.02.24	A

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ARCHITECT: SBA ARCHITECTS
CLIENT: Hale

PROJECT: PROPOSED INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LDV	LDV	FEB'24	DS	B1	AS SHOWN	C014411.02-C202

CONSULT AUSTRALIA

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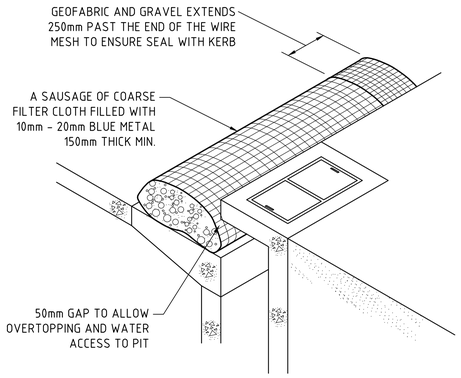
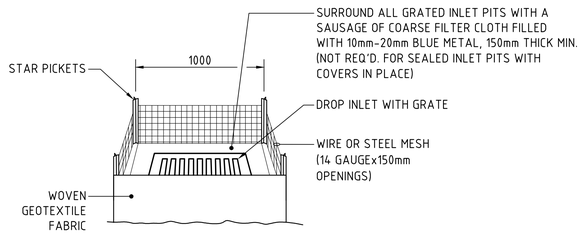
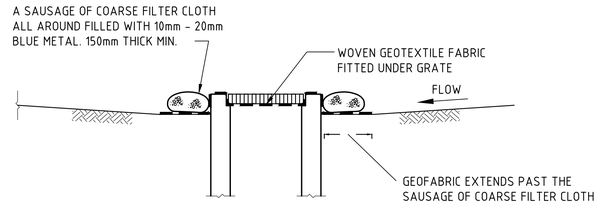
DRAWING No: CV-DWG-200G-C202
DRAWING TITLE: EROSION & SEDIMENT CONTROL PLAN STAGE 2
COSTIN ROE REFERENCE No: C014411.02-C202
ISSUE: 0



KERB INLET CONTROL
N.T.S



GRATED INLET PIT FILTER DETAIL
OPTION 1
N.T.S



GRATED INLET PIT FILTER DETAIL
OPTION 2
N.T.S

NOTE :
ADOPT ABOVE DETAILS AROUND ALL PITS WITHIN AREA ENCOMPASSED BY SILT FENCE & TO PITS ON THE ROAD ADJACENT TO SITE BOUNDARY.

NOTES:

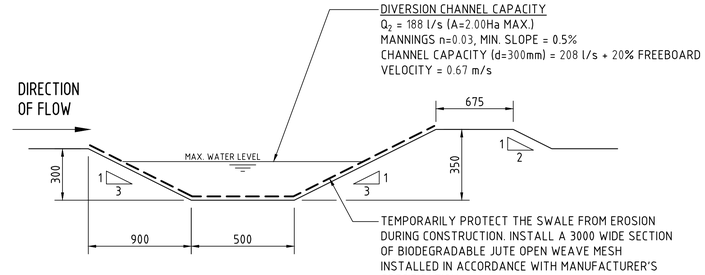
ALL EROSION & SEDIMENT CONTROL MEASURES TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER.

MINIMISE DISTURBED AREAS.

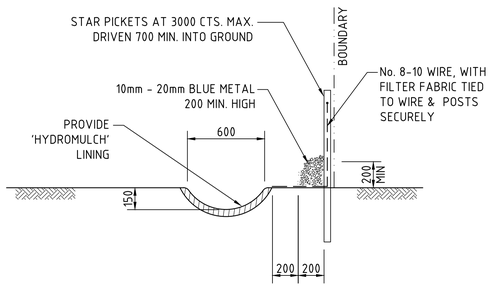
ROADS & FOOTPATHS TO BE SWEPT DAILY.

1.2m TURF TO BE PLACED BEHIND KERBS.

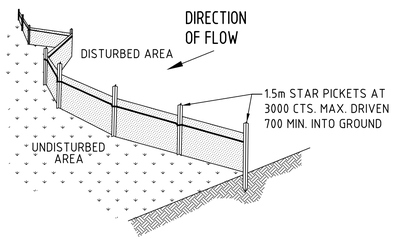
DUST MINIMISATION CONTROL BY WATERING TO BE IMPLEMENTED BY SITE MANAGER AS REQUIRED OR AS DIRECTED BY THE EPA.



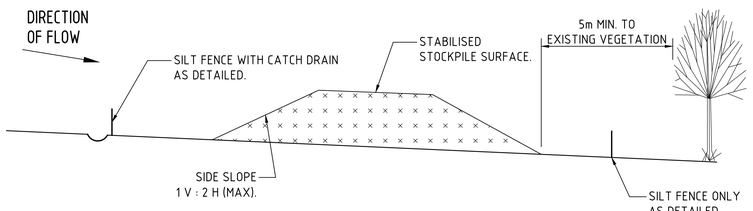
DIVERSION DRAIN SECTION
SCALE 1:20



TYPICAL OPEN DRAIN & SILT FENCE
SCALE 1:20



TYPICAL SILT FENCE DETAIL
N.T.S
NOTE: PROVIDE 1m RETURNS AT 30m INTERVALS.
TYPICAL



TYPICAL STOCKPILE DETAIL
N.T.S

STOCKPILE NOTES

1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1 V: 2 H MAX.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE STOCKPILES ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE USING WOOD CHIP MULCH - 16 TONNE/Ha.
5. CONSTRUCT SILT FENCE WITH CATCH DRAIN ON UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES & SILT FENCE ONLY 1 TO 2m DOWNSLOPE AS SHOWN.

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT B1 SIZE SHEET

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ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
PROPOSED INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
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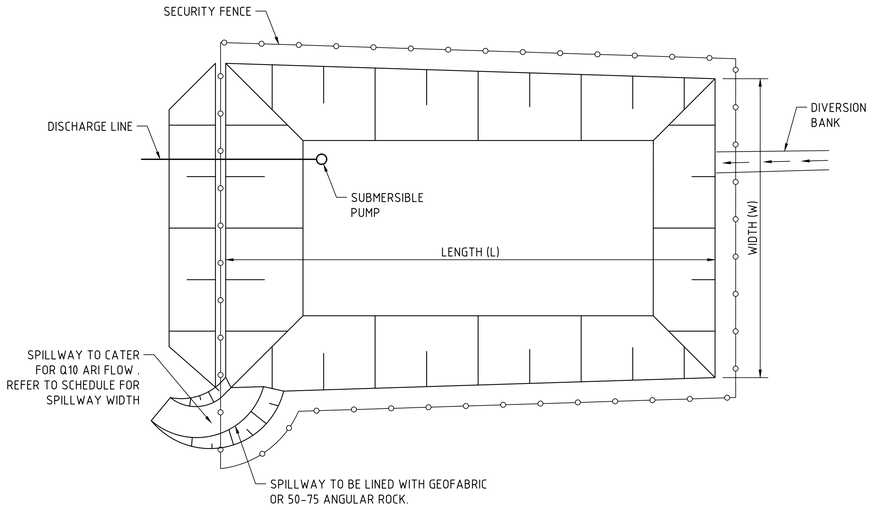
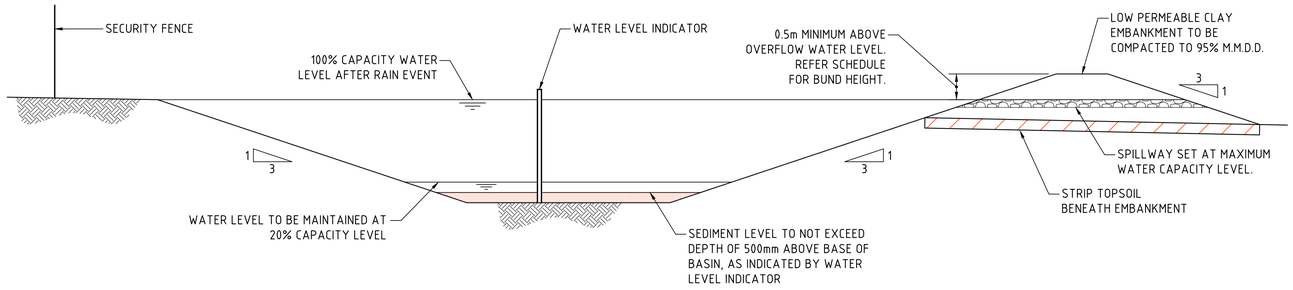
DRAWING TITLE EROSION & SEDIMENT CONTROL DETAILS SHEET 1
COSTIN ROE REFERENCE No C014411.02-C250
ISSUE 0



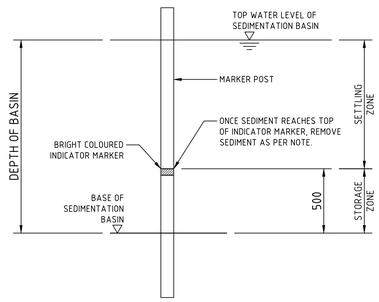
TYPICAL SEDIMENT CONTROL POND PLAN

SCALE 1:250



TYPICAL SEDIMENT CONTROL BASIN SECTION

SCALE 1:50



SEDIMENT STORAGE MARKER

SCALE 1:20

SPILLWAY DETAIL & SCHEDULE					
CATCHMENT (Ha)	FLOW (m^3/s)	WIDTH (mm)	FLOW DEPTH (mm)	ROCK SIZE (mm)	BUND HEIGHT ABOVE SPILLWAY (mm)
0.20	0.14	1000	200	-	600
0.5	0.2	2000	200	-	600
1	0.3	2000	200	-	700
2	0.6	4000	200	-	700
5	1.4	5000	300	200	800
10	2.8	8000	350	200	850
20	5.5	14000	400	250	900
40	11.0	20000	500	250	1000

200mm 0 500 1000 1500 2000mm

SCALE 1:20 AT B1 SIZE SHEET

500mm 0 1 2 3 4 5m

SCALE 1:50 AT B1 SIZE SHEET

2m 0 5 10 15 20 25m

SCALE 1:250 AT B1 SIZE SHEET

FOR CONSTRUCTION

AMENDMENTS	DATE	ISSUE
ISSUED FOR CONSTRUCTION	10.04.23	0
ISSUED FOR PRELIMINARY ONLY	07.02.24	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT
PROPOSED INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LDV	LDV	FEB'24	DS	B1	AS SHOWN	C014411.02-C251

CONSULT AUSTRALIA

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DRAWING No: CV-DWG-200G-C251

DRAWING TITLE: EROSION & SEDIMENT CONTROL DETAILS SHEET 2

COSTIN ROE REFERENCE No: C014411.02-C251

ISSUE: 0

A-15 Construction Flood Emergency Response Plan

Costin Roe Consulting (Civil Engineer)

COSTIN ROE CONSULTING

CIVIL & STRUCTURAL ENGINEERS

FLOOD MANAGEMENT PLAN
INCORPORATING FLOOD EMERGENCY

PROPOSED INDUSTRIAL FACILITY
42 BOOREA STREET,
LIDCOMBE, NSW

Prepared for:

Hale Capital Partners Pty Ltd
Suite 903, 25 Martin Place
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Rev: B

DOCUMENT VERIFICATION		
Project Title	42 Boorea Street, Lidcombe – Industrial Facility	
Document Title	Flood Management Plan Incorporating Flood Emergency Response Plan	
Project No.	Co14411.02	
Description	Flood Management Plan for Proposed Industrial Facility	
Client Contact	Hale Property Services – Ms Alana Garrick	
	Name	Signature
Prepared by	Ali Haghjoo	
Checked by	Lourens de Villiers	
Issued by	Daniel Soliman	
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Date	Revision	Issued to	No. Copies
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APPENDICES

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APPENDIX D	Cumberland LGA Flood Emergency Sub Plan
APPENDIX E	Flood Evacuation Induction & Sign-off

1 INTRODUCTION

Costin Roe Consulting Pty Ltd has been commissioned by Hale Capital Development Management Pty Ltd (Hale) to prepare this *Flood Management Plan (FMP)* for the industrial development located at 42 Boorea Street, Lidcombe, NSW.

This *Flood Management Plan (FMP)* addressed the flooding present on the proposed development site and incorporates a *Flood Emergency Response Plan (FERP)* for the 42 Boorea Street, Lidcombe, NSW.

This plan details the site responses to flooding including predicted flood levels, flood warnings and flood notifications, evacuation and refuge protocols and awareness training for employees and contractors.

The requirements outlined in this report are consistent with the provisions of the *NSW Flood Risk Management Manual (2023)*.

The subject area of this FMP/FERP comprises emergency responses for the construction and operational phases of the development.

This plan addresses the requirements of the Department of Planning, Industry and Environment Development Approval SSD-36464788 dated 12 December 2023, as included in Table 1 below.

Table 1.

SSD-48411467	CC Condition	How It Is Addressed
B18	**Flood Management** Prior to the commencement of construction of the development, the Applicant must prepare a Construction Flood Emergency Response Plan (CFERP) to the satisfaction of the Planning Secretary. The CFERP must form part of the CEMP required by condition C2 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) be prepared in consultation with the NSW State Emergency Service; (c) address the provisions of the Floodplain Development Manual (2023) and associated guidance in the Department's 'Flood risk management toolkit'; and (d) include details of: (i) the flood emergency responses for construction of the development; (ii) predicted flood levels; (iii) flood warning time, flood notification, signs and depth indicators;	Refer to this report for the Flood Emergency Response Plan. (c) refer to **Section 3** of this report for guidelines adopted for the FERP. i) refer to **Section 7** for the flood emergency responses. ii) refer to **Section 4** for a discussion on flood behaviour. iii) Refer to **Section 6 & Section 7** for Flood

SSD-48411467	CC Condition	How It Is Addressed
		Safety, evacuation and response
	(iv) assembly points and evacuation routes;	iv) Refer to **Section 6 & Section 7** for Flood Safety, evacuation and response
	(v) evacuation and refuge protocols; and	v) Refer to **Section 6** for Flood Safety, evacuation and response
	(vi) awareness training for employees and contractors.	vi) refer to **Section 6** of this report for the flood education, awareness and preparedness program.
B20	Prior to the commencement of operation of the development, the Applicant must update the CFERP for the purposes of operation of the development in an Operational Flood Emergency Response Plan (OFERP) to the satisfaction of the Planning Secretary. The OFERP must:	Refer to this report for the Flood Emergency Response Plan.
	(a) be prepared by a suitably qualified and experienced person(s);	
	(b) be prepared in consultation with the NSW State Emergency Services;	
	(c) address the provisions of the Floodplain Development Manual (2023) and associated guidance in the Department's 'Flood risk management toolkit'; and	(c) refer to **Section 3** of this report for guidelines adopted for the FERP.
	(d) include details of:	
	(i) the flood emergency responses for operation of the development;	i) refer to **Section 7** for the flood emergency responses.
	(ii) predicted flood levels;	ii) refer to **Section 4** for a discussion on flood behaviour.
	(iii) flood warning time, flood notification, signs and depth indicators;	iii) Refer to **Section 6 & Section 7** for Flood Safety, evacuation and response.
	(iv) assembly points and evacuation routes;	iv) Refer to **Section 6 & Section 7** for Flood Safety, evacuation and response.

SSD-48411467	CC Condition	How It Is Addressed
	(v) evacuation and refuge protocols; and	v) Refer to **Section 6** for Flood Safety, evacuation and response.
	(vi) awareness training for employees and contractors.	vi) refer to **Section 6** of this report for the flood education, awareness and preparedness program.

2 DEVELOPMENT SITE

2.1 Site Description

The proposed development is located at 42 Boorea Street, Lidcombe, as Lot 1/DP740385, in the suburb of Lidcombe, as shown in **Figure 2.1**. The development site is a battle-axe shape, with a driveway entry on the eastern side of the property adjacent to no. 44 Boorea Street. The existing facility contains a longstanding logistics development, with associated warehouse building and associated loading docks and car park.

Figure 2.1 - Site Location and Aerial Imagery [42 Boorea Street, Lidcombe, NSW] (Source: Nearmap March 2022)

2.2 Topography & Description

The northern portion of the site generally grades down from east to the north-western corner of the site with the southern portion sloping from east to the south-western corner of the site. The highest level is RL 12.35m AHD along the north-eastern boundary. The large main building's lowest floor level is shown as RL 9.75m AHD with the most north-western building's floor level being RL 7.92m AHD (lowest floor level on site). The lowest level on the overall site is RL 4.28m AHD at the north-

west boundary of the site. The level of the access road's frontage at Boorea Street is RL 9.03m AHD.

To the north of the site is Toohey's Brewery site, east of the site is two warehouse sites and opposite these across Nyrang Street are residential dwellings, to the south is 44 Boorea Street which accommodates two warehouse buildings as well as the access to the site from Boorea Street, across which are more residential dwellings, and to the west of the site is Haslams Creek concrete lined channel with more industrial developments further west of the creek.

2.3 Proposed Development Description

The proposed development is for a two-storey warehouse and distribution centre comprising 28,962 m2 GFA including ancillary office space, landscaping, bicycle, and car parking, on a 4.1 Ha parcel of land.

A summary of the proposed works will include:

- Demolition of the existing structures on site & removal of the debris
- Earthworks involving cut and fill works;
- Site preparation works and servicing;
- Construction of retaining walls, both in cut and in fill;
- Building construction;
- External hardstand construction, parking and access road construction and landscaping;
- Construction of stormwater management infrastructure;

The site layout prepared by SBA Architects has been included in **Figure 2.4 & Figure 2.5**.

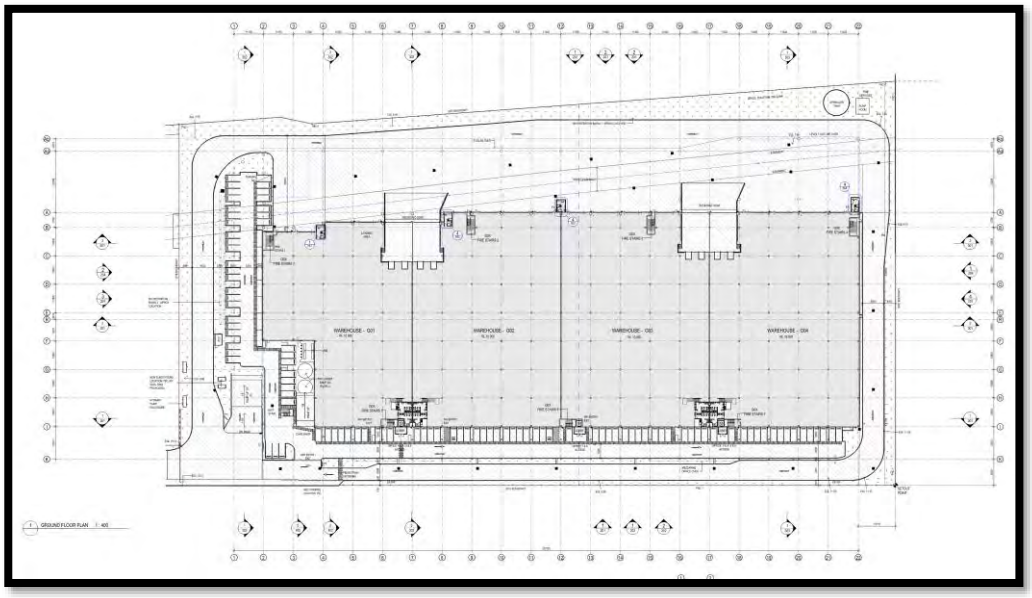


Figure 2.4 - Proposed Development (Ground Level)

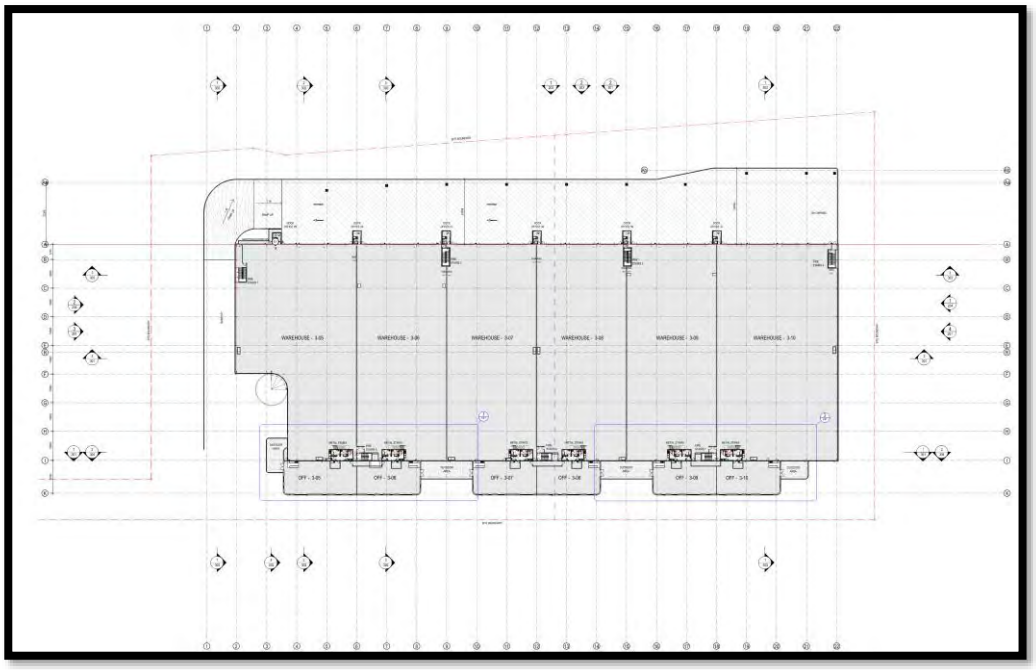
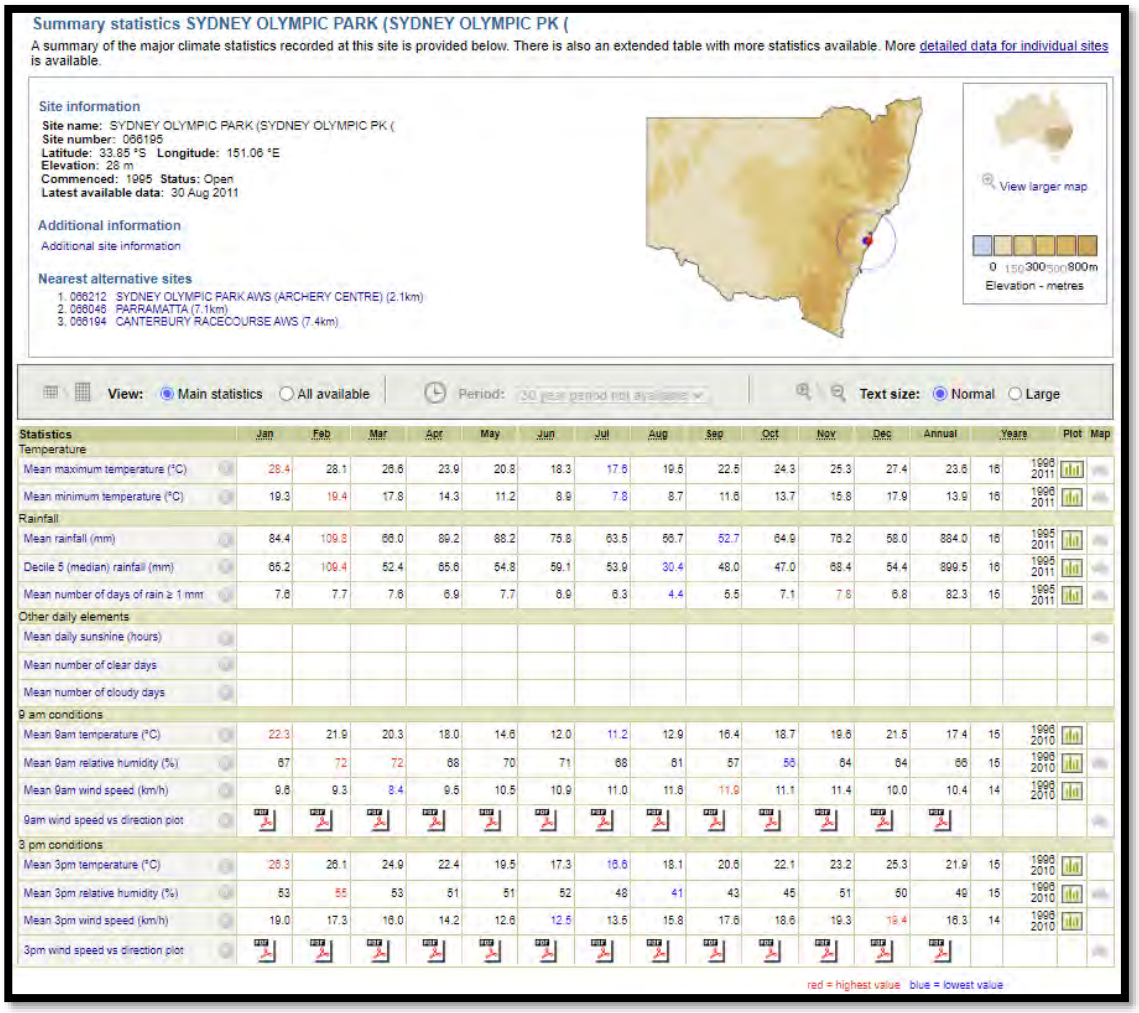


Figure 2.5 - Proposed Development (Level 1) – Concept Layout Plan

2.4 Climate and Meteorology

The Lidcombe area experiences relatively mild temperatures and moderate rainfall, with a mean annual rainfall of about 884mm-1087mm, based on records from two weather stations; Sydney Olympic Park Weather Station (Station 066195 since 1995 up to 2011) and Sydney Olympic Park AWS - Archery Centre (Station 066212 since 2011 till present date). These weather stations are approximately 5-6km to the north-east of the development site.

Figure 2.6 – Sydney Area Weather Observation Stations (WOS) (Nearest WOS to 42 Boorea Street, Lidcombe is Sydney Olympic Park WOS. Ref: http://www.bom.gov.au/nsw/observations/sydneymap.shtml)



Summary statistics SYDNEY OLYMPIC PARK (SYDNEY OLYMPIC PK (

A summary of the major climate statistics recorded at this site is provided below. There is also an extended table with more statistics available. More detailed data for individual sites is available.

Site information

Site name: SYDNEY OLYMPIC PARK (SYDNEY OLYMPIC PK (
Site number: 066195
Latitude: 33.85 °S **Longitude:** 151.06 °E
Elevation: 28 m
Commenced: 1995 **Status:** Open
Latest available data: 30 Aug 2011

Additional information

Additional site information

Nearest alternative sites

1. 066212 SYDNEY OLYMPIC PARK AWS (ARCHERY CENTRE) (2.1km)
2. 066046 PARRAMATTA (7.1km)
3. 066194 CANTERBURY RACECOURSE AWS (7.4km)

View larger map

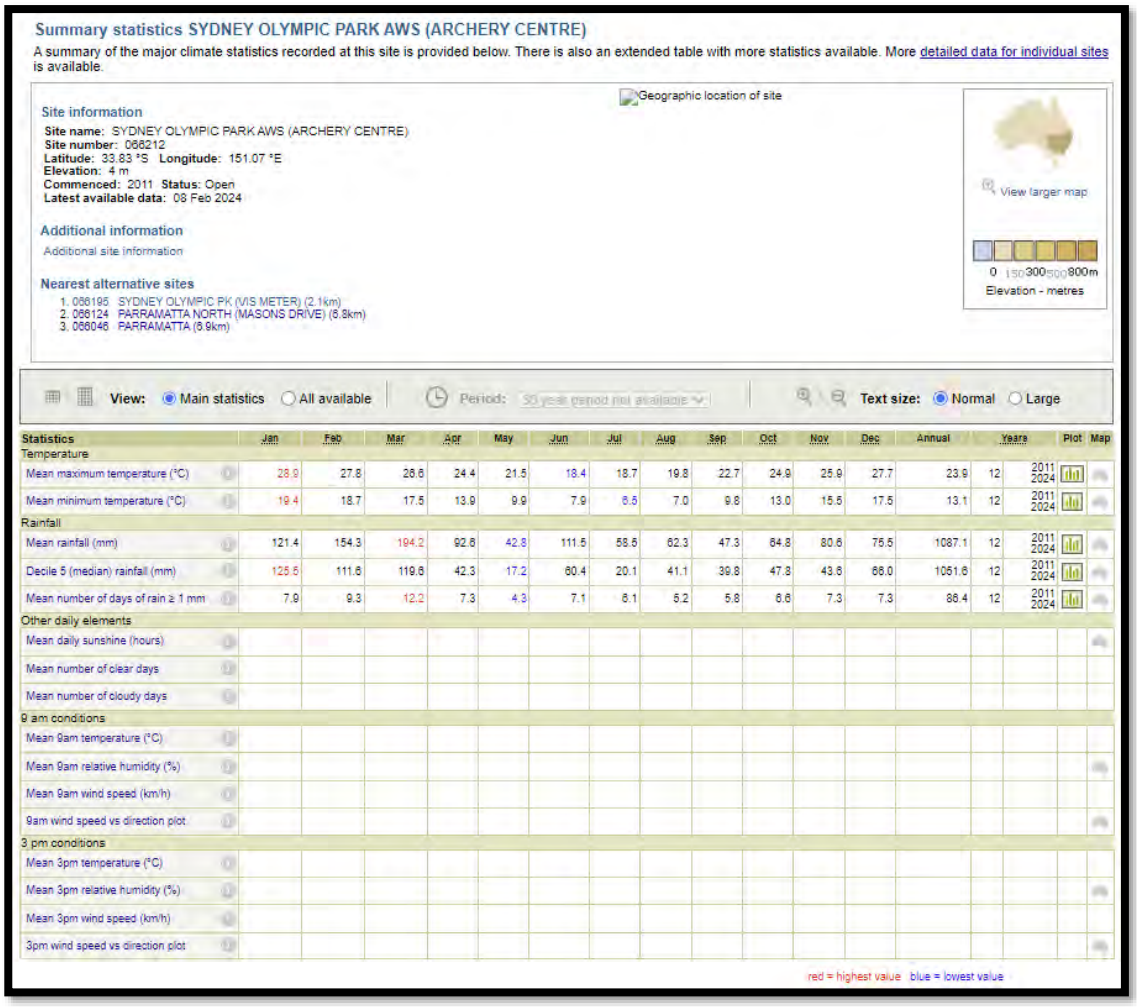
0 150 300 500 800m
Elevation - metres

View: Main statistics / All available | Period: 30 year period not available | Text size: Normal / Large

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years		Plot	Map
Temperature																	
Mean maximum temperature (°C)	28.4	28.1	26.6	23.9	20.8	18.3	17.6	19.6	22.5	24.3	25.3	27.4	23.6	16	1996 2011		
Mean minimum temperature (°C)	19.3	19.4	17.8	14.3	11.2	8.9	7.8	8.7	11.6	13.7	15.8	17.9	13.9	16	1996 2011		
Rainfall																	
Mean rainfall (mm)	84.4	109.8	66.0	89.2	88.2	75.8	63.5	56.7	52.7	64.9	76.2	58.0	884.0	16	1995 2011		
Decile 5 (median) rainfall (mm)	65.2	109.4	52.4	65.6	54.8	59.1	53.9	30.4	48.0	47.0	68.4	54.4	899.5	16	1995 2011		
Mean number of days of rain ≥ 1 mm	7.6	7.7	7.6	6.9	7.7	8.9	8.3	4.4	6.5	7.1	7.6	6.8	82.3	15	1995 2011		
Other daily elements																	
Mean daily sunshine (hours)																	
Mean number of clear days																	
Mean number of cloudy days																	
9 am conditions																	
Mean 9am temperature (°C)	22.3	21.9	20.3	18.0	14.6	12.0	11.2	12.9	16.4	18.7	19.6	21.5	17.4	15	1998 2010		
Mean 9am relative humidity (%)	67	72	72	68	70	71	68	61	57	55	64	64	66	15	1998 2010		
Mean 9am wind speed (km/h)	9.6	9.3	8.4	9.5	10.5	10.9	11.0	11.6	11.9	11.1	11.4	10.0	10.4	14	1998 2010		
9am wind speed vs direction plot																	
3 pm conditions																	
Mean 3pm temperature (°C)	26.3	26.1	24.9	22.4	19.5	17.3	16.6	18.1	20.6	22.1	23.2	25.3	21.9	15	1998 2010		
Mean 3pm relative humidity (%)	53	55	53	51	51	52	48	41	43	45	51	50	49	15	1998 2010		
Mean 3pm wind speed (km/h)	19.0	17.3	16.0	14.2	12.6	12.5	13.5	15.8	17.6	18.6	19.3	19.4	16.3	14	1998 2010		
3pm wind speed vs direction plot																	

red = highest value blue = lowest value

Figure 2.6 - Summary statistics for SYDNEY OLYMPIC PARK WOS (Reference: http://www.bom.gov.au/climate/averages/tables/cw_066195.shtml)



Summary statistics SYDNEY OLYMPIC PARK AWS (ARCHERY CENTRE)

A summary of the major climate statistics recorded at this site is provided below. There is also an extended table with more statistics available. More detailed data for individual sites is available.

Geographic location of site

View larger map

0 150 300 500 800m
Elevation - metres

Site information

Site name: SYDNEY OLYMPIC PARK AWS (ARCHERY CENTRE)
Site number: 066212
Latitude: 33.83 °S **Longitude:** 151.07 °E
Elevation: 4 m
Commenced: 2011 **Status:** Open
Latest available data: 08 Feb 2024

Additional information

Additional site information

Nearest alternative sites

1. 066195 SYDNEY OLYMPIC PK (VIS METER) (2.1km)
2. 066124 PARRAMATTA NORTH (MASONS DRIVE) (6.8km)
3. 066046 PARRAMATTA (9.9km)

View: Main statistics / All available | Period: 30 year period not available | Text size: Normal / Large

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years		Plot	Map
Temperature																	
Mean maximum temperature (°C)	28.9	27.8	26.6	24.4	21.5	18.4	18.7	19.8	22.7	24.9	25.9	27.7	23.9	12	2011 2024		
Mean minimum temperature (°C)	19.4	18.7	17.5	13.9	9.9	7.9	6.5	7.0	9.8	13.0	15.5	17.5	13.1	12	2011 2024		
Rainfall																	
Mean rainfall (mm)	121.4	154.3	194.2	92.6	42.8	111.5	58.5	62.3	47.3	64.8	80.6	75.5	1087.1	12	2011 2024		
Decile 5 (median) rainfall (mm)	125.5	111.6	119.6	42.3	17.2	60.4	20.1	41.1	39.8	47.8	43.6	66.0	1051.6	12	2011 2024		
Mean number of days of rain ≥ 1 mm	7.9	9.3	12.2	7.3	4.3	7.1	6.1	5.2	5.8	6.6	7.3	7.3	86.4	12	2011 2024		
Other daily elements																	
Mean daily sunshine (hours)																	
Mean number of clear days																	
Mean number of cloudy days																	
9 am conditions																	
Mean 9am temperature (°C)																	
Mean 9am relative humidity (%)																	
Mean 9am wind speed (km/h)																	
9am wind speed vs direction plot																	
3 pm conditions																	
Mean 3pm temperature (°C)																	
Mean 3pm relative humidity (%)																	
Mean 3pm wind speed (km/h)																	
3pm wind speed vs direction plot																	

red = highest value blue = lowest value

Figure 2.7 - Summary statistics for SYDNEY OLYMPIC PARK AWS (ARCHERY CENTRE) (Reference: http://www.bom.gov.au/climate/averages/tables/cw_066212.shtml)

Typically, the wettest months (mean rainfall) is February/March, and driest usually September.

Based on the weather station at the archer centre's results, the annual mean minimum temperature is 13.1°C and the mean maximum temperature is 23.9°C. The hottest month is usually January (mean maximum of 28.9°C) and the coldest month is usually July (mean minimum of 6.5°C).

Climate statistics and average annual rainfall data and rainfall patterns relevant to this site (as sourced from Australian Bureau of Meteorology (BOM)) are included for reference in **Appendix B** of this **FMP**.

3 GENERAL REQUIREMENTS

3.1 General Requirements Introduction

This FMP has been prepared with the purpose of providing an understanding of flood behaviour to the facility owners, management, and contractors during operation and construction of the development.

This document has been completed with consideration to the following (**Referenced Documents** – Development Owners and Management need to ensure latest revisions of referenced documents is consulted in between periodic review of FERP):

- Flood Risk Management Manual (2023);
- Cumberland Council Flood Risk Management Policy (Nov 2021);
- Cumberland Council Stormwater and Flood Maps 1 to 8 (October 2021);
- Part G4 of the Cumberland Council DCP 2021;
- Cumberland Council Flood Letters (EC2021/0528);
- NSW Government (2023). Flood Impact and Risk Assessment. Flood Risk management guideline LU01;
- Provision and Requirements for Flood Warning in New South Wales – SES (Nov 2019);
- Cumberland LGA Flood Emergency Sub-Plan – SES (Nov 2021)
- Bureau of Meteorology (2013). Service Level Specification for Flood Forecasting and Warning Services for New South Wales – Version 2.0;
- Costin Roe Consulting (2023), Civil Engineering Report (Co14411.01-03.rpt)

The following sections of this FMP provide confirmation of roles and responsibilities, statutory requirements, measures to monitor and report on impacts and performance of the measures implemented, contingency planning and protocols for review and improvement.

3.2 Roles and Responsibilities

3.2.1. The builder, during construction, and the warehouse owners/management, during operations, are the key persons responsible for the implementation of this FMP and have the responsibility action measures if there is potential for a safety or environmental incident to occur.

3.2.2. The key roles and responsibilities for the responsible personnel in relation to flood risk management are outlined below in **Table 3.1**.

Table 3.1 Roles and Responsibilities

Role	Responsibilities
Development Owners and Management	Provide for training in stormwater management for personnel directly involved with the implementation of this plan, as required. Identify and allocate Project resources to implement the requirements of this plan. Oversee the implementation and maintenance of this plan.

Role	Responsibilities
	Ensure all measures are performing adequately throughout the operation of the centre in perpetuity.
Construction Contractor's EM	Ensure maintenance and monitoring of the stormwater management measures are undertaken in accordance with **Section 7.**
Construction Contractors	Ensure flood behaviour local to the development is understood. Ensure personnel are educated in the overall **FERP**.

3.3 General FMP/FERP Requirements

3.3.1. This document and associated drawings are subject to further periodic review throughout the operational period to ensure the requirements and measures set out in this **FMP/FERP** are fit for purpose and allow for any changes which might occur not envisaged during the initial preparation of the **FMP/FERP**.

3.3.2. All flood management and response measures will conform to the standards and information contained in:

i. This **FMP/FERP**;
ii. Conditions of Consent;
iii. The latest version of the SES Cumberland LGA's flood emergency sub-plans;
iv. The latest version of the SES Provision and Requirements for Flood Warning in NSW;
v. The latest version of Cumberland City Council's Flood Risk Management Policy;

3.4 Review and Improvement

During operation, effectiveness of the flood detention basin & flood emergency response management measures will be confirmed through regular review of the **FERP**. It is recommended that this **FERP** be reviewed every 3 to 5 years once operations commence. Further additional reviews are to be undertaken following major flood event to confirm real life conditions against baseline conditions and make any necessary adjustments.

Adjustments as required will be made based on confirmed site conditions and effectiveness of the implemented measures. These will need to be made in conjunction with a suitably qualified engineer, or other professional, who specialises in stormwater management and flood management.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure. Construction will be undertaken in accordance with the most recent, approved version of this **FMP/FERP**.

4 FLOOD BEHAVIOUR

4.1 Flood Behaviour Introduction

The site is located to the north of Boorea Street. The site access point is located approximately 125m East of the Haslam Creek and Haslam Creek Culverts at their crossing of the Olympic Drive and Boorea Street intersection.

The flood behaviour discussion will inform the users of the site of the potential risks and time associated with inundation of Boorea Street due to flood waters.

This information informs access in- and out of the site during periods of inundation and how this access can be managed within the risk-based framework included in the NSW Flood Risk Manual – The Policy and manual for the management of flood liable land (DPE 2023).

Figure 4.1 Site location and features along access to site

The level of Boorea Street at the site access point is noted to be approximately 2m higher than the level of Boorea Street at the Haslam Creek culverts. A direct, unobstructed, line of sight is available for persons leaving the subject property to the Haslam Creek culverts.

The Haslam Creek culverts are noted to be a triple cell 2.6m x 1.9m box culverts.

The in-ground street drainage system design ARI (per Council and TfNSW design requirements) is the 1:10 ARI (10% AEP), with allowance for overland flow to the 1:100 ARI (1% AEP).

A TUFLOW hydrodynamic flood model has been completed and the pre and post development flood events assessed for flooding as a result of a 1% AEP rainfall event within the catchment.

The assessment of the 1% AEP event confirms that Haslem's Creek Channel along the north-western side of the proposed estate development is unaffected by the proposed development. There is negligible effect on flood water local to the development. The TUFLOW Modelling completed by Costin Roe Consulting confirms there is no affectation of upstream, downstream or adjoining properties.

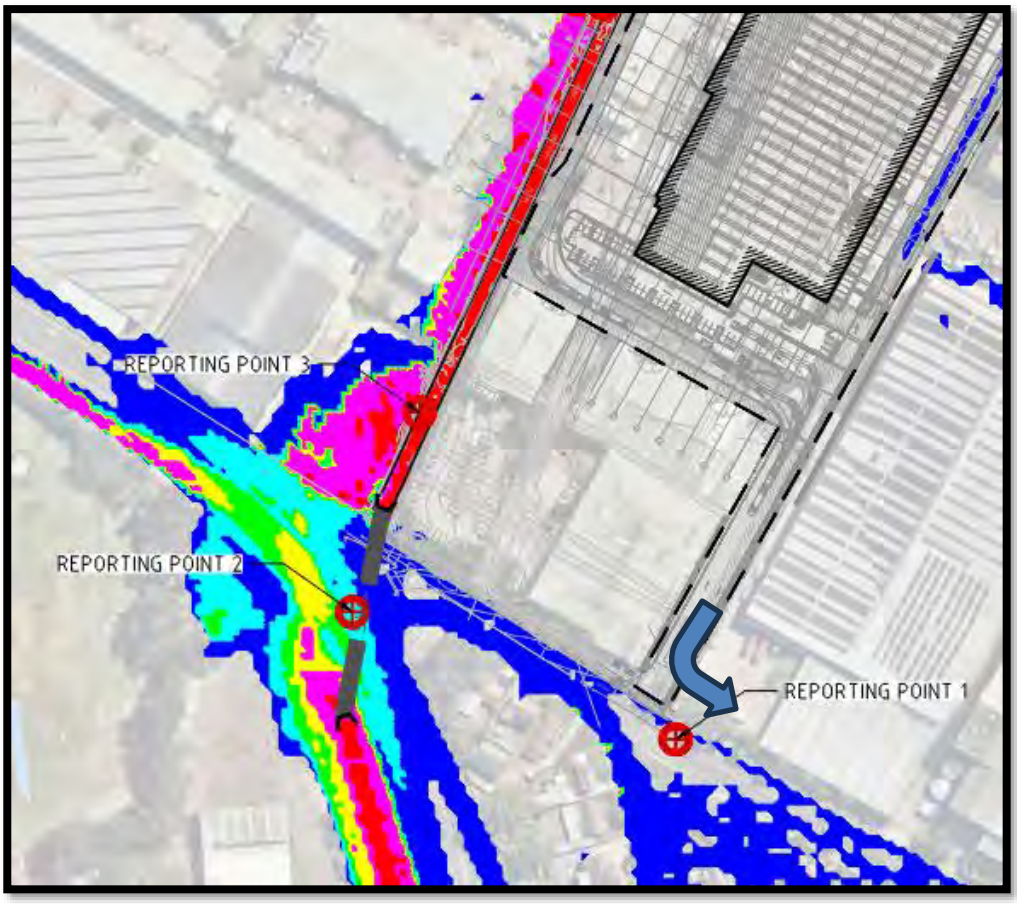


Figure 4.2 Hazard Categorisation at access to site at 1% AEP (Post-Development) (Hazard H1)

Review of the available information, including Councils adopted flood study, shows the site is classified as a low flood hazard site during the 1% AEP Flood Event.

The operational site is confirmed to be free of mainstream flooding associated with the adjacent Haslams Creek (up to the PMF event), however has a minor overland flow path (less than 100mm depth) which conveys runoff from 25-27 Hyrang Street to the haslams Creek channel.

The flooding behaviour identified in Boorea Street is associated with runoff within the local road network (namely flow with the kerb and gutter) generated from the road network and residential areas, coupled with breakout flows associated with

overtopping water from Haslam Creek at the hydraulic constraint formed by the Boorea street culverts.

The modelling shows that runoff immediately in front of the site access point is a function of the runoff from the local catchment only (in both 1% AEP and PMF events) and that the influence of breakout flows from the Haslam Creek culverts extend 50m from the Culverts (refer Figure 4.1). The flood influence associated with Haslam Creek, as such, is 75m from the site access point. The site access point is noted to be 75m clear of the influence of the breakout flows associated with Haslam Creek and culvert crossing of Boorea Street/ Olympic Drive. The site has safe, reliable, access to the east in all events to the PMF event.

The contributing catchment to Boorea Street, and Haslam Creek, is relatively small. As such, the catchment has a short response time meaning the area is sensitive to short duration intense storm events and flash flooding. Flooding and overland flow will typically be coupled with intense heavy rainfall which dissipates quickly as the rainfall intensity reduces. The critical storm duration for the 1% AEP event in Haslams Creek is noted to be 12hours and the PMF to be 6hrs.

Modelling of the system has been completed based on a 50% blockage scenario (as per Council blockage policy) and an unblocked (0%) scenario. Noting the size of the culverts are triple cell 2.6m wide x 1.9m high, a 50% blockage during an actual flood event is considered unlikely. This being said, it would also be unlikely there would be no blockage.

Other councils (e.g. Blacktown LGA) adopt a sliding scale for blockage factors when assessing flooding, depending on the size of the culvert. For these culverts a value of 25% blockage would be more commensurate to the size of the system. Noting all of these items, for the purpose of these assessments and consideration to risk and hydraulic hazards, we consider the upper and low bound flood range and the appropriate access and hazard categorisation will be between the 0% and 50% blockage scenarios modelled.

We note that the blockage factors do not affect the flood depth or velocity at the property access point, however significantly affect the depth of flow and inundation of Boorea Street at the Haslam Creek culverts.

The periods of inundation are also noted to be coupled with extremely intense rainfall and climatic conditions. As the rainfall rate reduces so too does the inundation of the road.

The existing overland flow path between 25 Nyrang Street and Haslams Creek channel has been maintained (for events >1% AEP) and provisions for a H1 hazard categorisation (generally safe for vehicles, people and buildings).

The 1% AEP and PMF output are shown in **Figures 4.3** and **4.4** below.

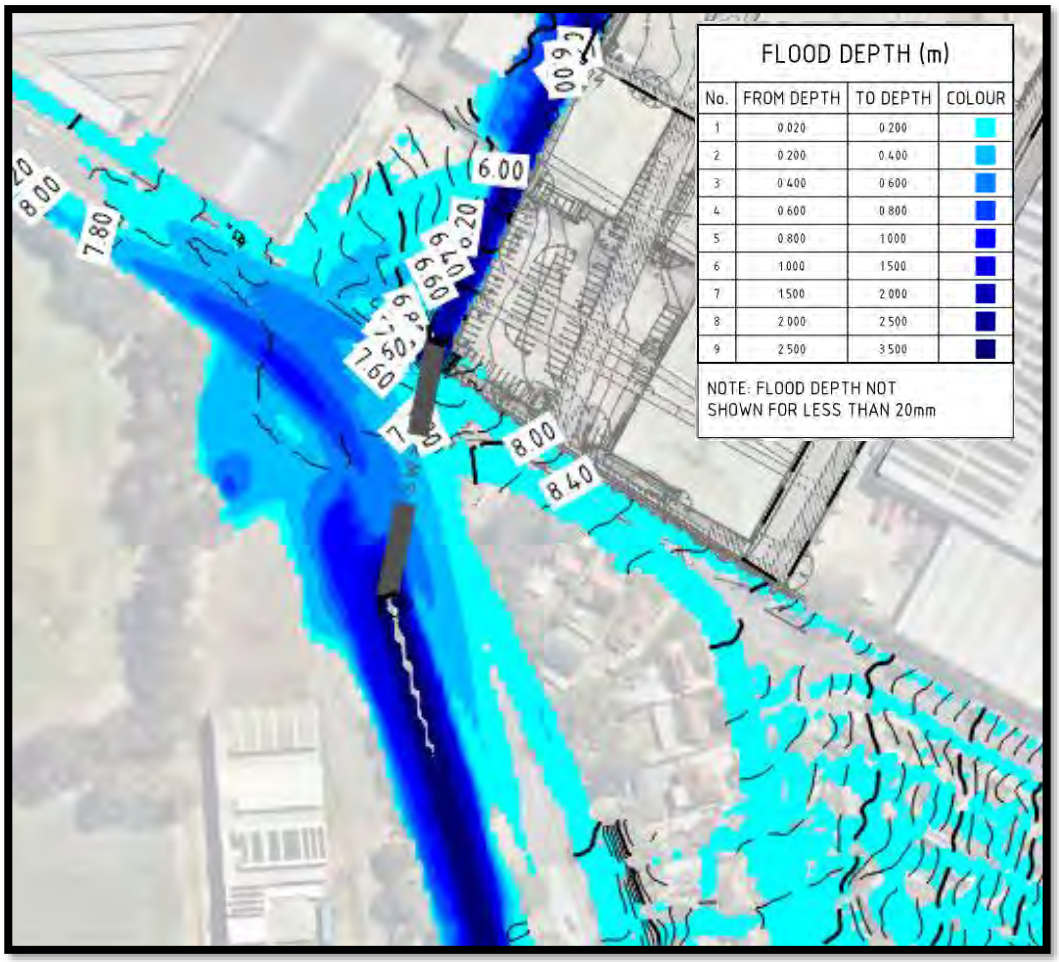


Figure 4.3. 1% AEP Flood Extent (50% blocked)

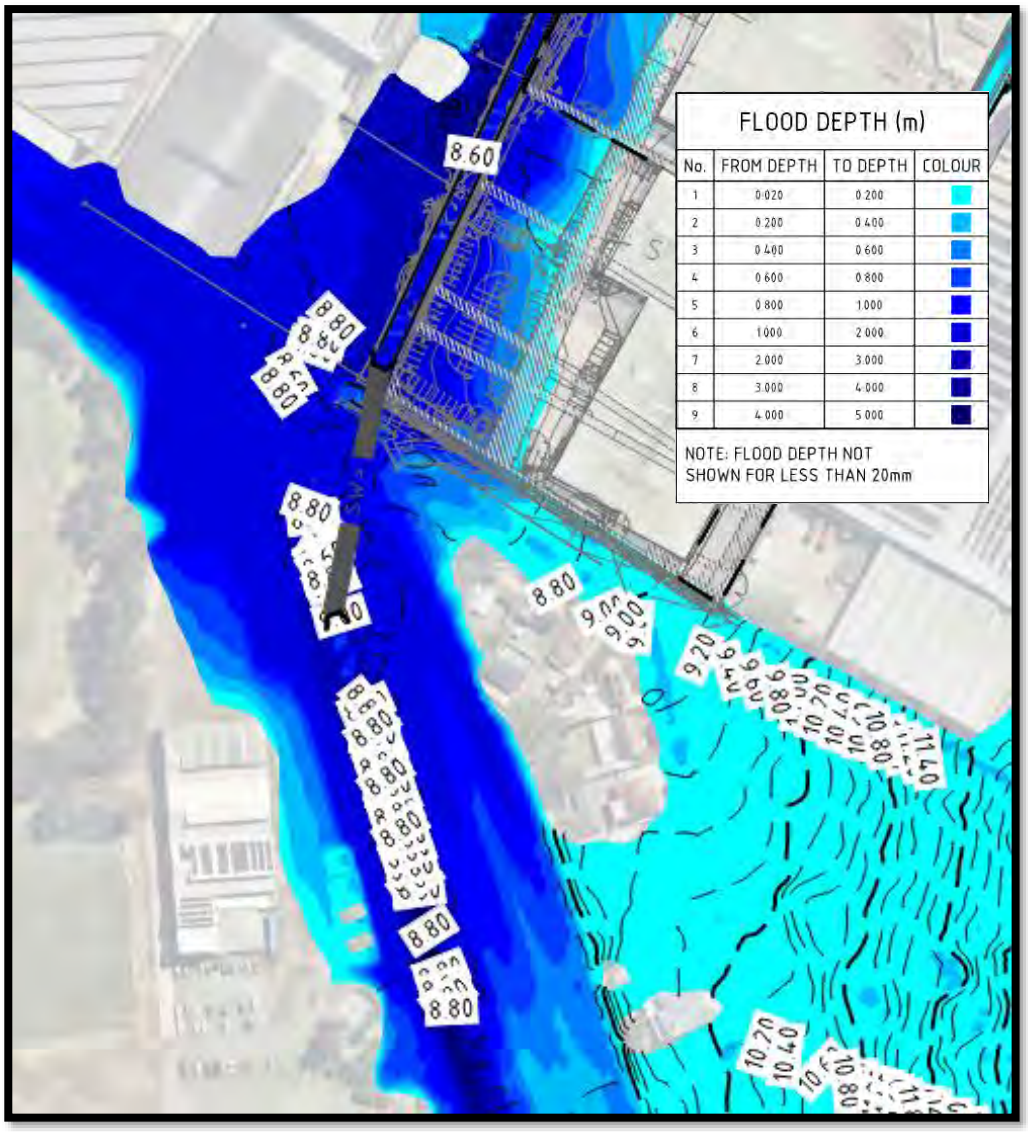


Figure 4.4. PMF Flood Extent (50% blocked)

4.2 Time associated with inundation and Hazard categorization at entrance to site

Review of **Figures 4.5 & 4.6**, and **Tables 4.1 and 4.2**, in conjunction with earlier figures and discussion shows that access from the site to Boorea Street can be achieved safely (Hazard <H1) in both the 1% AEP and PMF events.

Access north along Boorea Street toward Olympic Drive would be impacted by breakout flows of >H1, from Haslam Creek, for short periods of time (1hour) in the 1% AEP event, however longer periods (7Hrs >H3 and 8.5hrs >H1) of restricted access, beginning at a point 75m north of the site access drive, would be present during a PMF event.

Blockage factors applied to the culverts have little influence on the timing or depth of the inundation of Boorea Street at Haslam Creek.

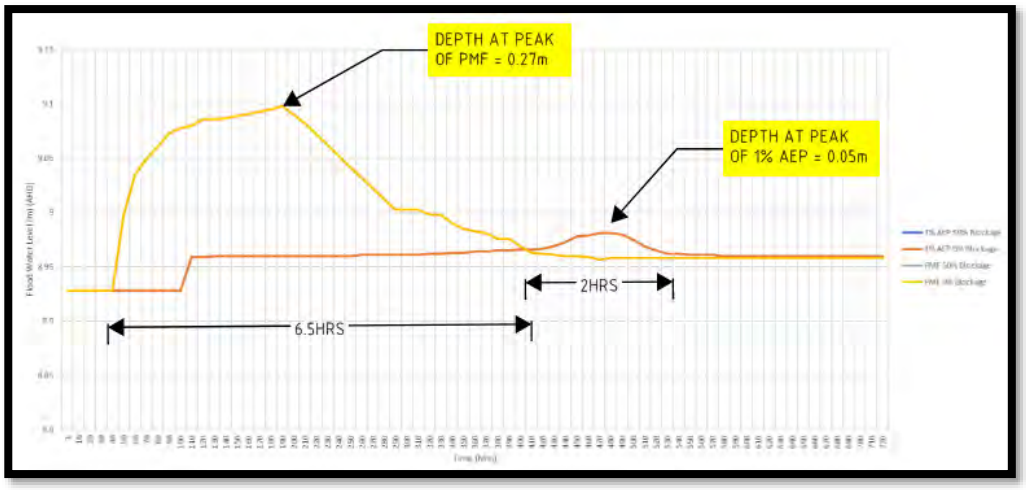


Figure 4.5. Stage Height Graph at Property Driveway

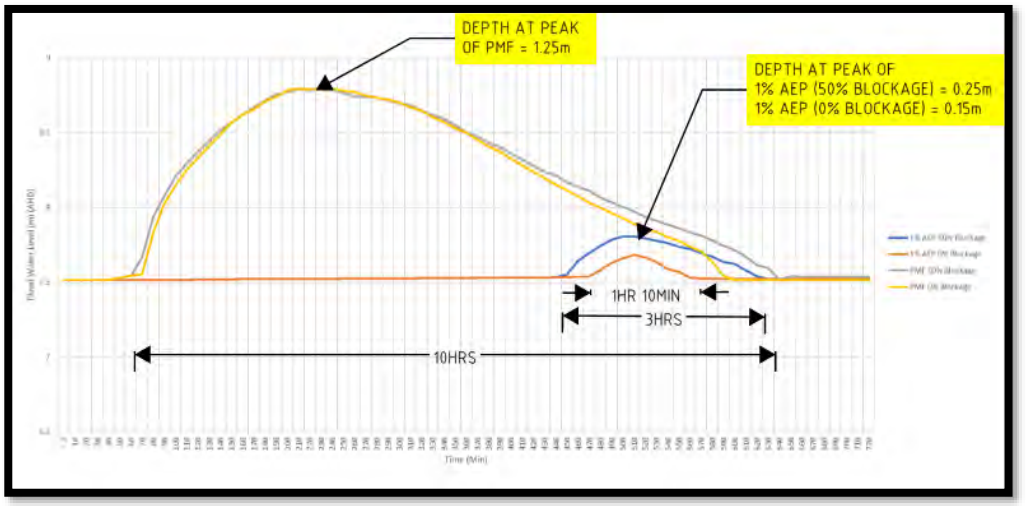


Figure 4.6. Stage Height Graph at Haslam Creek Culverts

Table 4.1. Duration of Inundation of Boorea Street 1% AEP (50% Blocked)

Location	Duration of Inundation (Hrs)	Duration of Inundation >H1 (Hrs)	Duration of Inundation >H3
Property Access	2	0	0
Haslam Ck.	3	1	0

Table 4.2. Duration of Inundation of Boorea Street PMF (50% Blocked)

Location	Duration of Inundation (Hrs)	Duration of Inundation >H1 (Hrs)	Duration of Inundation >H3
Property Access	6.5	0	0
Haslam Ck.	10	8.5	7

Safe access can be established from the property to Boorea Street in the east and southeast directions during both the 1% AEP and PMF events, with potential safe evacuation routes available to either the Lidcombe Shopping Centre or Lidcombe Train Station.

In addition to the information above, it's worth noting that the primary strategy employed by the NSW SES for managing populations at risk of flooding is evacuation. Please refer to **Figure 4.7** below, which illustrates the potential safe evacuation routes to either the Lidcombe Shopping Centre or the Lidcombe Train Station.

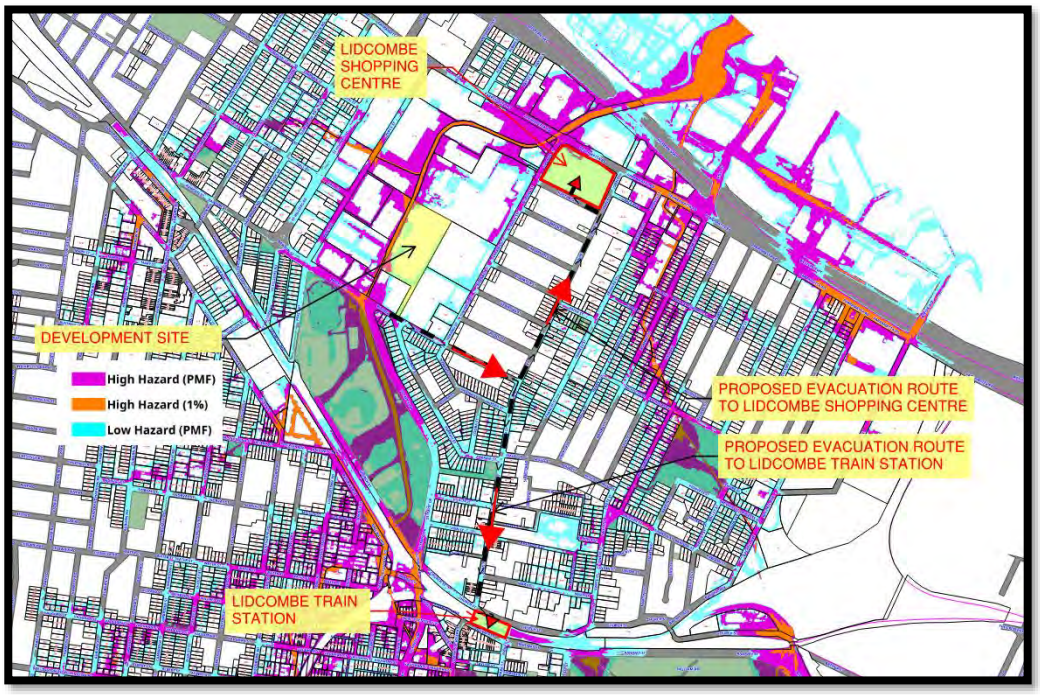


Figure 4.7. Potential flood evacuation routes to Lidcombe Shopping Centre or Lidcombe Train Station (Shown on an excerpt from Cumberland Council's MAP 3)

4.3 Flood Extent

Flood modelling has been completed by Costin Roe Consulting to determine the exact extent of flood affectation on and around the site as a result of the 1% AEP storm.

Refer to Figures 4.3 & 4.4 below for flood mapping showing the flood levels and depths in the 1% AEP storm for pre- and post-developed conditions.

As mentioned in Section 4.1 above, the operational site is confirmed to be free of mainstream flooding associated with the adjacent Haslams Creek (up to the PMF event), however has a minor overland flow path (less than 100mm depth) which conveys runoff from 25-27 Hyrang Street to the haslams Creek channel.

The post-development flood extent (Shown in **Figures 4.4**) and -level for the 1% AEP storm event can be seen to be around RL9.00m AHD at Boorea Street frontage, with a flow depth of only 0.04m.

Reference to **Figures 4.3 & Figure 4.4** as well as **Table 4.1** below should be made for the post-development flood levels and depths for the 1% AEP event.

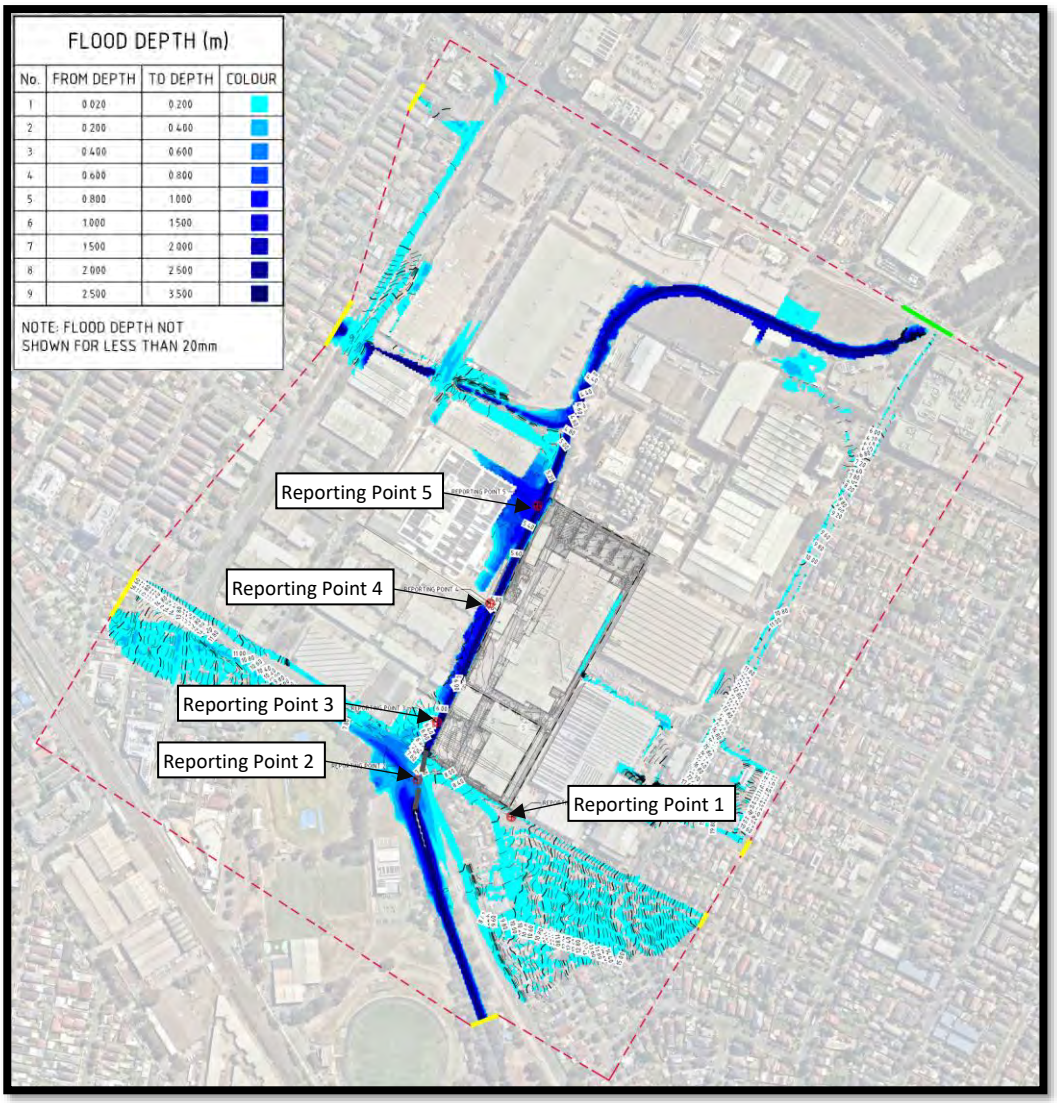


Figure 4.3 - 1% AEP Pre-Development Flood Levels & Depths

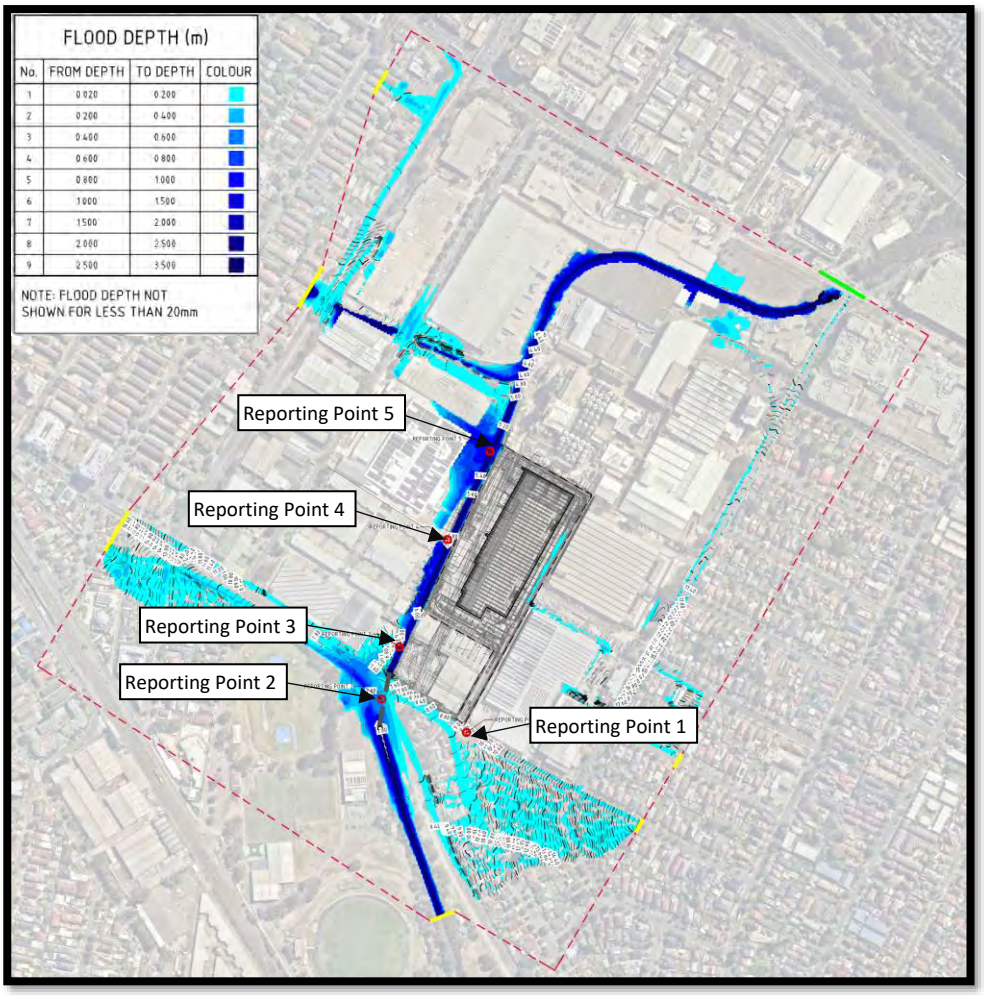


Figure 4.4 - 1% AEP Post-Development Flood Levels & Depths

Reporting Location	Water Level (mAHD)			Depth (m)	
	1% AEP			1% AEP	
	Existing	Developed	Difference	Existing	Developed
1	9.00	9.00	0.00	0.04	0.04
2	7.81	7.81	0.00	0.28	0.28
3	5.82	5.82	0.00	2.13	2.13
4	5.80	5.80	0.00	2.71	2.71
5	5.29	5.29	0.00	2.71	2.71

Table 4.1 – Flood Levels & Depths recorded at reporting points 1-5

5 HAZARD CATERGORIES & MAPPING

5.1 Introduction

Flood hazard categories are broken down into high and low hazard (H1 to H6 categories depending on depth and velocity, and their interaction with each other as set out in **Figures 5.1a** and **5.1b**) for each hydraulic category. High hazard areas are defined as those where there is a possible danger to personal safety and the potential for

significant structural damage. Able-bodied adults would have difficulty in wading to safety. With low hazard areas, should it be necessary, a truck could evacuate people and their possessions, and able-bodied adults would have little difficulty in wading to safety.

Flood hazard criteria and mapping has been completed for the 1% AEP and PMF post development conditions as per criteria set out in the *Australian Rainfall and Runoff (2019), A Guide to Flood Estimation – Book 6 – Flood Hydraulics* and *Figure 6.7.9* as included as **Figure 5.1** below.

Refer **Section 5.2** for hazard mapping.

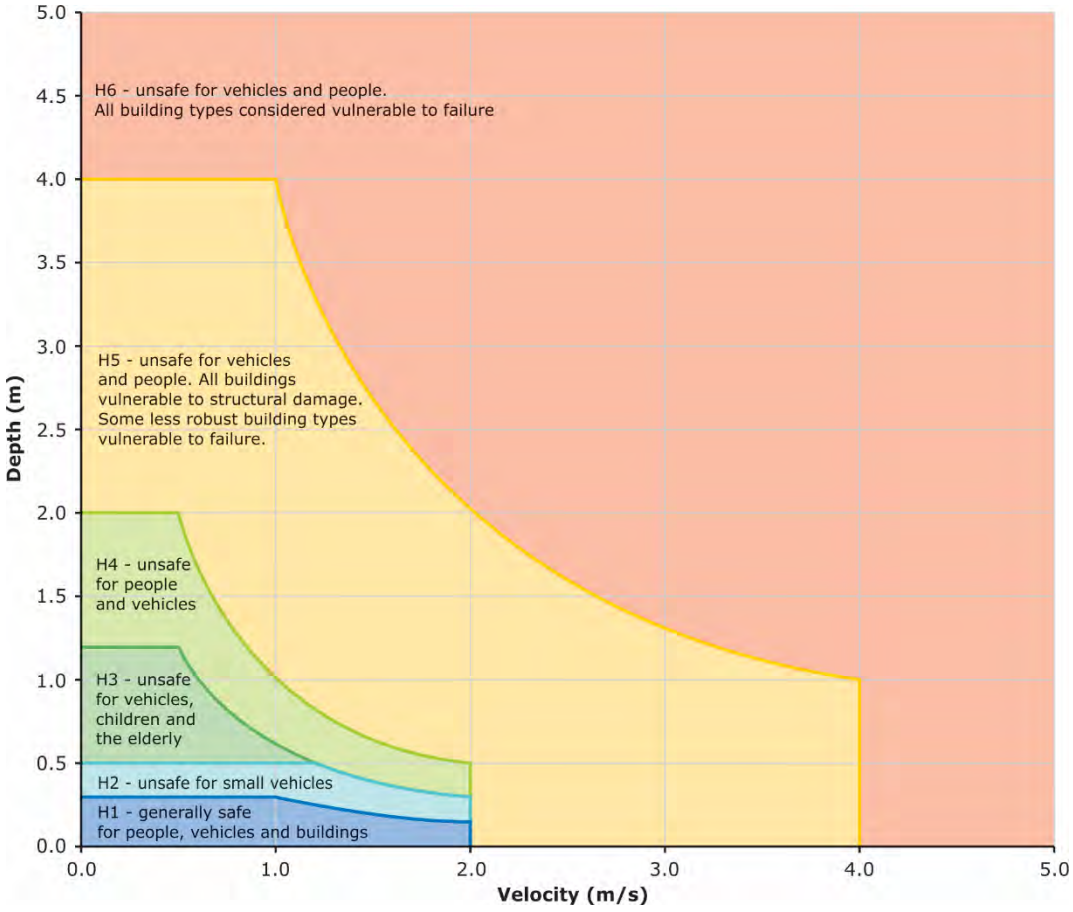


Figure 5.1a. Provisional Flood Hazard Chart (AR&R 2019)

Table 6.7.3. Combined Hazard Curves - Vulnerability Thresholds (Smith et al., 2014)

Hazard Vulnerability Classification	Description
H1	Generally safe for vehicles, people and buildings.
H2	Unsafe for small vehicles.
H3	Unsafe for vehicles, children and the elderly.
H4	Unsafe for vehicles and people.
H5	Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust buildings subject to failure.
H6	Unsafe for vehicles and people. All building types considered vulnerable to failure.

Table 6.7.4. Combined Hazard Curves - Vulnerability Thresholds Classification Limits (Smith et al., 2014)

Hazard Vulnerability Classification	Classification Limit (D and V in combination)	Limiting Still Water Depth (D)	Limiting Velocity (V)
H1	D*V ≤ 0.3	0.3	2.0
H2	D*V ≤ 0.6	0.5	2.0
H3	D*V ≤ 0.6	1.2	2.0
H4	D*V ≤ 1.0	2.0	2.0
H5	D*V ≤ 4.0	4.0	4.0
H6	D*V > 4.0	-	-

Figure 5.1b. Adopted Hazard Criteria (AR&R 2019)

5.2 Hazard Mapping

Flood hazard categorisation for the site and its surrounds has been assessed as part of the flood study undertaken for the development application. Refer to **Figure 5.2 & Figure 5.3** below for flood mapping showing the flood hazard in the 1% AEP storm for pre and post developed conditions. Hazard categorisation during the 1% AEP and PMF storms at the entrance/exit of the development site is shown in **Figures 5.4 & 5.5**.

The operational site is confirmed to be free of mainstream flooding associated with the adjacent Haslams Creek (up to the PMF event).

The minor overland flow path (less than 100mm depth) which conveys runoff from 25-27 Hyrang Street to the haslams Creek channel, past the entrance to the development site is discussed in **Section 4.2** above.

The flooding, during both the 1% AEP and the PMF storm event, noted within Boorea Street at the site access point is noted to have a hazard category of H1 at the crossover point, which is considered “generally safe for people, vehicles and buildings” with a low-risk evacuation route deemed available from the site (to the east/south-east of the development site) and it is considered that the Emergency Management (EM) strategy is compatible with the relevant NSW SES requirements.

NSW SES’s primary strategy for managing populations at risk of flooding is evacuation (Refer to Section 5.8 of NSW SES’s Cumberland LGA Flood Emergency Sub Plan), which is possible from the development site. Refer to our **Figure 4.7**, showing the potential safe evacuation routes to either the Lidcombe Shopping Centre or the Lidcombe Train Station.

Site Accessibility summarised below:

- Safe access (Hazard Categorisation H1) for pedestrian and vehicles is available for the 1% AEP and PMF events at the property access point onto Boorea Street.
- Safe egress east along Boorea Street is available in the PMF and 1% AEP events.

- Safe egress west along Boorea Street is **limited** at the Haslam Creek culverts for a period of 1hr in the 1% AEP, and 7-8hours in the PMF.
- The time between overtopping of the Haslam Creek culverts and access from the site being above the H1 threshold is less than 1 hour.
- At the peak of the 1% AEP flood event at the property access point, the hazard categorisation is H1.
- At the peak of the PMF flood event at the property access point, the hazard categorisation is H1.

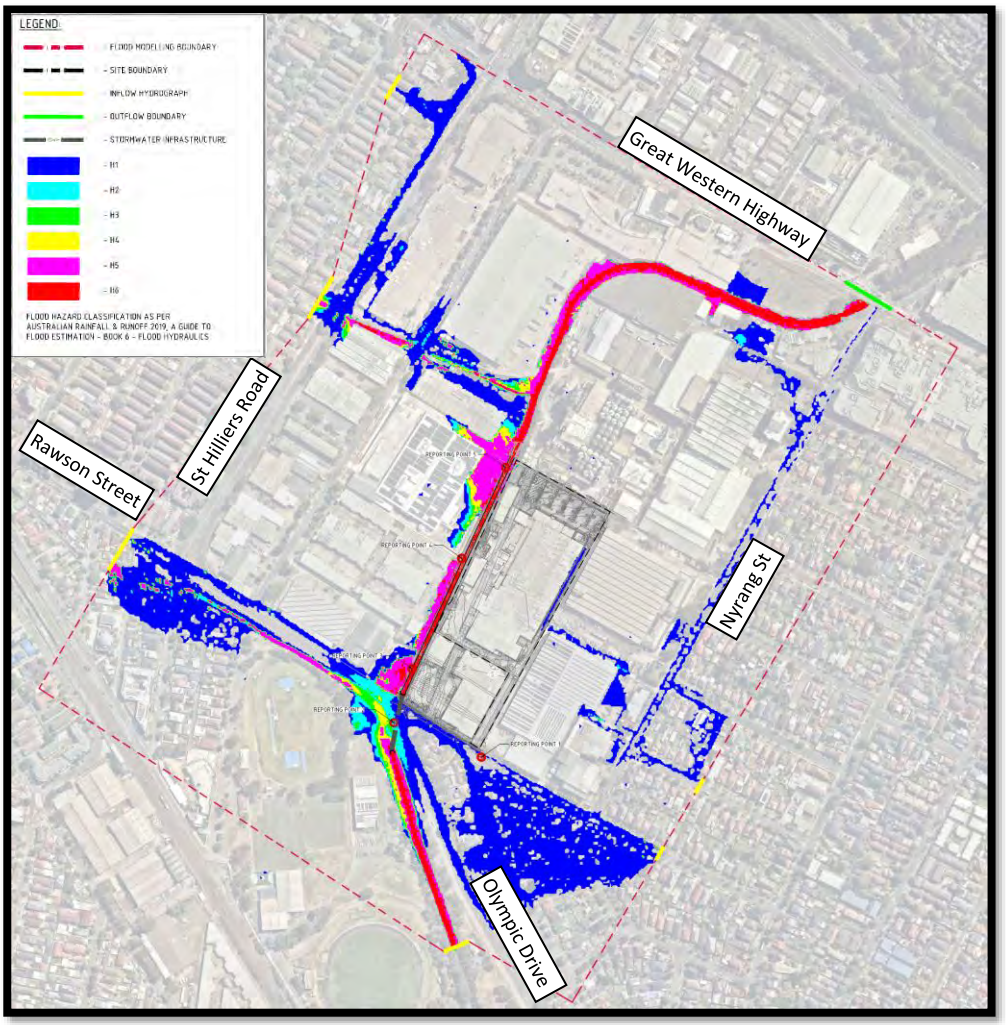


Figure 5.2: 1% AEP Pre-developed Flood Hazard Categorisation

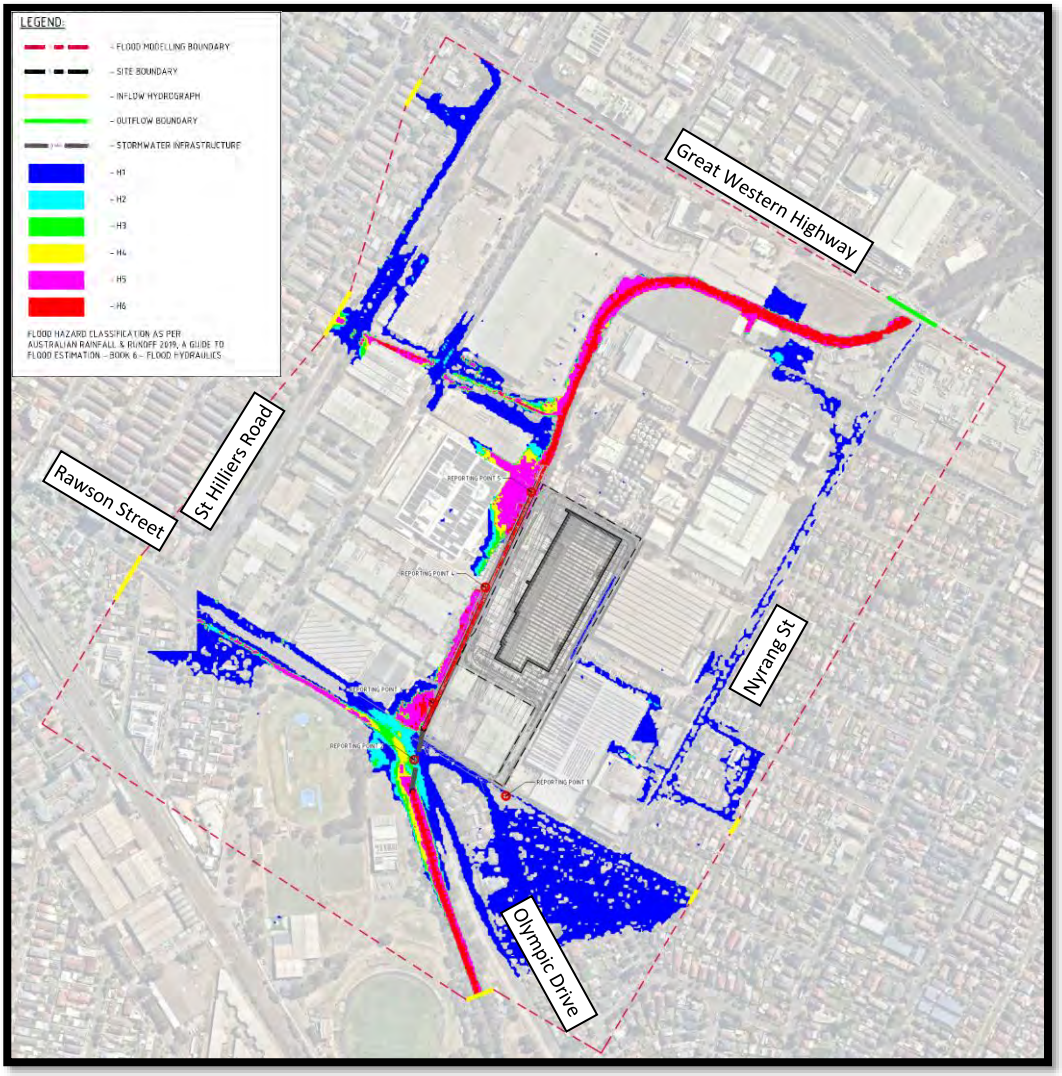


Figure 5.3 1% Post-development Flood Hazard Categorisation

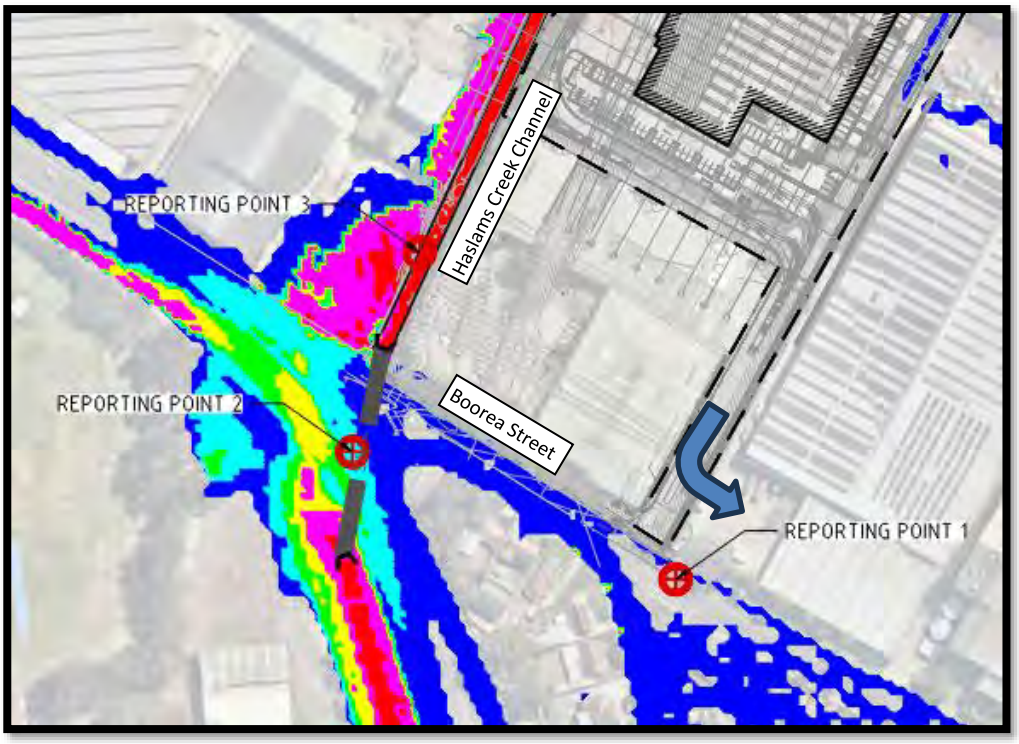


Figure 5.4: Hazard Categorisation at access to site at 1% AEP (Post-Development) (Hazard H1)

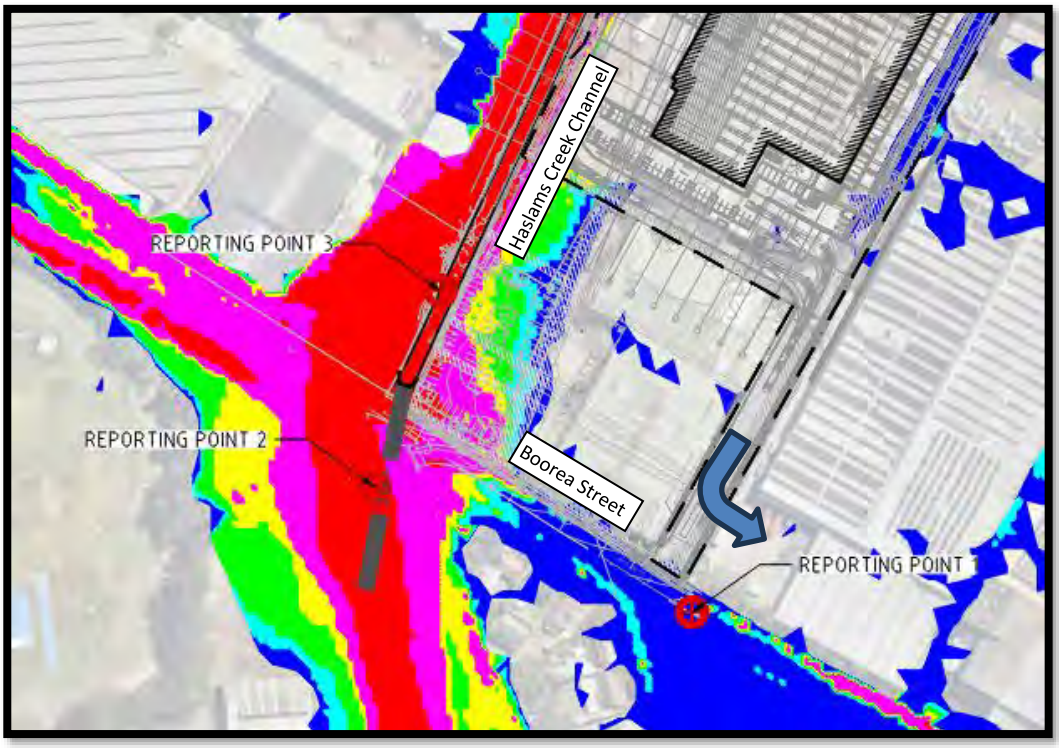


Figure 5.5: Hazard Categorisation at access to site at PMF (Hazard H1)

6 FLOOD SAFETY AND EVACUATION

6.1 Introduction

This section of the report presents the relevant information in relation to egress and evacuation during the approach of a significant flood event. The information in this report can be used as a framework for the overall precinct and for more detailed emergency response plans for individual tenants.

This framework has been completed with consideration to the State Emergency and Rescue Management Act 1989 (NSW), the State Emergency Service Act 1989 (NSW), and the *SES Cumberland LGA Flood Emergency Sub Plan.*

6.2 Flood Extent

The flood behaviour, including flood levels and extents (refer **Figure 4.3** and **Figure 4.4**), during the 1% AEP storm events are included in **Section 4** of this plan.

As discussed in earlier sections of the report, the operational site is confirmed to be free of mainstream flooding associated with the adjacent Haslams Creek (up to the PMF event), however has a minor overland flow path (less than 100mm depth) which conveys runoff from 25-27 Hyrang Street to the Haslams Creek channel.

Further discussion on effective warning measures and triggers are included in the following sections.

6.3 Preparedness

Education, awareness, and preparedness program:

The FRM plan provide the opportunity to develop engagement and education materials to support flood awareness activities. These activities should also be part of any major FRM measure that alters flood behaviour, flood warning or how the community needs to respond to the flood threat. Management (construction & operational stages) need to be responsible for ongoing awareness and education including informing the community on how to prepare for, and how and when to act in response a flood threat.

Education should seek to provide information to raise awareness of flooding so as to enable individuals to understand how to manage themselves and their property in response to flood warnings.

It is recommended that flooding emergency plans is regularly exercised. Should the exercise drills highlight particulars that need to be updated in the flood emergency plan, it is recommended that the plan is updated and circulated to all parties affected.

Development of Warning Systems:

Each tenant should have a tenant specific plan which sets out flood warden, evacuation zones and responsible persons. This flood plan should:

- Provide an overview / summary of the flood risk on site;
- Explain and demonstrate emergency evacuation procedures;
- Outline that the site should not be evacuated by foot or vehicle once Baker Street is flooded.

This flood awareness program should be incorporated into the induction process for new and existing staff members of tenants on the development site and is to be repeated annually as part of any "refresher" training. The program is to be reviewed when new tenants move into the building. Management should consider installing signage in around the site which outlines the flood evacuation procedure.

Visitors are to be briefed on the basics of the flood evacuation procedure upon arrival to the site. This training may include identification of the Flood Warden on site during the duration of their stay and showing visitors the designated refuge areas and evacuation pathways.

As noted, the advice in this report can be used as a framework for these site-specific plans, in conjunction with Cumberland Council and SES sub plans as required. During construction, the warehouse site should have a responsible person (EM or site manager) who understands the flood behaviour of this area, is familiar with this report and flood management responses set out in the FERP.

The Bureau of Meteorology (BoM) will issue flood alerts as part of their responsibility for the issue of warnings of weather conditions likely to give rise to Floods and for the provision of forecasting and warning services for Extreme Weather and Hazard Impact Events. Severe Weather Warnings, Severe Thunderstorm Warnings & Flood warnings are issued by the Bureau of Meteorology to alert communities to the threat of severe weather at (http://www.bom.gov.au/nsw/warnings/ & http://www.bom.gov.au/nsw/flood/sydney.shtml).

Development Owners and Management should appoint personnel (person or committee) involved with the implementation of this plan. As part of an early warning system, the appointed person or committee should be aware of the weekly weather forecast to identify heavy forecasted rainfall to prepare according. It is recommended that, if possible, the committee/Flood warden, bookmark the BoM warning pages for quick access.

The appointed person or committee should, during periods of heavy or forecast heavy rainfall, diligently observe the Severe Weather Warnings, rainfalls and road closures from the BoM.

As described in **Section 6.5** below, the BoM warning system is based on predicted rainfall and gauges in the Sydney region. This includes identification of potential flooding areas, estimated impacts of flooding at different heights and action time.

The BOM warning system will provide good initial guidance for triggering of flood measures. A suitable response/trigger methodology has been outlined in **Section 6.5** which can be utilised to inform users of the site to prepare their own site-specific flood management response plans.

Flood warning and emergency response for the development site will be based on the rainfall within the adjoining catchments.

Real-time data (updated at 15-minute intervals) for these sites can be accessed through the BoM website via the following hyperlink: http://www.bom.gov.au/nsw/flood/sydney.shtml (refer **Figure 6.1** for an indication of the relevant site-specific station):

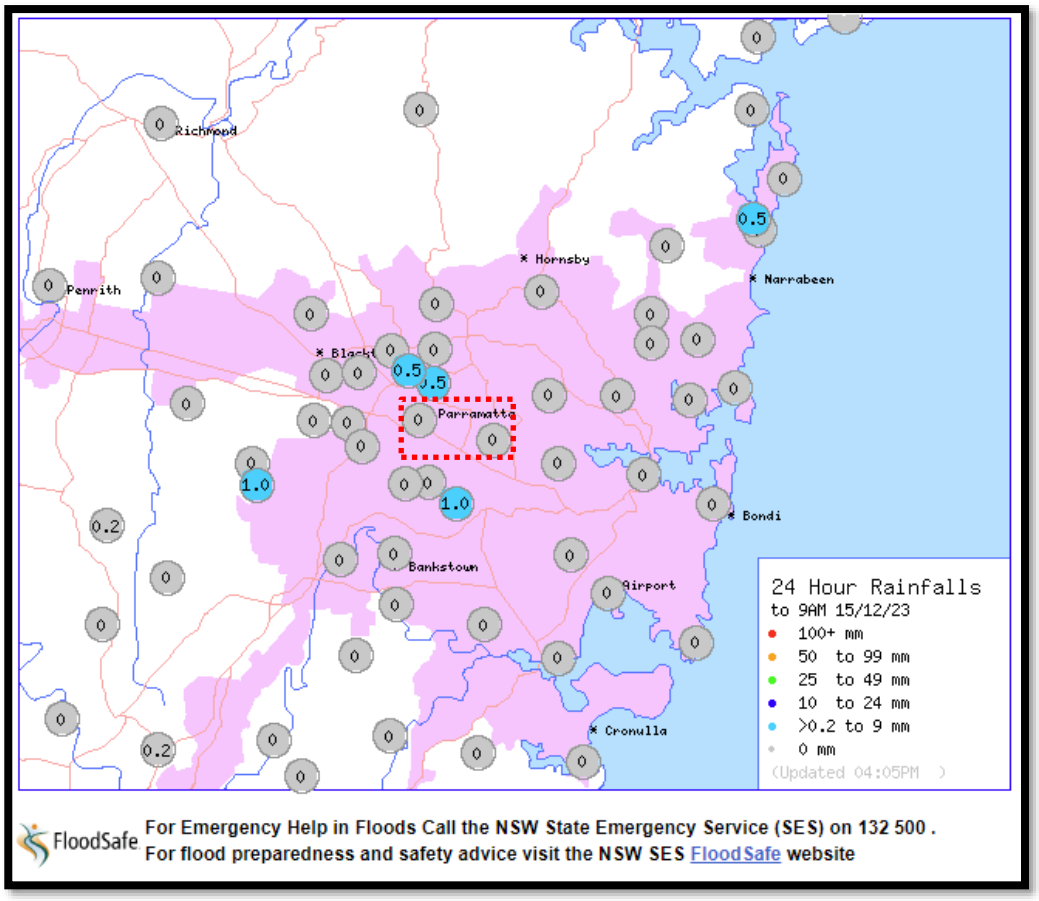


Figure 6.1 – Site specific station (http://www.bom.gov.au/nsw/flood/sydney.shtml)

6.4 Emergency Response Planning

Flood Emergency Management planning refers to the preparation of a formal community-based plan of action to deal with the threat, onset, and aftermath of flooding. It involves planning for an event equal to, or greater than the event used to derive the FPL.

The plan of action should include an on-site response plan that addresses what measures should be undertaken once the threat of a flood is determined to be imminent. A flood evacuation strategy should also be included so that all persons within the precinct are familiar with the processes required if a flood occurs.

In summary, the review shows, during both the 1% AEP and the PMF storm event, a hazard category of H1 at the crossover point, which is considered "generally safe for people, vehicles and buildings" with a low-risk evacuation route deemed available from the site to the east/south-east of the development site, as shown in **Figure 6.1** below, as well as **Figures 5.4 & 5.5**.

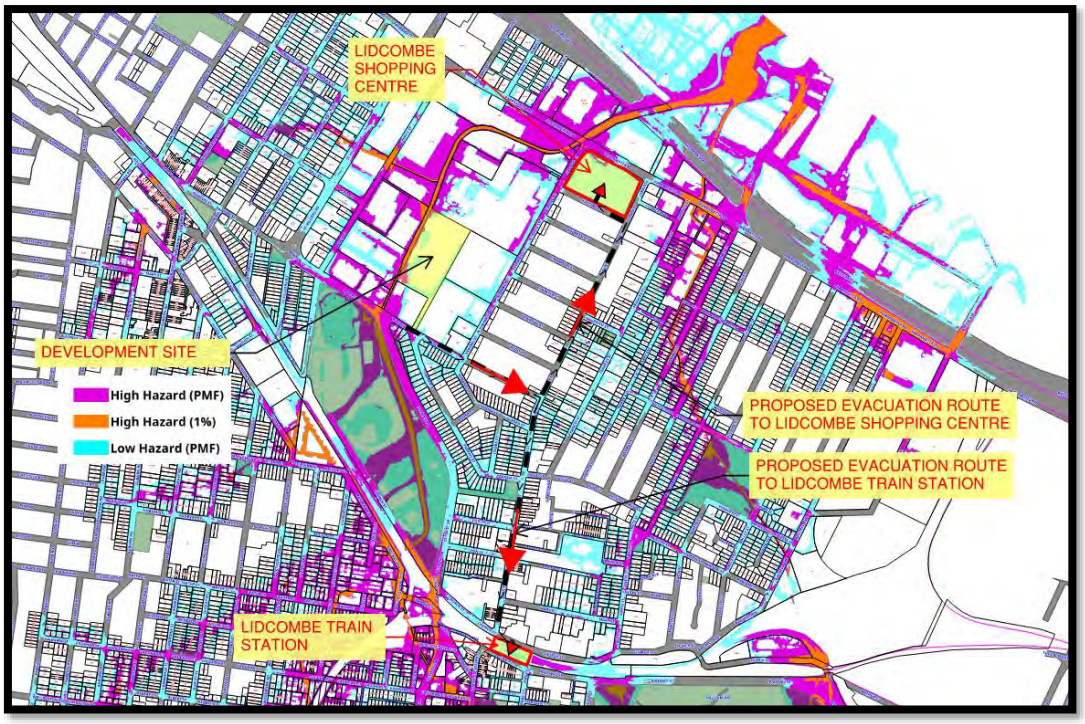


Figure 6.1: Potential flood evacuation routes to Lidcombe Shopping Centre or Lidcombe Train Station (Shown on an excerpt from Cumberland Council's MAP 3)

6.5 Preparation Steps

It is the responsibility of Management to understand the risks and dangers of flooding relating to the development site, and the need to restrict access to the flood management zone (overland flow path) (subject to flooding) in such an event.

It is recommended that key persons within Management are registered to be able to receive flood warning messages from the BoM. This should include a specific Flood Warden, as well as upper management personnel.

Lastly, the evacuation framework contained in this report must be understood and adapted, as necessary. It is recommended that a copy or copies of this report are kept at several locations on site such as the construction site shed, maintenance manager, and office administrator. A thorough understanding of *Councils Local Flood Plan* should also be made.

The plan of action includes an on-site response plan that addresses what measures should be undertaken once the threat of a flood is determined to be imminent and the occupants should be inducted so that all persons within the precinct are familiar with the processes and the flood evacuation strategy required if a flood occurs.

It is noted that significant lead warning time would be required to enable effective flood response plans to be initiated for this site to address safety of persons. Refer to **Section 7.1** below for early warning systems.

7 FLOOD RESPONSE

7.1 Flood Response Introduction

The following sub-sections of the report provide information on potential flood triggers that could be utilised by site management (during construction and operation) to be able to prepare their own flood response plans.

The site management (during construction and operation) may visually gauges conditions (flow depth and velocity) within the Haslams Creek channel as an early warning system during heavy rainfall.

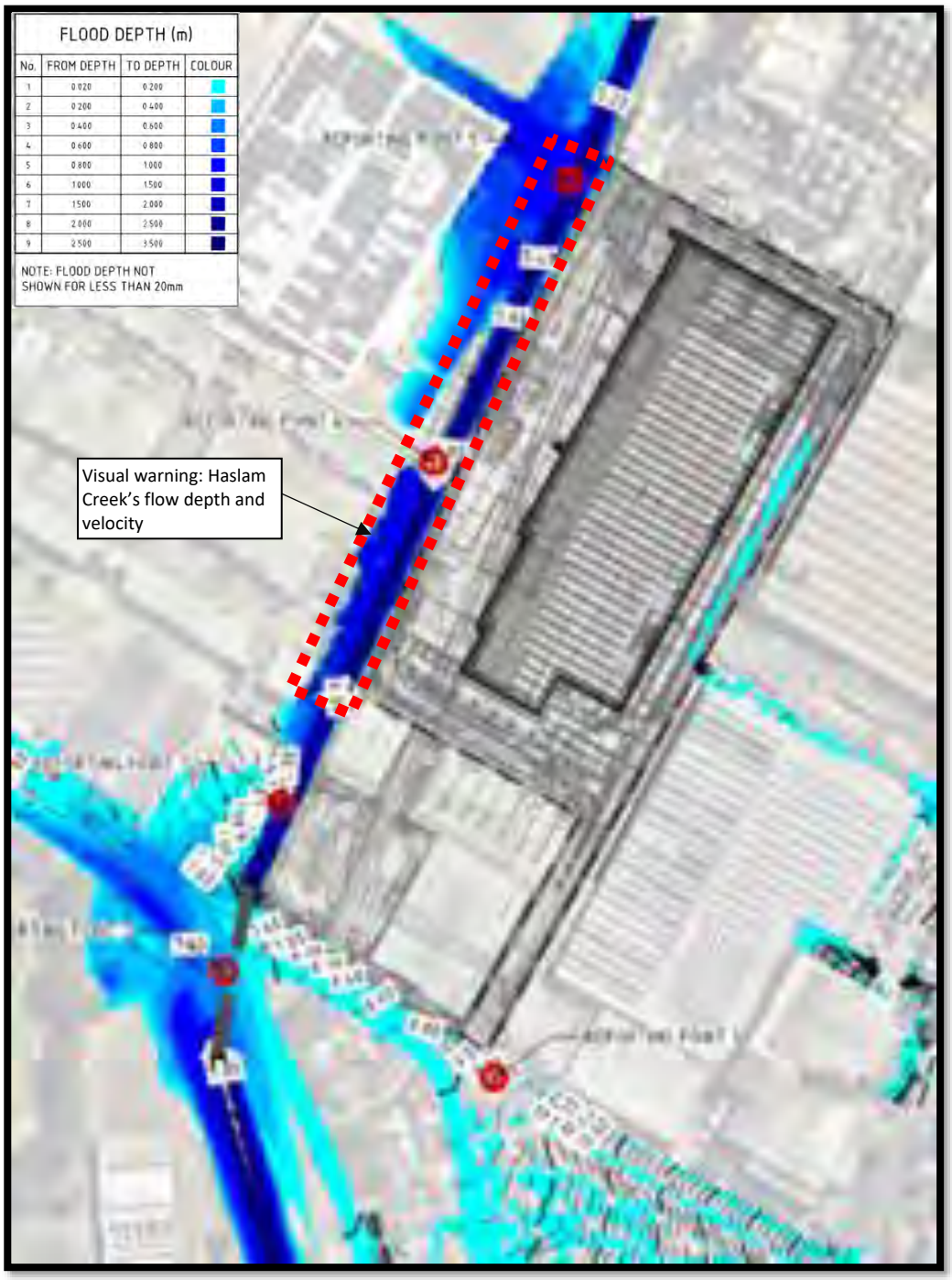


Figure 7.1 - 1% AEP Post-Development Flood Levels & Depths

7.2 Response Triggers & Site-Specific Measures

7.2.1 Trigger 1 - A flood alert/watch/advice is issued by the BOM.

The BOM alert will be issued if flood producing rain is predicted. This provides an early warning that flooding may occur, however is not confirmation that flooding will occur. If this alert is issued then the Flood Warden should be on alert for further BOM, SES or site-specific Triggers.

7.2.2 Trigger 2 – General flood alert issued by the BOM.

A generalised flood warning would be issued when flooding is expected to occur in a given area. These would generally be provided by the BOM with three hours warning time is expected from issue of warning to peak flood level as per the "*Service Level Specification for Flood Forecasting and Warning Services for New South Wales – Version 2.0*" (Bureau of Meteorology, 2013).

Maintenance workers, or other persons, who might need to access the landscaped area west of the new retaining wall along the Haslams Creek Channel boundary should be notified prior to entering the lower areas on the embankment of the potentially flood affected areas.

It is noted that Trigger 3 may occur prior to Trigger 2 and the Flood Warden is required to consider this eventuality.

7.2.3 Trigger 3 – Guage flood levels within Haslams Creek channel - flood depth of 0.5m below top of channel.

Flood Warden at this point should put Warehouse occupants on alert to evacuate the site. Flood warden to contact SES for additional updates, if required.

7.2.4 Trigger 4 - Guage flood levels within Haslams Creek channel - flood depth at top of channel walls.

Flood warden should advise the immediate evacuation of the development site to the east. Safe evacuation to the east only, no evacuation should be made in a western direction (towards Haslam Creek Channel), unless otherwise noted by management on the day, with actual information and conditions available.

Flood warden should advise occupants or remaining occupants (those opting to seek refuge on site) to move to higher ground (upper levels), for example within the Warehouse or Office.

End of Response Operations

Once the flood levels recede below the trigger level and the danger posed by flooding has passed, the NSW SES Cumberland Local Incident Controller will issue an "all clear" message which will be conveyed in the same format as the warning message, via SMS. The site occupiers can then leave the industrial precinct if on site refuge was undertaken or return to the precinct if evacuated.

8 CONCLUSION

Costin Roe Consulting Pty Ltd has been commissioned to develop this **FMP/FERP** for the industrial development at 42 Boorea Street, Lidcombe, NSW.

The report provides a summary of flood behaviour of local flooding which affects the site, and the different conditions which cause flooding on the site.

Flood preparedness and response techniques have been clarified, including warning triggers and distribution of the flood response procedures. During flooding events, evacuation should take place to the east of the site while conditions allow.

Further the report provides the framework for the preparation of the flood egress plans as required throughout the operational phase of the development.

9 REFERENCES

- Flood Risk Management Manual (2023);
- Cumberland Council Flood Risk Management Policy (Nov 2021);
- Cumberland Council Stormwater and Flood Maps 1 to 8 (October 2021);
- Part G4 of the Cumberland Council DCP 2021;
- Cumberland Council Flood Letters (EC2021/0528);
- NSW Government (2023). Flood Impact and Risk Assessment. Flood Risk management guideline LU01;
- Provision and Requirements for Flood Warning in New South Wales – SES (Nov 2019);
- Cumberland LGA Flood Emergency Sub-Plan – SES (Nov 2021)
- Bureau of Meteorology (2013). Service Level Specification for Flood Forecasting and Warning Services for New South Wales – Version 2.0;
- Costin Roe Consulting (2023), Civil Engineering Report (Co14411.01-03.rpt)

APPENDIX A

COSTIN ROE CONSULTING

FLOOD MODELLING DRAWING

FLOOD MODEL EXTENT AND CATCHMENT PLAN
SCALE 1:7500

50m 0 100 200 300 400 500m
SCALE 1:7500 AT B1 SIZE SHEET

FOR INFORMATION

ISSUED FOR INFORMATION	27.10.23	A	
AMENDMENTS	DATE	ISSUE	AMENDMENTS DATE ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F00

CONSULT AUSTRALIA

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CRC COSTIN ROE CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE: CATCHMENT PLAN

DRAWING No: C014411.01-F 00
ISSUE: A

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- – FLOOD MODELLING BOUNDARY
- – SITE BOUNDARY
- – INFLOW HYDROGRAPH
- – OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

1.0% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	06.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F10

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DRAWING TITLE: 1.0% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No: C014411.01-F 10

ISSUE: D

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- – FLOOD MODELLING BOUNDARY
- – SITE BOUNDARY
- – INFLOW HYDROGRAPH
- – OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

1.0% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	06.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F 11

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DRAWING TITLE: 1.0% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No: C014411.01-F 11

ISSUE: D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

FLOOD AFFLUX (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	-0.050	-0.020	
2	0.020	0.030	
3	0.030	0.040	
4	0.040	0.050	
5	0.050	0.100	
6	0.100	0.200	
7	0.200	0.300	
8	0.300	0.400	

NOTE:
FLOOD LEVEL DIFFERENCE PROVIDED FOR THE PRE-DEVELOPED SCENARIO VS THE POST-DEVELOPMENT SCENARIO
ORIGINAL SURFACE - PRE-DEVELOPMENT Q100 ARI FLOOD LEVEL
COMPARISON SURFACE - POST-DEVELOPMENT SCENARIO Q100 ARI FLOOD LEVEL
FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

1.0% AEP FLOOD LEVEL AFFLUX
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
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ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT
SBA ARCHITECTS

CLIENT
Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F12

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DRAWING TITLE
1.0% AEP FLOOD LEVEL AFFLUX PLAN

DRAWING No C014411.01-F 12
ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE (SW)

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

1.0% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
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ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F13

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CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
1% AEP PRE-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 13
ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

1.0% AEP POST-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	06.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F14

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DRAWING TITLE: 1.0% AEP POST-DEVELOPMENT FLOOD VELOCITY

DRAWING No: C014411.01-F 14

ISSUE: D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE (SW)

VELOCITY AFFLUX (m/s)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	-5.000	-1.000	
2	-1.000	-0.750	
3	-0.750	-0.500	
4	-0.500	-0.250	
5	-0.250	0.000	
6	0.000	0.250	
7	0.250	0.500	
8	0.500	0.750	
9	0.750	1.000	
10	1.000	1.250	
11	1.250	1.500	
12	1.500	1.750	
13	1.750	2.000	
14	2.000	2.250	
15	2.250	2.500	
16	2.500	3.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

1.0% AEP FLOOD VELOCITY AFFLUX PLAN

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	11.06.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F15

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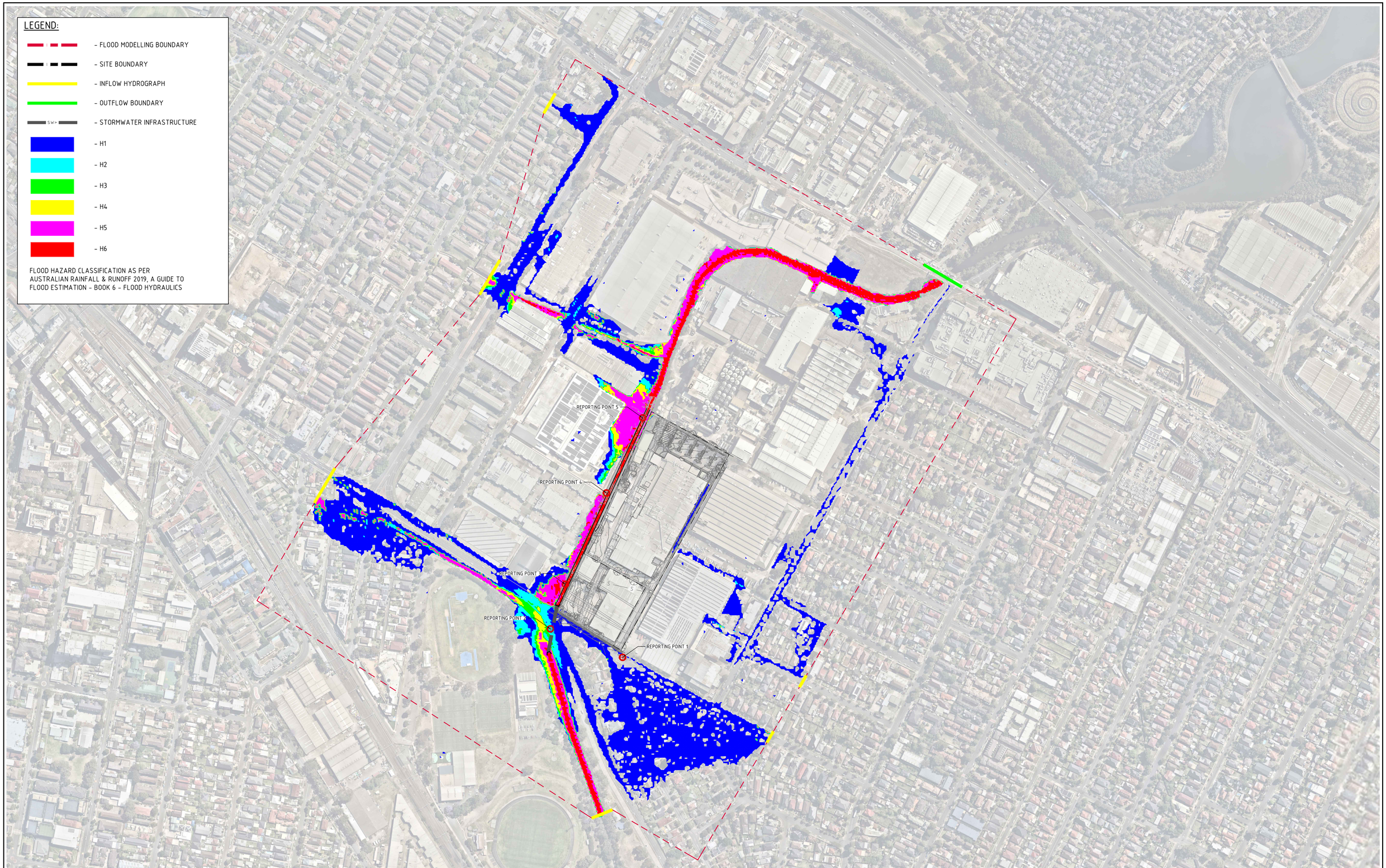
DRAWING TITLE: 1.0% AEP FLOOD VELOCITY AFFLUX PLAN

DRAWING No C014411.01-F 15 ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION – BOOK 6 – FLOOD HYDRAULICS



1.0% AEP PRE-DEVELOPMENT HAZARD
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	06.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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DRAWING TITLE: 1% AEP PRE-DEVELOPMENT HAZARD

DRAWING No: C014411.01-F 16

ISSUE: D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION – BOOK 6 – FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

1.0% AEP POST-DEVELOPMENT HAZARD
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

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AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C01411.01-F17

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DRAWING TITLE: 1.0% AEP POST-DEVELOPMENT HAZARD

DRAWING No: C01411.01-F 17

ISSUE: D

LEGEND:

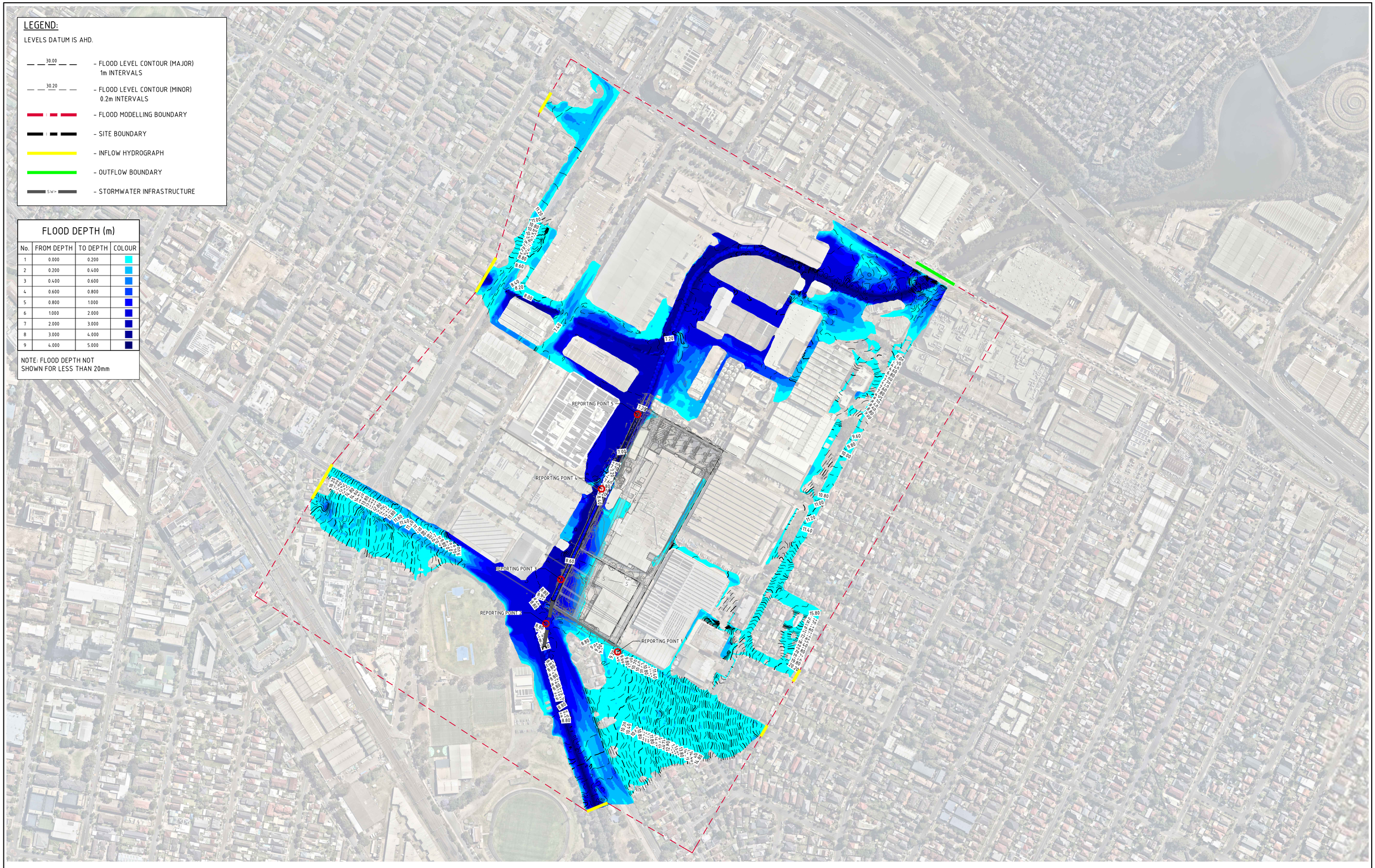
LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- – FLOOD MODELLING BOUNDARY
- – SITE BOUNDARY
- – INFLOW HYDROGRAPH
- – OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	2.000	
7	2.000	3.000	
8	3.000	4.000	
9	4.000	5.000	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm



PMF PRE-DEVELOPMENT LEVELS AND DEPTHS
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	06.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C01411.01-F20

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DRAWING TITLE
PMF PRE-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No C01411.01-F 20 ISSUE D

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- – FLOOD MODELLING BOUNDARY
- – SITE BOUNDARY
- – INFLOW HYDROGRAPH
- – OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	2.000	
7	2.000	3.000	
8	3.000	4.000	
9	4.000	5.000	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

PMF POST-DEVELOPMENT LEVELS AND DEPTHS
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
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ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F 21

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DRAWING TITLE: PMF POST-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No: C014411.01-F 21

ISSUE: D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.100	
2	0.100	0.200	
3	0.200	0.300	
4	0.300	0.400	
5	0.400	0.500	
6	0.500	1.000	
7	1.000	1.500	
8	1.500	2.000	
9	2.000	2.500	
10	2.500	3.000	
11	3.000	3.500	
12	3.500	4.000	
13	4.000	4.500	
14	4.500	5.000	
15	5.000	6.000	
16	6.000	8.000	
17	8.000	10.000	
18	10.000	15.000	
19	15.000	20.000	
20	20.000	25.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

PMF PRE-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	06.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT
SBA ARCHITECTS

CLIENT
Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F22

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DRAWING TITLE
PMF PRE-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 22
ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.100	
2	0.100	0.200	
3	0.200	0.300	
4	0.300	0.400	
5	0.400	0.500	
6	0.500	1.000	
7	1.000	1.500	
8	1.500	2.000	
9	2.000	2.500	
10	2.500	3.000	
11	3.000	3.500	
12	3.500	4.000	
13	4.000	4.500	
14	4.500	5.000	
15	5.000	6.000	
16	6.000	8.000	
17	8.000	10.000	
18	10.000	15.000	
19	15.000	20.000	
20	20.000	25.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

PMF PRE-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
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ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F23

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DRAWING TITLE
PMF POST-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 23
ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION - BOOK 6 - FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

PMF PRE-DEVELOPMENT HAZARD
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	06.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F24

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DRAWING TITLE: PMF PRE-DEVELOPMENT HAZARD

DRAWING No: C014411.01-F 24

ISSUE: D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION - BOOK 6 - FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

PMF POST-DEVELOPMENT HAZARD
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	06.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F25

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DRAWING TITLE
PMF POST-DEVELOPMENT HAZARD

DRAWING No C014411.01-F 25 ISSUE D

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- – FLOOD MODELLING BOUNDARY
- – SITE BOUNDARY
- – INFLOW HYDROGRAPH
- – OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.5% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F30

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DRAWING TITLE: 0.5% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No: C014411.01-F 30

ISSUE: D

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.5% AEP POST-DEVELOPMENT LEVELS AND DEPTHS
SCALE 1:500

5m 0 10 20 30 40 50m
SCALE 1:500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F31

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DRAWING TITLE: 0.5% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No: C014411.01-F 31 ISSUE: D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.5% AEP PRE-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C01411.01-F32

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DRAWING TITLE
0.5% AEP PRE-DEVELOPMENT FLOOD VELOCITY

DRAWING No C01411.01-F 32
ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.5% AEP POST-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
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ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F33

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DRAWING TITLE
0.5% AEP POST-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 33 ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION - BOOK 6 - FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.5% AEP PRE-DEVELOPMENT HAZARD
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F10

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DRAWING TITLE
0.5% AEP PRE-DEVELOPMENT HAZARD

DRAWING No C014411.01-F 34

ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION – BOOK 6 – FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.5% AEP POST-DEVELOPMENT HAZARD

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F35

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DRAWING TITLE
0.5% AEP POST-DEVELOPMENT HAZARD

DRAWING No C014411.01-F 35

ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

FLOOD LEVEL AFFLUX (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.010	
2	0.010	0.020	
3	0.020	0.030	
4	0.030	0.040	
5	0.040	0.050	
6	0.050	0.100	
7	0.100	0.200	
8	0.200	0.300	
9	0.300	0.400	
10	0.400	0.500	
11	0.500	1.000	

NOTE:
FLOOD LEVEL DIFFERENCE PROVIDED FOR THE 0.5% POST-DEVELOPED SCENARIO
VS THE 1.0% POST-DEVELOPMENT SCENARIO
ORIGINAL SURFACE - POST-DEVELOPMENT Q100 ARI FLOOD LEVEL
COMPARISON SURFACE - POST-DEVELOPMENT SCENARIO Q200 ARI FLOOD LEVEL

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.5% AEP FLOOD LEVEL INCREASE
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

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ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F36

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DRAWING TITLE
0.5% AEP FLOOD LEVEL AFFLUX PLAN COMPARED TO 1% AEP

DRAWING No C014411.01-F 36

ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

FLOOD LEVEL AFFLUX (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	-0.050	-0.020	
2	0.020	0.030	
3	0.030	0.040	
4	0.040	0.050	
5	0.050	0.100	
6	0.200	0.300	
7	0.300	0.400	
8	0.400	0.500	

NOTE:
FLOOD LEVEL DIFFERENCE PROVIDED FOR THE 0.5% POST-DEVELOPED SCENARIO
VS THE 0.5% PRE-DEVELOPMENT SCENARIO.
ORIGINAL SURFACE - PRE-DEVELOPMENT Q200 ARI FLOOD LEVEL
COMPARISON SURFACE - POST-DEVELOPMENT SCENARIO Q200 ARI FLOOD LEVEL
FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.5% AEP FLOOD LEVELS AFFLUX PLAN
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	21.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C01441.01-F37

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DRAWING TITLE: 0.5% AEP FLOOD LEVEL AFFLUX PLAN (PRE- COMPARED TO POST DEVELOPMENT)

DRAWING No: C01441.01-F 37

ISSUE: C

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- – FLOOD MODELLING BOUNDARY
- – SITE BOUNDARY
- – INFLOW HYDROGRAPH
- – OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

N

0.2% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F40

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CRC COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
0.2% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No C014411.01-F 40 ISSUE D

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- – FLOOD MODELLING BOUNDARY
- – SITE BOUNDARY
- – INFLOW HYDROGRAPH
- – OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 1
REPORTING POINT 2
REPORTING POINT 3
REPORTING POINT 4
REPORTING POINT 5

N

0.2% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F41

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CRC COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
0.2% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No C014411.01-F 41 ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.2% AEP PRE-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F42

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CRC COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

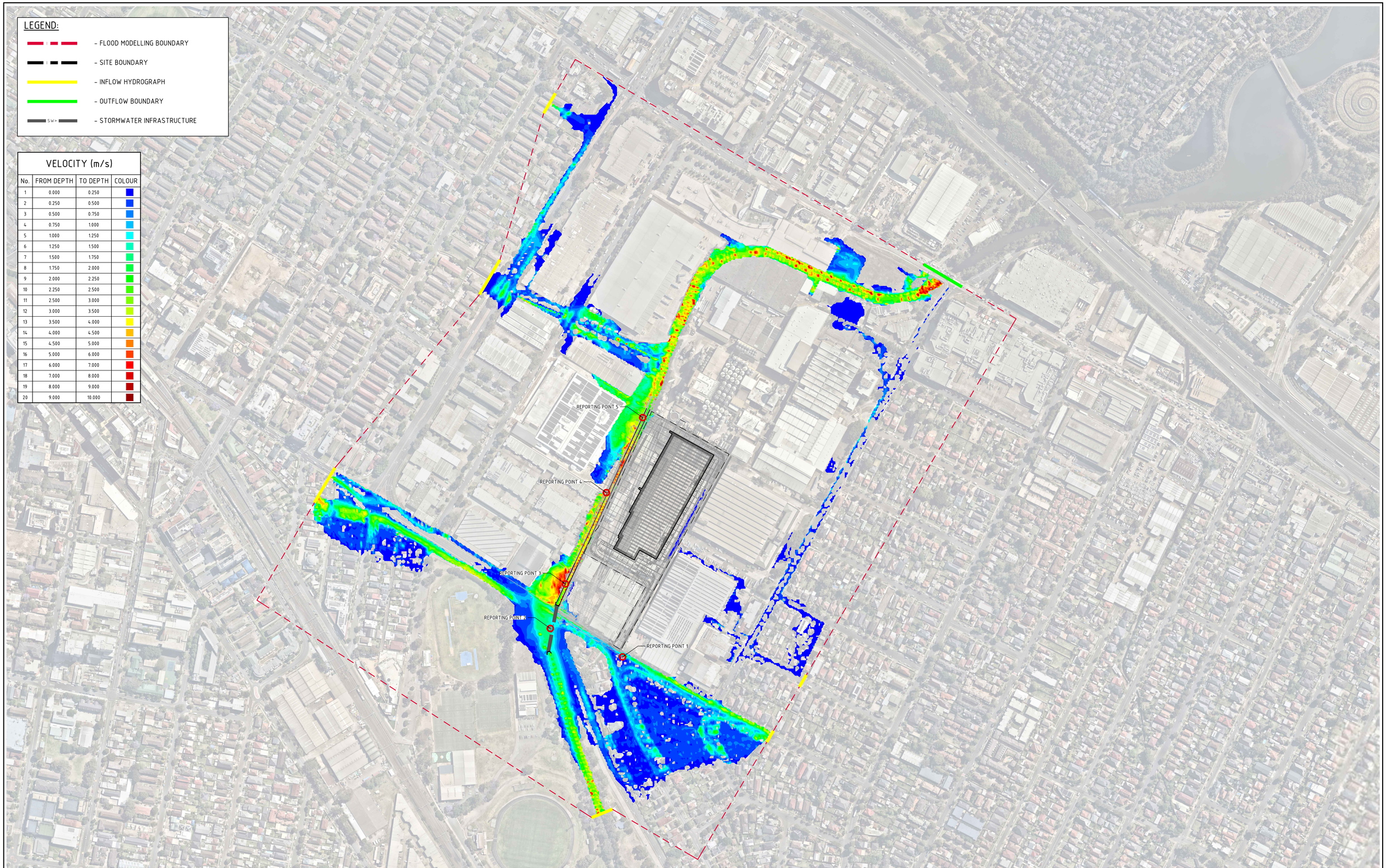
DRAWING TITLE
0.2% AEP PRE-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 42 ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE (SW)

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	



0.2% AEP POST-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F43

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DRAWING TITLE
0.2% AEP POST-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 43

ISSUE D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION – BOOK 6 – FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.2% AEP PRE-DEVELOPMENT HAZARD

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F44

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DRAWING TITLE: 0.2% AEP PRE-DEVELOPMENT HAZARD

DRAWING No: C014411.01-F 44

ISSUE: D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION - BOOK 6 - FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.2% AEP POST-DEVELOPMENT HAZARD

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F45

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DRAWING TITLE: 0.2% AEP POST-DEVELOPMENT HAZARD

DRAWING No: C014411.01-F 45

ISSUE: D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE (SW)

FLOOD LEVEL AFFLUX (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.010	0.020	
2	0.020	0.030	
3	0.030	0.040	
4	0.040	0.050	
5	0.050	0.100	
6	0.100	0.200	
7	0.200	0.300	
8	0.300	0.400	
9	0.400	0.500	
10	0.500	1.000	
11	1.000	2.000	
12	2.000	3.000	

NOTE:
FLOOD LEVEL DIFFERENCE PROVIDED FOR THE 0.5% POST-DEVELOPED SCENARIO
VS THE 1.0% POST-DEVELOPMENT SCENARIO
ORIGINAL SURFACE - POST-DEVELOPMENT Q100 ARI FLOOD LEVEL
COMPARISON SURFACE - POST-DEVELOPMENT SCENARIO Q500 ARI FLOOD LEVEL

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.2% AEP FLOOD LEVEL AFFLUX PLAN COMPARED TO 1% AEP
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	D
ISSUED FOR INFORMATION	27.10.23	C
ISSUED FOR INFORMATION	04.08.23	B
ISSUED FOR INFORMATION	08.06.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F46

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CRC COSTIN ROE CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
0.2% AEP FLOOD LEVEL AFFLUX PLAN COMPARED TO 1% AEP

DRAWING No: C014411.01-F 46
ISSUE: D

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

FLOOD LEVEL AFFLUX (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	-0.050	-0.020	
2	0.020	0.030	
3	0.030	0.040	
4	0.040	0.050	
5	0.050	0.100	
6	0.100	0.200	
7	0.200	0.300	
8	0.300	0.400	

NOTE:
FLOOD LEVEL DIFFERENCE PROVIDED FOR THE 0.5% POST-DEVELOPED SCENARIO
VS THE 0.5% PRE-DEVELOPMENT SCENARIO.
ORIGINAL SURFACE - PRE-DEVELOPMENT Q200 ARI FLOOD LEVEL
COMPARISON SURFACE - POST-DEVELOPMENT SCENARIO Q200 ARI FLOOD LEVEL
FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

0.2% AEP FLOOD LEVEL AFFLUX PLAN
(PRE-COMPARED TO POST DEVELOPMENT)
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	21.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT
SBA ARCHITECTS

CLIENT
Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C01441.01-F47

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CRC COSTIN ROE CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
0.2% AEP FLOOD LEVEL AFFLUX PLAN
(PRE- COMPARED TO POST DEVELOPMENT)

DRAWING No C01441.01-F 47
ISSUE C

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

50% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F50

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CRC COSTIN ROE CONSULTING — CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE: 50% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No: C014411.01-F 50

ISSUE: C

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

50% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C0144 11.01-F S1

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CRC COSTIN ROE CONSULTING — CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE: 50% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No: C0144 11.01-F S1

ISSUE: C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

50% AEP PRE-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT
SBA ARCHITECTS

CLIENT
Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F52

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CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
50% AEP PRE-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 52
ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

50% AEP POST-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C01441.01-F53

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CRC COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
50% AEP POST-DEVELOPMENT FLOOD VELOCITY

DRAWING No C01441.01-F 53 ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION – BOOK 6 – FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

50% AEP PRE-DEVELOPMENT HAZARD

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F54

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CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
50% AEP PRE-DEVELOPMENT HAZARD

DRAWING No C014411.01-F 54

ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION – BOOK 6 – FLOOD HYDRAULICS

50% AEP POST-DEVELOPMENT HAZARD

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F55

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DRAWING TITLE
50% AEP POST-DEVELOPMENT HAZARD

DRAWING No C014411.01-F 55

ISSUE C

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

20% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F60

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COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE: 20% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No: C014411.01-F 60

ISSUE: C

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

20% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C0144 11.01-F61

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CRC COSTIN ROE CONSULTING — CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE: 20% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No: C0144 11.01-F 61

ISSUE: C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

20% AEP PRE-DEVELOPMENT FLOOD VELOCITY

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F62

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CRC COSTIN ROE CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
20% AEP PRE-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 62

ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

20% AEP PRE-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F63

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DRAWING TITLE
20% AEP POST-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 63 ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION - BOOK 6 - FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

20% AEP PRE-DEVELOPMENT HAZARD

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F64

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CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
20% AEP PRE-DEVELOPMENT HAZARD

DRAWING No: C014411.01-F 64

ISSUE: C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION – BOOK 6 – FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

20% AEP PRE-DEVELOPMENT HAZARD

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F65

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DRAWING TITLE
20% AEP POST-DEVELOPMENT HAZARD

DRAWING No C014411.01-F 65

ISSUE C

LEGEND:

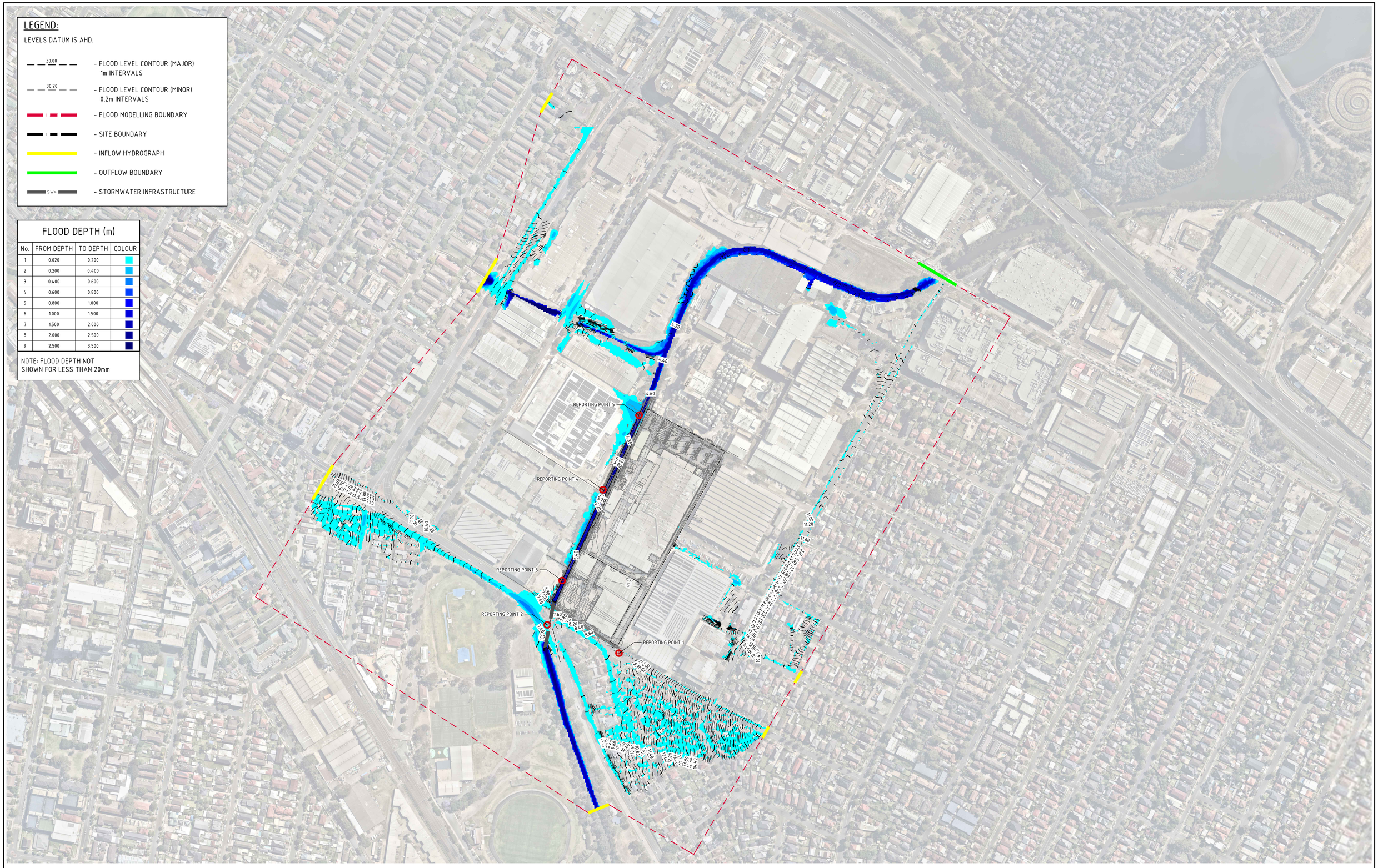
LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm



5% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Hale

PROJECT: INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C0144 11.01-F70

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DRAWING TITLE: 5% AEP PRE-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No: C0144 11.01-F 70

ISSUE: C

LEGEND:

LEVELS DATUM IS AHD.

- 30.00 – FLOOD LEVEL CONTOUR (MAJOR) 1m INTERVALS
- 30.20 – FLOOD LEVEL CONTOUR (MINOR) 0.2m INTERVALS
- – FLOOD MODELLING BOUNDARY
- – SITE BOUNDARY
- – INFLOW HYDROGRAPH
- – OUTFLOW BOUNDARY
- SW – STORMWATER INFRASTRUCTURE

FLOOD DEPTH (m)

No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.020	0.200	
2	0.200	0.400	
3	0.400	0.600	
4	0.600	0.800	
5	0.800	1.000	
6	1.000	1.500	
7	1.500	2.000	
8	2.000	2.500	
9	2.500	3.500	

NOTE: FLOOD DEPTH NOT SHOWN FOR LESS THAN 20mm

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

5% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F71

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DRAWING TITLE
5% AEP POST-DEVELOPMENT LEVELS AND DEPTHS

DRAWING No C014411.01-F 71 ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

5.0% AEP PRE-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F72

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CRC COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
5% AEP PRE-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 72 ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE

VELOCITY (m/s)			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	0.000	0.250	
2	0.250	0.500	
3	0.500	0.750	
4	0.750	1.000	
5	1.000	1.250	
6	1.250	1.500	
7	1.500	1.750	
8	1.750	2.000	
9	2.000	2.250	
10	2.250	2.500	
11	2.500	3.000	
12	3.000	3.500	
13	3.500	4.000	
14	4.000	4.500	
15	4.500	5.000	
16	5.000	6.000	
17	6.000	7.000	
18	7.000	8.000	
19	8.000	9.000	
20	9.000	10.000	

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

5% AEP PRE-DEVELOPMENT FLOOD VELOCITY
SCALE 1:2500

20m 0 50 100 150 200 250m
SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F73

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CRC COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
5% AEP POST-DEVELOPMENT FLOOD VELOCITY

DRAWING No C014411.01-F 73 ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION - BOOK 6 - FLOOD HYDRAULICS

REPORTING POINT 5
REPORTING POINT 4
REPORTING POINT 3
REPORTING POINT 2
REPORTING POINT 1

5.0% AEP PRE-DEVELOPMENT HAZARD

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

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42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C01411.01-F74

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CRC COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE
5% AEP PRE-DEVELOPMENT HAZARD

DRAWING No C01411.01-F 74

ISSUE C

LEGEND:

- FLOOD MODELLING BOUNDARY
- SITE BOUNDARY
- INFLOW HYDROGRAPH
- OUTFLOW BOUNDARY
- STORMWATER INFRASTRUCTURE
- H1
- H2
- H3
- H4
- H5
- H6

FLOOD HAZARD CLASSIFICATION AS PER AUSTRALIAN RAINFALL & RUNOFF 2019, A GUIDE TO FLOOD ESTIMATION – BOOK 6 – FLOOD HYDRAULICS

REPORTING POINT 5

REPORTING POINT 4

REPORTING POINT 3

REPORTING POINT 2

REPORTING POINT 1

5% AEP PRE-DEVELOPMENT HAZARD

SCALE 1:2500

20m 0 50 100 150 200 250m

SCALE 1:2500 AT B1 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION	10.11.23	C
ISSUED FOR INFORMATION	27.10.23	B
ISSUED FOR INFORMATION	04.08.23	A

AMENDMENTS DATE ISSUE

ARCHITECT SBA ARCHITECTS

CLIENT Hale

PROJECT
INDUSTRIAL DEVELOPMENT
42 BOOREA STREET, LIDCOMBE
NSW, 2141

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
LdV	LdV	JUN'23	DS	B1	AS SHOWN	C014411.01-F75

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DRAWING TITLE
5% AEP POST-DEVELOPMENT HAZARD

DRAWING No C014411.01-F 75

ISSUE C

APPENDIX B

MONTHLY RAINFALL DATA & CLIMATE STATISTICS

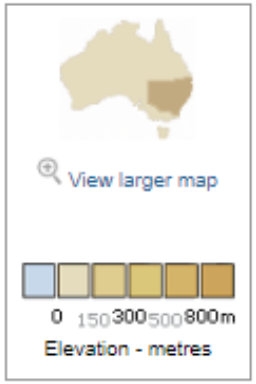
Summary statistics SYDNEY OLYMPIC PARK AWS (ARCHERY CENTRE)

A summary of the major climate statistics recorded at this site is provided below. There is also an extended table with more statistics available. More detailed data for individual sites is available.

Site information

Site name: SYDNEY OLYMPIC PARK AWS (ARCHERY CENTRE)
Site number: 066212
Latitude: 33.83 °S **Longitude:** 151.07 °E
Elevation: 4 m
Commenced: 2011 **Status:** Open
Latest available data: 08 Feb 2024

Geographic location of site



Additional information

Additional site information

Nearest alternative sites

1. 066195 SYDNEY OLYMPIC PK (VIS METER) (2.1km)
2. 066124 PARRAMATTA NORTH (MASONS DRIVE) (6.8km)
3. 066046 PARRAMATTA (8.9km)

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years		Plot	Map
Temperature																	
Mean maximum temperature (°C)	28.9	27.8	26.6	24.4	21.5	18.4	18.7	19.8	22.7	24.9	25.9	27.7	23.9	12	2011 2024		
Mean minimum temperature (°C)	19.4	18.7	17.5	13.9	9.9	7.9	6.5	7.0	9.8	13.0	15.5	17.5	13.1	12	2011 2024		
Rainfall																	
Mean rainfall (mm)	121.4	154.3	194.2	92.6	42.8	111.5	58.5	62.3	47.3	64.8	80.6	75.5	1087.1	12	2011 2024		
Decile 5 (median) rainfall (mm)	125.5	111.6	119.6	42.3	17.2	60.4	20.1	41.1	39.8	47.8	43.6	66.0	1051.6	12	2011 2024		
Mean number of days of rain ≥ 1 mm	7.9	9.3	12.2	7.3	4.3	7.1	6.1	5.2	5.8	6.6	7.3	7.3	86.4	12	2011 2024		

SYDNEY OLYMPIC PARK AWS (ARCHERY CENTRE)

Mean rainfall (mm)

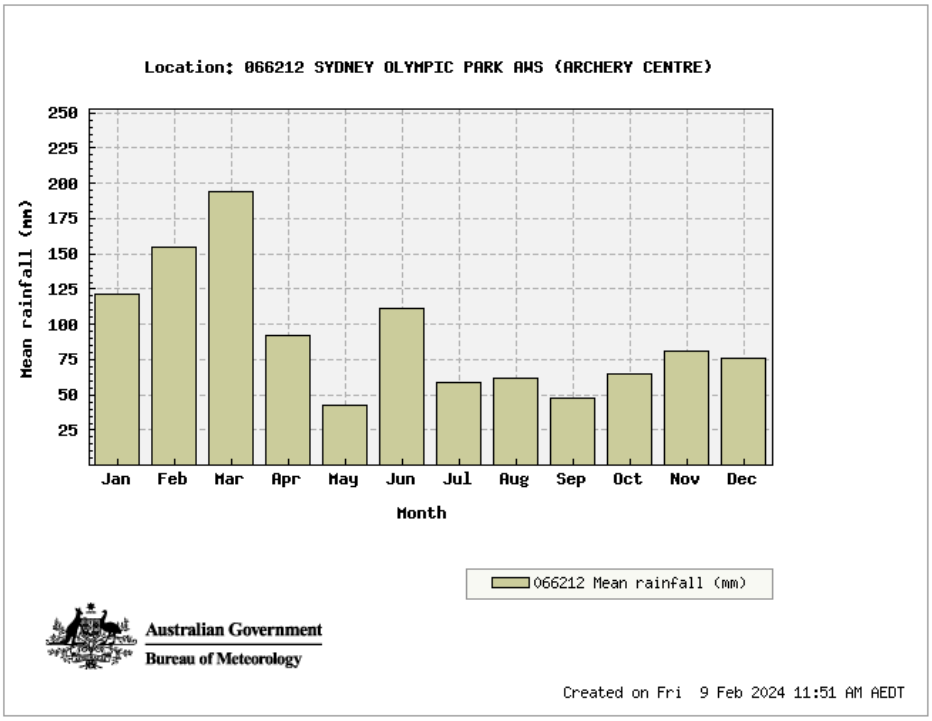
Site details

Site name: SYDNEY OLYMPIC PARK AWS (ARCHERY | **Site number:** 066212 | **Commenced:** 2011
Latitude: 33.83 °S | **Longitude:** 151.07 °E | **Elevation:** 4 m | **Operational status:** Still Open

Yearly data | 30 year statistics | Comparison site | First statistic | Second statistic

Note: Only one option can be redrawn at a time

Include data for the year: 2024 Redraw



Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years
Mean rainfall (mm) for years 2011 to 2024	121.4	154.3	194.2	92.6	42.8	111.5	58.5	62.3	47.3	64.8	80.6	75.5	1087.1	12

12.3 = Not quality controlled

APPENDIX C

CUMBERLAND COUNCIL FLOOD RISK MANAGEMENT POLICY (NOV 2021)

https://www.cumberland.nsw.gov.au/sites/default/files/inline-files/flood-risk-management-policy-november-2021.pdf

CUMBERLAND
CITY COUNCIL

Flood Risk Management Policy

AUTHORISATION & VERSION CONTROL

Policy Number	POL-061
Policy Owner	Director Environment & Planning
Date Adopted	5 November 2021
Version No	1
Document ID	9112211
Review Date	November 2023

FLOOD RISK MANAGEMENT POLICY

BACKGROUND / INTRODUCTION

Council's Flood Risk Management Policy establishes Council's approach to flood risk management for Cumberland City through the local application of the NSW government's flood risk management principles. There are three floodplains within Cumberland City: Haslams Creek floodplain; Duck River floodplain; and Cooks River floodplain.

PURPOSE

The policy sets out Cumberland City Council's requirements and approach to flood risk management. The purpose of the policy is to reduce the impact of flooding and flood liability.

SCOPE

This policy applies to land within Cumberland City. It should be read in conjunction with the *Cumberland DCP 2021* and other relevant legislation and plans.

DEFINITIONS

ARI – average recurrence interval
DCP - *Cumberland Development Control Plan 2021*
Flood prone land - being synonymous with 'flood liable land' and 'floodplain' is the area of land which is subject to inundation by floods up to and including an extreme flood such as a probable maximum flood (PMF).
FRMP - Flood Risk Management Plan or study
FRP - Flood Risk Precinct
LEP - *Cumberland Local Environmental Plan 2021*
Probable Maximum Flood (PMF) - the largest flood that could conceivably occur at a particular location.

PRINCIPLES

1. To minimise risk to life and damage to property arising from flooding.
2. To manage and facilitate the appropriate development of flood prone land in an economically, environmentally and socially sustainable manner.
3. To ensure the appropriate assessment of proposed development on flood prone land.
4. To ensure that new development does not expose existing development to increased flood risks.
5. Measures to increase resilience across the city are encouraged to reduce the effects of flooding and flood risk.

REQUIREMENTS

1. Development applications lodged in accordance with the *Environmental Planning and Assessment Act 1979* on land affected by potential floods are to be assessed in accordance with the controls in the *Cumberland LEP 2021* and *Cumberland DCP 2021*, as well as the requirements of this policy, as applicable.

2. When assessing flood risk, both mainstream and overland flooding are to be considered.

3. Blockage needs to be included when analysing overland flow paths, pipes, etc. This analysis should be carried out on the basis that all bridges, culverts, pipes, etc. are at least 50% blocked.

4. A number of major land use categories have been identified for the purpose of floodplain management control. Table 1 (in the Appendix) shows these major categories together with the specific uses under each category (as defined by *Cumberland LEP 2021*), and the relevant requirements for each category.

5. Where flood compatible materials are required, refer to Table 2 in the Appendix:

6. Development is to comply with the controls applicable to the proposed land use category and FRPs within which the site is located:

    - Haslams Creek floodplain as specified in Table 3 in the Appendix;
    - Duck River floodplain; and
    - Cooks river floodplain.

    Maps for these catchment areas can be found in the appendix.

Note:

1. Council will prepare FRP Maps to identify flood hazards associated with main channels, creeks and rivers only. Other areas potentially affected by local overland flooding will require further study by the applicant, to determine the applicable FRP.
2. There may be areas beyond those mapped by Council, subject to potential flooding. These areas will require further study if identified, to determine an appropriate FRP.
3. Where the applicant is required to undertake further study to determine the applicable FRP, this will need to be undertaken by using an appropriate hydraulic analysis methodology by a suitably qualified hydraulic engineer with experience in urban flood studies.
4. Each of the floodplains within Cumberland City can be divided into flood risk precincts based on different levels of potential flood risk. These flood risk precincts are as follows:

    Haslams Creek floodplain:
    - *High flood risk:* the area within the envelope of land subject to a high hydraulic hazard (in accordance with the provisional criteria outlined in the Floodplain Management Manual) in a 100 year flood or potentially subject to evacuation difficulties.
    - *Medium flood risk:* as land below the 100 year flood level (plus freeboard) subject to low hydraulic hazard (in accordance with the provisional criteria outlined by the NSW Floodplain Management Manual).
    - *Low flood risk:* all other land within the floodplain (i.e. within the extent of the probable maximum flood) but not identified as either a high flood risk or medium flood risk FRP, where risk of damages are low for most land uses.

    Duck River floodplain:
    FRMPs are yet to be finalised for this floodplain. In the interim, the controls applicable to the Haslams Creek floodplain will be applied. No FRP maps apply and appropriate FRPs must be determined on an individual site basis.

    Cooks River floodplain:
    FRMPs are yet to be finalised for this floodplain. In the interim, the controls applicable to the Haslams Creek floodplain will be applied. No FRP maps apply, and appropriate FRPs must be determined on an individual site basis.

RELATED LEGISLATION

Conveyancing Act 1919
Floodplain Development Manual 2005 (NSW Government)
Australian Standards
Cumberland Local Environmental Plan 2021

RELATED DOCUMENTS AND COUNCIL POLICY

Cumberland City Council Development Control Plan 2021
Any applicable flood risk management plans (FRMP)
Managing Urban Stormwater: Soils and Construction (NSW Department of Housing)
Sydney Water Standards

APPENDIX

Table 1: Floodplain Management Controls – Land Use Categories

Essential community facilities	Critical utilities	Subdivision	Residential	Commercial or industrial	Non-urban activities or open space	Concessional development
Place of public entertainment or public administration buildings which may provide an important contribution to the notification and evacuation of the community during flood events. Hospitals and educational establishments.	Telecommunication facilities; fill; electricity generating works or infrastructure land uses which may cause pollution of waterways during flooding. are essential to evacuation during periods of flood or if affected during flood events would unreasonably affect the ability of the community to return to normal activities after flood events.	Subdivision of land which involves the creation of new allotments for any particular purpose.	Bed & Breakfast accommodation; boarding houses; dwelling houses; home industry; infrastructure land uses (other than critical infrastructure); multi dwelling housing; neighbourhood shops; permanent group homes; residential flat buildings; seniors housing; serviced apartments; transitional group homes.	Amusement centres; bulky goods premises; car parks; child care centres; business premises; community facilities; depots; educational establishments; food and drink premises (excluding pubs); function centre; hazardous industries; hazardous storage establishments; health consulting rooms; health service facilities;	Cemetery; depot; extractive industries; helipad; marinas; mining; recreation areas and recreation facilities (outdoor); stock and sale yard.	(a) In the case of residential development: (i) an addition to an existing dwelling house of not more than 10% or 35m² (whichever is the lesser) of the habitable floor area which existed at the date of commencement of this Plan; (ii) the construction of an outbuilding with a maximum floor area of 20m² or

Essential community facilities	Critical utilities	Subdivision	Residential	Commercial or industrial	Non-urban activities or open space	Concessional development
				hotel or motel accommodation; industries; light industries; liquid fuel depot; medical centres; offensive industries; offensive storage establishments; office premises; passenger transport facilities; place of public entertainment; places of public worship; public administration building; recreation facilities (indoor); recreation facilities (major); registered clubs; resource recovery facility; service stations; sex service premises; shops; storage premises; vehicle body repair workshops; vehicle repair stations; vehicle sales or hire premises; warehouse or distribution centres; wholesale supply.		(iii) re-development for the purposes of substantially reducing the extent of flood affectation to the existing building. (b) In the case of other development: (i) an addition to existing premises of not more than 10% of the floor area which existed at the date of commencement of this Plan; or (ii) re-development for the purposes of substantially reducing the extent of flood affectation to the existing building. (c) In the case of all development: (i) earthworks or filling operations covering 100m² or more than 0.3m deep, which do not raise ground levels above the 20-year ARI flood level, and is not located within the foreshore building line.

APPENDIX (CONTINUED)

Table 2: Flood Compatible Materials

Building component	Flood compatible material	Building component	Flood compatible material
Flooring and sub-floor structure	• Concrete slab-on-ground monolith construction • Suspension reinforced concrete slab	Doors	▪ Solid panel with water proof adhesives ▪ Flush door with marine ply filled with closed cell foam ▪ Painted metal construction ▪ Aluminium or galvanised steel frame
Floor covering	• Clay tiles • Concrete, precast or in situ • Concrete tiles • Epoxy, formed-in-place • Mastic flooring, formed-in-place • Rubber sheets or tiles with chemical-set adhesives • Silicone floors formed-in-place • Vinyl sheets or tiles with chemical-set adhesive • Ceramic tiles, fixed with mortar or chemical-set adhesive • Asphalt tiles, fixed with water resistant adhesive	Wall and ceiling linings	▪ Fibro-cement board ▪ Brick, face or glazed ▪ Clay tile glazed in waterproof mortar ▪ Concrete ▪ Concrete block ▪ Steel with waterproof applications ▪ Stone, natural solid or veneer, waterproof grout ▪ Glass blocks ▪ Glass ▪ Plastic sheeting or wall with waterproof adhesive
Wall structure	• Solid brickwork, blockwork, reinforced, concrete or mass concrete	Insulation windows	▪ Foam (closed cell types) ▪ Aluminium frame with stainless steel rollers or similar corrosion and water resistant material
Roofing structure (for situations where the relevant flood level is above the ceiling)	• Reinforced concrete construction • Galvanized metal construction	Nails, bolts, hinges and fittings	▪ Brass, nylon or stainless steel ▪ Removable pin hinges ▪ Hot dipped galvanized steel wire nails or similar
Electrical and mechanical equipment For dwellings constructed on land to which this Part applies, the electrical and mechanical materials, equipment and installation should conform to the following requirements.		**Heating and air conditioning systems** Heating and air conditioning systems should, to the maximum extent possible, be installed in areas and spaces of the house above the relevant flood level. When this is not feasible, every precaution should be taken to minimize the damage caused by submersion according to the following guidelines.	
Main power supply Subject to the approval of the relevant authority, the incoming main commercial power service equipment, including all metering equipment, shall be located above the relevant flood level. Means shall be available to easily disconnect the dwelling from the main power supply.		**Fuel** Heating systems using gas or oil as a fuel should have a manually operated valve located in the fuel supply line to enable fuel cut-off.	
Wiring All wiring, power outlets, switches, etc. should, to the maximum extent possible, be located above the relevant flood level. All electrical wiring installed below the relevant flood level should be suitable for continuous submergence in water and should contain no fibrous components. Earth core linkage systems (or safety switches) are to be installed. Only submersible-type splices should be used below the relevant flood level. All conduits located below the relevant designated flood level should be so installed that they will be self-draining if subjected to flooding.		**Installation** The heating equipment and fuel storage tanks should be mounted on and securely anchored to a foundation pad of sufficient mass to overcome buoyancy and prevent movement that could damage the fuel supply line. All storage tanks should be vented to an elevation of 600 millimetres above the relevant flood level.	
Equipment All equipment installed below or partially below the relevant flood level should be capable of disconnection by a single plug and socket assembly.		**Ducting** All ductwork located below the relevant flood level should be provided with openings for drainage and cleaning. Self draining may be achieved by constructing the ductwork on a suitable grade. Where ductwork must pass through a water-tight wall or floor below the relevant flood level, the ductwork should be protected by a closure assembly operated from above relevant flood level.	
Reconnection Should any electrical device and/or part of the wiring be flooded, it should be thoroughly cleaned or replaced and checked by an approved electrical contractor before reconnection.			

APPENDIX (CONTINUED)

Haslams Creek Floodplain

(Also applies to Duck River and Cooks River Floodplain in interim - subject to review)

Planning Consideration	Flood Risk Precincts (FRP's)																		
	Low Flood Risk							Medium Flood Risk						High Flood Risk					
	Essential Community Facilities	Critical Utilities	Subdivision	Residential	Commercial & Industrial	Recreation & Non-Urban	Concessional Development	Essential Community Facilities	Critical Utilities	Subdivision	Residential	Commercial & Industrial	Recreation & Non-Urban	Concessional Development	Essential Community Facilities	Critical Utilities	Subdivision	Residential	Commercial & Industrial	Recreation & Non-Urban	Concessional Development
Floor Level		5									2,3,4	2,3	1	6						1	2,6
Building Components		2									1	1	1	1						1	1
Structural Soundness		3									2	2	2	2						1	1
Flood Affectation		2								1	2	2	2	2						1	1
Evacuation		2,4	*	3,4	4					*	3,4	3,4	1	3						1	3
Management & Design		1,2,3	1							1	2,3,5	2,3,5	2,3,5	2,3,5						2,3,5	2,3,5

Not Relevant

Unsuitable Land Use

* Refer to 'Management & Design' planning consideration for subdivision

Note: *Filling of the site, where acceptable to Council, may change the FRP considered to determine the controls applied in the circumstances of individual applications.*

Floor level

1	All floor levels to be equal to or greater than the 5 year ARI flood level plus freeboard unless justified by site specific assessment.
2	Floor levels of open car parking areas to be equal to or greater than the 20 year ARI flood plus freeboard. This may be achieved with a suspended floor which allows the continued passage of flood waters or filling if justified by a site specific assessment, as required with reference to flood affectation and other controls below. Enclosed car parking (e.g. garages or basement car parking) must be protected from the 100 year ARI flood.
3	Habitable floor levels to be equal to or greater than the 100 year ARI flood plus freeboard.
4	Below ground swimming pools should be free from inundation from storms up to the 5 year ARI. Where required, the private open space of a dwelling should be a usable outdoor recreation area which, during storm events equal to less than the 5 year ARI, is free from inundation by overland flows exceeding 50mm.
5	All floor levels to be equal to or greater than the probable maximum flood plus freeboard.
6	Floor levels to be as close to the design floor level (the level nominated above that would apply if not concessional development) as practical and no lower than the existing floor level when undertaking alterations or additions.

Note: The freeboard height in the Haslams Creek floodplain is variable primarily, due to the implications of sub-critical and super-critical flows caused by obstructions to the flowpath of flood waters, and can be determined by reference to a map and tables produced as part of the Haslams Creek FRMP and held in the offices of Council. The freeboard height for the Duck River and Cooks River floodplains is 0.5m.

Building components and method (Also see Table 7)

1	All structures to have flood compatible building components below or at the 100 year ARI flood level.
2	All structures to have flood compatible building components below or at the PMF level.

Structural soundness

1	Engineers report to certify that any structure can withstand the forces of floodwater, debris and buoyancy up to and including a 100 year flood.
2	Applicant to demonstrate that any structure can withstand the forces of floodwater, debris and buoyancy up to and including a 100 year flood.

3	Applicant to demonstrate that any structure can withstand the forces of floodwater, debris and buoyancy up to and including a PMF flood.

Flood affectation

1	Engineers report required to certify that the development will not increase flood affectation elsewhere.
2	The impact of the development on flooding elsewhere to be considered.

Note: When assessing flood affectation the following must be considered:

1. Loss of storage area in the floodplain (except for filling occurring up to the 20 year ARI.
2. Changes in flood levels caused by alteration of conveyance of flood waters.
3. Filling between the 20 year and 100 year ARI flood levels will not be permitted.

Evacuation

1	Reliable access for pedestrians required during a 5 year ARI flood.
2	Reliable access for pedestrians and vehicles required during a PMF flood.
3	Reliable access for pedestrians or vehicles is required from the dwelling, commencing at a minimum flood level equal to the lowest habitable floor level to an area of refuge above the PMF level, either on-site of off-site.
4	Applicant to demonstrate that the development is to be consistent with any relevant DISPLAN or flood evacuation strategy.

Management and design

1	Applicant to demonstrate that potential development as a consequence of a subdivision proposal can be undertaken in accordance with this Part.
2	Site Emergency Response Flood plan required (except for single-dwelling houses) where floor levels are below the design floor level.
3	Applicant to demonstrate that area is available to store goods above the 100 year flood plus 0/5m (freeboard).
4	Applicant to demonstrate that area is available to store goods above the PMF flood plus 0.5m (freeboard).
5	No external storage of materials below design floor level which may cause pollution or be potentially hazardous during any flood.

APPENDIX (CONTINUED)

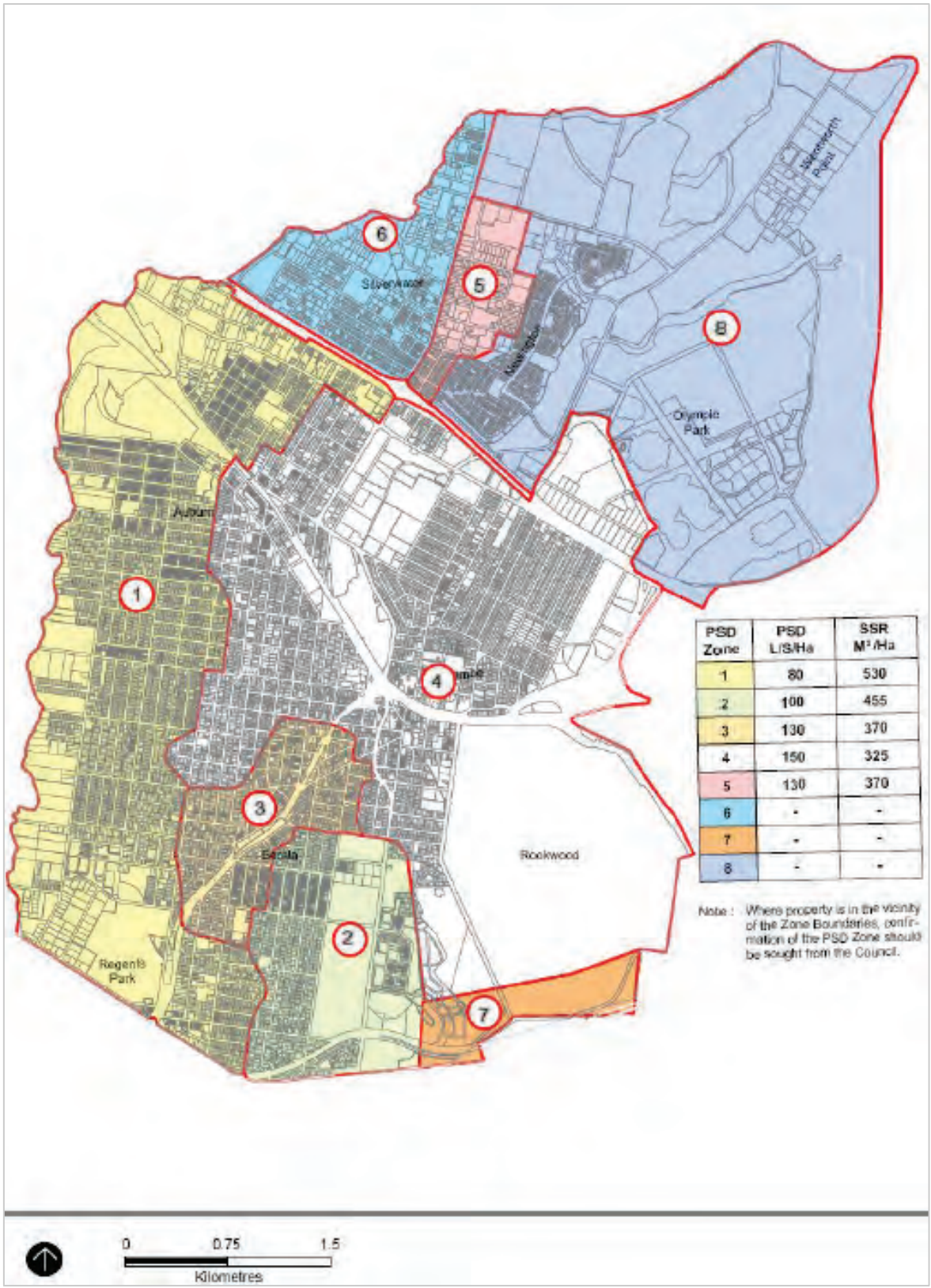


Figure 1: Haslams Creek catchment area

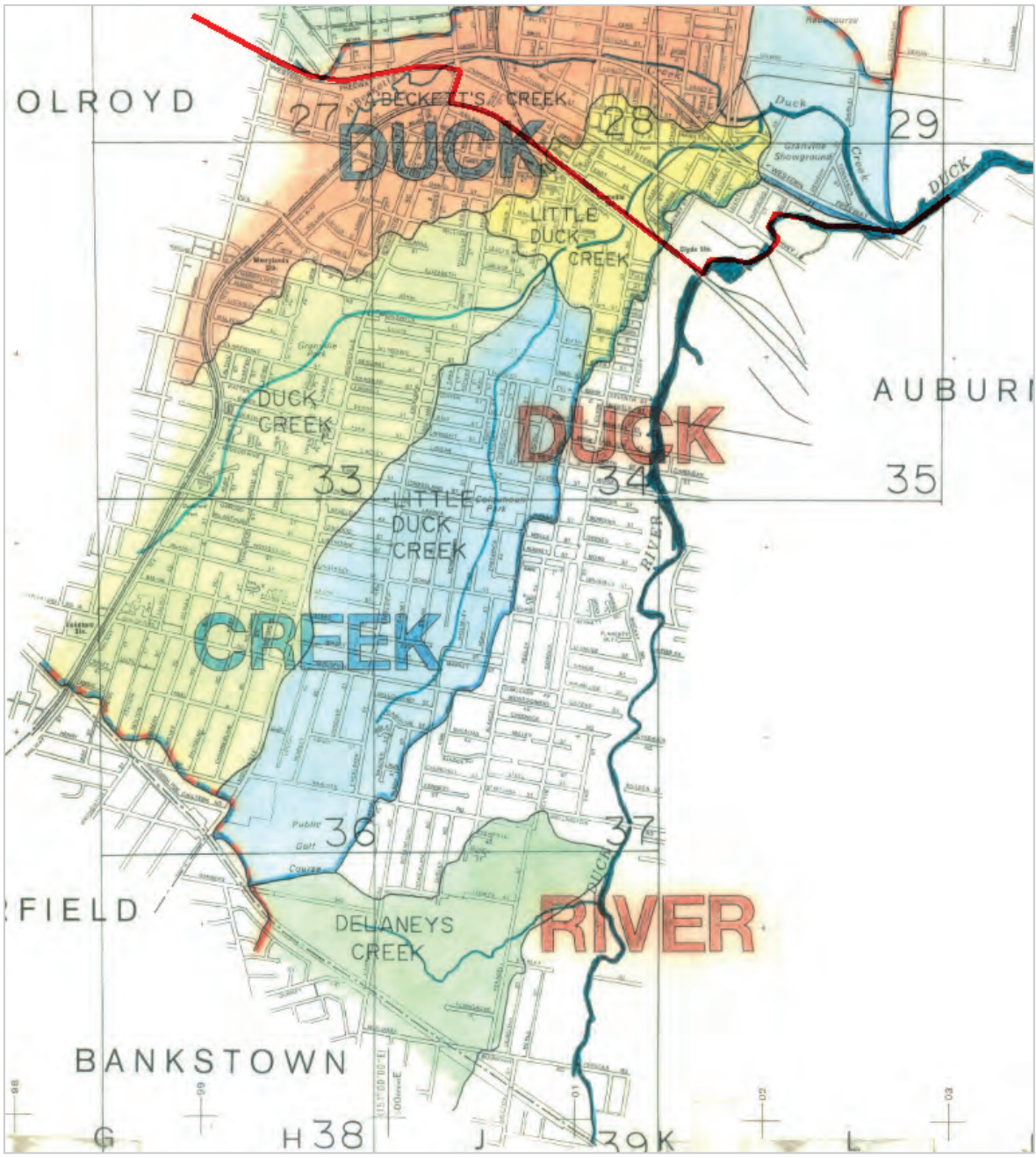


Figure 2: Duck River catchment area

APPENDIX D

CUMBERLAND LGA FLOOD EMERGENCY SUB PLAN

https://www.ses.nsw.gov.au/media/5363/cumberland-vol-1-lfp-endorsed-nov-2021.pdf

CUMBERLAND CITY COUNCIL

SES
NSW STATE EMERGENCY SERVICE

CUMBERLAND LGA FLOOD EMERGENCY SUB PLAN

A Sub Plan of the Local Emergency Management Plan (EMPLAN)

Volume 1 of the Cumberland LGA Local Flood Plan

Endorsed by the Emergency Management Committee

24 November 2021

AUTHORISATION

The Cumberland LGA Flood Emergency Sub Plan is a sub plan of the Cumberland Local Emergency Management Plan (EMPLAN). It has been prepared in accordance with the provisions of the ***State Emergency Service Act 1989*** **(NSW)** and is endorsed by the Local Emergency Management Committee in accordance with the provisions of the ***State Emergency and Rescue Management Act 1989*** **(NSW)**.

Authorised

Kathy Garancsi

NSW SES Central Cluster Local Commander

Date: 18/11/2021

Endorsed

Chair, Local Emergency Management Committee

Date: 16/02/2022.

VERSION HISTORY

Version Number	Description	Date

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

Community Planning and Engagement
NSW State Emergency Service
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Amendments in the list below have been entered in this plan.

Amendment Number	Description	Updated by	Date

DISTRIBUTION LIST

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1 OUTLINE AND SCOPE

1.1 PURPOSE

1.1.1 The purpose of this plan is to set out the multi-agency arrangements for the emergency management of flooding in the Cumberland Local Government Area (LGA).

1.2 AUTHORITY

1.2.1 This plan is written and issued under the authority of the *State Emergency and Rescue Management Act 1989* (NSW) ('SERM Act'), the *State Emergency Service Act 1989* (NSW) ('SES Act') and the NSW State Emergency Management Plan (EMPLAN).

1.2.2 This plan is a sub plan to the Cumberland Local Emergency Management Plan (EMPLAN) and is endorsed by the Emergency Management Committee (LEMC).

1.3 ACTIVATION

1.3.1 This plan does not require activation. The arrangements set out in this plan are always active.

1.3.2 The Cumberland Emergency Management Plan (EMPLAN) is active at all times in anticipation of the need to coordinate support and resources requested by combat agencies, including the NSW State Emergency Service (NSW SES).

1.4 SCOPE

1.4.1 The area covered by this plan is the Cumberland LGA. The Cumberland LGA and its principal towns, villages, rivers and creeks are shown in Appendix A.

1.4.2 The council area is in the NSW SES Metro Zone and for emergency management purposes is part of the South West Metro Emergency Management Region.

1.4.3 The plan sets out the Cumberland Council level emergency management arrangements for prevention, preparation, response and initial recovery for flooding in the Cumberland LGA.

1.4.4 In this plan a flood is defined as a relatively high water level which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves (including tsunami) overtopping coastline defences.

1.4.5 This plan outlines the local level arrangements for the management of downstream consequences of dam failure,

1.5 GOALS

1.5.1 The primary goals for flood emergency management in NSW are:

a. Protection and preservation of life.

b. Establishment and operation of flood warning systems.

c. Issuing of community information and community warnings.

d. Coordination of evacuation and welfare of affected communities.

e. Protection of critical infrastructure and community assets essential to community survival during and emergency incident.

f. Protection of residential property.

g. Protection of assets and infrastructure that support individual and community financial sustainability and aid assisting a community to recover from an incident; and

h. Protection of the environment and conservation values considering the cultural, biodiversity and social values of the environment.

1.6 KEY PRINCIPLES

1.6.1 The protection and preservation of human life (including the lives of responders and the community) is the highest priority.

1.6.2 Evacuation is the primary response strategy for people impacted by flooding.

1.7 ROLES AND RESPONSIBILITIES

1.7.1 General responsibilities of emergency service organisations and functional areas are set out in the NSW State EMPLAN and NSW State Flood Plan.

1.7.2 Specific roles and responsibilities for agencies, functional areas and organisations in relation to flooding within the Cumberland LGA are detailed within this plan, Appendix B and Appendix C.

1.7.3 Any agency with agreed responsibilities in this plan that are temporarily, or no longer able to fulfil their responsibilities must as soon as possible notify the:

a. NSW SES Incident Controller (for local or zone level responsibilities during response operations).

b. NSW SES Zone Duty Commander (for regional level responsibilities outside of response operations).

1.8 PLAN MAINTENANCE AND REVIEW

1.8.1 The NSW SES will maintain the currency of this plan by:

a. Ensuring that all supporting emergency services and functional areas, organisations and officers mentioned in it are aware of their roles and responsibilities.

b. Conducting exercises to test arrangements.

c. Reviewing the contents of the plan:

- When there are changes which alter agreed plan arrangements.
- When changes to land use strategic plans and policies increase the population at risk.
- After a flood including from after action reviews, reports, or inquiries; and

- As determined by the NSW SES Commissioner.

d. The plan is to be reviewed no less frequently than every five years or after a significant flood event.

1.9 SUPPLEMENTARY DOCUMENTS

1.9.1 Supplementary material published in previous versions of the Local Flood Plan is now maintained on the NSW SES website at: https://www.ses.nsw.gov.au/about-us/flood-storm-and-tsunami-plans/ including:

a. Flood Plan Glossary.

b. NSW SES Dam Failure Notification Flowchart.

c. NSW SES Resupply Flowchart.

2 OVERVIEW OF NSW FLOOD HAZARD AND RISK

2.1 THE FLOOD THREAT

2.1.1 The NSW SES maintains information on the nature of flooding and effects of flooding on the community in the Cumberland Council LGA.

2.1.2 Declared dams in or upstream of the Cumberland Local Government Area.

Dam Name	Owner	High Risk Dam
Windemere Detention Basin	Boral Recycling P/L	
CSIRO Retarding Basin	Cumberland City Council	
Lidcombe Basin NO. 6	Cumberland City Council	
Potts Hill Reservoir WS455 & WS456	Sydney Water	
Prospect Reservoir	Water NSW	
Fox Hills Retarding Basin	Blacktown Council	

3 PREVENTION/ MITIGATION

3.1 INTRODUCTION

3.1.1 The Floodplain Development Manual outlines the NSW Government's Flood Prone Lands Policy which details the framework for managing flood prone land in New South Wales. Incorporation of floodplain risk management into land use planning is one of the key means to limit the exposure to flood risks to our communities and help build long term resilience to future flood events.

3.2 LAND USE PLANNING

3.2.1 **Strategy:** Work with landuse planning and consent authorities to advocate that the risks arising from floods are considered so as to prevent the creation of intolerable impacts of these hazards on the community.

Actions:

a. NSW SES will provide strategic input about land use planning matters which have or will create significant flood risk.

b. NSW SES will provide responses to land use planning proposal referrals that have or will create significant flood risk.

3.3 FLOODPLAIN RISK MANAGEMENT

3.3.1 **Strategy**: NSW SES advocates for the recognition of emergency management considerations through participation in the floodplain risk management program.

Actions:

a. NSW SES will provide coordinated and consistent emergency management advice to councils and other agencies in relation to the management of land that is subject to flooding or coastal inundation; and

b. NSW SES will provide advice, support and technical resources for NSW SES representatives to contribute effectively to local Floodplain Management Committees.

4 PREPARATION

4.1 INTRODUCTION

4.1.1 Preparation includes arrangements or plans to deal with an emergency or the effects of an emergency.

4.2 FLOOD EMERGENCY PLANNING

4.2.1 **Strategy**: NSW SES develop, review and maintain Flood Sub Plans

4.2.2 **Actions**:

a. Develop and review this NSW SES Local Flood Plan as required. Local Flood Plans outline the specific arrangements for management of flood events within an LGA, and may include cross boundary arrangements; and

b. Review plans as per Section 1.8.

4.2.3 Local EMPLAN Consequence Management Guides for flood are not required for communities covered by NSW SES Local Flood Plans.

4.3 FLOOD INTELLIGENCE SYSTEMS

4.3.1 **Strategy**: NSW SES develop and maintain a flood intelligence system to identify flood behaviour, its impact on the community and required response actions.

Actions:

a. Gather and assess flood information for the full range of flood types and severities.

b. Collect, collate, and assess information on the characteristics of communities at risk and the potential effects of flooding on communities at risk; and

c. Share flood intelligence information with supporting agencies.

4.4 DEVELOPMENT OF WARNING SYSTEMS

4.4.1 **Strategy**: Develop, maintain and prepare systems for the provision of flood warnings and associated warning services.

Actions:

a. All levels of government work in partnership to develop and maintain flood warning infrastructure.

b. NSW SES maintains a list of the requirements for flood warnings for flood gauges in NSW (including flood classifications, warning times required and key statistics) and can be found in the supplementary document to the NSW State Flood Plan (see Section 1.9).

c. The NSW SES will recommend new warning services and changes to warning alert levels for gauges to the NSW Flood Warning Consultative Committee.

d. The State Government, in partnership with Local Government, is responsible for developing and maintaining flash flood warning systems for local catchments where required.

e. Dam Owners will provide Dam Failure Warning Systems (where required) and consult NSW SES on alert levels and messaging. Alert level definitions are listed in Dam Emergency Plans.

f. NSW SES maintains a dedicated dam failure hotline and procedures to ensure priority dissemination of dam failure warnings.

g. NSW SES develops and maintains warning and flood information products by:

- Utilising flood intelligence data.
- Developing pre-written warning and flood information products.
- Continuously reviewing warning and flood information products; and
- Consulting with affected communities, key stakeholders, Dam Safety NSW and the NSW Flood Warning Consultative Committee; and maintain Operational Readiness.

4.5 BRIEFING, TRAINING AND EXERCISING

4.5.1 **Strategy**: Ensure NSW SES, supporting agencies, functional areas and the community are prepared and familiar with the strategies and arrangements within the Flood Sub Plan and supporting documents.

Actions:

a. NSW SES will consult stakeholders throughout the development of plans.

b. NSW SES will inform stakeholders of content changes after revisions.

c. NSW SES will ensure their facilities and resources are maintained and operationally ready.

d. NSW SES will train personnel for their expected flood operation roles; and

e. NSW SES will regularly brief stakeholders on the exercise arrangements contained in the NSW Flood Sub Plan.

4.6 COMMUNITY RESILIENCE TO FLOODING

4.6.1 **Strategy**: NSW SES provides and maintains a flexible volunteer workforce to support community resilience.

Actions:

a. Ensure ongoing recruitment and training of a diverse range of volunteers.

b. Ensure pre-planning to facilitate the management of spontaneous volunteers and community members during a flood.

4.6.2 **Strategy**: NSW SES works with individuals, communities, businesses and government agencies to build flood resilience.

Actions:

a. Work with communities to understand and manage the risks associated with floods, including providing business continuity guidance (NSW SES Business Floodsafe), family preparedness (NSW SES Home Floodsafe) and other engagement strategies.

b. NSW SES will collate, assess and disseminate flood information to the community.

c. Collaborate with individuals, businesses, government agencies and communities when developing flood intelligence, preparedness and response information.

d. Plan for floods collaboratively with communities through community and stakeholder participation and engagement.

5 RESPONSE

5.1 INTRODUCTION

5.1.1 Flood response operations will begin:

a. On receipt of a Bureau of Meteorology (BoM) Severe Weather Warning or Thunderstorm Warning that includes heavy rain or storm surge; or

b. On the receipt of a BoM Flood Watch or Flood Warning; or

c. On receipt warnings for flash flood; or

d. On receipt of a dam failure alert; or

e. When other evidence leads to an expectation of flooding.

5.2 INCIDENT MANAGEMENT ARRANGEMENTS

5.2.1 **Strategy**: Maintain effective control of flood operations across New South Wales.

Actions:

a. The NSW SES uses the Australasian Inter-service Incident Management System (AIIMS) to manage the flood response.

b. Control of flood response will be at the lowest effective level and may be scaled to suit the incident.

c. The NSW SES State Duty Commander will appoint Incident Controllers and establish Incident Control Centres (see NSW SES headquarters on map in Appendix A).

d. The Incident Controller, in consultation with participating supporting emergency services and Functional Areas will determine the appropriate breakdown of an incident area into Divisions and/or Sectors in accordance with the principles of AIIMS as well as the predefined Divisions and Sectors outlined within the NSW SES Intelligence System

5.2.2 **Strategy**: Maintain Incident Control Centre(s).

Actions:

a. NSW SES will operate Incident Control Centre(s) as required.

b. The NSW SES Incident Control Centre(s) will:

- Control resources from NSW SES and coordinate resources of supporting emergency services and functional areas.
- Manage Request for Assistance (RFA) tasking and ensure they are actioned in a timely manner.
- Undertake response planning and determine future resourcing requirements; and
- Coordinate information flow, including warnings, public information and social media.

5.2.3 **Strategy**: Provide effective liaison between the NSW SES and supporting agencies or functional areas in accordance with Local EMPLAN.

Actions:

a. Supporting emergency services and Functional Areas should provide Liaison Officers to NSW SES Incident Control Centre(s) and/or Emergency Operation Centres as required; and

b. NSW SES will provide Liaison Officer(s) to Emergency Operations Centres as required.

5.2.4 **Strategy**: Coordinate resources and logistics support to ensure operational effectiveness.

Actions:

a. The NSW SES Incident Controller will notify agencies of potential access issues between locations, for the consideration of pre-deploying of resources.

b. The NSW SES may request resources and logistics support directly from a supporting emergency service or Functional Area.

c. Wherever possible, supporting organisations are to provide their own logistic support in consultation with NSW SES where appropriate.

d. The NSW SES Incident Controller will control air support operations and may utilise supporting agencies in the management of aircraft.

5.3 USE OF INFORMATION AND COLLECTION OF INTELLIGENCE

5.3.1 **Strategy**: Ensure flood information is effectively communicated and collected during a flood.

Actions:

a. Information relating to the consequences of flooding, response strategies, situational awareness and operational updates will be distributed by NSW SES to supporting emergency services and Functional Areas listed under this Plan.

b. All supporting emergency services and Functional Areas will accurately record and report information relevant to their activities and any real time flood information (including road closure information) to the NSW SES Incident Controller. This may be in the form of a combined Emergency Operations Centre (EOC) report, or direct from agencies where an EOC has not been established.

c. The NSW SES may establish and operate a Joint Intelligence Unit to coordinate the collection, collation, interpretation, mapping, actioning and dissemination of information; and

d. Reconnaissance, mapping, damage assessments, intelligence validation and post flood evaluation will be coordinated by NSW SES. This may occur post impact and continue into the recovery phase.

5.3.2 **Strategy**: Ensure flood intelligence is incorporated into operational decision-making.

Action: The NSW SES will use flood intelligence and official forecasts and warnings, to undertake an assessment of the predicted impact of a flood and to inform operational decision-making.

5.4 PROVISION OF INFORMATION AND WARNINGS TO THE COMMUNITY

5.4.1 **Strategy**: Timely and effective warnings are distributed to the community.

Actions:

a. The BoM issues public weather and flood warning products before and during a flood. These may include:

- Severe Thunderstorm Warnings with reference to heavy rainfall
- Regional Severe Thunderstorm Warnings with reference to heavy rainfall
- Detailed Severe Thunderstorm Warnings (for Sydney / Newcastle / Wollongong) with reference to heavy rainfall,
- Severe Weather Warnings with reference to heavy rainfall and/or storm surge,
- Flood Watches, and

- Flood Warnings.

b. Dam Owners will utilise Dam Failure Warning Systems to provide warnings and information to NSW SES and communities (where appropriate).

c. NSW SES Incident Controllers will issue the following NSW SES flood information products incorporating warnings from the above, expected consequences and safety messages:

- Local Flood Advices
- Flood Bulletins
- NSW SES Evacuation Warning
- NSW SES Evacuation Order
- NSW SES All Clear

d. NSW SES liaises with the Bureau of Meteorology to discuss the development of flood warnings as required.

e. NSW SES provides alerts and deliver flood information to affected communities using a combination of the following methods:

- Mobile and fixed public address systems.
- Two-way radio.
- Emergency Alert (SMS and voice message alerting system).
- Telecommunications (including Auto dial systems).
- Facsimile
- Standard Emergency Warning Signal.
- Doorknocking.
- Variable message signs.
- Community notices in identified hubs.
- Distribution through established community liaison networks, partnerships and relationships; and
- NSW SES social media and website.

f. NSW SES may request supporting agencies redistribute NSW SES alerts and information, including through the provision of doorknocking teams.

g. Road closure information will be provided to the community through the following agencies/methods:

- Local Government Council websites; and
- My Road Info
- Transport for NSW 'Live Traffic' website: www.livetraffic.com or 'Transport InfoLine': 131 500. VMS messaging on roadways may also be used to advise motorists.

h. The Public Information and Inquiry Centre will be established by the NSW Police Force where required to provide information regarding evacuees and emergency information. Contact details will be broadcast once the centre is established.

i. The Disaster Welfare Assistance Line will be established by Disaster Welfare Services where required to provide information on welfare services and assistance. Assistance line contact details will be broadcast once Disaster Welfare Services commence.

5.5 PROTECTION OF PROPERTY

5.5.1 **Strategy**: Coordinate the protection of property from destruction or damage arising from floods.

Action: NSW SES, supporting agencies, and community volunteers will assist the community (where resources are available, feasible and safe to do so) in:

a. The protection of properties through flood protection systems (e.g. sandbagging) to minimise entry of water into buildings; and

b. The raising or moving of household furniture and commercial stock/equipment.

5.6 ROAD AND TRAFFIC CONTROL

5.6.1 **Strategy**: Coordinate the closing and re-opening of flood affected roads.

Actions:

a. Cumberland City Council will coordinate the closure and reopening of council managed roads once inspections have been carried out by the relevant authority.

b. Transport for NSW will coordinate the closure and reopening of the state road network.

c. The NSW Police Force may close and re-open roads but will normally only do so (if the Cumberland City Council or Transport for NSW have not already acted and if public safety requires such action;

d. NSW SES will assist with erecting road closure signs and barriers when time and resources permit.

5.6.2 **Strategy**: Coordinate traffic control measures in flood affected areas.

a. The NSW SES Incident Controller may direct the imposition of traffic control measures into flood affected areas in accordance with the provisions of the *State Emergency Service Act, 1989* and the *State Emergency Rescue Management Act, 1989.*

b. The NSW SES Incident Controller may request the Local Emergency Operations Controller provide suitable personnel to assist with traffic coordination.

5.7 PROTECTION OF ESSENTIAL SERVICES

5.7.1 Local and Region EMPLAN's contain infrastructure inventories.

5.7.2 **Strategy**: Minimise disruption to the community by ensuring protection of infrastructure and supply of essential energy and utility services.

Actions:

a. Transport Services Functional Area will keep the NSW SES informed of the status of transport network infrastructure.

b. The Energy and Utility Services Functional Area is to coordinate the assessment and restoration of essential energy and utility services (not including telecommunications).

c. The Telecommunications Services Functional Area is to coordinate the assessment and restoration of telecommunications and the Government Radio Network.

d. The Engineering Services Functional Area is to coordinate the assessment and restoration of critical public buildings for example hospitals; and

e. Functional Areas will keep the NSW SES informed of the status of utilities and infrastructure.

5.8 EVACUATION

5.8.1 Evacuation is the NSW SES's primary response strategy for managing the population at risk of flooding.

5.8.2 **Strategy**: Conduct planning to ensure all evacuation constraints are considered.

Actions:

a. Evacuations will take place when there is a risk to public safety. Circumstances may include:

- Evacuation of people when their homes or businesses are likely to flood.
- Evacuation of people who are unsuited to living in isolated circumstances, due to flood water closing access; and
- Evacuation of people where essential energy and/or utility services are likely to fail or where buildings have been or may be made uninhabitable; and

b. The NSW SES will consider the following in evacuation decisions:

- Duration of evacuation.
- Characteristics of the community.
- Numbers requiring evacuation.
- Availability of evacuation routes and transport.
- Time available for evacuation.
- Evacuee management requirements; and
- Resources and delivery of evacuation information.

c. NSW SES Incident Controllers, and flood planners will carefully consider the risks involved in conducting evacuations.

d. All evacuation decisions will be made as per the current NSW SES policies and procedures, and consistent with the NSW Evacuation Management Guidelines.

e. Potential Evacuation Centres are located in the Local EMPLAN; and

f. The NSW Police Force will coordinate the provision of overall security for evacuated areas.

5.8.3 **Strategy**: Evacuate people pre-emptively from dangerous or potentially dangerous places and or locations created by the flood hazard to safe locations away from the hazard.

a. NSW SES will control and coordinate the evacuation of affected communities.

b. The NSW SES Incident Controller will warn communities to prepare for a possible evacuation, where circumstances allow such lead time.

c. The NSW SES Incident Controller will order any necessary evacuations and provide information to the community about when and how to evacuate.

d. Support to evacuation operations may be requested from other emergency services and supporting agencies using arrangements in the local EMPLAN and supporting plans.

e. Health Services Functional Area will coordinate the evacuation of hospitals, health centres and aged care facilities (including nursing homes) in consultation with the NSW SES and Welfare Services.

f. School administration offices (Government and Private) will coordinate the evacuation of schools in consultation with the NSW SES and Welfare Services, if not already closed.

g. People who are reluctant or refuse to comply with any Evacuation Order will be referred to the NSW Police Force.

5.9 EVACUEE MANAGEMENT AND WELFARE

5.9.1 Research and experience in flood operations shows that most evacuees go to family, friends and commercial accommodation outside the impact area.

5.9.2 **Strategy**: Maintain the welfare of communities and individuals affected by the impact of a flood.

Actions:

a. NSW SES will provide initial welfare for evacuees where required but will hand the responsibility over to the Welfare Services Functional Area as soon as possible. In these cases, the NSW SES will brief the Welfare Services Functional Area at the earliest opportunity regarding the level of assistance required.

b. Welfare Services Functional Area will manage evacuation centres for affected residents and travellers in accordance with the Welfare Services Functional Area Supporting Plan.

c. Schools Administration (Government and Private) will manage the safety of students directly affected by flooding and will work with the NSW SES in the temporary closure of schools and will coordinate with NSW SES Transport and Welfare Services in the management of school evacuees.

d. Disaster Victim Registration will be controlled and coordinated by the NSW Police Force with the assistance of NSW SES and Welfare Services Functional Area.

e. NSW SES will provide details of all residents assisted in evacuations to the Welfare Services Functional Area as early as possible.

f. Where the expected remaining number of evacuees and the duration of evacuation is assessed to be beyond the capability and capacity of the established evacuation centre arrangements the SEOCON may establish Major Evacuation Centres or Mass Care facilities; and

g. The decision to establish Major Evacuation Centres or Mass Care Facilities will be made by the NSW SES and SEOCON in consultation with members of the State Emergency Management Committee.

5.9.3 **Strategy**: Coordinate available and accessible health services for flood affected communities.

Action: The provision of environmental health advice, assessment of public health risks and coordination of immediate mental health support will be provided by Health Services Functional Area.

5.9.4 **Strategy**: Coordinate maintenance of food supplies for flood affected communities.

Actions: All matters relating to the primary production, manufacturing, processing and handling of all food from primary industries to retail, inclusive of all restaurants, food services and catering businesses should be referred to the NSW Food Authority through the Agriculture and Animal Services Functional Area.

5.9.5 **Strategy**: Maintain the welfare of animals impacted by a flood.

Actions:

a. Agriculture and Animal Services Functional Area will coordinate the welfare of livestock, pets, companion animals and wildlife including support to primary producers, animal holding establishments and community members; and

b. Agriculture and Animal Services Functional Area role will assist with evacuation, emergency care of animals and assessment, humane destruction and disposal of affected animals, and supply of emergency fodder, water and aerial support where necessary.

5.10 FLOOD RESCUE

5.10.1 **Strategy**: Control and coordinate flood rescue of people and domestic animals.

Actions:

a. NSW SES will perform flood rescue, where training and equipment is suitable and where a risk assessment has indicated that the risk to rescuers is acceptable.

b. Flood rescue operations will be conducted in accordance with the State Rescue Board Land Rescue Policy and the NSW State Rescue Board Flood Rescue Policy

which sets out the framework, governance, responsibilities and requirements for the management and conduct of flood rescue in NSW.

c. NSW SES may request other supporting emergency services to undertake flood rescues on behalf of the NSW SES. Agencies must be authorised/accredited to undertake flood rescue operations in accordance with State Rescue Board requirements, as prescribed by NSW SES. Supporting emergency services must supply information regarding rescues performed to the NSW SES. Notification arrangements with NSW Police Force are outlined in the NSW State Rescue Board Flood Rescue Policy; and

d. Rescue agencies will conduct rescue of domestic small and large animals as per the State Rescue Board Land Rescue Policy (and may include Large Animal Rescue of family horses and cows at a residence or property). The rescue of livestock (which includes commercial animals found on farming and breeding enterprises) will be coordinated through Animal and Agriculture Services Functional Area.

5.11 RESUPPLY

5.11.1 **Strategy**: Coordinate resupply to towns and villages isolated by flooding to minimise disruption to the community.

Actions:

a. NSW SES will advise communities and businesses if flood predictions indicate that areas are likely to become isolated, and indicative timeframes where possible.

b. Retailers should be advised to ensure sufficient stock is available for the duration of the flood.

c. When isolation occurs, NSW SES will establish loading points where retailers can instruct suppliers to deliver goods.

d. NSW SES will endeavour to deliver mail to isolated communities but may not be able to do so according to normal Australia Post timetables.

e. NSW SES will assist hospitals with resupply of linen and other consumables where able.

f. NSW SES may request resupply assistance from supporting agencies.

5.12 ALL CLEAR AND RETURN

5.12.1 **Strategy**: Coordinate the safe return of communities to flood affected areas when the immediate danger to life and property has passed.

Actions:

a. NSW SES Incident Controller will determine when it is safe to progressively return in consultation with the relevant Emergency Operations Controller and supporting agencies, considering the impact on the following:

- Access and egress
- Communications

- Power supply
- Gas supply
- Infrastructure damage
- Hazardous materials; and
- Public health risks (including sewerage)

b. NSW SES Incident Controller will specify the level of access to affected communities as the following:

- Not suitable for access.
- Limited access by emergency services and response agencies.
- Limited access by residents and/or business operators; or
- Full access

c. NSW SES Incident Controller will issue an 'All Clear' message when the immediate danger to life and property has passed for areas assessed as safe; and

d. The NSW SES will facilitate the return of evacuees to their homes.

5.13 END OF RESPONSE OPERATIONS

5.13.1 **Strategy**: Conclude response operations.

Actions:

a. Response operations will conclude when:

- The physical impact of the flood has ceased.
- All requests for assistance related to the flood have been completed;
- The need for warning and evacuation no longer exist.
- There is no further likelihood of rescuing people.
- Resupply is no longer required (resupply operations may occur concurrently with the recovery phase).
- Response to fire and hazardous material incidents have concluded (not including subsequent clean-up of contaminated sites); and
- All affected areas have had an 'All Clear' issued.

5.14 POST IMPACT ACTIONS

5.14.1 **Strategy**: Learnings from the event are used to inform recovery and future events.

Actions:

a. NSW SES will continue to engage with communities after significant floods through convening one or more community forums, workshops or other opportunities to provide communities a chance to provide feedback, address any concerns and provide input into the recovery process. These will typically

include other agencies such as the Bureau of Meteorology, Welfare Services and Cumberland CIty Council representatives.

b. NSW SES will ensure that damage assessment information is provided to the relevant Emergency Operations Controller to inform the recovery impact assessment.

c. NSW SES will conduct After Action Reviews, wherever possible, within three weeks of the end of response operations, which will involve all stakeholders. Findings will be shared and incorporated into improved disaster resilience planning.

d. NSW SES will undertake/coordinate a comprehensive review of intelligence and plans following significant flood events.

5.14.2 **Strategy:** Participate in post flood data collection analysis.

Actions: NSW SES will work with the NSW Department of Planning, Industry and Environment (DPIE) and Cumberland City Council on post flood data collection analysis including review of flood intelligence where necessary.

6 RECOVERY OPERATIONS

6.1 INTRODUCTION

6.1.1 Recovery is the process of returning an affected community to its proper level of functioning after an emergency. It will generally commence simultaneously with the Response phase.

6.1.2 Recovery operations will be initiated and conducted as outlined in the NSW State EMPLAN and as further detailed in the NSW Recovery Supporting Plan.

6.2 NSW SES RECOVERY ROLE

6.2.1 **Strategy**: NSW SES will support recovery operations and established Recovery Committees.

6.2.2 **Actions**:

a. NSW SES will provide representation to Recovery Committees as required and may have an ongoing role in the Recovery phase.

b. NSW SES roles on Recovery Committees may include providing information about any continuing response, guidance on mitigation strategies and general advice and assistance to the committee as a subject matter specialist and or expert.

c. NSW SES will provide information to Resilience NSW to support applications to Treasury for Natural Disaster Relief and Recovery Arrangements.

d. The NSW SES, in conjunction with a Recovery Committee, will provide a service to support the information needs of a community immediately following a flood; and

e. NSW SES and where required supporting agencies will assist with clean-up operations after floods, where possible when resources and personnel permit.

7 ABBREVIATIONS

For a full list of abbreviations refer to the NSW State Flood Plan - Abbreviations

8 GLOSSARY

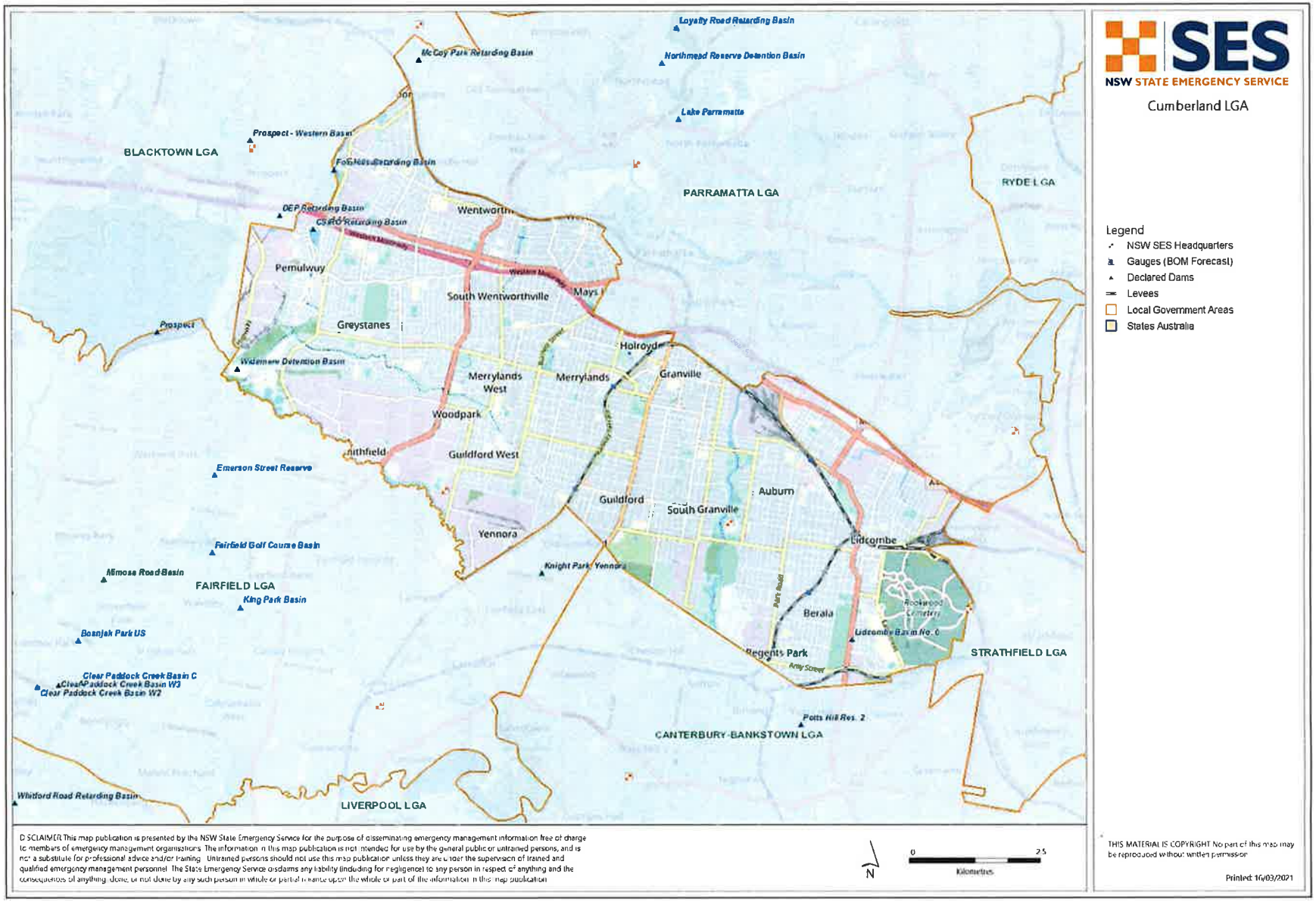
Common emergency service terminology can be found within the Australian Disaster Resilience Glossary.

Readers should refer to EMPLAN Annex 9 – Definitions.

Refer to the NSW State Flood Plan for a complete glossary of terminology used throughout this plan and within NSW SES Flood Plans.

For a full list of definitions refer to the Supporting Document - State Flood Plan Glossary https://www.ses.nsw.gov.au/media/2650/glossary.pdf

9 Appendix A – Map of Cumberland Local Government Area



10 Appendix B – Roles and Responsibilities

AGENCY	RESPONSIBILITIES
NSW State Emergency Service	The NSW SES is the designated Combat Agency for floods, storms and tsunami and controls response operations. NSW SES roles and responsibilities in relation to floods are detailed within the New South Wales State Flood Plan.

AGENCY	RESPONSIBILITIES
Agriculture and Animal Services Functional Area	The roles and responsibilities for Agriculture and Animal Services are outlined in the Agriculture and Animal Services Supporting Plan Roles and responsibilities in addition to the Supporting Plan are: • Disseminate briefing information to participating agriculture and animal services and related stakeholders. • When activated the Agriculture and Animal Services will coordinate the provision of required services which may include: – Coordinate response for animal welfare including pets, livestock and wildlife. – Supply and delivery of emergency fodder. – Emergency water replacement in certain circumstances; and – Financial, welfare and damage assessment assistance to flood affected primary producers. • Support recovery arrangements including: – Administer transport subsidies to primary producers.
Australian Government Bureau of Meteorology	The roles and responsibilities of the Australian Government Bureau of Meteorology are outlined in the NSW State Flood Plan.
Cumberland City Council	**Preparedness** • Establish and maintain floodplain risk management committees and ensure that key agencies are represented. • Develop and implement floodplain risk management plans in accordance with the NSW Government's Flood Prone Land Policy and the Floodplain Development Manual. • Provide levee studies, flood studies and floodplain management studies to the NSW SES. • Maintain Dam Safety Emergency Plans for the Cumberland City Council dams and provide copies to the NSW SES. • Provide information on the consequences of dam failure to the NSW SES for incorporation into planning and flood intelligence.

AGENCY	RESPONSIBILITIES
	• Coordinate the development of warning services for catchments prone to flash flooding (small catchments), where appropriate; • Maintain council-owned flood warning networks and flood mitigation works. • Participate in NSW SES-led flood emergency planning meetings, to assist in the preparation of Flood Sub-Plans. • Maintain a plant and equipment resource list for the council area. • Contribute to community engagement activities. **Response** • Subject to the availability of council resources, assist the NSW SES with flood operations including: – Traffic management on council managed roads. – Provision of assistance to the NSW SES (plant, equipment and personnel where able and requested). – Property protection tasks including sandbagging. – Warning and/or evacuation of residents and other people in flood liable areas. – Provision of back-up radio communications – Resupply of isolated properties; and – Technical advice on the impacts of flooding. – Close and reopen council roads (and other roads nominated by agreement with Transport for NSW) and advise the NSW SES, the NSW Police Force and people who contact the council for road information. – Assist the NSW SES to provide filled sandbags and filling facilities to residents and business in areas which flooding is expected. • Assist with making facilities available for domestic pets and companion animals of evacuees during evacuations. • • Operate flood mitigation works including critical structures such as detention basins and levees and advise the NSW SES regarding their operation. • Manage and protect council-owned infrastructure facilities during floods. • Provide advice to the NSW SES and the Health Services Functional Area during floods about key council managed infrastructure such as sewerage treatment and water supply. • Advise the Environmental Protection Agency of any sewerage overflow caused by flooding.

AGENCY	RESPONSIBILITIES
	• Work with the NSW SES and DPIE to collect flood related data during and after flood events. **Recovery** • Provide for the management of health hazards associated with flooding including removing debris and waste. • Ensure premises are fit and safe for reoccupation and assess any need for demolition. • Provide services, assistance and advice to State Government in accordance with the State Recovery Plan.
Childcare Centres and Preschools	• When notified of possible flooding or isolation, childcare centres and preschools should. – Liaise with the NSW SES and arrange for the early release of children whose travel arrangements are likely to be disrupted by flooding and/or road closures; and – Assist with coordinating the evacuation of preschools and childcare centres.
Dams Safety NSW	The roles and responsibilities of the Dams Safety NSW (formerly NSW Dam Safety Committee) are outlined in the NSW State Flood Plan.
Department of Defence	Arrangements for Defence Assistance to the Civil Community are detailed within the State EMPLAN (section 448).
Department of Industry	The roles and responsibilities for the Department of Industry (Crown Lands and Water Division) are outlined in the NSW State Flood Plan.
Energy and Utilities Services Functional Area	The roles and responsibilities for Energy and Utilities Services are outlined in the Energy and Utility Services Supporting Plan (EUSPLAN). Roles and responsibilities in addition to the Supporting Plan are: • Assist NSW SES with identification of infrastructure at risk of flood damage where resources are available. • Facilitate local utility service distribution providers (electricity, gas, water, wastewater) to: – Provide advice to the NSW SES of any need to disconnect power/gas/water/wastewater supplies or of any timetable for reconnection. – Advise the NSW SES of any hazards from utility services during flooding and coastal erosion/inundation. – Advise the public with regard to electrical hazards during flooding and coastal erosion/inundation, and to the availability or otherwise of the electricity supply.

AGENCY	RESPONSIBILITIES
	– Clear or make safe any hazard caused by power lines or electricity distribution equipment. – Reconnect customers' electrical/ gas/ water/wastewater installations, when certified safe to do so and as conditions allow. – Assist the NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.
Engineering Services Functional Area	The roles and responsibilities for Engineering Services are outlined in the Engineering Services Supporting Plan.
Environmental Services Functional Area	The roles and responsibilities for Environmental Services are outlined in the Environmental Services (ENVIROPLAN) Supporting Plan.
Floodplain Management Australia	The roles and responsibilities of Floodplain Management Australia are outlined in the New South Wales State Flood Plan.
Fire and Rescue NSW (as per NSW State Flood Plan)	**Preparedness** • Identify and notify the NSW SES of any locations at risk of fire (within Fire Districts (13) or hazardous materials that pose a significant threat to surrounding populations due to the impact of a flood for incorporation into NSW SES flood intelligence and planning; and **Response** • Meet the agreed arrangements described in the NSW SES and Fire and Rescue NSW Mutual Aid Agreement. • Provide Incident Management personnel and Liaison Officers to the NSW SES where required. • When requested by NSW SES, provide support to the NSW SES in response to flood emergencies across the State. • Assist the NSW SES with the warning and/or evacuation of at-risk communities. • Assist the NSW SES with the monitoring/reconnaissance of flood prone areas. • Provision of Land Based and In Water Flood Rescue Operators as required. • Provision of appropriately trained personnel to perform Down the Wire (DTW) functions as required. • Conduct Hazmat operations including asbestos risks, rising from flood emergencies in coordination with the SES Incident Controller. • Decontamination of Flood Rescue Operators as required. • Assist the NSW SES with the resupply of isolated communities and/or properties.

AGENCY	RESPONSIBILITIES
	• Assist the NSW SES with property protection tasks including sandbagging. • Provide resources for pumping flood water out of buildings and from low-lying areas. • Assist with clean-up operations, including the hosing out of flood affected properties. • Provide trained staff to support a joint intelligence unit, if established by NSW SES, including Remotely Piloted Aircraft System (RPAS) pilots to assist with field observations. • Assist the NSW SES to undertake damage assessment including structural collapse risks. • Coordinate the pre-deployment of fire resources to communities within NSW Fire Districts if access is expected to be lost, in consultation with the NSW SES; and • Coordinate the deployment of the FRNSW High trans Pump to locations in consultation with NSW SES. **Recovery** • Participate in After Action Reviews as required.
Health Services Functional Area	The roles and responsibilities for Health Services Functional Area are outlined in the Health Services (HEALTHPLAN) Supporting Plan. Roles and responsibilities in addition to the Supporting Plan are: • Ensure that appropriate business continuity plans are developed for essential health infrastructure and are activated during floods.
Local Emergency Operations Controller (LEOCON)	• Monitor flood operations. • If requested, coordinate support for the NSW SES Incident Controller.
Local Emergency Management Officer (LEMO)	• If requested by the NSW SES Incident Controller, advise appropriate agencies and officers of the start of response operations.
Manly Hydraulics Laboratory (MHL)	The roles and responsibilities of Manly Hydraulic Laboratory are outlined in the NSW State Flood Plan.
Marine Rescue NSW (as per NSW State Flood Plan)	**Response** • When requested by NSW SES, assist in flood operations when training and equipment are available and suitable including assistance with: – Warning and/or evacuation of at-risk communities. – Providing communications personnel. – Property protection tasks including sandbagging; and – Flood rescue operations.

AGENCY	RESPONSIBILITIES
NSW Ambulance	The roles and responsibilities for NSW Ambulance are outlined in the Health Services (HEALTHPLAN) Supporting Plan.
NSW Department of Education	**Preparedness** • Liaise with the NSW SES and arrange for the early release of students whose travel arrangements are likely to be disrupted by flooding and/or road closures (or where required, for students to be moved to a suitable location until normal school closing time); • Ensure that evacuation plans for flood liable schools have arrangements for flooding; and • Assist NSW SES with community engagement and capacity building programs. **Response** • Assist with the coordination of the evacuation of schools and the immediate welfare of students until returned to the appropriate carer. • Pass information to school bus drivers/companies and/or school principals on expected or actual impacts of flooding; and • Provide space in schools for evacuation centres where necessary.
NSW Department of Industry, Planning and Environment (as per NSW State Flood Plan)	**Prevention** • Oversee the delivery of the NSW Flood Prone Land Policy including financial support through the Floodplain Management Program. Provide technical advice to councils and state agencies including assistance with the identification of risks, the preparation and implementation of Floodplain Risk Management Plans and associated mitigation and management actions and understanding flood mitigation schemes including levees. • Work with the NSW SES on the Flood Data Access Program to improve the provision of flood information through the NSW Flood Data Portal. • Assist the Department of Industry-Water in the preparation of rural floodplain management plans under the *Water Management Act 2000* (NSW); and **Preparedness** • Assist the NSW SES in the exercising of Flood Sub Plans. • Management of the state government's water level gauges for the flood warning network in tidal areas in NSW (Manly Hydraulic Laboratory operates this system as a service provider on behalf of DPIE.). • Advise NSW SES about conditions which may lead to coastal inundation or retarded river drainage near the coast.

AGENCY	RESPONSIBILITIES
	Response • Provide related advice on flood risks to the NSW SES on request; and • Work with the relevant local council and NSW SES to collect flood related data during and after flood events. **Recovery** Support recovery committees as required.
NSW Food Authority	The roles and responsibilities for NSW Food Authority are outlined in the Food Industry Emergency Sub Plan.
NSW Police Force (as per NSW State Flood Plan)	**Preparedness** • Participate in NSW SES briefings, training and exercises as required. **Response** • Provide a Liaison Officer to the NSW SES Operation Centre if required. • When requested by NSW SES, in flood operations when training and equipment are available and suitable. – Assist with warning and/or evacuation of at-risk communities. – Assist with monitoring / reconnaissance of flood prone areas. – Assist with flood rescue operations. • Conduct road and traffic control operations in conjunction with council and/or Transport NSW. • Coordinate searches for missing people within flood affected areas. • Coordinate security of supply lines evacuated and damaged areas. • Manage Disaster Victim Registration; and • Operate the Public Information and Inquiry Centre, if requested or otherwise needed during flood events. **Recovery** • Participate in After Action Reviews as required.
NSW Rural Fire Service (as per NSW State Flood Plan)	**Preparedness** • Participate in NSW SES briefings, training and exercises as required; and • Meet the agreed arrangements described in the NSW SES/NSW RFS Memorandum of Understanding. **Response** • Provide a Liaison Officer to the NSW SES Operation Centre or Emergency Operations Centre as required.

AGENCY	RESPONSIBILITIES
	• Provide Incident Management Personnel when requested. • Provide trained staff to support a joint intelligence unit, if established by NSW SES. • Provide aviation support, management and advice as requested through the State Air Desk. • Provide speciality aircraft and appropriately trained personnel to perform Down the Wire (DTW) functions as required. • Assist with Damage Assessments; and • Provide Strike Teams during flood operations when requested by NSW SES. This may include assistance with: – Warning and/or evacuation of at-risk communities. – Monitoring / reconnaissance of flood prone areas. – Property protection tasks including sandbagging. – Pumping flood water out of buildings and from low-lying areas. – Back-up radio communications. – Clean-up operations, including the hosing out of flood affected properties. – Deploying resources to communities within Rural Fire Districts where access is expected to be lost in consultation with the NSW SES. – The resupply of isolated communities and/or properties; and – Decontamination of NSW SES Flood Rescue Operators as required. **Recovery** • Participate in After Action Reviews as required.
NSW Volunteer Rescue Association (as per NSW State Flood Plan)	**Response** • Where requested by the NSW SES, assist in flood operations when training and equipment are available and suitable, including assistance with: – The warning and/or evacuation of at-risk communities. – Flood rescue operations. – Monitoring / reconnaissance of flood prone areas. – Resupply of isolated communities and/or properties; and – Property protection tasks including sandbagging.
Resilience NSW	The roles and responsibilities of Resilience NSW are outlined in the NSW State Flood Plan.
Owners of Declared Dams within or upstream of the	**Preparedness** • Assist the NSW SES with community engagement programs.

AGENCY	RESPONSIBILITIES
LGA (as per NSW State Flood Plan)	• Provide NSW SES with information necessary for response planning and warning distribution. • Assist the NSW SES identify correlations between water level and/or discharges at the dam for use in flood response operations (warning and evacuation); and • Consult with the NSW SES State Headquarters in the development of Dam Emergency Plans, including the development of dam failure alerts, in accordance with the Dam Safety Committee Guidelines. **Response** • Where water level monitoring or other instrumentation allows, provide NSW SES with flood advices as per pre-agreed thresholds for use in downstream flood response operations (warnings). • Notify NSW SES of potential or actual dam failures in accordance with the Dam Emergency Plan and Dam Safety NSW Guidelines. • Close at-risk recreational areas within their managed areas. • In the case of declared dams whose risks are intolerable, assist the NSW SES in planning to warn and evacuate people at risk of dam failure and maintain and operate any special Dam Failure Warning Systems and/or automatic telemetered monitoring devices to assist with early detection of incidents which are installed until such time that the risks have been lowered to an acceptable level; and Owners of gated dams: • Provide all available information to the BoM and the NSW SES on storage levels and actual and prospective water releases and their likely impacts on downstream river levels. • Advise the downstream community of prospective and actual water releases, except in those circumstances where the BoM would issue flood warnings; and • Where possible actively work with NSW SES and the BoM to reduce the impacts of flooding on communities through management of water releases within identified safe parameters and within statutory licencing provisions under the *Water Management Act 2000* and *Water NSW Act 2014*.
Public Information Services Functional Area	The roles and responsibilities for Public Information Services are outlined in the Public Information Services Supporting Plan. Roles and responsibilities in addition to the Supporting Plan are: • On receipt of advice from NSW SES of any weather event likely to result in significant multi agency operational activity, the Public Information Functional Area Coordinator PIFAC determines if a daily multi-agency teleconference is required to ensure that the

AGENCY	RESPONSIBILITIES
	information needs of each agency are being met and to address any issues. These teleconferences continue through the response phase into the recovery phase.
Transport for NSW	• Transport for NSW coordinates information on road conditions for emergency services access. • Transport for NSW coordinates the management of the road network across all modes of transport. • Transport for NSW in conjunction will assist the NSW SES with the evacuation of at-risk communities by maintaining access and egress routes. • Transport for NSW will assist the NSW SES with the communication of flood warnings and information provision to the public through Live Traffic and Social Media according to the VMS protocols and procedures. • Assist the NSW SES with identification of road infrastructure at risk of flooding.
SEOCON/SEOC	The roles and responsibilities of the SEOCON/SEOC are outlined in the New South Wales State Flood Plan.
Surf Life Saving NSW (as per NSW State Flood Plan)	**Preparedness** • Contribute to NSW SES reviews into plans, policies and procedures as required; and • Participate in NSW SES briefings, training and exercises as required. **Response** • Assist the NSW SES with the warning and/or evacuation of at-risk communities. • Provide accommodation in Surf Life Saving facilities for evacuation centres where required; and • Assist the NSW SES with flood rescue operations, where training and equipment are suitable.
Telecommunications Services Functional Area	The roles and responsibilities for Telecommunications Services are outlined in the Telecommunications Services (TELCOPLAN) Supporting Plan.
Transport Services Functional Area	The roles and responsibilities for Transport Services are outlined in the Transport Services Supporting Plan. Roles and responsibilities in addition to the Supporting Plan are: • Participate in risk management studies.

AGENCY	RESPONSIBILITIES
	• Assist the NSW SES to identify transport infrastructure at risk of flood damage for incorporation into planning and intelligence; and • Coordinate the provision of traffic and transport operations as consistent with the roles of Transport organisations.
Water NSW	The roles and responsibilities for Water NSW are outlined in the New South Wales State Flood Plan.
Welfare Services Functional Area	The roles and responsibilities for Welfare Services are outlined in the Welfare Services Functional Area Supporting Plan.

11 Appendix C – Community Specific Roles and Responsibilities

Community Members	**Preparedness** • Understand the potential risk and impact of flooding. • Prepare homes and property to reduce the impact of flooding. • Understand warnings and other triggers for action and the safest actions to take in a flood. • Households, institutions and businesses develop plans to manage flood risks, sharing and practicing this with family, friends, employees and neighbours. • Have an emergency kit; and • Be involved in local emergency planning processes. **Recovery** • Assist with community clean-up if required and able to do so. Participate in After Action Reviews if required.

APPENDIX E

FLOOD EVACUATION INDUCTION & SIGN-OFF

PROJECT POSITION	NAME	SIGNATURE	REVISIONS			
			<DATE>	<DATE>	<DATE>	<DATE>
Project Director						
Project Manager						
Site Manager / Flood Warden						
Site Supervisor						
Contract Manager						
Contract Administrator						
WHS /Environmental Manager						
Quality Co-ordinator						
Leading Hand						
Add others:						

A-16 Construction Noise & Vibration Management Plan

Pulse White Noise Acoustics (Acoustic Consultant)

42-44 Boorea Street, Lidcombe

Hale Capital, Lidcome Warehouse and Distribution Centre SSD-36464788

Construction Noise and Vibration Management Plan

ADCO

Report number: 240014-Hale Capital, Lidcombe-CNVMP-R2
Date: 13 May 2024
Version: For Construction

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DOCUMENT CONTROL

Project Name	42-44 Boorea Street, Lidcombe
Project Number	240014
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2	For Construction	240014-Hale Capital, Lidcombe-CNVMP-R2	13 May 2024	Ben White	Matt Furlong	Ben White

PREPARED BY:

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This report has been prepared by Pulse White Noise Acoustics Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Client. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of ADCO
No warranties or guarantees are expressed or should be inferred by any third parties.
This report may not be relied upon by other parties without written consent from Pulse White Noise Acoustics.

This report remains the property of Pulse White Noise Acoustics Pty Ltd until paid for in full by the client, ADCO.

Pulse White Noise Acoustics disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

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1 COMPLIANCE MATRIX

This report has been undertaken such that the construction noise and vibration requirements of the projects SSD-36464788, including Items B1, B24, B25, B26, B27, B31 and B32 are satisfied. The requirements of projects *Conditions of Consent* have been satisfied in this report and details are included in the compliance table below.

<table>
<tr><th colspan="3">NOISE & VIBRATION COMPLIANCE TABLE</th></tr>
<tr><th colspan="2">PROJECT CONDITION OF CONSENT</th><th>REFERENCE IN THE PLAN</th></tr>
<tr><td colspan="2"><u>Item B1 (e) (iii)</u>

(e) include a Driver Code of Conduct and Induction Program to:
(i) minimise the impacts of earthworks and construction on the local and regional road network;
(ii) minimise conflicts with other road users;
(iii) minimise road traffic noise; and
(iv) ensure truck drivers use specified routes:</td><td>Section 9.5</td></tr>
<tr><td colspan="2"><u>Item B24</u>
Hours of Work
B24. The Applicant must comply with the hours detailed in Table 1.
Table 1 Hours of Work
<table><tr><th>Activity</th><th>Day</th><th>Time</th></tr><tr><td>Construction</td><td>Monday – Friday
Saturday</td><td>7 am to 6 pm
8 am to 1 pm</td></tr><tr><td>Operation</td><td>Monday – Sunday</td><td>24 hours</td></tr></table></td><td>Section 6.1.1</td></tr>
<tr><td colspan="2"><u>Item B25</u>
B25. Works outside of the hours identified in condition B24 may be undertaken in the following circumstances:
(a) works that are inaudible at the nearest sensitive receivers;
(b) works agreed to in writing by the Planning Secretary;
(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
(d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.</td><td>Section 6.1.1</td></tr>
<tr><td colspan="2"><u>Item B26</u>

Construction Noise Limits
B26. The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures in the Appendix 2.</td><td>Section 6 and 9</td></tr>
</table>

Item B27 **Construction Noise and Vibration Management Plan** B27. The Applicant must prepare a Construction Noise and Vibration Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must: (a) be prepared by a suitably qualified and experienced noise expert; (b) describe procedures for achieving the noise management levels in the *Interim Construction Noise Guideline* (DECC, 2009) (as may be updated or replaced from time to time); (c) describe the measures to be implemented to manage high noise or vibration generating works such as piling, in close proximity to sensitive receivers; (d) include mitigation measures identified in the 'Noise and Vibration Impact Assessment' prepared for the development by RWDI Australia Pty Ltd dated 6 February 2023, Version B, Final; and (e) include a complaints management system that would be implemented for the duration of the development.	**a) - Section 2** **b) - Section 6.3.1** **c) - Section 9.1** **d) - Section 9.1** **e) - Section 10**
Item B31 **Vibration Criteria** B31. Vibration caused by construction at any residence or structure outside the site must be limited to: (a) for structural damage, the latest version of *DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures* (German Institute for Standardisation, 1999); and (b) for human exposure, the acceptable vibration values set out in the *Environmental Noise Management Assessing Vibration: a technical guideline* (DEC, 2006) (as may be updated or replaced from time to time).	**Section 7**
Item B32 B32. Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition B31.	**Section 7.6**
Requirements of the NSW EPA *Interim Construction Noise Guideline.*	**Section 6.3.1**

2 INTRODUCTION

Pulse White Noise Acoustics has been engaged to undertake the acoustic assessment of the noise and vibration impacts during the construction of the Hale warehouse and distribution centre located at 42-44 Boorea Street, Lidcombe.

This report has been undertaken such that the construction noise and vibration requirements of the projects SSD-36464788, including Items B1, B24, B25, B26, B27, B31 and B32 are satisfied as well as the requirements of the NSW EPA *Interim Construction Noise Guideline*. The requirements of projects *Conditions of Consent* have been satisfied in this report and details are included in the compliance table in Section 1 above.

This report includes the noise and vibration mitigations and management controls for the operation of construction activities on the site to ensure impacts to surrounding receivers are minimised in accordance with the relevant requirements.

3 DEVELOPMENT DESCRIPTION

The development includes the construction of a new warehouse and distribution centre to be located at 42-44 Boorea Street, Lidcombe.

The site is located on the industrial precinct to the north of Boorea Street. The required construction of the project will include construction of the new warehouse and distribution building and include demolition of the exiting buildings on the site, ground works and standard construction.

The surrounding receivers to the site include industrial receivers which are adjacent to the site as well as residential receivers located to the east, west and south of the site.

The site location, in relation to surrounding buildings, is shown in Figure 1 below.

Figure 1 Site Location and Surrounding Receivers

4 CONDITIONS OF CONSENT

The management of noise and vibration assassinated with the required construction works to be undertaken as part of the project will be undertaken in conjunction with the requirements of the SSD Conditions of Consent, including Item B26 of the SSD-36464788 that requires the construction of the project to comply with NSW Dept of Env & Climate Change *"Interim Construction Noise Guideline"* 2009 and includes the following:

This report has been undertaken in compliance with the items above and details the required management controls to comply with the Conditions of Consent, which includes the following:

Construction Noise Limits

B26. The development must be constructed to achieve the construction noise management levels detailed in *the Interim Construction Noise Guideline* (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures in the Appendix 2.

5 EXISTING ACOUSTIC ENVIRONMENT

The development includes the construction of a new Hale warehouse and distribution centre located at 42-44 Boorea Street, Lidcombe and includes the SSD-36464788. See Figure 1 above.

Existing environmental noise levels at the site are dominated by traffic noise generated predominantly from surrounding roadways and existing environmental noise levels of surrounding land uses, including the surrounding land uses.

As part of the SSD-36464788 approval of the site RWDI has undertaken an acoustic assessment, including the *Boorea Street, Warehouse and Distribution Centre Lidcombe NSW – Noise and Vibration Impact Assessment,* including the report with refence RWDI#2201867 and dated 6 February 2023 which is included in the SSD approvals. As part of the *Noise and Vibration Impact Assessment* a background noise survey of the site has been undertaken, the results of which have been used as the basis of this report.

As part of the *Noise and Vibration Impact Assessment* for the project construction noise management criteria have been nominated which are included in this report.

6 CONSTRUCTION NOISE ASSESSMENT

This section of the report details the assessment of noise associated with the construction activities associated with the development. The assessment has been undertaken to assess the potential noise impacts from construction on surrounding receivers to the site.

The construction activities to be undertaken on the site include the ground works and construction of the site. The construction of the project does not include major demolition or excavation on the site.

6.1 Construction Noise

The assessment of construction noise impacts generated from the site has been undertaken in accordance with the requirements of the EAP Interim Construction Noise Guideline.

The EPA's Interim Construction Noise Guideline defines normal day time hours as the following:

2.2 Recommended standard hours

The recommended standard hours for construction work are shown in Table 1; however, they are not mandatory. There are some situations, as described below, where construction work may need to be undertaken outside of these hours. The likely noise impacts and the ability to undertake works during the recommended standard hours should be considered when scheduling work.

Table 1: Recommended standard hours for construction work

Work type	Recommended standard hours of work*
Normal construction	Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays
Blasting	Monday to Friday 9 am to 5 pm Saturday 9 am to 1 pm No blasting on Sundays or public holidays

* The relevant authority (consent, determining or regulatory) may impose more or less stringent construction hours.

6.1.1 Approved Hours of Work

Works on the site will be undertaken in accordance with the requirements of Items B24 and 25 of the *Consent* which includes the following.

Hours of Work

B24. The Applicant must comply with the hours detailed in Table 1.

Table 1 *Hours of Work*

Activity	Day	Time
Construction	Monday – Friday Saturday	7 am to 6 pm 8 am to 1 pm
Operation	Monday – Sunday	24 hours

B25. Works outside of the hours identified in condition B24 may be undertaken in the following circumstances:

(a) works that are inaudible at the nearest sensitive receivers;

(b) works agreed to in writing by the Planning Secretary;

(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or

(d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

6.2 Construction Appliances

The construction appliances which will be used as part of the construction of the project are detailed in the table below.

Table 1 Noise Level from Expected Demotion Appliances

Tasks	Equipment	Sound Power Levels per task dB(A)	Aggregate Sound Power Level per Task dB(A) $L_{eq\ (15\ min)}$
Site Clearing, Demolition and Earthworks	Excavators and bulldozers	115	120
	Bitumen Spray Trucks	111	
	Paving Machines	104	
	Concrete trucks/mixers	106	
	Concrete Vibrator	102	
	Forklifts	101	
	Rollers	107	
	Materials Movements	105	
	Bulldozers	115	
	Trucks and water carts	109	
	Tipper Trucks	97	
Construction Works/Landscaping works	Piling	115	122
	Welder	101	
	Saw cutter	109	
	Excavators	97	
	Dump trucks and concrete trucks (including water carts)	109	
	Concrete saw	119	
	Power hand tools	109	
	Graders	108	
	Scissor lifts	97	
	Cranes	110	
	Mechanical mulching machines	97	
	Skid steer Loaders and bobcats	98	

Note: Noise levels of proposed equipment to be used on the site based on the Australian Standard AS2436-2010 and noise level measurements previously undertaken of similar equipment on construction sites.

6.3 Construction Noise Criteria

This section of the report details the relevant construction noise criteria which is applicable to the site including the EPA's *Interim Construction Noise Guideline* (ICNG).

6.3.1 Interim Construction Noise Guideline

Noise criteria for construction activities are discussed in the *Interim Construction Noise Guideline* (ICNG). The ICNG also recommends procedures to address potential impacts of construction noise on residences and other sensitive land uses. The main objectives of the ICNG are summarised as follows:

- Promote a clear understanding of ways to identify and minimise noise from construction works;
- Focus on applying all "feasible" and "reasonable" work practices to minimise construction noise impacts;
- Encourage construction to be undertaken only during the recommended standard hours unless approval is given for works that cannot be undertaken during these hours;
- Streamline the assessment and approval stages and reduce time spent dealing with complaints at the project implementation stage; and
- Provide flexibility in selecting site-specific feasible and reasonable work practices in order to minimise noise impacts.

The ICNG contains a quantitative assessment method which is applicable to this project. Guidance levels are given for airborne noise at residences and other sensitive land uses.

The quantitative assessment method involves predicting noise levels at sensitive receivers and comparing them with the Noise Management Levels (NMLs). The NML affectation categories for receivers have been reproduced from the guideline and are listed in the table below.

Table 2 Noise Management Levels from Construction

Receiver Type	Time of Day	Noise Management Level $L_{Aeq(15minute)}$[1,2]	How to Apply
Residential	During approved working hours detained with the conditions of consent	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq(15minute)}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.

Receiver Type	Time of Day	Noise Management Level $L_{Aeq(15minute)}$[1,2]	How to Apply
		Highly noise affected 75 dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: 1. Times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences. 2. If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
	Outside recommended standard hours	Noise affected RBL + 5 dB	A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5 dB above the noise affected level, the proponent should negotiate with the community.

Table 2 Continued

Receiver Type	Time of Day	Noise Management Level $L_{Aeq(15minute)}$[1,2]	How to Apply
Retail/ Commercial receivers	When is use	$L_{Aeq\ (15\ min)}$ 70 dB(A)	During construction, the proponent should regularly update the occupants of the commercial and industrial premises regarding noise levels and hours of work.
Industrial Receivers	When is use	$L_{Aeq\ (15\ min)}$ 75 dB(A)	During construction, the proponent should regularly update the occupants of the commercial and industrial premises regarding noise levels and hours of work.

Note 1 *Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence. Noise levels may be higher at upper floors of the noise affected residence.*

Note 2 *The RBL is the overall single-figure background noise level measured in each relevant assessment period (during or outside the recommended standard hours). The term RBL is described in detail in the NSW Industrial Noise Policy (EPA 2000).*

Based on the table above the suitable construction noise management levels for works undertaken on the site is detailed in Table 2 below and is based on the construction noise requirements included in the RWDI report, including the *Boorea Street, Warehouse and Distribution Centre Lidcombe NSW – Noise and Vibration Impact Assessment,* including the report with refence RWDI#2201867 and dated 6 February 2023 (which is included in documents included in the NSW Major Project Portal submission) and included in the SSD approvals.

Table 3 Site Construction Noise Management Levels

Noise Source	Time Period	Receiver Type	Construction Noise Management Level[1]	**'High Noise Affected'** Level[1]
Construction Noise	During period of approved hours of works as detailed within of the SSD *Conditions of Consent*	Commercial	70 dB(A) $L_{Aeq\ (15min)}$	75 dB(A) $L_{Aeq\ (15min)}$
		Industrial Receivers	75 dB(A) $L_{Aeq\ (15min)}$	75 dB(A) $L_{Aeq\ (15min)}$
		Residential Receivers to the east (beyond Nyrang Street)	49 dB(A) $L_{Aeq\ (15min)}$	75 dB(A) $L_{Aeq\ (15min)}$
		Residential Receivers to the south west (beyond Rawson Street)	63 dB(A) $L_{Aeq\ (15min)}$	75 dB(A) $L_{Aeq\ (15min)}$
		Residential Receivers to the north west (beyond St Hillers Road)	70 dB(A) $L_{Aeq\ (15min)}$	75 dB(A) $L_{Aeq\ (15min)}$

Note 1: Construction noise management levels based on the Interim Construction Noise Guideline

6.4 Construction Noise Management – Qualitative Assessment

Based on the assessment conducted of the expected construction noise levels generated from the site, levels are generally expected to require the building contractor to engage in management of activities on the site and engagement with the local community.

Notwithstanding, the following management controls are to be implemented to mitigate construction noise levels on the site:

1. Construction to be undertaken within the approved hours detailed within the projects *Conditions of Consent.*
2. All plant and equipment are to be maintained such that they are in good working order.
3. A register of complaints is to be recorded in the event of complaints being received, including location, time of complaint, nature of the complaint and actions resulting from the complaint.
4. If required a noise level measurement of the offending plant item generating complaints is to be conducted and noise mitigations undertaken to reduce noise levels to within Noise Management levels in the event magnitude of noise levels is found to be above suitable levels.
5. Where possible any excavation to be undertaken on the site is to include ripping of material where possible.

In addition to the mitigations above details of the construction works to be conducted on the site, including type of activities to be conducted as well as the expected duration of activities should be provided to the neighbouring receivers.

In the event noise levels are found to required additional noise reduction then all possible and practical mitigations are required to be included in the construction of the project. Possible acoustic treatments and controls may include the following:

1. Use of alternative appliances to complete the required works which result in reduced noise impacts on surrounding neighbours.
2. Period when noisy appliances are undertaken, such as undertaking noisy works on locations with the greatest distance to residential receivers during morning periods if possible.
3. Construction of acoustic screening to permanently located high noise generating equipment such as pumps and generators.
4. Scheduling of high noise generating works outside of noise sensitive periods if possible.
5. Other site specific treatments and controls which may become possible once works commence.

6.5 Construction Noise Assessment – Quantitative Assessment

A quantitative assessment of the construction noise levels resulting from the works to be undertaken as part of the project on surrounding receivers has been undertaken.

Where appliances are expected to include an annoying characteristics a penalty of 5dB has been applied to the predicted noise levels presented below where required, and including the following application:

1. Hydraulic hammering.
2. Saw cutting.
3. Activities with the potential for impact noise levels including materials movement.
4. Reversing alarms on vehicles.

The assessment has been based on the expected noise levels to be generated on the site including those detailed in Section 6.2 above. Calculations of the resulting construction noise levels of the receivers within proximity to the site is detailed in the table below.

Table 4 Quantitative Assessment of Construction Noise to Receivers Adjance to the site (industrial)

Source Noise	Equipment	Sound Power Levels	Site Cumulative Sound Power Level dB(A) $L_{eq\ (15\ min)}$	Calculated Construction Noise Level	Noise Management Level dB(A) $L_{eq\ (15\ min)}$	Comments
Industrial Receivers Neighbouring the site						
Ground Works/Road Works	Excavators and bulldozers	115	120	57-84 dB(A)	75 dB(A)	Construction Noise Management Levels may be triggered when high noise works are being used on the site. Noise mitigations and controls to be implemented as detailed in this report.
	Bitumen Spray Trucks	111				
	Paving Machines	104				
	Concrete trucks/mixers	106				
	Concrete Vibrator	102				
	Forklifts	101				
	Rollers (smooth Drum)	107				
	Materials Movements	105				
	Bulldozers	115				
	Trucks and water carts	109				
	Tipper Trucks	97				
Construction Works	Piling	115	122	59-86 dB(A) when items used externally. 39-66 dB(A) once items used internally within the building structure.	75 dB(A)	
	Welder	101				
	Saw cutter	109				
	Excavators	97				
	Dump trucks and concrete trucks (including water carts)	109				
	Concrete saw	119				
	Power hand tools	109				
	Graders	108				
	Scissor lifts	97				
	Cranes	110				

Based on the predicted noise levels management of construction appliances should be undertaken as detailed in Section 9.1 of this report.

Table 5 Quantitative Assessment of Construction Noise to Residnetail Receivers to the East

Source Noise	Equipment	Sound Power Levels	Site Cumulative Sound Power Level dB(A) $L_{eq\ (15\ min)}$	Calculated Construction Noise Level	Noise Management Level dB(A) $L_{eq\ (15\ min)}$	Comments
Residential Recovery to the East of the site (Located on Nyrang Street)						
Ground Works/Road Works	Excavators and bulldozers	115	120	35-52 dB(A)	Noise Management Level – 49 dB(A) High Noise Affected Level – 75 dB(A)	Construction Noise Management Levels may be triggered when high noise works are being used on the site. Noise mitigations and controls to be implemented as detailed in this report.
	Bitumen Spray Trucks	111				
	Paving Machines	104				
	Concrete trucks/mixers	106				
	Concrete Vibrator	102				
	Forklifts	101				
	Rollers (smooth Drum)	107				
	Materials Movements	105				
	Bulldozers	115				
	Trucks and water carts	109				
	Tipper Trucks	97				
Construction Works	Piling	115	122	37-54 dB(A) when items used externally. 17-34 dB(A) once items used internally within the building structure.	Noise Management Level – 49 dB(A) High Noise Affected Level – 75 dB(A)	
	Welder	101				
	Saw cutter	109				
	Excavators	97				
	Dump trucks and concrete trucks (including water carts)	109				
	Concrete saw	119				
	Power hand tools	109				
	Graders	108				
	Scissor lifts	97				
	Cranes	110				

Based on the predicted noise levels management of construction appliances should be undertaken as detailed in Section 9.1 of this report.

Table 6 Quantitative Assessment of Construction Noise to Residential Receivers to the South

Source Noise	Equipment	Sound Power Levels	Site Cumulative Sound Power Level dB(A) $L_{eq\ (15\ min)}$	Calculated Construction Noise Level	Noise Management Level dB(A) $L_{eq\ (15\ min)}$	Comments
Residential receiver to the South (including those on Boorea Street)						
Ground Works/Road Works	Excavators and bulldozers	115	120	30-47 dB(A)	Noise Management Level – 63 dB(A) High Noise Affected Level – 75 dB(A)	Construction Noise Management Levels not expected to trigger noise management levels. If required noise mitigations and controls to be implemented as detailed in this report.
	Bitumen Spray Trucks	111				
	Paving Machines	104				
	Concrete trucks/mixers	106				
	Concrete Vibrator	102				
	Forklifts	101				
	Rollers (smooth Drum)	107				
	Materials Movements	105				
	Bulldozers	115				
	Trucks and water carts	109				
	Tipper Trucks	97				
Construction Works	Piling	115	122	32-49 dB(A) when items used externally. Less than 31 dB(A) once items used internally within the building structure.	Noise Management Level – 63 dB(A) High Noise Affected Level – 75 dB(A)	
	Welder	101				
	Saw cutter	109				
	Excavators	97				
	Dump trucks and concrete trucks (including water carts)	109				
	Concrete saw	119				
	Power hand tools	109				
	Graders	108				
	Scissor lifts	97				
	Cranes	110				

Based on the details of the construction noise assessment noise levels are expected to be within the noise management levels to the residential receivers located to the south of the site.

Table 7 Quantitative Assessment of Construction Noise to Residential Receivers Located to the West of the site

Source Noise	Equipment	Sound Power Levels	Site Cumulative Sound Power Level dB(A) $L_{eq\ (15\ min)}$	Calculated Construction Noise Level	Noise Management Level dB(A) $L_{eq\ (15\ min)}$	Comments
Residential receiver to the West (on St Hillers Road)						
Ground Works/Road Works	Excavators and bulldozers	115	120	30-47 dB(A)	Noise Management Level – 70 dB(A) High Noise Affected Level – 75 dB(A)	Construction Noise Management Levels not expected to trigger noise management levels. If required noise mitigations and controls to be implemented as detailed in this report.
	Bitumen Spray Trucks	111				
	Paving Machines	104				
	Concrete trucks/mixers	106				
	Concrete Vibrator	102				
	Forklifts	101				
	Rollers (smooth Drum)	107				
	Materials Movements	105				
	Bulldozers	115				
	Trucks and water carts	109				
	Tipper Trucks	97				
Construction Works	Piling	115	122	32-49 dB(A) when items used externally. Less than 31 dB(A) once items used internally within the building structure.	Noise Management Level – 70 dB(A) High Noise Affected Level – 75 dB(A)	
	Welder	101				
	Saw cutter	109				
	Excavators	97				
	Dump trucks and concrete trucks (including water carts)	109				
	Concrete saw	119				
	Power hand tools	109				
	Graders	108				
	Scissor lifts	97				
	Cranes	110				

Based on the details of the construction noise assessment noise levels are expected to be within the noise management levels to the residential receivers located to the west of the site.

Where noise levels are less than the noise management levels detailed in Table 3 additional mitigations and management controls are not required to be included as part of the construction activities being undertaken on the site.

Based on the qualitative assessment of construction noise suitable management controls and community notifications may be required to be conducted.

The required management of construction noise impacts are included in Section 9 and the Community Consultation included in Section 11 of this report.

7 CONSTRUCTION VIBRATION ASSESSMENT

This section of the report details the assessment of construction vibration impacts on surrounding receivers.

Effects of ground borne vibration on buildings may be segregated into the following three categories:

- Human comfort – vibration in which the occupants or users of the building are inconvenienced or possibly disturbed. Refer to further discussion in Section 7.1.
- Effects on building contents – where vibration can cause damage to fixtures, fittings and other non-building related objects. Refer to further discussion in Section 7.2.
- Effects on building structures – where vibration can compromise the integrity of the building or structure itself. Refer to further discussion in Section 7.3.

7.1 Vibration Criteria – Human Comfort

Vibration effects relating specifically to the human comfort aspects of the project are taken from the guideline titled *"Assessing Vibration – A Technical Guideline"*. (AVTG) This type of impact can be further categorised and assessed using the appropriate criterion as follows:

- Continuous vibration – from uninterrupted sources (refer to Table 8).
- Impulsive vibration – up to three instances of sudden impact e.g. dropping heavy items, per monitoring period (refer to Table 9).
- Intermittent vibration – such as from drilling, compacting or activities that would result in continuous vibration if operated continuously (refer to Table 10).

Table 8 Continuous vibration acceleration criteria (m/s^2) 1 Hz-80 Hz

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Residences	Daytime	0.010	0.0071	0.020	0.014
	Night-time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day or night-time	0.020	0.014	0.040	0.028
		0.04	0.029	0.080	0.058
Workshops	Day or night-time	0.04	0.029	0.080	0.058

Table 9 Impulsive vibration acceleration criteria (m/s^2) 1 Hz-80 Hz

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Residences	Daytime	0.30	0.21	0.60	0.42
	Night-time	0.10	0.071	0.20	0.14
Offices, schools, educational institutions and places of worship	Day or night-time	0.64	0.46	1.28	0.92
Workshops	Day or night-time	0.64	0.46	1.28	0.92

Table 10 Intermittent vibration impacts criteria ($m/s^{1.75}$) 1 Hz-80 Hz

Location	Daytime		Night-time	
	Preferred Values	Maximum Values	Preferred Values	Maximum Values
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

7.2 Vibration Criteria – Building Contents and Structure

The vibration effects on the building itself are assessed against international standards as follows:

- For transient vibration: British Standard BS 7385: Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration" (BSI 1993); and
- For continuous or repetitive vibration: German DIN 4150: Part 3 – 1999 "Effects of Vibration on Structure" (DIN 1999).

7.3 Standard BS 7385 Part 2 - 1993

For transient vibration, as discussed in standard BS 7385 Part 2-1993, the criteria are based on peak particle velocity (mm/s) which is to be measured at the base of the building. These are summarised in Table 11 and illustrated in the Figure below.

Table 11 Transient vibration criteria as per standard BS 7385 Part 2 - 1993

Line in Figure 2	Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and Above
1	Reinforced or framed structures Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Standard BS 7385 Part 2 – 1993 states that the values in Table 8 relate to transient vibration which does not cause resonant responses in buildings.

Where the dynamic loading caused by continuous vibration events is such as that results in dynamic magnification due to resonance (especially at the lower frequencies where lower guide values apply), then the values in

Table 11 may need to be reduced by up to 50% (refer to Line 3 in the Figure below).

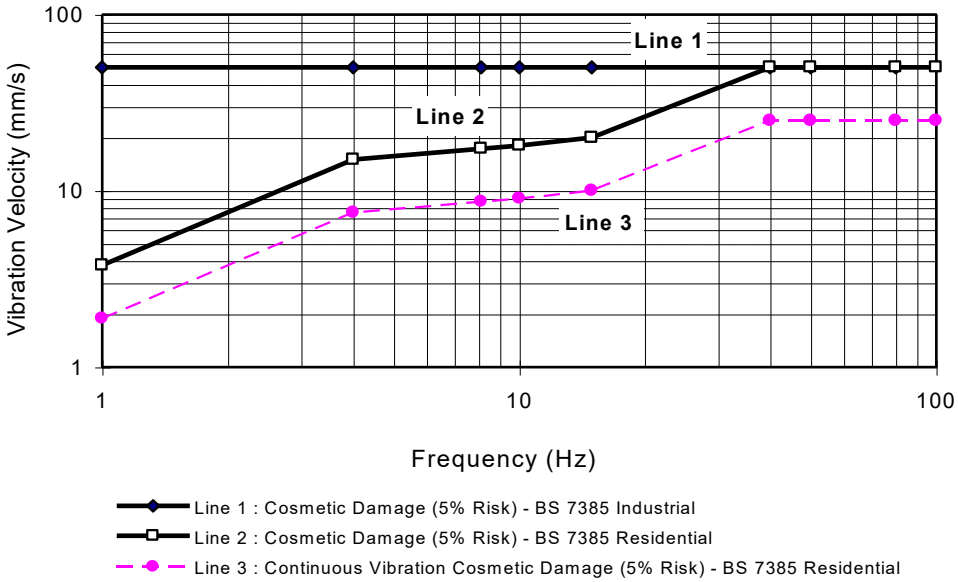


Figure 2 BS 7385 Part 2 – 1993, graph of transient vibration values for cosmetic damage

In the lower frequency region where strains associated with a given vibration velocity magnitude are higher, the recommended values corresponding to Line 2 are reduced. Below a frequency of 4 Hz where a high displacement is associated with the relatively low peak component particle velocity value, a maximum displacement of 0.6 mm (zero to peak) is recommended. This displacement is equivalent to a vibration velocity of 3.7 mm/s at 1 Hz.

The standard also states that minor damage is possible at vibration magnitudes which are greater than twice those given in Table 10, and major damage to a building structure may occur at values greater than four times the tabulated values.

Fatigue considerations are also addressed in the standard and it is concluded that unless calculation indicates that the magnitude and number of load reversals is significant (in respect of the fatigue life of building materials) then the values in Table 10 should not be reduced for fatigue considerations.

7.3.1 Standard DIN 4150 Part 3 - 1999

For continuous or repetitive vibration, standard DIN 4150 Part 3-1999 provides criteria based on values for peak particle velocity (mm/s) measured at the foundation of the building; these are summarised in the table below. The criteria are frequency dependent and specific to particular categories of structures.

Table 12 Structural damage criteria as per standard DIN 4150 Part 3 - 1999

Type of Structure	Peak Component Particle Velocity, mm/s			
	Vibration at the foundation at a frequency of			Vibration of horizontal plane of highest floor at all frequencies
	1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz[1]	
Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
Structures that, because of their sensitivity to vibration, do not correspond to those listed in lines 1 and 2 and are of great intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

Note 1: For frequencies above 100Hz, at least the values specified in this column shall be applied.

7.4 Construction Vibration Criteria

Based on the details included in the sections above the project specific vibration criteria to protect the surrounding residential receivers from structural or architectural damage includes the following:

1. Project construction vibration criteria at all surrounding building structures – 10 mm/s

7.5 Construction Vibration Impacts

An assessment of the potential for vibration generated as part of the required construction activities on the project (including ground works and construction) has been undertaken.

Based on the required works to be undertaken on the site and the proximity to surrounding residential receivers vibration levels generated from the construction on the site are expected to comply with all vibration criteria detailed in this report without additional treatments or mitigations.

7.6 Vibration Assessment

In order to maintain compliance with the vibration criteria discussed in this section of the report, the indicative safe distances listed in Table 13 should be maintained. These indicative safe distances should be validated prior to the start of construction works by undertaking measurements of vibration levels generated by construction equipment to be used on site.

Table 13 Indicative safe working distances for vibration intensive plant

Plant	Rating / Description	Safe Working Distances (m)	
		Cosmetic Damage (BS 7385: Part 2 DIN 4150: Part 3)	Human Comfort (AVTG)
Small hydraulic hammer	300 kg, typically 5 – 12 tonnes excavator	2	7
Medium hydraulic hammer	900 kg, typically 12 – 18 tonnes excavator	7	23
Large hydraulic hammer	1600 kg, typically 18 – 34 tonnes excavator	22	73
Jackhammer	Hand held	1	Avoid contact with structure and steel reinforcements
Vibratory Compactors	Vibration rollers	25	30

An assessment of the potential for vibration generated as part of the required construction activities on the project (including excavation) has been undertaken based on the expected vibration detailed in the table above.

To ensure the vibration impact criteria detailed in this report are complied with the following safe working mitigations and/or working distances should be implemented as detailed in the table below.

Table 14 Vibration Mitigation Requirements

Construction Phase	Activity	Vibration Mitigation
In ground works	Removal of Rock	Based on the existing distance separation to receiver's compliance with construction vibration criteria is expected to be achieved without additional mitigations based on the required equipment to undertake the limited demolition and in ground works for the project.
Construction	General Construction activities	General construction activities are not expected to exceed project vibration limits detailed in this report.

8 NOISE AND VIBRATION MEASUREMENTS AND MONITORING

As part of the management of noise from the proposed construction activities to be undertaken on the site the following noise and vibration measurements are recommended to be undertaken:

1. Noise – Attended noise level measurements of typical construction activities should be undertaken at site.

   Attended construction noise surveys of the site and surrounding impacts on neighbours should be undertaken during the following as a minimum:

   a. In response to any ongoing complaints received from neighbours.

2. Vibration – Based on the proximity of the surrounding receivers to the works, attended vibration measurements of typical excavation and construction activities should be undertaken at site.

   Attended construction vibration measurements at representative locations to the neighbouring building structures should be undertaken at the following times as a minimum:

   a. In response to any ongoing complaints received from neighbours.

9 NOISE AND VIBRATION MANAGEMENT PLAN

Table 15 below summarises the management procedures for airborne noise and vibration impact. These procedures are further discussed in the report. Hence, where applicable, links to further references are provided in Table 15.

Table 15 Summary of mitigation procedures

Procedure	Abbreviation	Description	Further Reference
General Management Measures	GMM	Introduce best-practice general mitigation measures in the workplace which are aimed at reducing the acoustic impact onto the nearest affected receivers.	Refer to Section 9.3.3 For vibration impact, also refer to section 7.6
Project Notification	PN	Issue project updates to stakeholders, discussing overviews of current and upcoming works. Advanced warning of potential disruptions can be included. Content and length to be determined on a project-by-project basis.	Refer to Section 11
Verification Monitoring	V	Monitoring to comprise attended or unattended acoustic surveys. The purpose of the monitoring is to confirm measured levels are consistent with the predictions in the acoustic assessment, and to verify that the mitigation procedures are appropriate for the affected receivers. If the measured levels are higher than those predicted, then the measures will need to be reviewed and the management plan will need to be amended.	For noise impact, refer to Section 6. For vibration impact, refer to Section 7.5
Complaints Management System	CMS	Implement a management system which includes procedures for receiving and addressing complaints from affected stakeholders	Refer to Section 11.1
Specific Notification	SN	Individual letters or phone calls to notify stakeholders that noise levels are likely to exceed noise objectives. Alternatively, contractor could visit stakeholders individually in order to brief them in regards to the noise impact and the mitigation measures that will be implemented.	Refer to Section 11
Respite Offer	RO	Offer provided to stakeholders subjected to an ongoing impact. The offer could include movie tickets, meal vouchers, gift cards or equivalent measures.	-
Alternative Construction Methodology	AC	Contractor to consider alternative construction options that achieve compliance with relevant criteria. Alternative option to be determined on a case-by-case basis. It is recommended that the selection of the alternative option should also be determined by considering the assessment of on-site measurements (refer to Verification Monitoring above).	-

The application of these procedures is in relation to the exceedances over the relevant criteria. For airborne noise, the criteria are based on NMLs.

The site protocol for response to management of noise and vibration during the construction of the project is detailed in the following table.

When Measure Should be Implemented	Who Is Responsible for Implementing Measure	How Evidence of Implementation Will be Recorded / Tracked
Prior to being Permitted to the Construction Site	**Site Manager / HSE Supervisor / Site Foreman**	**Site Induction Record** The induction will include training of relevant persons in the efficient use of plant and materials to minimise all potential environmental impacts including noise, air pollution, water pollution, waste, contamination, and hours of work.
Prior to Commencement of Construction Works and during Daily Prestart	**Site Manager / HSE Supervisor / Site Foreman**	**Toolbox Talk Record** All Site Personnel are to be tool boxed on acceptable noise levels for construction site.
During External Works stage of construction	**Site Manager / HSE Supervisor / Site Foreman**	**Toolbox Talk Record & Noise Monitoring Record** All Site Personnel involved in this activity are to be tool boxed on acceptable noise levels and the requirements of this report.

9.1 Allocation of Noise Management Procedures

For residences, the management procedures have been allocated based on noise level exceedances at the affected properties, which occur over the designated NMLs (refer to section 6.5). The allocation of these procedures is summarised in Table 16 below.

Table 16 Allocation of noise management procedures

Construction Hours	Exceedance over NML (dB)	Management Procedures (see definition above)
Standard Hours Including Approved working hours	0 - 3	GMM
	4 - 10	GMM, PN, V [1], CMS, AC
	> 10	GMM, PN, V, CMS, SN, AC
Mon – Fri: 7:00 am to 8:00 am Sat: 7:00 am to 8:00 am	0 - 10	GMM, AC
	11 - 20	GMM, PN, V [1], CMS, AC
	> 20	GMM, PN, V, CMS, SN, RO, AC

Notes

1. Verification monitoring to be undertaken upon complaints received from affected receivers

Please note the following regarding the allocation of these procedures:

- The exceedances have been estimated as part of the acoustic assessment, and these are summarised in Section 6.
- The allocation of procedures is based on the assumptions used for noise level predictions (refer to Section 6). Consequently, these allocations can be further refined once additional details of the construction program become available.

Based on the prediction of noise levels from the construction activities the management procedures are to be implemented during various stages of the project are included in the following table.

Table 17 Implementation of Noise Management Procedures

Construction Period	Proposed Appliances	Management Procedures to be Implemented
Demolition/Ground Works	General demolition and in ground works including activities detailed in Section 6.2	1. All works to be undertaken within the projects approved DA Working Hours. 2. Ensure best practice working practices and maintained equipment used. 3. Implement the required complaints management system detailed in section 9 below. 4. Assess if alterative construction activities can be implemented to mitigate noise levels where possible.
Construction Works/Landscaping works	General construction activities including activities detailed in Section 6.2	1. All works to be undertaken within the projects approved DA Working Hours. 2. Ensure best practice working practices and maintained equipment used. 3. Undertake notification when works are to be undertaken in neighbouring stakeholders. 4. Implement the required complaints management system detailed in section 9 below. 5. Assess if alterative construction activities can be implemented to mitigate noise levels where possible.
Internal Works	–General internal fit off works including: Services Fit-off, Office Fit-Out, etc. – Scissors, Boom Lifts, Mechanical Drilling Works (Façade), etc	1. All works to be undertaken within the projects approved DA Working Hours. 2. Ensure best practice working practices and maintained equipment used. 3. Generally internal works undertaken within the completed building will be within Construction Noise Management Levels.

9.2 Site Specific Noise Mitigation Measures (including High Noise Affected Levels)

Predicted noise levels outlined in section 6.1 indicate exceedances above the Noise Management Levels (NMLs) as well as the Highly Noise Affected Level (HNAL) when in proximity to a boundary are not expected to occur.

Based on the expected noise levels resulting from the proposed construction activities *High Noise Affected Levels* are not expected to result at surrounding receivers, see predicted noise levels in Section 6.5 above.

In the event the site was to generate HNAL it would be required to introduce periods of respite for activities which are creating noise levels above the HNAL. The recommended periods for respite for activities resulting HNAL are detailed in the table below.

Table 18 Recommended Respite Periods

Monday to Friday	Saturday
7:00am to 8:00am – No noisy works (Respite Period)	8:00am to 9:00am – No noisy works (Respite Period)
8:00am to 11:30am – Works	9:00am to 12:00pm – Works
11:30am to 12:30pm – No noisy works (Respite Period)	12:00pm to 1:00pm – No noisy works (Respite Period)
12:30pm to 3:30pm – Works	
3:30pm to 4:30pm – No noisy works (Respite Period)	
4:30pm to 6:00pm – Works	

The introduction of the additional noise management detailed in this section of the report is to be included in the operation of construction activities in the event *High Noise Affected Levels* result from construction on the site.

The required respite times are to be applied to the construction appliances which are resulting in the *High Noise Affected Levels* including construction zones which are within the proximity of the affected boundaries.

9.3 General Comments

The contractor will, where reasonable and feasible, apply best practice noise mitigation measures. These measures shall include the following:

- Maximising the offset distance between plant items and nearby noise sensitive receivers.
- Preventing noisy plant working simultaneously and adjacent to sensitive receivers.
- Minimising consecutive works in the same site area.
- Orienting equipment away from noise sensitive areas.
- Carrying out loading and unloading away from noise sensitive areas.
- Operators should be trained in order to raise their awareness of potential noise problems and to increase their use of techniques to minimise noise emission.

In order to minimise noise impacts during the works, the contractor will take all reasonable and feasible measures to mitigate noise effects.

The contractor will also take reasonable steps to control noise from all plant and equipment. Examples of appropriate noise control include efficient silencers and low noise mufflers.

The contractor should apply all feasible and reasonable work practices to meet the NMLs and inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels, duration of noise generating construction works, and the contact details for the proposal.

9.3.1 Alternate Equipment or Process

Exceedance of the site's NMLs should result in an investigation as to whether alternate equipment could be used, or a difference process could be undertaken.

In some cases, the investigation may conclude that no possible other equipment can be used, however, a different process could be undertaken.

Reduction in noise levels will depend on the alterative equipment used, possible reductions of 5-10 dB(A) can result from using appliances such as ripping or the like in lieu of hydraulic hammering, for example.

9.3.2 Acoustic Enclosures/Screening

Typically, on a construction site there are three different types of plant that will be used: mobile plant (i.e., excavators, skid steers, etc.), semi mobile plant (i.e., hand tools generally) or static plant i.e. (diesel generators).

For plant items which are static it is possible to mitigate, in the event exceedances are being measured due to operation of the plant item, an acoustic enclosure/screen is constructed to reduce impacts. These systems can be constructed from Fibre Cement (FC) sheeting or, if airflow is required, acoustic attenuators or louvres.

For semi mobile plant, relocation of plant should be investigated to either be operated in an enclosed space or at locations away from a receiver.

With mobile plant it is generally not possible to treat these sources. However, investigations into the machine itself may result in a reduction of noise (i.e., mufflers/attenuators etc).

Where acoustic screening or enclosures can be included to stationary plant (such as pumps or generators) a noise reduction of 5-8 dB(A) can be expected depending on the height and location of screening.

9.3.3 General Mitigation Measures (Australia Standard 2436-2010)

As well as the above project specific noise mitigation controls, AS 2436-2010 "*Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites*" sets out numerous practical recommendations to assist in mitigating construction noise emissions. Examples of strategies that could be implemented on the subject project are listed below, including the typical noise reduction achieved, where applicable.

9.3.4 Adoption of Universal Work Practices

- Tool box meetings informing the works force of requirements to mitigate noise and vibration from the construction of the site is required to be included prior to starting works on the site.
- Regular reinforcement (such as at toolbox talks) of the need to minimise noise and vibration.
- Regular identification of noisy activities and adoption of improvement techniques.
- Avoiding the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact upon nearby sensitive receivers.
- Where possible, avoiding the use of equipment that generates impulsive noise.
- Minimising the need for vehicle reversing for example (particularly at night), by arranging for one-way site traffic routes.
- Use of broadband audible alarms on vehicles and elevating work platforms used on site.
- Minimising the movement of materials and plant and unnecessary metal-on-metal contact.
- Minimising truck movements.

9.3.5 Plant and Equipment

The operation of plant and equipment on the site should be undertaken, including the following:

- Choosing quieter plant and equipment based on the optimal power and size to most efficiently perform the required tasks.
- Selecting plant and equipment with low vibration generation characteristics.
- Operating plant and equipment in the quietest and most efficient manner.

9.3.6 Work Scheduling

- Providing respite periods which could include restricting very noisy activities to time periods that least affect the nearby noise sensitive locations, restricting the number of nights that after-hours work is conducted near residences or by determining any specific requirements.
- Scheduling work to coincide with non-sensitive periods.
- Planning deliveries and access to the site to occur quietly and efficiently and organising parking only within designated areas located away from the sensitive receivers.
- Optimising the number of deliveries to the site by amalgamating loads where possible and scheduling arrivals within designated hours.
- Including contract conditions that include penalties for non-compliance with reasonable instructions by the principal to minimise noise or arrange suitable scheduling.

9.3.7 Source Noise Control Strategies

Some ways of controlling noise at the source are:

- Where reasonably practical, noisy plant or processes should be replaced by less noisy alternatives.
- Modify existing equipment: Engines and exhausts are typically the dominant noise sources on mobile plant such as cranes, graders, excavators, trucks, etc. In order to minimise noise emissions, residential grade mufflers should be fitted on all mobile plant utilised on site.
- Siting of equipment: locating noisy equipment behind structures that act as barriers, or at the greatest distance from the noise-sensitive area; or orienting the equipment so that noise emissions are directed away from any sensitive areas, to achieve the maximum attenuation of noise.
- Regular and effective maintenance.

9.3.8 Miscellaneous Comments

Deliveries should be undertaken, where possible, during standard construction hours.

Maximise hammer penetration (and reduce blows) by using sharp hammer tips. Keep stocks of sharp profiles at site and monitor the profiles in use.

It is advised that mobile plant and trucks operating on site for a significant portion of the project are to have reversing alarm noise emissions minimised. This is to be implemented subject to recognising the need to maintain occupational safety standards.

No public address system should be used on site.

Communication with the surrounding receivers should be undertaken such that high noise generating activities can be scheduled outside of any noise sensitive periods resulting from uses on the site.

9.4 Vibration Mitigation Measures

Based on the existing distance separation to receiver's compliance with construction vibration criteria is expected to be achieved without additional mitigations.

9.5 Driver Code

All drivers of trucks and construction vehicles are required to be trained in the sites requirements for the operation of equipment and routes to be used to access the site. The driver code is required to be developed in accordance with the project SSD Conditions including Item B1(f) which includes the following.

TRAFFIC AND ACCESS

Construction Traffic Management Plan

B1. Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition C2 and must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be prepared in consultation with Council;

(c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction;

(d) detail heavy vehicle routes, access and parking arrangements;

(e) include a Driver Code of Conduct and Induction Program to:

(i) minimise the impacts of earthworks and construction on the local and regional road network;

(ii) minimise conflicts with other road users;

(iii) minimise road traffic noise; and

(iv) ensure truck drivers use specified routes;

(f) include a program to monitor the effectiveness of these measures; and

(g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.

Truck drivers are to be instructed to mitigate noise impacts including the following:

1. Mitigate engine braking from truck when possible, including deactivating breaks within the vicinity of residential receivers.
2. Reduce aggressive acceleration from the site.
3. Ensure all trucks and equipment are well maintained.
4. Other relevant noise reducing operations where possible.

Details of the required driver codes are include in the projects *Construction Management Plan.*

10 COMPLIANCE MANAGEMENT PROCESS

As part of the construction ADCO will implement a compliance management process.

As part of the construction on the site there will be ongoing assessment of the construction being undertaken on the site which will include training, inspections, auditing of the mitigations on the site. The construction of the project will include the ongoing assessment of possible and practical noise and vibration mitigations resulting from activities being undertaken on the site such that improvements in the mitigation of noise will be implement where possible.

The assessment and implementation of the management plans and *Construction Management Plan* and will be undertaken by the site foreman, site management, site supervisor. Contact details will be included within the *Construction Management Plan* and on the site entry as required by the project *Conditions of Consent.*

Action and management of the mitigation of construction activities will also include the following:

- Site Induction Measures
- Tool Box talks
- Managed by Site Manager, HSE Supervisor & Site Foremen, including the Taylor Construction team.

11 COMMUNITY ENGAGEMENT

Active community consultation and the maintenance of positive relations with local residents and businesses would assist in alleviating concerns and thereby minimising complaint. Community notification and consultation is being undertaken for the site, details are included in the *Construction Environmental Management Plan* and required by Item C2 of the projects SSD approval.

The notification should provide specific notification of the duration and timing of the construction activities so that residents are informed about the works ahead of time. The letter should also provide the community with a hotline number for a community liaison officer available to adequately respond to all project related enquiries.

Ideally the hotline number should provide concerned locals an opportunity to raise any concerns with the project proponent and provide an opportunity to determine the best method to satisfy all requirements.

Prior to the works onsite being undertaken, community consultation with the neighbouring affected parties be undertaken. Community engagement and consultation should not be limited to the beginning of the onsite works but throughout, providing the community with constant updates on the progress and upcoming works. In our experience these could include:

- Site noticeboard;
- Email notifications; and
- Letterbox drops.

During the construction of the project (including excavation and construction) the building contractor is required to engage in community interaction. The community interaction and notification is required to include the following:

1. Notification of the works to be undertaken on the site and the periods when works will be conducted, including information regarding the programme of works such as excavation activities. This should include the expected period when activities such as hydraulic hammering, rock breaking, concrete or rock sawing is required to be undertaken.

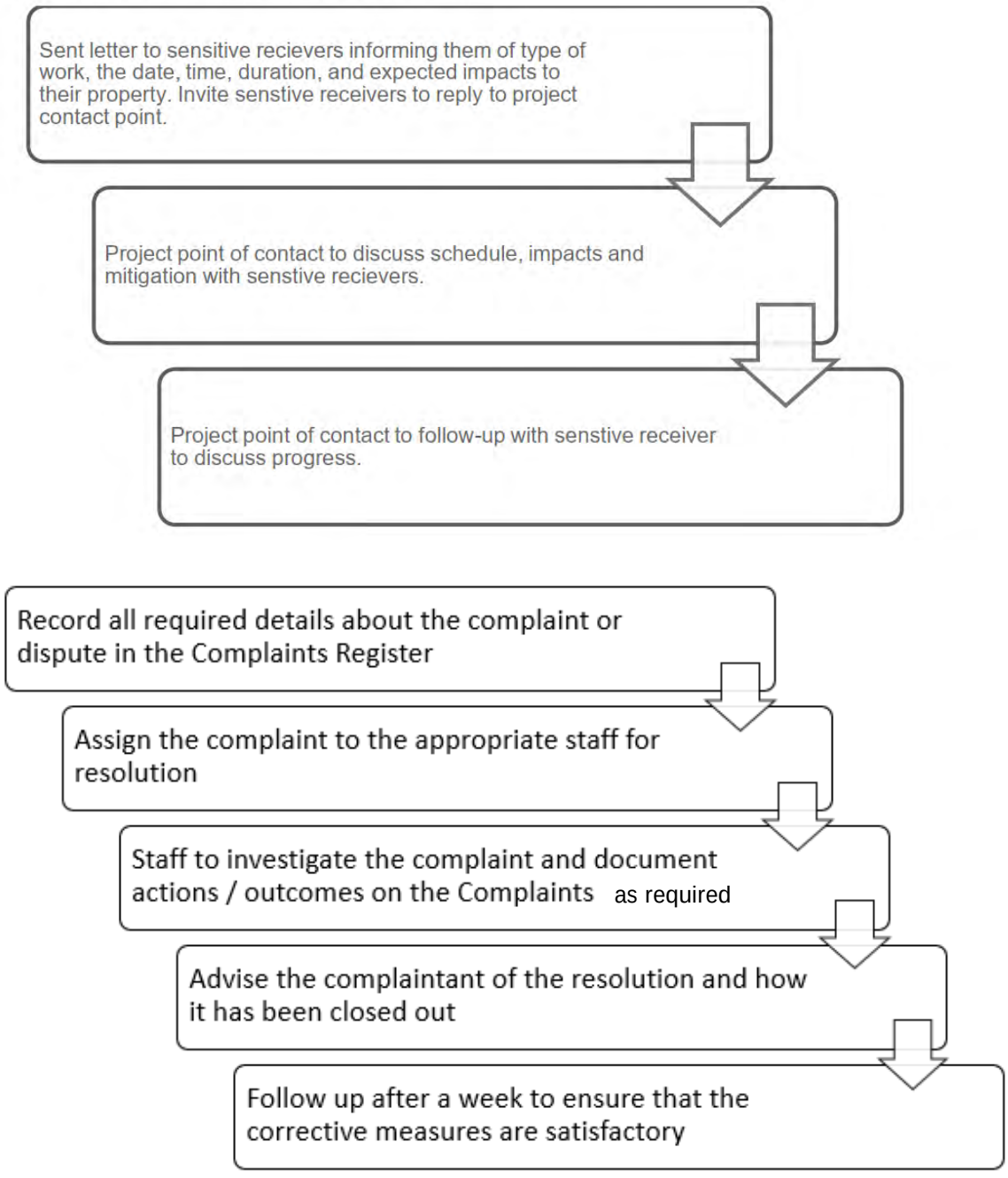
2. Details of the relevant site representative where complaints can be registered.

3. Details of the methodology to respond to complaints raised from the surrounding receivers.

4. A register of complaints, to be kept on site including record of time and nature of the complaint as well as the outcomes and comments regarding investigations resulting from the complaint.

Based on the location of the site community notification of works may not be required.

Community consultation could be undertaken in accordance with information included in the plan, which includes the following flow chart for consultation procedure and complaints and disputes resolution procedure.



11.1 Complaints Management System

Should complaints arise they must be dealt with in a responsible and uniform manner, therefore, a management system to deal with complaints is detailed below:

Local residents and land owners should be informed by direct mail of a direct 24-hour telephone line where any noise complaints related to the construction will be recorded. The 24-hour telephone line number will be made available on the construction site signage.

All complaints should be investigated by the Contractor in accordance with the procedures outlined in Australia Standard 2436-2010. Consequently, a complaint response procedure should be implemented. Information to be gathered as part of this process should include:

- location of complainant
- time/s of occurrence of alleged noise or vibration impacts
- nature of impact particularly with respect to vibration
- Perceived source
- Prevailing weather conditions and similar details that could be utilised to assist in the investigation of the complaint.

All resident complaints will be responded to in the required timeframe and action taken recorded.

Post receiving a noise and or vibration complaint, the process outlined in the *Contingency Plans* below should be undertaken.

11.2 Contingency Plans

Contingency plans are required to address noise or vibration problems if excessive levels are measured at surrounding sensitive receivers and/or if justified complaints occur. Such plans include:

- Stop the onsite works.
- Identify the source of the main equipment within specific areas of the site which is producing the most construction noise and vibration at the sensitive receivers; and
- Review the identified equipment and determine if an alternate piece of equipment can be used or the process can be altered.
- In the event an alternate piece of equipment or process can be used, works can re-commence.
- In the event an alternate piece of equipment or process cannot be determined implement a construction assessment to be performed by a suitably qualified acoustic consultant.
- Respite periods to be scheduled during potentially noise sensitive periods of the surrounding receivers.

The Superintendent shall have access to view the Contractor's noise measurement records on request. The Superintendent may undertake noise monitoring if and when required.

12 CONCLUSION

This report details the construction noise and vibration assessment of the construction of the new Hale warehouse and distribution centre located at 42-44 Boorea Street, Lidcombe.

An assessment of noise and vibration impacts from the required processes to be undertaken during the construction period of the project (including ground works and construction) has been undertaken and suitable treatments, management controls, perioding measurements and community engagement has been detailed in this report.

Providing the recommendations in this report are included in the construction of the site, compliance with the relevant EPA's Interim Construction Noise Guideline and SSD-36464788 including Items B1, B24, B25, B26, B27, B31 and B32 are satisfied.

For any additional information please do not hesitate to contact the person below.

Regards

Ben White
Director

Pulse White Noise Acoustics

13 APPENDIX A – GLOSSARY OF TERMS

Ambient Sound The totally encompassing sound in a given situation at a given time, usually composed of sound from all sources near and far.

Audible Range The limits of frequency which are audible or heard as sound. The normal ear in young adults detects sound having frequencies in the region 20 Hz to 20 kHz, although it is possible for some people to detect frequencies outside these limits.

Character, acoustic The total of the qualities making up the individuality of the noise. The pitch or shape of a sound's frequency content (spectrum) dictate a sound's character.

Decibel [dB] The level of noise is measured objectively using a Sound Level Meter. The following are examples of the decibel readings of every day sounds;

0dB	the faintest sound we can hear
30dB	a quiet library or in a quiet location in the country
45dB	typical office space. Ambience in the city at night
60dB	Martin Place at lunch time
70dB	the sound of a car passing on the street
80dB	loud music played at home
90dB	the sound of a truck passing on the street
100dB	the sound of a rock band
115dB	limit of sound permitted in industry
120dB	deafening

dB(A) *A-weighted decibels* The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the "A" filter. A sound level measured with this filter switched on is denoted as dB(A). Practically all noise is measured using the A filter. The sound pressure level in dB(A) gives a close indication of the subjective loudness of the noise.

Frequency Frequency is synonymous to *pitch*. Sounds have a pitch which is peculiar to the nature of the sound generator. For example, the sound of a tiny bell has a high pitch and the sound of a bass drum has a low pitch. Frequency or pitch can be measured on a scale in units of Hertz or Hz.

Loudness A rise of 10 dB in sound level corresponds approximately to a doubling of subjective loudness. That is, a sound of 85 dB is twice as loud as a sound of 75 dB which is twice as loud as a sound of 65 dB and so on

L_{Max} The maximum sound pressure level measured over a given period.

L_{Min} The minimum sound pressure level measured over a given period.

L_1 The sound pressure level that is exceeded for 1% of the time for which the given sound is measured.

L_{10} The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.

L_{90} The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L_{90} noise level expressed in units of dB(A).

L_{eq} The "equivalent noise level" is the summation of noise events and integrated over a selected period of time.

Background Sound Low The average of the lowest levels of the sound levels measured in an affected area in the absence of noise from occupants and from unwanted, external ambient noise sources. Usually taken to mean the L_{A90} value

Ctr A frequency adaptation term applied in accordance with the procedures described in ISO 717.

dB (A) 'A' Weighted overall sound pressure level

Noise Reduction	The difference in sound pressure level between any two areas. The term "noise reduction" does not specify any grade or performance quality unless accompanied by a specification of the units and conditions under which the units shall apply
NR Noise Rating	Single number evaluation of the background noise level. The NR level is normally around 5 to 6 dB below the "A" weighted noise level. The NR curve describes a spectrum of noise levels and is categorised by the level at 1000 Hz ie the NR 50 curve has a value of 50 dB at 1000 Hz. The NR rating is a tangential system where a noise spectrum is classified by the NR curve that just encompasses the entire noise spectrum consideration.
Rw	Weighted Sound Reduction Index - Laboratory test measurement procedure that provides a single number indication of the acoustic performance of a partition or single element. Calculation procedures for Rw are defined in ISO 140-2:1991 "Measurement of Sound Insulation in Buildings and of Building Elements Part 2: Determination, verification and application of precision data".
R'w	Field obtained Weighted Sound Reduction Index - this figure is generally up to 3-5 lower than the laboratory test determined level data due to flanked sound transmission and imperfect site construction.
Sound Isolation	A reference to the degree of acoustical separation between any two areas. Sound isolation may refer to sound transmission loss of a partition or to noise reduction from any unwanted noise source. The term "sound isolation" does not specify any grade or performance quality and requires the units to be specified for any contractual condition
Sound Pressure Level, L_P dB	A measurement obtained directly using a microphone and sound level meter. Sound pressure level varies with distance from a source and with changes to the measuring environment. Sound pressure level equals 20 times the logarithm to the base 10 of the ratio of the rms sound pressure to the reference sound pressure of 20 micro Pascals.
Sound Power Level, L_W dB	Sound power level is a measure of the sound energy emitted by a source, does not change with distance, and cannot be directly measured. Sound power level of a machine may vary depending on the actual operating load and is calculated from sound pressure level measurements with appropriate corrections for distance and/or environmental conditions. Sound power levels is equal to 10 times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power of 1 picoWatt
Speech Privacy	A non-technical term but one of common usage. Speech privacy and speech intelligibility are opposites and a high level of speech privacy means a low level of speech intelligibility. It should be recognised that acceptable levels of speech privacy do not require that speech from an adjacent room is inaudible.
Transmission Loss	Equivalent to Sound Transmission Loss and to Sound Reduction Index in terminology used in countries other than Australia. A formal test rating of sound transmission properties of any construction, by usually a wall, floor, roof etc. The transmission loss of all materials varies with frequency and may be determined by either laboratory or field tests. Australian Standards apply to test methods for both situations.

14 APPENDIX B – BEN WHITE, AAS MEMBERSHIP CERTIFICATE

AUSTRALIAN ACOUSTICAL SOCIETY

This is to certify that

BENJAMIN WHITE

was admitted to the grade of

MEMBER

of the Australian Acoustical Society

on 27th October 2020

and is entitled to use the letters

M.A.A.S.

issued on 26th November 2020

S. Moore

President

General Secretary

AUSTRALIAN ACOUSTICAL SOCIETY A.C.N. 000 712 658 The Common Seal Of

This certificate remains the property of the Australian Acoustical Society

A-17 Construction Waste Management Plan

ADCO Constructions (Head Contractor)

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT SUB PLAN

PROJECT NAME

LIDCOMBE MULTI STOREY WAREHOUSE PROJECT

PROJECT NO.

3658

ADCO

Plan Control and Amendment

The current approved Master Version of this Management Sub Plan is available electronically for all project personnel to access on the ADCO Intranet The Hub. The date and latest revision of the Master Document is outlined in the footer below. For clarity, the footer must not be amended by the User to ensure traceability to the relevant Master version.

Downloaded Plans are uncontrolled, and it is the responsibility of the User to ensure they are using the latest Master Version from The Hub.

The Document Owner is responsible for maintenance, review, updates, approval and distribution of this Master Version of this Plan. All changes to this Plan to suit Project Site specific needs are recorded by the Project Manager, or nominated ADCO representative, in the Project Version History table below. The first Project Version History issued will be recorded as v3.1 followed by v3.2.

The Project Manager, or nominated representative, must review the Contamination Management Sub Plan at maximum six (6) month intervals; or if significant change occurs in the scope of works affecting waste management; or if a significant incident occurs related to waste management.

Project related minor revisions to this Management Sub Plan, can be independently issued, but must be approved by the Project Manager, or a nominated ADCO representative.

Project Version History

Revision	Date	Description / Updates	Reviewed by	Approved by
3.1	26/02/24	Initial Circulation for Client & Internal Review / Comments.	Paul Cassimatis	Paul Cassimatis
3.2	08/04/24	Amendments made for satisfactory compliance with SSD-36464788 Conditions.	Paul Cassimatis	Paul Cassimatis
3.3	19/05/24	Update with reference to DPHI consultation – Item 6.	Nicholas Napoli	Nicholas Napoli

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1. INTRODUCTION

The purpose of this Waste Management Sub Plan is to outline the requirements for effective identification, management and reporting on project waste streams to ensure:

- Compliance with local and state legislation.
- The achievement of environmental objectives and targets for the project site consistent with ADCO Environmental Management Plan and the ADCO Environmental Management Policy,
- The establishment of recycling and diversion from landfill to promote the Circular Economy and the recovery of resources.
- Subcontractor involvement in waste management is clearly outlined in procurement of goods and services; and
- The identification of client or other project initiatives or requirements related to strategic waste management.

2. SCOPE OF PROJECT AND MANAGEMENT SUB PLAN

This Waste Management Sub Plan is an integral part of the ADCO Health Safety Environment & Quality Management System implemented at the Project Site and forms part of the Project Environmental Management Plan.

The Management Sub Plan describes how ADCO will manage waste at the project site consistent with ADCO Environmental Management Plan objectives and targets and the ADCO Environmental Management Policy; i.e., designing out waste and minimising waste generation through pro-active planning, increased waste recovery and compliance with relevant statutory, project and any related client or other requirements. The Management Sub Plan is designed to provide information about the key project site elements of waste management including recycling and diversion from landfill to promote the Circular Economy.

The development of this Management Sub Plan has also considered the information contained in the following reports: [insert any relevant report or delete this section]

- **PSM Additional Geotechnical Investigation / Report (Report No: PSM5049-007L | Dated: 25 August 2023)**
- **Hazardous Building Materials Report by WSP Environmental (Revision: A | Dated: 7 June 2021)**
  - Appendix A-26 of the ADCO Construction Environmental Management Plan
- **Additional Contamination Assessment by JBS&G (Report No: JBS&G 62184- 148308 | Dated: 28 October 2023)**
  - Appendix A-25 of the ADCO Construction Environmental Management Plan

3. PLANNING

In addition to those requirements outlined in the ADCO General Requirements Waste Management, waste services must be procured and executed in accordance with the ADCO Waste Service Agreement Scope Of Works both located on The Hub. The Scope of Works must be adapted to meet the requirements of the project site and included as an attachment to the Minor Works Contract/Supply Agreement when engaging a Waste Services Contractor on an ADCO construction project.

The Management Sub Plan also identifies and outlines an effective management strategy for environmental impacts (permanent or otherwise) associated with the construction of the project and any waste related impacts that construction activities may have on the building footprint or its surrounding areas / locality.

4. PROJECT OBJECTIVES AND TARGETS

Objectives and targets include the following:

- Facilitate detailed consideration of waste elimination, waste generation and waste recovery options for each stage of construction from design to end use, operations and maintenance.
- Maximise resource recovery and beneficial re-use or re-processing of construction waste and any excavated materials to reduce waste to landfill and promote the Circular Economy to reduce impacts on natural resources, e.g., recycle virgin excavated natural material or excavated natural material.
- Prevent environmental pollution associated with waste storage, handling, transport and disposal.
- Verify proper disposal of waste to a licenced facility, and traceability of waste disposal.
- Recover, through reuse and recycling (diversion), a greater than 90% (by weight) of all waste (excluding soil) generated on site.
- Treat contaminated waste where possible and reuse or encapsulate on site.

5. SCOPE OF WORKS

This Management Sub Plan has been prepared and based on consideration of the following high level scope of works:

- Construction of a two-storey warehouse including ancillary office space, landscaping, bicycle, and car parking.
- Site establishment including tree removal works, vegetation and topsoil stripping, office & compound setup with waste management and storage areas accommodated for.
- Demolition of Existing Warehouse Tenancies – safe removal of existing asbestos materials.
- Bulk Fill of ground materials over Existing Warehouse Slab (to be retained as a Piling Platform). Working around contaminated soil.
- Foundation Piling (Pre-Cast Driven Spiral Piles and / or Screw Piles)
- Construction of Multi-Level Warehouse (2 Storey) and
- Fit out and commissioning of Warehouse Storage Space and Office Tenancies.

6. LEGAL & OTHER COMPLIANCE REQUIREMENTS

Legislation and other compliance requirements relevant to the project site include the following:

Federal/National:

- The Australian National Packaging Covenant – Australian National Packaging Covenant Organisation.
- National Waste Policy 2018
- National Waste Policy Action Plan

New South Wales

- Protection of the Environment Operations (POEO) Act 1997
- POEO (Penalty Notices) Regulation 2004Environmental Planning and Assessment Act 1979
- POEO (Clean Air) Regulation 2010
- POEO (Waste) Regulation 2014
- Waste Avoidance and Resource Recovery Act 2001
- Protection of the Environment Administration Act 1991 and Regulation 2012

- Environmental Planning and Assessment Act 1979
- Water Management Act 2000
- Water Act 1912
- Heavy Vehicle (Adoption of National Law) Act 2013
- Heavy Vehicle (Adoption of National Law) Regulation 2013

Local Requirements/Rating Schemes:

- Green Building Council of Australia
- Infrastructure Sustainability Council of Australia

ADCO Requirements (refer The Hub):

- ADCO Trade Partner Tender Evaluation Report
- ADCO Project Pre-Commencement Review and Approval To Commence
- ADCO Waste Service Agreement Scope Of Works
- ADCO Health Safety Environment Requirements s24.15
- ADCO General Requirements Waste Management
- ADCO Guideline Waste Volume Conversion Factors
- ADCO Waste Calculation Summary spreadsheet provided for use for multiple waste reports
- ADCO Concrete Equipment Washout Standard
- ADCO Project Set Up Guideline Sustainability Standards

7. KEY ISSUES AND RISKS

The management of waste must be based on the Waste Management Hierarchy depicted where 'avoid and reduce waste' is the most preferable option, and the 'disposal of waste' to landfill, is the least preferable option.

Consistent with the Waste Management Hierarchy, waste must be managed in a way that ensures reuse and recycling is maximised and the volume of waste transported to landfill is minimised, consistent with ADCO objectives and targets.

The works described above will result in the generation of waste materials that include:

- Vegetation
- Soil
- Steel/ Metal
- Concrete
- Wastewater including wash down water.
- Timber
- Cardboard and paper
- Paint
- Hazardous chemicals containers and residues
- Sewage
- Trade waste (liquid)
- Food (putrescible) waste

Based on the above described information the key risks identified for the project site are:

- Over-ordering or inaccurate material estimates resulting in waste;
- Inappropriate handling and storage of solid waste, liquids, contaminated or hazardous materials resulting in loss or pollution;
- Inappropriate transport and disposal of waste to non-licenced or non-approved facilities;
- Uncontrolled discharge of paint waste, concrete slurry, trade washout or litter into the stormwater system or off-site resulting in pollution to the environment;
- Spills and associated clean up and remediation.
- Loss of resources and materials of value due to weather events, physical damage or vandalism;
- Disposal of materials or contamination of waste streams due to lack of awareness and behaviour factors; and
- Missing or inaccurate tracking and verification of waste removed from site.

8. SUMMARY OF KEY CONTROL MEASURES

Works will be planned, implemented and monitored in accordance with the ADCO Project Environmental Management Plan and this Waste Management Sub Plan, the ADCO Health Safety Environment Requirements s29.14 and ADCO Project Setup Guideline Sustainability Standards. These documents detail the ADCO approach and commitment to pro-active and responsible waste management on this project site.

Suitable waste management contractor(s) will be engaged to collect and manage office, kitchen and site waste under a minor works contract. The service will be delivered in accordance with the ADCO Waste Service Agreement Scope Of Works available on The Hub, which is customised to the project, each stage of its works and any additional Client or other sustainable development requirements.

The objectives of this Management Sub Plan and details of the ADCO waste recovery targets and reporting requirements will be communicated to the waste management contractor and subcontractors who will be required to provide detailed monthly reporting on waste breakdowns to the project.

Site specific waste management controls, monitoring, reporting and performance measures are identified in this Sub Plan. These include but are not limited to:

- The establishment and maintenance of suitably designed waste handling areas that facilitate on-site waste separation, where available space allows for separation.
- The correct storage and handling of waste materials including liquids.
- Customisation of waste management services (considering type, expected quantity staging) in consultation with the waste service provider.
- Identifying external opportunities for reuse and re-processing of waste to promote the Circular Economy and reduce depletion of natural resources.
- Excavated Natural Material or Virgin Excavated Natural Material can be recycled to prevent disposal to landfill.
- Accurately validating that waste quantities removed from the project site match those quantities disposed of at the approved licenced facility(s) with documented evidence retained by the project site for audit purposes.
- Monthly reporting of waste and recycling data though HammerTech (ADCO Online reporting system) and Project Control Reporting.
- Weekly inspections of waste management areas and skip use.
- Verifying the Contractor appointed for waste removal (including bulk excavation, remediation and demolition) has an accurate way of demonstrating that the loaded Heavy Vehicle is within the legal permissible Gross Vehicle Mass, contained appropriately and within dimension limits as required by Heavy Vehicle (and COR) legislation.

  - As a secondary measure confirmation through a waste facility weighbridge unloading/delivery destination (i.e., dockets received by ADCO) verify the mass of each heavy vehicle (that it was not recorded as overloaded at the weighbridge) that departs the project.
- Where an overweight load is identified through dockets or in vehicle scales the event must be recorded as an incident in the ADCO Online reporting system and an Action Plan assigned to the Waste Service Contractor to address the overweight load issue and verified in the ADCO Online reporting system as closed by ADCO. Refer ADCO Procedure Heavy Vehicle Chain of Responsibility Management.
- Waste reduction, storage, separation (for reuse and recycling) and disposal requirements will be included in relevant specifications, contractual agreements, supply agreements, quality assurance documents, subcontractor work method statements and waste management plans.
- Criteria for the selection and use of recycled and recycled content products will also be specified.

9. PROJECT WASTE MANAGEMENT SITE INSPECTIONS, MONITORING & REPORTING

The Table below details control measures for the management of Waste. The control measures must be reviewed and adapted to the specific scope of works and staging of the project and its site conditions.

Control Measure	Timing	Methodology	By Who	Monitoring and Reporting	Performance Measurement
Design and Work Methodology					
Identify opportunities to 'design out' or eliminate waste.	At design stage and each new stage of construction	Review project bid/tender commitments and opportunities to eliminate or reduce waste through design. Work with project designers, suppliers and subcontractors to identify opportunities to eliminate or minimise waste generation, incorporate recycled content materials/products, and/or revise construction methodologies to eliminate/design out. Identify options for reducing material waste, e.g., standard size materials, reusable formwork system, reuse of soil, masonry, or rock. Any Excavated Natural Material or Virgin Excavated Natural Material can be recycled to prevent disposal to landfill.	PM SM CA HSEA	Record of opportunities identified, and changes made.	Increased reuse in materials generated on site. Reduction in waste generated identified and recorded. Design change resulting in reduced waste generation recorded and quantified. Completed ADCO Trade Partner Tender Evaluation Report Completed ADCO Project Pre-Commencement Review and Approval To Commence
Planning					
Identify expected major waste streams for each stage of construction to inform the development of a detailed Waste Service Supply Agreement Scope Of Works for waste management.	Prior to project commencement	With reference to the construction program, identify major waste streams for each stage of works. For each stage of works, develop an understanding of expected waste quantities. Use this information to document waste service supply agreement scope of works (incl. skip numbers, types and sizes) with the aim of maximising on-site separation of key wastes including concrete, steel, plasterboard, cardboard,	PM SM HSEA	Completed Waste Stream Matrix (Appendix 2) Project specific waste management sub plan reviewed quarterly.	Achieve greater than 90% recovery by weight (excluding contaminated soils).

Control Measure	Timing	Methodology	By Who	Monitoring and Reporting	Performance Measurement
		timber, soft and hard plastics, where sufficient space allows. (Complete Appendix 1)			
Raise awareness of waste minimisation and site management practice requirements.	Prior to and during works.	Include project specific waste management information in the site induction. Display posters and signage and deliver toolbox talks addressing the conservation of natural resources and waste minimisation to promote the Circular Economy.	SM HSEA	Induction delivered	Demonstrated participation in waste management programs by Subcontractors.
Site Establishment (Waste Management Areas)					
Implement the waste management requirements of the ADCO Environmental Management Policy, the ADCO Project Set Up Guideline Sustainability Standard and the ADCO Environmental Management Plan.	Prior to commencing works	Implement waste management initiatives to achieve elimination of waste streams where practicable and diversion from landfill outcomes.	PM SM HSEA	Included in project audit.	[Insert agreed diversion rate to be achieved, Target is >90% diversion from landfill – excluding contaminated waste] Agreed diversion rate achieved and maintained during construction.
Prepare a detailed site plan showing: • Waste handling areas • Material storage areas • Concrete waste collection/washout areas • Trade waste/wastewater facility locations. • Stockpile locations.	Prior to site establishment	Appropriately located and adequately sized areas must be identified for each activity. Waste management areas should accommodate multiple bins/skips to allow for on-site separation of different waste streams at various stages of construction or comingling if the site area and constraints do not enable separation. Waste management areas must be separate to material storage areas. Trade Waste Licence (VIC only)	PM SM HSEA	Weekly/monthly EHS inspections. Monthly waste data capture (ADCO Online reporting system Site Diary and Project Control Review) Environmental Management Diagram (EMD) prepared (Appendix 1).	PCR reviewed monthly. No pollution incidents associated with waste storage, handling and transport or uncontrolled escape to the environment. Trade Waste Licence Current (VIC only)

Control Measure	Timing	Methodology	By Who	Monitoring and Reporting	Performance Measurement
Procurement of Waste Services					
Based on the identification of key construction wastes, identify skip requirements for on-site separation, collection (at ground level and within floor areas), off-site recycling and disposal for each stage of construction.	Prior to works commencing	Refer ADCO procurement arrangements for waste services. (i.e., minor works contract and Waste Service Supply Agreement Scope Of Works for waste service providers). Discuss project requirements, objectives and targets for waste management with selected waste contractors. Identify opportunities for customising waste services for each project stage to maximise recovery and reduce costs.	PM SM	Monthly waste report from contractor (meeting requirements of Waste Service Supply Agreement Scope of Works). Monthly waste reporting by subcontractors. SoW attached to contract information to inform any major subcontractors of reporting requirements, e.g., demolition, excavation or other	Waste Service Supply Agreement Scope of Works formulated and tendered.
Procure suitable waste service contractor that can verify compliance with Minor Works Contract; Waste Service Supply Agreement Scope Of Works	Prior to engaging contractor	Identify suitable waste service transport contractor and appoint. Check landfill/disposal facility licence details to confirm their suitability to accept the waste. Obtain any relevant approvals and permits for transport, reuse and/or disposal of waste prior to removal from site, e.g., contaminated waste streams.	PM SM	Copies of any licences and approvals reviewed. Disposal/weighbridge documents retained, and waste details captured in the ADCO Online reporting system.	Waste service contracted. No waste leaving site without relevant approvals. Copies of any permits /approvals are on site. All loads transported off site accounted for at destination facility and quantity verified against quantity leaving site. System to accurately verify heavy vehicle loads are the correct mass leaving site.
Procure separate waste services for office and kitchen/crib hut waste (i.e., organic and putrescible waste).	Prior to works commencing	Discuss project requirements with relevant waste contractors. As a minimum, consider separate bins for the collection of putrescible waste, organic waste, co-mingled recyclables (bottles/cans), paper/cardboard, printer cartridges, batteries and globes.	PM SM HSEA	Monthly waste report from contractor.	No unacceptable waste in construction skip bins.

Control Measure	Timing	Methodology	By Who	Monitoring and Reporting	Performance Measurement
		(These wastes must not be placed in mixed construction waste skip bins).			
Procure separate services for any re-gassing of air conditioners or refrigeration units	Maintenance or repair	Specialist air conditioning/refrigeration contractors used to draw down capture of refrigerant gases	PM SM HSEA	Maintenance / Service only	Dockets verify draw down capture with zero release of ozone depleting greenhouse gases. Refrigerant replacement has an ozone depletion potential (ODP) of zero, and a 100 year Global Warming Potential (GWP100) of 10 or less.
Subcontractor & Supplier Waste Management					
Identify major suppliers and identify opportunities to minimise or eliminate packaging and procure recycled content products to support the Circular Economy.	Prior to and during construction	Identify major suppliers with the largest potential waste generation impact. Proactively consider and review supply agreements, materials and packaging with the view of eliminating or minimising waste through 'take back' or 'reduction of packaging material' initiatives. Request input from subcontractors and suppliers to nominate recycled products or products that include a recycled component. Check compliance with specifications and ensure the material is fit for purpose.	PM SM HSEA	Specifications met. Tabled in design and pre-contract meetings. Sign off on product selection. Take back and package reduction programs implemented.	Proven examples of packaging reduction. Use of recycled materials and recycled content products. Material received with clearance certificates (i.e., no contamination) and fit for purpose. Completed ADCO Trade Partner Tender Evaluation Report
Major subcontractors to submit details of waste generated, waste minimisation, take back, reuse and recycling opportunities.	At tender and contract finalisation. During Construction	Identify major subcontractors with the largest potential waste generation impact. Identify predicted waste types that will be generated and quantities. Identify practical measures associated with the subcontractor's scope of work or product supply to reduce waste entering the site (e.g., reduced or alternative packaging, take back, use of recycled materials, hire arrangements or other recycle programs, e.g., paint pales recycle, plasterboard recycle.	PM SM HSEA	Inspection of incoming materials and packaging to identify new opportunities. Periodic checks of waste skips and subcontractor waste management activities. Subcontractor monthly waste reports support the waste data recorded in	Reduced waste generation and costs. Alternative products identified and used. Bulk handling and reusable/returnable transport containers encouraged. Waste and recovery targets tracked.

Control Measure	Timing	Methodology	By Who	Monitoring and Reporting	Performance Measurement
		Document waste management commitments in contract documentation and site plans.		the ADCO online reporting system.	
Project Site Waste Handling & Management					
Dispose of waste using licensed contractors at appropriately licensed/ approved facilities.	At all times	Consider reuse and recycling options before disposal. Request copies/check EPL/approval for facilities receiving waste and recyclables before the waste leaves site.	PM SM HSEA	Inspection of waste transport licenses and vehicles. Monthly waste report. Disposal dockets.	No waste disposed to unlicensed facilities. Copies of disposal documentation maintained and tracked in the ADCO online reporting system. No illegal placement of waste on land or in water. Waste, reuse, recycling and recovery data tracked in the ADCO online reporting system.
Separate/sort waste materials on site to divert waste from landfill and maximise recovery.	At all times	In consultation with the waste service provider identify costs and options for the separation of materials on site. Maintain waste storage areas in a tidy condition. Provide separate bins (as identified during the planning stage) and clear signage to prevent cross-contamination of wastes in segregated skips. Identify options for the use of balers for plastic and cardboard. Maintain a materials reuse area to divert materials of value from recycling and disposal skips. Maintain a materials reuse area to divert materials of value from recycling and disposal skips.	PM SM HSEA	Weekly/monthly inspection checklist. Monthly waste reports.	Clean and tidy waste management area. Nil to minimal cross contamination of waste types. On site separation of wastes maximised during various stages of construction.
Maintain waste handling and waste storage areas (solid and liquid wastes) in good condition to prevent pollution.	At all times	Store liquid wastes in secure, well ventilated, covered, bunded areas (min. 110% capacity of the largest container in the bund and covered where possible).	PM SM HSEA	Weekly inspection of waste areas to assess condition of storage and waste collection areas and identify maintenance requirements.	Nil to minimal cross contamination of wastes. No spillage or loss of wastes from collection containers in storage areas. No 'orphaned' drums identified on site during inspections; (i.e.,

Control Measure	Timing	Methodology	By Who	Monitoring and Reporting	Performance Measurement
		Store materials in original containers (label and seal intact). Do not stack unless secured against toppling and rupture. Provide a spill control kit and ADCO trained personnel to clean up spills immediately.			drums/containers left outside of a bunded area). Spill kit(s) located on site and key persons trained in spill response.
Encourage good site 'housekeeping' in material handling and storage areas to prevent damage and the loss of materials due to physical impact and weather events.	At all times	Communicate material handling and storage requirements to subcontractors. Address in subcontractor SWMS/WMS.	PM SM HSEA	Weekly inspection checklist to identify inappropriate storage or the waste of materials and resources.	No loss due to poor storage.
Recycle virgin excavated natural material (VENM) or excavated natural material (ENM).	Excavation	Complete required checks and forms and check approvals for disposal to Development Approved site classified to accept the ENM/VENM type. Where recycling cannot be achieved use a licensed waste contractor to transport spoil (VENM/ENM) to an appropriately licensed or approved facility (as waste to landfill). Only VENM, ENM, or other material approved in writing by EPA is to be brought onto the site.	PM SM HSEA	Tracking of materials transported on & off-site (i.e., through dockets). Waste classification reports by Subcontractor.	Reconciliation of tracking registers and dockets. VENM / ENM soil quantities tracked and recorded in HammerTech. All records are to be available to the Department of Planning, Infrastructure & Environment (DPIE) upon request.
Waste Data Capture					
Capture waste data and analyse to assess waste management outcomes.	Whole of Project	Capture office/kitchen waste and construction site waste data in the ADCO Online reporting system. Analyse waste data to identify new opportunities and/or issues.	PM SM HSEA	Monthly	Monitored during Project Control Review at monthly intervals
Co-ordinate the sharing and reuse of raw materials, excess products, and building materials including plywood, hoarding, fencing, concrete and	During construction	Establish a dedicated material recovery area for the collection of materials suitable for reuse.	PM SM HSEA	Discussed in project and subcontractor meetings. Reinforced through toolbox talks. Weekly/monthly inspection checklist.	Documentation of actual examples as a case study. Quantified in project control reviews.

Control Measure	Timing	Methodology	By Who	Monitoring and Reporting	Performance Measurement
formwork where possible.				Recycling facility dockets.	

APPENDIX:

A-1 Waste Management Diagram

- Waste management areas and vehicular access for the placement and collection of multiple bins/balers/skips
- Multi-skip locations (to allow waste separation on site, where possible), material reuse area (to store materials for reuse back on the project), pallet storage areas (for pallet collection and reuse) (larger scale plan may be required)
- Material storage areas (must be separate to waste management areas, clearly delineated and well organised to prevent materials from becoming waste)
- Stockpile storage locations
- Washout areas/facilities (concrete and trade waste)
- Other key features of the site and surrounds

A-2 Key Waste Streams, Estimated Quantities and Service Requirements

Project Name: 3658 Lidcombe Multi Storey Warehouse Project

Start Date: 31 May 2024 **Finish Date:** January 2026 **Duration:** 18 Months

Stage and Timing	Expected waste types*	Estimate of expected waste quantity**	Estimate of Service Requirements (type, number and size – weekly)***				Comments	# Weeks
	-EXAMPLES ONLY– ADD SITE DETAILS Refer to Appendix 3 for guidance		Skips	Bins	Balers/ Compactors	Other (e.g. kerbside)		
Office	Shredded paper Ink cartridges Glass / bottles Food waste Comingled recyclables							
Site Accommodation	Food waste Comingled recyclables General waste							
Demolition								
Site establishment	Soil Terracotta pipes Electrical wiring PVC							

Stage and Timing	Expected waste types*	Estimate of expected waste quantity**	Estimate of Service Requirements (type, number and size – weekly)***				Comments	# Weeks
	Vegetation Fencing materials							
Piling	Soil Concrete Steel Casing							
Earthworks	Soil Rock Aggregate Contaminated material							
Structure	Concrete and slurry Containers (plastic)							
Façade	Timber pallets. Soft plastic							
Fit out	Cardboard boxes Pallets Timber packers. Soft plastic Strapping Styrofoam							
External works with landscaping								
Final clean up								
Decommissioning								

Stage and Timing	Expected waste types*	Estimate of expected waste quantity**	Estimate of Service Requirements (type, number and size – weekly)***				Comments	# Weeks
(site office, meters, tanks, site controls, fencing)								

* Refer to table below (Appendix 3) for a list of potential waste types and management opportunities.

** Can be calculated as a percentage of material procured (if known) or as an estimate based on an appropriate, documented methodology e.g., past project or similar project outcomes. Please outline the methodology.

*** Identify options in consultation with relevant Trade Partners.

A-3 Key Waste Types and Opportunities for Diversion

Waste Type	Site Requirements (where practicable)	Opportunities for optimising reuse or recycling Discuss with Team, Subcontractor and Waste Service Provider/Specialist
Aluminium	Separate for recycling.	Metal recyclers.
Asphalt	Separate. Stockpile or place in skip. No runoff of contaminants.	Reused in temporary works, site levelling or to establish walkways, driveways or stabilised areas. Off-site recycling.
Biodegradable bags	Purchase	Landfill
Cables and parts	Metal components separated and placed in metal bin. Remaining material placed in mixed skip.	
Cardboard	Bins (240L), skips or cages. Baler	Off-site recycling
Carpet and carpet underlay	Separated	Recycled. Donated. Cleaned and reused by others.
Crib hut/kitchen waste	Bins and collection arranged (240L) Putrescible wastes must not be placed in mixed construction skips.	Separate bins for food waste, cans, plastic bottles for off-site recycling.
Concrete (liquid slurry from washout and solid).	Appropriately designed and located washout facility. Waste concrete (wet) and slurry placed in collection trays. Separate stockpile or skip for dried concrete for off-site recycling. Separate dried concrete from plastic tray lining. Place plastic in mixed skip.	On-site reuse of excess concrete (i.e., hardstand areas, footpaths) On site recycling of wastewater. Check whether plastic liner affects the ability of the waste service provider to recycle the concrete. Refer to the ADCO Concrete Equipment Washout Standard.
Drums and containers	Store in bunded areas for collection. Must not be stored with incompatible substances.	Removal off-site by a licensed contractor for rinsing, recycling or disposal at a licensed landfill.
Excavated spoil (e.g., clean spoil including excavated natural material, virgin excavated natural material)	Reuse on site. Stockpile separately. Removed from site by trucks.	Reuse off-site under a resource recovery exemption, Development Approval or licence (beneficial reuse/recycle). Where reuse/recycle cannot be achieved disposal and reporting to landfill. Disposal off-site (if contaminated)
Excavated spoil contaminated	Stockpile separately.	Approved treatment and reuse on site if possible.

Waste Type	Site Requirements (where practicable)	Opportunities for optimising reuse or recycling Discuss with Team, Subcontractor and Waste Service Provider/Specialist
	Removed from site by trucks. Disposal off-site to an appropriately licenced facility. Controls installed to prevent pollution.	Reuse of treated material off-site (where permissible).
Food packaging/cans/bottles	Bins or cages. Signage to identify the purpose of each bin/cage.	Recyclables sorted for collection and off-site recycling. Landfill if not recyclable.
Facade frames/supports	Separated and protected from damage.	Returned for reuse. Disassembled for recycling.
Glass/plastic/cans	Bins (240L), skips or cages. Baler	Separated for collection. Off-site recycling
Green waste (vegetation)	Mulch or chip on site. Trucked off site. Separated into a skip.	Chipped on site. Transported to off-site centre for recycling
Ink cartridges (office based use)	Collection bin or drop off points identified.	Return for refill or recycling.
Liquid from wet trades (e.g., paint, dry walls, renderers, tilers)	Dedicated washout facility/treatment system, e.g., Wash Box.	Off-site recycling of solids (slurry) On-site recycling of water.
Oily rags and filters	Bins. Separated from other wastes.	Off-site recycling by licensed waste oil recycler
Organic food scraps	Bins. Separated from waste that can be recovered or recycling.	On-site worm farm or maggot farm Taken off-site to organic recycling facility. Landfill
Paper waste (e.g., office based use)	Secured and unsecured Bins (240L)	Off-site recycling
Plastic (soft and hard)	Separate bin/skip. Baler or cage.	Off-site recycling or re-processing.
Scrap metal/steel	Separate skip.	Off-site recycling
Sediment control materials	Store on site for reuse.	Reuse at other local sites. Recycle clean fabrics and plastics.

Waste Type	Site Requirements (where practicable)	Opportunities for optimising reuse or recycling Discuss with Team, Subcontractor and Waste Service Provider/Specialist
Spill control materials (e.g., absorbent pads/booms	Containers, bins and/or tanks that have been suitably bunded	Taken off-site to landfill. Collection by specialist waste contractor if containing hydrocarbons, chemicals.
Timber and timber pallets	Separated. Skip bin.	Reused on site. Recycled off-site. Returned Disposed to landfill.
Waste oil, grease, lubricants	Sealed and stored in original container in bunded areas for collection.	Off-site recycling by licensed contractor.
Plastic wrapping/containers	Separated. Baler or skip Must remain uncontaminated by other wastes (e.g., slurry)	Off-site recycling for clean, dry, soft plastics or landfill as appropriate.

A-4 Estimated Monthly Construction & Demolition Waste

Type of Waste Generated	Reuse	Recycling	Disposal	Method of on-site reuse, contractor, and recycling facility and/or waste depot to be used
	Estimate Volume (m3) or Weight (t)	Estimate Volume (m3) or Weight (t)	Estimate Volume (m3) or Weight (t)	
Excavated materials. **(soil spoil)**	0m^3	0m^3	0m^3	N/A - If disposal required refer to Table 9 & A-3
Green waste	0m^3	<10m3	0m^3	Recycling Facility
Bricks/pavers	0m^3	0m^3	<10m3	Waste Management Centre
Tiles	0m^3	0m^3	<5m3	Waste Management Centre
Concrete	0m^3	0m^3	<15m3	Waste Management Centre
Plasterboard	0m^3	0m^3	<10m3	Waste Management Centre
Asbestos	0m^3	0m^3	<5m3	Waste Management Centre
Metal – specify	0m^3	<15m3 (Steel studs)	0m^3	Recycling Facility
Timber - specify	0m^3	0m^3	0m^3	
Other waste – specify (eg. paints, PVC pipe)	0m^3	0m^3	<10m3	Waste Management Centre
Packaging (used pallets, pallet wrap)	0m^3	<15m3	0m^3	Recycling Facility
Containers (cans, plastic, glass)	0m^3	<5m3	0m^3	Recycling Facility
Paper/cardboard	0m^3	<10m3	0m^3	Recycling Facility
TOTAL	**0m^3**	**<55m3**	**<55m3**	

A-5 Monthly Waste Tracking Register

Lidcombe Multi Storey Warehouse Project
42-44 Boorea Street Lidcombe

ADCO

Hale
HALE Capital Partners

LIDCOMBE MULTI STOREY WAREHOUSE PROJECT - MONTHLY CONSTRUCTION WASTE PERFORMANCE TRACKING SCHEDULE

Information	Details	JTD	YTD	Demo/ Civil Jun-24	Demo/ Civil Jul-24	Demo/ Civil Aug-24	Demo/ Civil Sep-24	Demo/ Civil Oct-24	Demo/ Civil Nov-24	Demo/ Civil Dec-24
Waste report & project data (enter the material categories to match your waste reports)	Recyclable Bricks/ Tiles	1.000	#VALUE!	1.00	0.00	0.00	0.00	0.00	0.00	0.00
	Recyclable Concrete (See Above)	1.000	#VALUE!	0.00	1.00	0.00	0.00	0.00	0.00	0.00
	Recyclable Soil / Sand / Rubble Fines	1.000	#VALUE!	0.00	0.00	1.00	0.00	0.00	0.00	0.00
	Recyclable Metals (ferrous)	1.000	#VALUE!	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Recyclable Metals (non-ferrous) (See Above)	1.000	#VALUE!	0.00	0.00	0.00	0.00	1.00	0.00	0.00
	Recyclable Timber	1.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	1.00	0.00
	Recyclable Green Waste	1.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	1.00
	Recyclable Cardboard / Paper	0.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Recyclable Plastic	0.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Recyclable Plasterboard	0.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Glass (See Recyclable Brick/Tiles)	0.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Process Engineered Fuel (including but not limited to - paper, cardboard, woody matter, textile, plastics and other inorganic material)	0.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Recycled Waste	0.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	General Waste (landfill)	0.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Other (Asbestos)	0.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Other (Lead)	0.000	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Other (TBD)	0.000	#VALUE!	0.00						
	Total Weight on Waste Report (Tonnes)	7.000	#VALUE!	1	1	1	1	1	1	1
	Total Weight from weighbridge reports/invoices - if available (Tonnes)	**0.000**	**#VALUE!**							
	Waste Reported as Recycled (Tonnes)	**7.000**	**#VALUE!**	1	1	1	1	1	1	1
Project Data outside Waste Report	Mates on the Move	0.000	#VALUE!	0	0	0	0	0	0	0
	Metro - Furniture Inventory and removal (See General Waste (landfill) Above)	0.000	#VALUE!	0	0	0	0	0	0	0
	General Waste (landfill) (See General Waste (landfill) Above)	0.000	#VALUE!	0	0	0	0	0	0	0
	Total Weight (Tonnes)	0.000	#VALUE!	0	0	0	0	0	0	0
	Total Weight from weighbridge reports/invoices - if available (Tonnes)	**0.000**	**#VALUE!**							
	Waste Reported as Recycled (Tonnes)	**0.000**	**#VALUE!**	0	0	0	0	0	0	0
	Total Weight (Tonnes)	**7.000**	**#VALUE!**							
	Percentage Recycled	100.00%		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

In Accordance with:
- Protection of the Environment Operations Act 1997
- Environmental Planning Assessment Act 1979
- ADCO CWSMP

YTD = YEAR TO DATE
JTD = JOB TO DATE

A-18 Demolition Procedural Plan

ADCO Constructions (Head Contractor)

PROCEDURE
DEMOLITION

PLANNING

PURPOSE

This procedure has been developed to provide guidance on **Demolition.**

The procedure is not conclusive as alternative requirements may apply nationally. It is recommended that further guidance is obtained from your State Regulatory Authority or through www.safeworkaustrialia.gov.au

DEFINITIONS

Demolish or dismantle a structure or part of a structure that is load-bearing or otherwise related to the physical integrity of the structure, but does not include:

A structure is anything that is constructed, whether fixed or moveable, temporary or permanent, and includes buildings, sheds, towers, chimney stacks, silos, storage tanks.

SAFETY ESSENTIALS

The project team are required to review the ADCO Safety Essentials to ensure that all mandatory risk management requirements are understood and completed prior to commencement or works, during the works and upon completion of the works.
Refer to ADCO – Safety Essentials

PROJECT RISK REGISTER AND MANAGEMENT PLANS

The Project Risk Registers/Management Plans developed by the **Project Manager** at the start of the project, provides project-specific information pertaining to identified high risk works, risks and control measures.

- The Risk Registers/Management Plans must be reviewed by the site team to familiarise themselves with identified high risk works to be undertaken.
- For the life of the project, the Risk Registers/management Plans should be reviewed on a regular basis and kept up to date with changes to scope and identified high risk works.
- Copies of the Risk Register and Safety Management Plan must be made available to all workers and interested parties.

Refer to Procedure: Performance Management

SITE PLANNING

Prior to commencing any work, the project team and relevant subcontractor must discuss and agree on the following, but not limited to:

- Sequence of works
- Structural issues
- Required hot works
- Use of mobile plant
- Potential impact on personnel or public
- Dust, noise and vibration issues
- Debris removal and disposal
- Hazardous Material Report / Asbestos Register
- Temporary works/propping
- Legal and other requirements

Demolition Management Plan	A person who has management or control of the workplace must ensure that a Demolition Management Plan (DMP) is prepared for the intended works. The Demolition Management Plan management plan must:

- Scope of works.
- Sequence of work operations and methods of demolition to be adopted.
- Management of vibration, noise, dust, lighting, etc.
- Proposed access/egress to the work area site.
- Engineering investigation of the structural integrity of the building and/or adjoining buildings.
- Engineering verification of the demolition methodology.
- Risk control measures (e.g. services isolation/ disconnection, bracing / support systems, public protection, etc.).
- Proposed method of handling and disposing of demolished materials.
- Qualifications/Certification of demolition personnel.
- Regulatory Authority requirements or notifications.

Where licensed demolition work is required, the Plan must be prepared by a licensed contractor.

Structural Demolition

Where written evidence of engineering investigation has not been supplied with the Plan, a secondary review by a suitably competent person (e.g. Structural Engineer) is required.

The review must either be conducted by an Engineer appointed by the subcontractor or by ADCO.

Temporary Support Systems

Temporary Support Systems e.g. propping, and bracing may be required to undertake demolition activities. A suitably qualified engineer must provide detailed instructions for temporary support systems. This includes but is not limited to system details, locations, proprietary information and installation and removal requirements.

Vibration and Noise

Where required by a Council / Regulatory Authority / Client, noise and vibration monitoring conducted by a suitably qualified company may be required.

If required, ADCO must engage a company to provide monitoring services before and during all / nominated activities.

Dilapidation Report

A Dilapidation Survey assesses the pre-construction / demolition condition of a property, as well adjacent structures.

The survey notes obvious defects (e.g. cracks, movement, settlement, water seepage, distortion, subsidence, and various other potential defects) and uses notes and photographs to record issues.

Surveys and reports must be completed prior to the start of the work activity.

Additional surveys may be completed during the work activity if there are observations of changes to the work environment.

The survey report must be completed by a licenced surveyor. The **Project Manager** must ensure a survey report is undertaken prior to work commencing.

Hazardous Materials

Where Asbestos Containing Material (ACM) is known to be located or is discovered in the area to be demolished, it must be removed in its entirety before any other works are permitted.
Refer to Procedure: Asbestos Management

Services

All services must be clearly identified and marked accordingly.

Written confirmation must be obtained by the **Site Manager** for all services being isolated, decommissioned or terminated prior to works commencing.

Where this is not possible, live services must be clearly identified and demolition methodology reviewed to ensure services impacts are controlled and managed.

REGULATORY PERMITS AND NOTIFICATIONS

The **Project Manager** must ensure relevant permits have been acquired and are current for the intended works.

- Check with your State Regulatory Authority for notification and permit requirements.
- Contact: www.safeworkaustrialia.gov.au or the relevant State Regulatory Authority.
- Evidence of notification or permits must be kept on site and made available to interested parties.

CONTRACTOR COMPETENCY

Prior to the start of the work activity, the subcontractor must provide ADCO with written proof that they are currently licenced with the State Regulatory Authority and training has been provided relevant to the activity.

Contractor Licence	Prior to commencing any work, the subcontractor must provide written proof that they are currently licenced with the State Regulatory Authority. A copy of the Contractor licence must be verified, kept on site and made available to interested parties.
Supervisor Competency	Provision of instruction and training via – acknowledgment of the Demolition Management Plan, risk assessment, Safe Work Method Statement and toolbox talks etc relevant to the activity.
Worker Competency	Provision of instruction and training via – acknowledgment of the Demolition Management Plan, risk assessment, Safe Work Method Statement and toolbox talks etc relevant to the activity

Note: check with your State Regulatory Authority as licence requirements may differ from state to state.

Contact: www.safeworkaustrialia.gov.au or the relevant State Regulatory Authority.

REVIEW AND APPROVAL

Prior to any works, all associated documentation relevant to the high-risk work must be reviewed, approved and regularly revised by the **Project Manager / Site Manager.**

Any concerns or issues must be raised immediately with the subcontractor and addressed. Where concerns or issues cannot be resolved, these must be elevated to the **Construction Manager**.

CHECKLIST COMMENCEMENT

Prior to commencing any work, the PLANNING section of the activity checklist must be completed and authorised by the **Project Manager**. If the **Project Manager** is unavailable to approve the PLANNING section of the checklist, the **Construction Manager** must complete and approve in their absence.

Activity Checklist – Demolition
Refer to Procedure: Permit Management

SITE ACTIVITY MANAGEMENT

WORK AREA INSPECTION

Prior to commencing any work, the **Site Manager** together with the subcontractor supervisor must complete an inspection of the work area. The purpose of the inspection is to:

- Review the work area.
- Agree on the work activity, work schedule, risks and control measures.
- Review emergency procedures
- Obtain information required to complete the relevant Checklists and ATW Permit

CHECKLIST COMPLETION

Prior to commencing any work, the SITE ACTIVITY MANAGEMENT section of the activity checklist must be completed and authorised by the **Site Manager** prior to issuing an Authority to Work Permit. If the **Site Manager** is unavailable to approve the SITE ACTIVITY MANAGEMENT section of the checklist, the **Project Manager** or **Construction Manager** must complete and approve in their absence.

Activity Checklist – Demolition
Refer to Procedure: Permit Management.

AUTHORITY TO WORK PERMIT

Prior to commencing the work activity, an Authority to Work Permit must be issued by the **Site Manager** for the intended works.
Refer to Procedure: Permit Management

CONSULTATION

Information relating to the work and control measures must be provided to subcontract workers at site induction and through any other forms of consultation utilised on the project.
Refer to Procedure: Consultation and Communication

MONITORING REQUIREMENTS

MONITORING

The **Site Manager** must ensure that controls measures have been established and maintained for the duration of the works.

Monitoring should include:

- Compliance to SWMS methodology and controls
- Compliance to Permit condition
- Compliance to the Demolition Management Plan
- Compliance to any additional agreed control measures
- Compliance to work activity PPE etc.

Observations should be recorded in the *Weekly Site Inspection* or other inspection formats.

Non – Compliance issues must be addressed in accordance with system requirements.

Refer to Procedure: Subcontractor Management
Refer to Procedure: Performance Management

Waste Management	The amount of demolition waste should be minimised, confined and maintained to reduce risk to workers. Waste should be; / Minimised so as not to accumulate in work areas. / Placed in skip bins as quick as reasonably possible and removed from site. / Separated from commutable materials etc. / Controlled in relation to stockpile heights. Waste skip bins used for the disposal of demolition waste must be; / Fit for purpose / In good condition without holes or damage to bins etc / Covered prior to exiting the site
Waste Minimisation	Where possible, waste separation should be undertaken on site in appropriately labelled skip bins. Where this is not possible due to space etc, waste separation and recycling must be undertaken of site by a reputable waste provider. Recycling targets should fall between 80% to 85%.
Dust, Noise and Vibration	Dust, noise and vibration must be monitored in accordance with project management plans and associated legal requirements
Temporary Support Systems / Engineering Requirements	Temporary Support Systems / Structural support systems (back propping and bracing), work methodologies etc. detailed by the engineer must be monitored for compliance.
Unexpected Finds (Historic or Other)	Any historic finds, aboriginal artefacts etc found during works, must be brought the attention of the Site Manager immediately. The following must apply: / Stop all work in the immediate area / Do not attempt to handle, move or relocate the find / Establish an exclusion zone around the find / Erecting warning signs / Cover the suspected find (if possible) / Notify the Project Manager and Construction Manager / Notify relevant authorities and client / Advising all workers / Any media comments or interviews must be at the direction of the Chief Executive Officer.
Unexpected Finds (ACM)	Any suspected ACM found during works which was not originally identified must be managed and controlled by: / Stopping all work in the immediate area / Establishing an exclusion zone around the affected area / Erecting asbestos warning signs / Covering the suspected material / Keeping the material damp or wet / Arranging for the material to be inspected and tested

- Advising all workers of the potential danger and control measure

Once material has been confirmed as asbestos, the **Site Manager** must ensure correct removal and disposal arrangements are arranged and undertaken.

Refer to Procedure: Asbestos Management

Exclusion Zones

Exclusion zones are typically established / demarcated and or managed by;

- Solid barricades such as hoarding, barriers (concrete or water filled), crowd fencing, fixed fencing, temporary fencing, power webbing etc.
- Exclusion zones must be clearly sign posted to warn of dangers.
- Exclusion zones should have clear entry/exit points.
- As required, exclusion zones may require the assistance of spotters.

Work at Height

As determined by the scope of works, any work at height must be controlled for both workers safety and the potential for materials falling.

Controls should include but not be limited to:

- Works on ground where possible
- Use of approved Scaffold systems or working platforms
- Use of EWP's or Work Box
- Use of approved edge protection
- Use of approved platform ladders and or 450mm wide trestles.
- Use of approved fall restraint or fall arrest equipment, etc.

Refer to Procedure – Work at Height

Traffic Management and Movement

As determined by the scope of works, any traffic or pedestrian management requirements must be controlled.

Controls should include but not be limited to:

- Reducing the need to work in public areas
- Woking out of hours (low volume of public)
- Approved hoarding systems
- Traffic management
- Exclusion zones
- Spotters

Refer to Procedure - Traffic Management

Operational Plans

The **Site Manager** is required to update project operational plans to reflect site operational conditions *(Traffic Movement Plan, Services Plan, Evacuation Plan etc.*

Refer to Procedure: Working around live services
Refer to Procedure: Traffic Management / Movement
Refer to Procedure: Emergency Management

End of Shift Inspection

At the end of each shift / close of each day, the **Site Manager** is required to review / inspect the work area to confirm that required control measures are in place and, that the work area is safe / secure.

Observations should be recorded in the ***Weekly Site Inspection***

Refer to Procedure: Performance Management

ACTIVITY COMPLETION

ENGINEERING REVIEW

All engineering requirements must be verified and continuously monitored by the Site Management team to ensure temporary support systems, devices, structures are fit for purpose and suitable for use.

Failing to comply with engineering controls or prescribed instructions must raise alarm and be elevated to the **Site Manager** or **Project Manager** immediately.

Observations should be recorded in the Weekly Site Inspection
Refer to Procedure: Performance Management

Temporary Support Systems	At an approved stage of the works, temporary support systems must be removed. Temporary support systems should be removed in a manner that protects workers from collapse, structural collapse or being struck by structural members. When removing systems, the support system should be removed in accordance with the manufacturers requirements, safe system of work and specifications as detailed by the Engineer (if applicable). **Note: Temporary support systems must not be removed without the prior approval of an Engineer.**

WORK AREA REVIEW

At the end of each shift / close of each day / completion of work activities for which the Permit was issued, the **Site Manager** and Subcontractor Supervisor is required to review / inspect the work area to confirm that required control measures are in place and that the work area is safe / secure, and no further hazards / risks exist.

DOCUMENTATION CLOSE OUT

After completion of the work, the **Site Manager** is required to close out the Permit.
Refer to Procedure: Permit Management

ADDITIONAL INFORMATION

LEGISLATION REFERENCE

National	www.safeworkaustrialia.gov.au
Victoria, Western Australia	Refer to State Legislation
Australian Standards	*AS2601-2001 - The Demolition of Structures*

A-19 Unexpected Contamination Finds Procedure

ADCO Constructions (Head Contractor)

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Monday 20 May 2025

Sally Munk
Principal Planner – Industry Assessments
Department of Planning, Housing and Infrastructure
4 Parramatta Square
12 Darcy Street
PARRAMATTA NSW 2150

Dear Sally,

Unexpected Finds Procedure - Contamination
Boorea Street Warehouse & Distribution Centre
42-44 Boorea Street, Lidcombe NSW 2141

SECTION 1 | INTRODUCTION

SSD-36464788 was granted development consent by DPHI on 12 December 2023 for a new 2-level multi storey warehouse and distribution centre at 42-44 Boorea Street, Lidcombe.

As per **Condition B69** of **SSD-36464788**, this Unexpected Finds Procedure – Contamination (UFP) has been prepared to support the overall ADCO Construction Environmental Management Plan (CEMP) to satisfy this condition.

SECTION 2 | STATUTORY REQUIREMENTS

SSD-36464788 Conditions of Consent require an Unexpected Finds Protocol to be prepared as part of the CEMP:

Unexpected Finds		
B69	Prior to the commencement of construction, the Applicant must prepare an unexpected contamination finds procedure to ensure that potentially contaminated material is appropriately managed. The procedure must form part of the of the CEMP in accordance with condition C2 and must ensure any material identified as contaminated is disposed of in accordance with the POEO Act and its associated regulations. Details of the final disposal location and the results of any associated testing must be submitted to the Planning Secretary prior to removal of the contaminated material from the site.	Refer to Appendix A-19 Unexpected Contamination Finds Procedure of the CEMP.

***Sections 3, 4 5 & 6** below have been implemented to satisfy the requirements of the above.*

SECTION 3 | INTRODUCTION

A **Detailed Site Investigation (DSI)** was prepared by **JBS&G Australia Pty Ltd (2022 | Document No.: 62184/143725 | Rev: 4)** as part of the EIS for **SSD-36464788**.

The objectives of the DSI are to characterise potential contamination at the site and draw conclusions regarding the suitability of the site for on-going commercial/industrial land use.

Please see below a summary of the findings made in summary (also appended):

- The property has been used for various commercial / industrial purposes since the 1950s including stockyards and facilities for processing meat products, manufacture, storage and distribution of egg products (including pulp processing for paper production), flour and food ingredients, printing, warehousing and distribution and office spaces.
- The potential sources of contamination identified at the site included; anthropogenic fill materials of unknown origin used to create existing/current site levels, former/current structures potentially containing hazardous materials, historical manufacturing / industrial activities as well as potential off-site sources of contamination comprising current and former industry surrounding the site.
- Representative samples of fill material and natural soils within accessible areas of the site (at twenty-one locations) were analysed for a range of identified potential contaminants of concern including heavy metals, PAHs, TRH, BTEX, OCP/PCBs, PFAS and asbestos. The reported concentrations of all contaminants of concern were below the adopted criteria protective of human health under the proposed land-use. On this basis, there were no identified impacts within site soil assessed as part of this investigation that would present an unacceptable risk under the proposed land-use.
- There were no unacceptable odours or staining associated with contamination observed within site soil during the current investigation that may pose an aesthetic issue at the site.
- Potential acid sulfate soils were identified in natural soils at depth. Please refer to the **Acid Sulfate Soils Management Plan appended to the ADCO CEMP (Appendix A-20).**
- Similar to the soil assessment, representative samples of groundwater from seven locations across the site were analysed for a range of identified potential contaminants of concern including heavy metals, PAHs, TRH, OCPs, PCBs, VOCs and PFAS. All reported COPCs were below the adopted criteria within groundwater with the exception of some elevated levels of heavy metals been reported in several monitoring wells at the site as well as PFAS at two locations. The elevated concentrations of heavy metals are considered to be indicative of urban background concentrations.
- Elevated highest concentrations of PFAS were recorded at MW4 and lower concentrations at MW12 (which is downgradient of MW4) indicating downgradient attenuation of PFAS. Surface sampling conducted by JBS&G (2021) identified the presence of PFAS at low concentrations (less than the adopted site assessment criteria) upgradient (SW01) and downgradient (SW02) of the site in Haslam Creek. As concentrations did not increase from the upgradient to downgradient locations it is considered that migration of PFAS in groundwater from the site does not currently pose an offsite risk.
- A sub-slab vapour assessment was completed at 30 locations across the site. Contaminant levels as measured in sub-slab vapour were below the laboratory detection limits or the adopted guideline values for the assessment, thus indicating there were no volatile impacts within the sub-surface that would pose an unacceptable risk to future site receptors (via vapour intrusion to within enclosed spaces/buildings) in the areas assessed.
- Whilst not strictly required to make the site suitable for the proposed land-use, the UST present in the western portion of the site will require appropriate decommissioning Removal and off-site disposal) in accordance with the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019.
- It is further recommended that an appropriate construction environmental management plan (CEMP) be prepared and implemented during future in-ground construction activities that includes an unexpected finds protocol and waste management protocol.
- Based on the findings of this investigation and subject to the limitations presented in Section 12, it is considered that the site is suitable for the proposed commercial / industrial land-use (HIL-D) subject to implementation of the unexpected finds protocol requirements during future construction activities.

SECTION 4 | POTENTIAL UNEXPECTED FINDS AND CHARACTERISTICS

4.1 WHAT IS AN UNEXPECTED FINDS MANAGEMENT PLAN?

An unexpected find is defined as potential contaminated land or asbestos that was not previously identified in the EIS, DSI, CEMP (and sub-plans) or during pre-construction investigations.

For the purposes of this plan, contaminated land comprises land within the project area that meets the definition of contamination in *Contaminated Land Management Act 1997*, including asbestos amongst other contaminated materials.

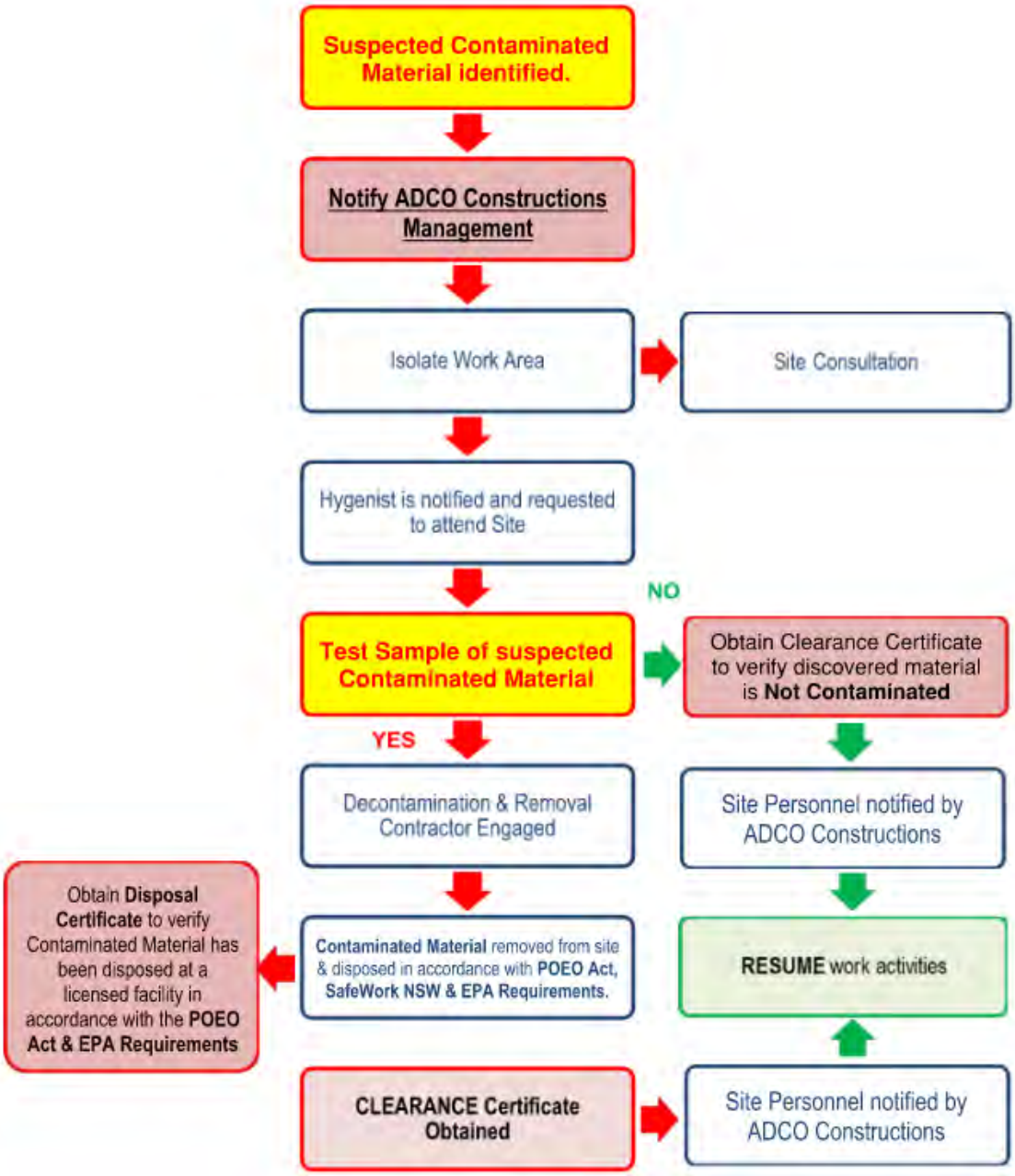
4.2 POTENTIAL UNEXPECTED FINDS CHARACTERISTICS

A summary and description of the types of unexpected finds that may be encountered during construction work, based on contaminants of potential concerns, is presented in **Table 1** below.

POTENTIAL UNEXPECTED FIND	OBSERVED CHARACTERISTIC	TYPE OF POTENTIAL CONTAMINANT
Petroleum Hydrocarbons (e.g., Fuels, Oils, and Lubricants)	Identifiable by either odour and/or visual indications of contamination. Characteristic petrol, diesel, or 'oily' odours (e.g., hydraulic oil) which may vary in strength from weak (just detectable) to very strong (easily detectable at a distance from the source). In soils, the odour may or may not be accompanied by specific areas of dark staining (black grey) or larger scale discolouration of strata from a previously identified 'natural colour' (e.g., staining of orange and brown clay to dark grey and green). May also be visible as a distinct coloured sheen on water within an excavation.	**TRH, BTEX, PAH**
Buried Dry Waste Materials	Variety of construction and demolition waste materials including wood, plastic, metal fragments, building rubble such as concrete, brick, asphalt, asbestos containing materials etc.	**ASBESTOS, HEAVY METALS**
Buried or Surface Bonded ACM, Asbestos Fines/Friable Asbestos	Cement-bound asbestos containing material (ACM) (e.g., compressed cement sheeting) may be present in building waste or pipes. Friable forms of asbestos including lagging and insulation, textured coatings and vinyl floor tiles may also contain asbestos. Fines and fibers are not typically visible to the unaided eye. Laboratory analysis is required to identify asbestos in soil.	**ASBESTOS**

Structures or Conduits Containing Possible Hazardous Materials	Could be identified by a buried storage tank or former pipelines (typically metal, concrete, or plastic), deeper sand fill sometimes with visual/olfactory indications of contamination, or presence of small concrete footings surrounding by odorous of visually impacted soils and/or groundwater.	**TPH, BTEX, PAH,** **ASBESTOS**
Ash or Slag Deposits	Ash materials are typically light weight, grey and white sand and gravel sized particles (1mm to 10mm). Slag materials can be varied in consistency and colour and may comprise pale grey to blue/green/grey and be loose or cemented. Slag gravels can be very angular and appear to have a 'honeycomb' texture.	**PAH, HEAVY METALS, CAN GENERATE ALKALINE LEACHATE**
Landfill Type Material	Could include a combination of the other categories along with domestic (e.g., clothing), clinical (e.g., human tissue or hair, laboratory specimens etc.), and/or putrescible waste (e.g., food scraps, nappies, etc.).	**HEAVY METALS**
Buried Drums	Metal or plastic drums containing potentially unknown hazardous substances. Management of drum contents may require specialist hazmat contractors. Drums should not be opened to inspect contents until a qualified hazmat contractor has been engaged to assessed potential risks.	**VARIOUS**
Other Unusual Odours	Other unusual odours that a different from surrounding soils, such as a sweet odour could indicate the presence of chlorinated hydrocarbon contamination.	**VARIOUS**

SECTION 5 | UNEXPECTED FINDS PROTOCOL



SECTION 6 | MEASURES AND COMPLIANCE

6.1 ROLES AND RESPONSIBILITIES
The ADCO Site Manager will retain the overall responsibility for implementing the unexpected finds procedure for all construction works undertaken within the project area.

6.2 TRAINING
All construction workers will be trained to recognise potential unexpected finds. This training will be part of the general site induction and refreshed periodically at toolbox meetings. This training will raise awareness of potential contamination and hazardous materials, reinforcing that works on-site can be temporarily suspended for evaluation by a qualified expert. All site project workers will be trained in identifying the following:

- Soil that seems contaminated based on visual or olfactory indicators;
- Asbestos, whether bonded or friable
- Groundwater or surface water that appears contaminated based on visual or olfactory signs (e.g., hydrocarbon sheens, free phase liquids like petroleum fuel, discoloration, etc.)
- Drums or underground storage tanks (USTs)
- Fill containing waste (e.g., ash, slag, refuse, demolition materials)

6.3 MONITORING
Monitoring and inspection will be conducted in accordance with general inspections as outlined in **SECTION 6 IMPROVE** of the ADCO Construction Environmental Management Plan (CEMP). Results and actions of monitoring and inspection are to be recorded as specified within the ADCO Construction Environmental Management Plan (CEMP).

6.4 REPORTING
Reporting will be conducted as outlined in **SECTION 5 IMPLEMENT** of the ADCO Construction Environmental Management Plan (CEMP).

6.5 AUDITS
Audits will be conducted as outlined in **SECTION 2.2** of the ADCO Construction Environmental Management Plan (CEMP) and the ADCO Procedure Performance Management..

Yours faithfully
ADCO Constructions Pty Ltd

Paul Cassimatis
Senior Design Manager

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ADCO

SYDNEY
MELBOURNE
BRISBANE
GOLD COAST
PERTH
PEOPLE WHO BUILD

Hale Property Services Pty Ltd

Detailed Site Investigation

42 Boorea Street
Lidcombe, NSW

10 May 2022

62184/143725 Rev 4

JBS&G Australia Pty Ltd

www.jbsg.com.au

Hale Property Services Pty Ltd

Detailed Site Investigation

42 Boorea Street
Lidcombe, NSW

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JBS&G Australia Pty Ltd

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Abbreviations

Term	Definition
ACM	Asbestos Containing Materials
AEC	Areas of Environmental Concern
AHD	Australian Height Datum
ASS	Acid Sulfate Soils
ASSMP	Acid Sulfate Soils Management Plan
BTEXN	Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene
CLM Act	Contaminated Land Management Act
COC	Chain of Custody
COPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
DBYD	Dial Before You Dig
DO	Dissolved Oxygen
DP	Development Plan
DQI	Data Quality Indicators
DQO	Data Quality Objectives
DSI	Detailed Site Investigation
EC	Electrical Conductivity
Eh	Redox Potential
EIL	Ecological Investigation Levels
EPA	NSW Environment Protection Authority
ESA	Environmental Site Assessment
ESLs	Ecological Screening Levels
Ha	Hectare
HILs	Health Investigation Levels
HSLs	Health Screening Levels
JBS&G	JBS&G Australia Pty Ltd
JRA	Job Risk Assessment
LEP	Local Environmental Plan
LOR	Limit of Reporting
bTOC	Below Top of Casing
NATA	National Accreditation Testing Authority
OCP	Organochlorine Pesticides
OPP	Organophosphate Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethylene
PFAS	Per- and polyfluoroalkyl substances
PID	Photoionisation Detector
POEO Act	Protection of Environment Operations Act
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
RPD	Relative Percentage Difference
SAQP	Sampling Analytical and Quality Plan
SCID	Stored Chemical Information Database
SWMS	Safe Work Method Statement
TCE	Trichloroethene
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
UST	Underground storage tank
VOC	Volatile Organic Compounds

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Hale Property Services Pty Lyd (the client) to complete a detailed site investigation (DSI) for the property located at 42 Boorea Street, Lidcombe NSW (the site). The site is legally identified as Lot 1 in DP 740385 and occupies a total area of approximately 4.1 hectares (ha).

The site is currently occupied by existing warehouse buildings and a carpark area. At the time of the assessment, all buildings were operational and largely used for warehousing and distribution as well as office spaces. It is understood that the client intends to demolish the existing structures and construct a large multi-level commercial/industrial building. The development requires the preparation of an Environmental Impact Statement (EIS) and this DSI is required to satisfy the Secretary's Environmental Assessment Requirements (SEARs) for the EIS as well as relevant aspects of SEPP (Resilience and Hazards) 2021.

Based on the findings of this investigation and subject to the limitations presented in **Section 12**, JBS&G concludes the following:

- The property has been used for various commercial / industrial purposes since the 1950s including stockyards and facilities for processing meat products, manufacture, storage and distribution of egg products (including pulp processing for paper production), flour and food ingredients, printing, warehousing and distribution and office spaces.
- The potential sources of contamination identified at the site included; anthropogenic fill materials of unknown origin used to create existing/current site levels, former/current structures potentially containing hazardous materials, historical manufacturing / industrial activities as well as potential off-site sources of contamination comprising current and former industry surrounding the site.
- Representative samples of fill material and natural soils within accessible areas of the site (at twenty one locations) were analysed for a range of identified potential contaminants of concern including heavy metals, PAHs, TRH, BTEX, OCP/PCBs, PFAS and asbestos. The reported concentrations of all contaminants of concern were below the adopted criteria protective of human health under the proposed land-use. On this basis, there were no identified impacts within site soil assessed as part of this investigation that would present an unacceptable risk under the proposed land-use.
- There were no unacceptable odours or staining associated with contamination observed within site soil during the current investigation that may pose an aesthetic issue at the site.
- Potential acid sulfate soils were identified in natural soils at depth. It is recommended that a acid sulfate soils management plan (ASSMP) be prepared to document the required management procedure to be implemented during future construction works that results in the disturbance of these materials.
- Similar to the soil assessment, representative samples of groundwater from seven locations across the site were analysed for a range of identified potential contaminants of concern including heavy metals, PAHs, TRH, OCPs, PCBs, VOCs and PFAS. All reported COPCs were below the adopted criteria within groundwater with the exception of some elevated levels of heavy metals been reported in several monitoring wells at the site as well as PFAS at two locations. The elevated concentrations of heavy metals are considered to be indicative of urban background concentrations.
- Elevated concentrations of PFAS were recorded at MW4 and lower concentrations at MW12 (which is downgradient of MW4) indicating downgradient attenuation of PFAS. Surface sampling conducted by JBS&G (2021) identified the presence of PFAS at low concentrations

(less than the adopted site assessment criteria) upgradient (SW01) and downgradient (SW02) of the site in Haslam Creek. As concentrations did not increase from the upgradient to downgradient locations it is considered that migration of PFAS in groundwater from the site does not currently pose an offsite risk.

- A sub-slab vapour assessment was completed at 30 locations across the site. Contaminant levels as measured in sub-slab vapour were below the laboratory detection limits or the adopted guideline values for the assessment, thus indicating there were no volatile impacts within the sub-surface that would pose an unaceptable risk to future site receptors (via vapour intrusion to within encolosed spaces/buildings) in the areas assessed.
- Whilst not strictly required to make the site suitable for the proposed land-use, the UST present in the western portion of the site will require appropriate decommissioning Removal and off-site disposal) in accordance with the *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019*.
- It is further recommended that an appropriate construction environmental management plan (CEMP) be prepared and implemented during future in-ground construction activities that includes an unexpected finds protocol and waste management protocol.
- Based on the findings of this investigation and subject to the limitations presented in **Section 12**, it is considered that the site is suitable for the proposed commercial / industrial land-use (HIL-D) subject to implementation of the unexpected finds protocol requirements during future construction activities.

1. Introduction

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Hale Property Services Pty Lyd (the client) to complete an detailed site inestigation (DSI) for the property located at 42 Boorea Street, Lidcombe NSW (the site). The site is legally identified as Lot 1 in DP 740385 and occupies a total area of approximately 3.9 hectares (ha).

The site is currently occupied by existing warehouse buildings and a carpark area. At the time of the assessment, all buildings were operational and largely used for warehousing and distribution as well as office spaces. It is understood that the client intends to demolish the existing structures and construct a large multi-level commercial/industrial building. The development requires the preparation of an Environmental Impact Statement (EIS) and this DSI is required to satisfy the Secretary's Environmental Assessment Requirements (SEARs) for the EIS as well as relevant aspects of SEPP (Resilience and Hazards) 2021.

This assessment has been developed in general accordance with NEPC (2013[1]) and guidelines made or approved by the NSW Environment Protection Authority (EPA), SEPP (Resilience and Hazards) 2021 and relevant Australian Standards.

1.2 Objective

The objectives of the investigation are to assess potential contamination at the site and to assessment of the suitability of the site for the proposed use.

1.3 Scope of Works

The following scope of works was undertaken for the assessment:

- A desktop review of site history and background information, to identify potential areas of environmental concern (AECs) and associated contaminants of potential concern (COPCs);
- A detailed inspection within acceisble areas of the site (i.e. outdoor areas) to confirm the desktop findings and identify the presence of additional AECs;
- Development and documentation of a conceptual site model (CSM) based on the available information;
- Soil sampling at twenty one locations to characterise site soils within accessible areas for the COPCs;
- Installation and sampling of seven groundwater monitoring wells;
- Sampling of two existing groundwater monitoring wells;
- Installation and subsequent sampling of thirty sub-slab vapour probes;
- Laboratory analysis program for representative samples of each media for COPCs, with subsequent data evaluation against NSW EPA endorsed guideline values; and
- Preparation of this report documenting the methods and results of the investigation.

1.4 Proposed Development

The development plans are provided in **Appendix H**. It is understood that the client is proposing to redevelop the site for commercial purposes that will comprise the demolition of existing structures

[1] *National Environmental Protection (Assessment of Site Contamination) Measure 2013*. National Environment Protection Council, 2013 (NEPC 2013).

and subsequent construction of a large multi-level commercial / industrial building. All structures are constructed at grade (i.e. no basements or underground levels) and there are minimal landscaped areas as part of the proposed development. As such, consideration has been given to the relevant land-use of “HIL D - Commercial/industrial, includes premises such as shops, offices, factories and industrial sites” as detailed in N*ational Environment Protection (Assessment of Site Contamination) Measure, 1999 (as amended 2013)*, National Environment Protection Council (NEPC 2013).

2. Site Condition & Summary Site History

2.1 Site Identification

The site location is shown in **Figure 1**, and current site layout is shown in **Figure 2**. The site details are summarised in **Table 2.1** and described in the following sections.

Table 2.1: Summary Site Details

Lot / DP	Lot 1 in DP 740385
Address	42 Boorea Street, Lidcombe NSW
Local Government Authority	Cumberland City Council
Approximate MGA Coordinates (MGA 56)	Easting: 318880 Northing: 6252528
Previous Use	Various industrial and commercial uses
Proposed Use	Commerical / industrial
Site Area	Approximately 3.9 Ha

2.2 Site Condition

Site inspections to evaluate site conditions and identify any potentially contaminating conditions and/or activities were undertaken by experienced JBS&G personnel on 18 January 2022. The inspection was limited to outdoor areas, in which key observations are documented below:

- The site comprised a irregular shaped property used for commercial/industrial purposes. A large warehouse (AU Express international cargo and STS Logistics) was situated to the east, with driveway access from Boorea street leading to a security gate. The warehouse operates as a freight/logistics terminal for the distribution of goods arriving from overseas. Several vans and trucks were observed collecting and distributing packages from the warehouse.
- The inside of the warehouse consisted of a large open space used as a van loading area, storage space for electronic equipment and carboard storage. Several offices and staff amenities were located in the northern portion of the warehouse. A quarantine area was located in the southwest portion of the site and was contained x-ray equipment used to inspect incoming packages.
- The western portion of the property was used for loading / unloading trucks and temporary parking and storage of transport vehicles. A forklift refueling area (with liquified petroleum gas [LPG])above ground storage tank (AST) and associated above ground pipes leading to a single dispenser) and chemical storage shed were noted in this portion of the site. The storage shed was inaccessible, however no signs of significant staining were apparent on the ground surfaces surrounding the storage shed.
- The northern portion of the site comprised a car park used by AU Express workers and customer collection of goods.
- An electrical substation was positioned along the eastern portion of the site. No oil staining was observed on the ground surface surrounding the substation.
- Several large ASTs were located in the western portion of the building, that were used for water storage.
- The ground surface of the site was almost completely covered in hardstand in which there were no obvious signs of contamination (staining etc).
- A potential underground storage tank (UST) was identified in the western portion of the site in a cargo unloading area. No breathers or fill points were observed and the tank appeared to be empty.

- There was no evidence of significant contamination at the site in the form of odours or significant staining on the hardstand ground surfaces. It is noted that there was minor surface oil staining at various car park locations and in the west portion where transport trucks were parked.

A photographic log is provided in **Appendix C**. In addition, the location of key site features are shown on **Figure 2**.

2.3 Site History

A detailed account of the site history is provided in the historical report completed at the site which is summarised below. In addition, recent EPA site records are also summarised in the sections below.

2.3.1 Preliminary Site Investigation (DP 2017)[2]

Douglas Partners (DP) completed a preliminary site investigation (PSI) for the site. The scope of works included a desktop review of historical site information, a site inspection and documentation of a CSM in order to establish the likelihood of identifying historical and current contaminating activities and related contaminated of concern.

The site was reportedly vacant paddocks up until circa 1950 when it was developed for commercial / industrial purposes. During this time the site was reportedly owned by the Sydney Meat Preserving Company that contained a factory with stockyards and facilities for slaughtering, butchering, preserving and boiling down of meat products. The site was later purchased by the Egg Marketing Board, whose activities were reported to comprise of manufacture, storage and distribution of egg products, flour and food ingredients. The warehouse during this period included a pulping room, blast freezer, boiler room, refrigeration, sterelisation room and offices. In addition, the following was reported to have occurred on site during this period:

- In 1972, an underground petrol storage tank (within 44 Boorea St) which was reported to be removed at a later date;
- The following chemicals were reportedly stored on site from 1988:
    - 5000 L solvents (Class 3 flammable liquids) in a roofed package store; and
    - 4000 L propane (Class 2.1 flammable gases) in an above ground storage tank (AST).

The site was more recently used for printing purposes under the operation of Offest Alpine Printing Pty Ltd. During this period, the following was reported:

- There was a licence application from 2 July 1995 to 2 July 1996 for fuel burning equipment capable of consuming more than 300 kg material per hour;
- Drying ovens processing printed paper were located on the site.
- An ink vat sump and plate making sludge sump which led to trade waste was located in the north western portion of the site (precise location not provided in the report);
- Chemicals were used in the manufacturing process including plate making chemicals, environmental print machine wash, isopropanol alcohol and solvents (a list of liquid chemicals stored on the site during that period is provided in Appendix C of the report, in which it appears most of the chemicals comprised petroleum hydrocarbon derived products (oils and solvents) but it is noted that the products were largely proprietary and therefore the exact composition cannot be confirmed);

[2] *Preliminary Site Investigation*, 42-44 Boorea Street, Lidcombe NSW, Douglas Partners Pty Ltd, March 2017 (DP 2017).

- One of the building units was used for the storage and distribution of hydraulic motors, pumps and valves;
- 360 L liquefied petroleum gas in an AST;
- 2000 L isopropanol (isopropyl alcohol) in a roofed package store (assumed to be the location of the current chemical storage shed); and
- 3000 L flammable liquid, N.O.S in a roofed package store.

It was concluded that there was a moderate potential for contamination at the site and it was therefore recommended that soil and groundwater intrusive investigations be completed in order to quantitatively characterise any contamination and to further assess the risks to potential receptors.

2.4 EPA Records

A search of the EPA's public register maintained under the Protection of the Environment Operations Act (POEO) 1997 was undertaken and is included as **Appendix D**.

The search identified a former POEO licence (no. 1912) and four section 58 licence variations issued to 'Offset Alpine Printing Pty Ltd' relating to hazardous, industrial or Group A waste generation or storage. The licence included waste generation or storage of up to 100 tonnes per year of inks, dyes, pigments, paints, lacquers, organic solvents and oil/water mixtures. The licence was issued during 2000 and is no longer in force (listed as completed during 2010). Several non-compliances were recorded however these were related to vapours/gases being discharged to the atmosphere.

An active EPL (no. 1537162) is held by Tooheys Pty Ltd which operates a brewery adjacent to the north site boundary. This includes storage of less than 350 tonnes of aerobic and anerobic waste treatment residue.

Saint-Gobain Abrasives Pty Ltd previously held an EPL (no. 1044018) for the generation or storage of over 500 tonnes of hazardous, industrial or Group A Waste including organic solvents. The site operated adjacent to the eastern boundary at 42 Boorea Street. Two non-compliances were recorded including small quantity of spilled material (acrylic resin and non-hazardous substance) between 2005 and 2006 with appropriate action/subsequent monitoring having been reportedly undertaken.

Siltech International Pty Ltd, located about 200 m from the west site boundary, previously held an EPL (no. 11662, surrendered 2006) for generation or storage of over 500 tonnes of Hazardous, Industrial or Group A Waste and Group A and Group B Waste processing. No non-compliances were noted between 2002 and 2005.

A search was undertaken through the EPA's public contaminated land register and is included as **Appendix D**. The search identified that there have been no notices issued under the Contaminated Land Management Act 1997 (CLM Act) for the site. 11-13 Percy Street, located adjacent to the western boundary of the site (across the drainage easement), is listed on the contaminated site list as 'under assessment'. It is understood that this is a result of the identification of chlorinated hydrocarbon impacted groundater and vapour at the property, with the potential for the discharge of impacted groundwater to the stormwater drainage easement (between the property and subject site).

A search was also undertaken through the EPA's PFAS register of contaminated sites. The site or nearby properties were not identified as listed on the EPA register.

2.5 Previous Reports

2.5.1 Preliminary Site Investigation (DP 2017)

Douglas Partners (DP) completed a preliminary site investigation (PSI) for the site which is sumarised in **Section 2.3.1** of this report. The scope of works included a desktop review of historical site

information, a site inspection and documentation of a CSM in order to establish the likelihood of identifying historical and current contaminating activities and related contaminated of concern.

The report concluded that there was a moderate potential for contamination at the site and it was therefore recommended that soil and groundwater intrusive investigations be completed in order to quantitatively characterise any contamination and to further assess the risks to potential receptors.

2.5.2 Detailed Site Investigation – 42-44 Boorea Street, Lidcombe NSW (JBS&G 2021[3])

JBS&G completed a DSI (for pre-purchase due diligence purposes) for the site and the adjoining property located at 42-44 Boorea Street, Lidcombe NSW. The objectives of the investigation was to characterise potential contamination within accessible areas of the site and determine if any impacts would pose an unacceptable risk to human health or the environment under the proposed land-use. It is noted that JBS&G did not have access to the interior of the warehouses during this investigation.

The scope of works included a desktop review of site history and background information, a detailed inspection within accessible areas of the site (i.e. outdoor areas), development and documentation of a conceptual site model (CSM) based on the available information, sampling twenty boreholes to characterise site soils within accessible areas, installing and sampling of 6 groundwater monitoring wells, installing and sampling of thirty-seven sub-slab vapour probes, surface water sampling within the stormwater channel located upgradient and downgradient of the site, analysing the collected samples and comparing the data against EPA endoursed guideline values and preparation of the report. Historical sample locations are shown in **Figure 3**.

The investigation reported that there were no identified impacts within site soil assessed as part of the investigation that would present an unacceptable risk under the current or proposed land-use. Furthermore, no impacts were identified in site soil vapours indicating there were no volatile impacts within the sub-surface that would pose an unaceptable risk to future site receptors (via vapour intrusion to within encolosed spaces/buildings) in the areas assessed. The groundwater assessment reported that all reported COPCs were below the adopted criteria within groundwater with the exception of some elevated levels of heavy metals reported in several monitoring wells at the site as well as PFAS at a single location. The elevated concentrations of heavy metals were considered to be indicative of urban background concentrations. Surface water sampling in Haslam Creek upgradient (SW1) and downgradient (SW2) of the site identified the presence of PFAS at low concentrations (less than the adopted site assessment criteria) in both samples. As concentrations did not increase from the upgradient to downgradient locations it was considered that migration of PFAS in groundwater from the site did not currently pose an offsite risk.

The report concluded that there were no identified impacts that would pose a risk to future site receptors under the proposed commercial / industrial land-use (HIL-D).

[3] *Detailed Site Investigation,* 42-44 Boorea Street, Lidcombe NSW, JBS&G Pty Ltd, 21 June 2021 (JBS&G 2021)

3. Conceptual Site Model

3.1 Potential Areas of Environmental Concern

Based on the history review and observations made during the JBS&G inspection of the site, areas of environmental concern (AECs) have been identified and are presented in **Table 3.1**.

Table 3.1: Areas of Environmental Concern and Contaminants of Potential Concern

Area of Environmental Concern (AEC)	Primary Contaminants of Potential Concern (COPC)
Anthropogenic fill materials of unknown origin used to create existing/current site levels	Heavy metals, total recoverable hydrocarbons (TRH), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs) and asbestos
Former structures (refurbishment/demolition)	Asbestos, heavy metals (lead-based paint)
Historical industrial activities	Heavy metals, TRH, BTEX, PAHs, PCBs, phenols, per- and polyfluoroalkyl substances (PFAS) and VOCs
Offsite sources (e.g. current and former industry surrounding the site)	Heavy metals, TRH, BTEX, PAH, PFAS and VOCs

3.2 Potentially Contaminated Media

Each of the AECs and corresponding COPCs identified in **Section 3.1** have the potential to impact soil, groundwater and/or soil gas (where volatile constituents are identified) underlying the site.

Where fill materials are present to depth, or soils have been disturbed, there is a likelihood that environmental impact may be present at depth, consistent with the depth of the disturbance. Anthropogenic materials are commonly present in impacted fill materials and can be used as an indication of the depth of disturbance. Where fill materials impacted with chemical based contaminants are identified, there is a likelihood the impact may have migrated laterally and vertically below the fill material.

With the exception of asbestos, each of the COPCs identified in **Table 3.1** for the site have the potential to migrate from shallow soils into groundwater.

3.3 Potential for Migration from Site

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

The COPCs identified as part of the site history review and site inspection are generally in solid (e.g. asbestos, PAHs and metals), liquid (e.g. TRH, BTEX, VOCs, PFAS, OCPs and PCBs) or gaseous (e.g. VOCs, BTEX, Volatile TRH and semi-volatile PAHs) form.

The ground surfaces overlying the site are primarily comprised of sealed pavements and building footprints with limited unsealed or vegetated ground thereby limiting the total extent of surface water infiltration into the subsurface. The migration of in-situ impacted soil via windblown dust is considered to be unlikely provided the hardstands are maintained across the site.

The potential solubility of chemical contaminants in soil, in addition to rate of surface water intrusion, perched water seepage and groundwater movement across the site will influence the potential for migration of soil and groundwater contamination within and from the site. Should impacted groundwaters be identified in proximity to the inferred downgradient boundary of the site,

then potential off-site migration of contaminants in groundwater will require consideration. It is noted that site groundwater is anticipated to flow to the north-west towards Haslams Creek.

The potential for off-site migration of vapours will only be relevant where these constituents are identified at significant levels. These constituents can migrate laterally from the site through diffusive/advective processes as well as through preferential pathways (refer to **Section 3.5**). Should elevated levels of vapours be identified, then the potential off-site migration of these constituents will require further consideration.

3.4 Potential Human and Ecological Receptors and Exposure Pathways

Table 3.2 summarises potential human receptors and associated exposure pathways for the site, based on the range of exposure scenarios that may occur under the different potential land-uses of the site.

Table 3.2: Summary of Potential Human Exposures

Receptor	Location	Media	Potential Exposure Pathways
Commercial Worker (adult) Commercial patrons (adult or child) and childcare centre users (adult or child)	Within commercial buildings	Soil	Inhalation (vapours)
		Groundwater	Inhalation (vapours)
	Outdoor areas	Soil (only relevant in unpaved areas)	Inhalation (particulates) Oral Dermal
Construction worker or intrusive maintenance worker (short duration)	Construction areas/ Excavations	Soil	Inhalation (vapours and particulates) Oral Dermal
		Groundwater	Inhalation (vapours) Oral (infiltrating seepage water) Dermal (infiltrating seepage water)

Currently the site is primarily covered by hardstand pavements and building footprints. On this basis, there are limited on-site ecological receptors that could be exposed to environmental impacts underlying the site. Possible off-site ecological receptors are limited to potential impacts associated with groundwater and surface runoff water (if present) migrating from the site into Haslams Creek. Off-site ecological receptors are therefore limited to the organisms living within the estuarine system of Haslams Creek and can be identified from the water quality objectives (WQO) from the Parramatta River catchment and include 'aquatic ecosystems'.

3.5 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPC as either liquids or gases.

Man-made preferential pathways are present throughout the site, generally associated with areas of previously disturbed fill material which may have a higher permeability than underlying natural soils as well as underground service trenches. Where environmental impact (particularly in liquid or gaseous form) is observed within proximity to these identified preferential pathways, further consideration to the potential migration of these impacts will be required.

4. Data Quality Objectives

4.1 Data Quality Objectives

Data Quality Objectives (DQOs) were established for the assessment, as discussed in the following sections.

4.1.1 State the Problem

Based on the site history review, a preliminary CSM (**Section 3**) was prepared for the site that identified a number of areas of environmental concern (AECs) that require assessment in order to assess the suitability of the site for the proposed land-use.

4.1.2 Identify the Decision

The decisions required to be made for the investigation are:

- Are there any unacceptable risks to likely future onsite receptors from soils?
- Are there any issues relating to local area background soil concentrations that exceed the appropriate soil criteria?
- Are there any unacceptable human health and ecological risks present in groundwater underlying the site?
- Are there any potential vapours present within the sub-surface that could present an unacceptable risk to future site receptors?
- Are there any impacts of chemical mixtures?
- Are there any aesthetic issues at the site?
- Is there any evidence of, or potential for, migration of contaminants from the site?
- Is a site management strategy required?

4.1.3 Identify Inputs to the Decision

The following inputs are required in order to make the stated decisions:

- A review of available historical information from the site;
- A detailed site inspection;
- Soil sampling from soil bores to assess for the presence of potential chemical COPCs and asbestos;
- Installation, sampling and analysis of groundwater monitoring wells within the site;
- Field parameters as measured utilising calibrated equipment during the intrusive investigation including assessment of soil sample headspace and physicochemical parameters of groundwater;
- Installation, sampling and analysis of sub-slab vapour probes within the site;
- Sampling and analysis of surface water samples from the stormwater channel downgradient of the site;
- Laboratory analysis data for COPCs;
- Site assessment criteria for potentially impacted media for COPCs as appropriate to potential future land uses; and

- Confirmation that data generated by sampling and analysis are of an acceptable quality to allow reliable comparison by assessment of quality assurance / quality control as per the data quality indicators established in **Section 4.1.6**.

Specifically, sufficient data needs to be collected from each of the identified potentially impacted media in the identified AEC for the associated COPC (**Table 3.1**).

4.1.4 Define the Study Boundaries

The study boundaries have been defined laterally as the extent of Lot 1 DP 740385 as defined in **Figure 2**. The vertical extent of the assessment was to a maximum depth of 7.5 m bgs as the final depth of the deepest borehole completed for the investigation.

As a result of the project objectives, the temporal study boundaries were limited to the period of assessment works undertaken in January 2022. Due to the nature of the potential contamination identified, seasonality was considered to not be significant with respect to assessing risks to future site receptors.

4.1.5 Develop a Decision Rule

The decision rules adopted to answer the decisions identified in **Section 4.1.2** are summarised in **Table 4.1**.

Table 4.1: Summary of Decision Rules

Decision Required to be Made	Decision Rule
1. Are there any unacceptable risks to likely future onsite receptors from soils assessed as part of the investigation?	Soil analytical data was compared against EPA endorsed criteria. Statistical analyses of the data in accordance with relevant guidance documents was undertaken where appropriate, to facilitate the decisions. The following statistical criteria were adopted with respect to soils: Either: the reported concentrations were all below the site criteria; Or: the 95% upper confidence limit (UCL) of the average concentration for each analyte was below the adopted site criterion; no single analyte concentration exceeded 250% of the adopted site criterion; and the standard deviation of the results was less than 50% of the site criterion. If the statistical criteria stated above were satisfied, the answer to the decision was No. If the statistical criteria were not satisfied, the answer to the decision was Yes.
2. Are there any issues relating to local area background soil concentrations that exceed the appropriate soil criteria?	If the 95% UCL of natural soils exceeded published background concentrations (NEPC 2013), the answer to the decision was Yes. Otherwise the answer to the decision was No.
3. Are there any unacceptable human health and ecological risks present in groundwater underlying the site?	Groundwater analytical data were compared against EPA endorsed criteria and reported background concentrations. If the criteria stated above are satisfied, the decision was No. If the criteria are not satisfied, the decision was Yes.
4. Are there any potential vapours present within the sub-surface that could present an unacceptable risk to future site receptors?	Are site-related contaminants present in soil vapour at concentrations exceeding levels found to pose a potential health risk? If the answer is Yes, then further assessment of contaminant levels in indoor air will be required to properly assess whether an unacceptable health risk is present – should contaminant levels within indoor air exceed levels found to pose a risk the decision was Yes. Otherwise, the answer to the decision was No.
5. Are there any impacts of chemical mixtures?	Are there more than one group of contaminants present which increase the risk of harm? If there is, the answer to the decision was Yes. Otherwise, the answer to the decision was No.
6. Are there any aesthetic issues at the site?	If there are any ACM fragments on the ground surface, any unacceptable odours or soil discolouration, the answer to the decision was Yes. Otherwise, the answer to the decision was No.
7. Is there any evidence of, or potential for, migration of contaminants from the site?	Is impacted groundwater potentially migrating from site? If yes, the decision was Yes. Otherwise, the decision was No.

Decision Required to be Made	Decision Rule
8. Is a site management strategy required?	Is the answer to any of the above decisions (1-7) Yes? If yes, further assessment and/or a site management strategy will be required to address unacceptable contamination concerns at the site, to make the site suitable for future proposed uses. If no, further assessment and/or a site management strategy is not required and the site is considered suitable, from a contamination view point for the proposed uses.

4.1.6 Specify the Limits on Decision Error

This step is to establish the decision maker's tolerable limits on decision errors, which are used to establish performance goals for limiting uncertainty in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence.

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NSW EPA and NEPC 2013, appropriate indicators of data quality (DQIs used to assess quality assurance / quality control) and standard JBS&G procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data was assessed against pre-determined Data Quality Indicators (DQIs) established for the project as discussed below in relation to precision, accuracy, representativeness, comparability and completeness (PARCC parameters). The acceptable limit on decision error is 95% compliance with DQIs.

The DQIs and data assessment criteria are summarised as presented in **Table 4.2**.

- **Precision** – measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** – measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** – expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** – expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** – expresses the appropriateness of the chosen field and laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Table 4.2: Summary of DQIs

Data Quality Objectives	Frequency	Data Quality Indicator
Precision		
Blind duplicates (intra laboratory)	1 / 20 samples	<50% relative percent difference (RPD)[1]
Blind duplicates (inter laboratory)	1 / 20 samples	<50% RPD
Accuracy		
Surrogate spikes	All organic samples	70-130%
Laboratory control samples	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes		-[2]
Samples extracted and analysed within holding times.	-	Soil and Groundwater Organics (7-14 days), inorganics (6 months), PFAS (14 days)
Trip spike (BTEX only)	1 per sampling event	70-130% recovery
Rinsate blank	1 per sampling event	<LOR
Method blank	1 per lab batch	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All samples
Standard analytical methods used for all analyses	All Samples	NATA accredited methods
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples[2]
Limits of reporting appropriate and consistent	All Samples	All samples[2]
Completeness		
Sample description and COCs completed and appropriate	All Samples	All samples[2]
Appropriate documentation	All Samples	All samples[2]
Satisfactory frequency and result for QC samples	All QA/QC samples	95% compliance
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted Site assessment criteria	All samples	LOR ≤ site assessment criteria

[1] If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgment will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.

[2] A qualitative assessment of compliance with standard procedures and appropriate sample collection methods will be completed during the DQI compliance assessment.

4.1.7 Optimise the Design for Obtaining the Data

The purpose of this step is to identify a resource-effective field investigation sampling design that generates data that are expected to satisfy the criteria specified in the preceding steps of the DQO process. This step provides a general description of the activities necessary to generate and select data collection designs that satisfy decision performance criteria.

Based on the objectives of the assessment and considering the scope of the 2021 JBS&G works, the following investigation approach was adopted:

- A soil sampling program was completed within accessible areas of the site that included sampling soil from shallow soil bores and bores advanced to install groundwater monitoring wells. **Figure 4** presents the sampling locations.

  For sites that are approximately 3.9 ha, *Contaminated Sites: Sampling Design Guidelines* (EPA 1995) require a minimum sampling density of 50 systematic sampling locations in order to detect hotspots with a diameter of 34.6 m with 95% confidence. However, given that the site will remain commercial / industrial land-use, in which there will be limited exposures to site soils (owing to the presence of hardstand across the majority of the site) the number of soil investigations comprises approximately two-thirds the density recommended in EPA

(1995). The sampling program comprises a total of twenty-one new borehole sample locations completed as part of the investigation placed generally systematically across the extent of the site supplemented by the previous fourteen locations (JBS&G 2021) (total of 35 soil locations).

- A combination of a targeted and systematic groundwater investigation was designed to provide adequate site coverage and target AECs (based on the desktop review) – including downgradient of warehouse buildings on the downgradient boundary of the site. The primary objective of the groundwater assessment was to assess site related contaminants in groundwater and the risks to current on-site receptors as well as the potential for impacted groundwater migrating onto the site or away from the site (if any) and presenting an un-acceptable risk to on-site or off-site receptors.
- A systematic sub-slab vapour assessment accross site in order to evaluate the potential risks to future occupants of buildings from potential volatile COPC sources within the subsurface, including potential sources within fill/soil and shallow groundwater.

4.2 Assessment Methodology

4.2.1 Soil Assessment

Soil samples were collected via solid flight auger using a Geoprobe track mounted drilling rig at the nominated borehole locations across the site. Use of the solid flight auger (150 mm diameter) through fill allowed collection of sufficient sample volume (500 mL) for asbestos analysis (the methodology employed for asbestos quantification is discussed below).

Soil samples (for chemical constituents) were collected directly underneath the hardstand (concrete or bitumen) then generally at 0.5-1.0 m intervals to a maximum depth of 7.5 m or at least 0.5 m into natural materials (or prior refusal), whichever was shallower. During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination were noted.

Soil samples were screened on site during works using a photo-ionisation detector (PID) to assess the presence of volatile organic compounds (VOCs) including petroleum hydrocarbons. Collected samples were immediately transferred to laboratory supplied sample jars (additional 500 mL plastic bags were used where asbestos analysis was required). The sample jars/bags were then transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was completed and forwarded with the samples to the testing laboratory.

Duplicate soil samples were collected at a rate of one per 20 primary samples. Duplicate samples were collected for QA/QC purposes by taking soil from the auger and placing directly into the sample jars. Samples were not mixed prior to placement into the jars to minimise the potential for loss of volatiles. Similarly, where 500 mL samples were required for duplicate asbestos analysis, no mixing of material was undertaken prior to placement into plastic bags to prevent the loss of free fibres. It is noted that this methodology may result in the calculation of poor RPDs but this is considered acceptable given that the loss of volatiles/fibres that may occur if samples are mixed would result in the reporting of lower contaminant concentrations than actually present. A trip spike (BTEX only) and rinsate blank (for non-dedicated equipment) was collected with each batch of samples.

All non-disposable sampling equipment, including augers, were cleaned with a high pressure water/ detergent spray, rinsed with water and then air dried. The equipment was then inspected to ensure that no soil, oil, debris or other contaminants were apparent on the equipment prior to the commencement of works. Sampling equipment was subsequently decontaminated using the above process between each location.

Not all soil samples collected were analysed. Soil samples were analysed in accordance with the sampling and analytical program (**Table 4.3**).

Asbestos Quantification

Soil sampling locations to facilitate asbestos quantification were completed in general accordance with the procedures included in NEPC (2013) as derived from DOH (2009[4]) in which it is noted that approximately 10 L samples was inspected for the presence of asbestos.

The asbestos quantification works were completed via the excavation of boreholes (150 mm diameter) as described previously. The boreholes were advanced in one metre increments until natural soils were identified at the sampling location (to the nominated maximum depth). Generally, each 1 m increment was treated as a discrete sample.

At each sampling location, material from each increment was collected on a separate plastic sheet that is distinctly different to the soil colour and spread out of inspection. Any obvious ACM fragments were placed in a dedicated laboratory supplied polyethylene ziplock sample bag labelled with the sampling location, depth increment, samplers name and sampling date. For coarse grained material (ie. Sand, gravels, etc), the 10 L of material was then passed through a 7 mm sieve in the field. The material captured on the sieve was then hand sorted and any further collected ACM fragments were placed in the sample bag.

A representative 500 mL volume sample of material that passes through the 7 mm sieve was then collected and placed in a separate dedicated laboratory supplied polyethylene ziplock sample bag, labelled as a soil sample.

4.2.2 Groundwater Assessment

A groundwater assessment was conducted to assess the potential for groundwater to be impacted by site-related contaminants and the potential for contaminants to migrate on and off-site. The monitoring locations are presented on **Figure 4.**

Groundwater Monitoring Well Installation

Soil bores were advanced to the nominated depth using solid flight augers. Boreholes were advanced to the target depth based on conditions encountered (lithology/geology conditions encountered) during drilling where the depth of monitoring wells were approximately 5.0 to 7.5 m bgs (or 2 m below encountered groundwater levels). The wells were constructed in accordance with relevant NSW EPA endorsed guidance such as National Uniform Drillers Licensing Committee, 2012, *Minimum Construction Requirements for Water Bores in Australia*, and Victoria EPA, 2000, *Publication 669 Groundwater Sampling Guidelines*.

Monitoring wells were constructed using Class 18 uPVC (50mm) screen and casing. A 3-4 m screened interval was used in the construction of each monitoring well. A gravel filter pack was placed adjacent to the screened interval with a 0.5 m bentonite seal above. The remaining bore annulus was backfilled with soil cuttings to the ground surface. The wells were finished with a lockable cap and flush-mounted gatic cover.

Well Development

Subsequent to well construction, each newly installed monitoring well was thoroughly developed to remove fines, settle the filter pack and ensure representative groundwater samples could be collected. Well development was undertaken manually using high density polyethylene tubing with a fixed footvalve until field-measured water quality parameters (electrical conductivity, pH, dissolved oxygen, redox and temperature) had stabilised and where possible, purged water ran clear.

[4] *Guidelines for the Assessment Remediation and Management of Asbestos Contaminated Sites in Western Australia*. May 2009, Western Australia Depart of Health (WA DOH) (DOH 2009)

Groundwater Sampling

Monitoring wells were sampled after a minimum of five days subsequent to well development.

The depth to standing water was gauged and an assessment of the presence of light non-aqueous phase liquids/dense non-aqueous phase liquids (LNAPL/DNAPL) was made using an interface probe.

Subsequent to groundwater gauging, the following methodology was adopted for the collection of PFAS/PFOS samples:

- Before and between sampling each well, the interface probe and all other non-disposable equipment (i.e. HydraSleeve weights and clips) was decontaminated in line with project/PFAS specific wash-down procedures, Decon 90 will not be used, the wash-down will involve the use of PFAS free products such as Liquinox;
- The HydraSleeve sampler comprised a flexible 3mm thick lay-flat polyethylene sleeve with a weight on the bottom and check valve on the top and was lowered into the well to the prescribed sampling depth (i.e. within the screened interval);
- The correct HydraSleeve size selection for each monitoring well was undertaken. After placement in the monitoring well, the HydraSleeve was left for a minimum of one hour to allow the water column to re-equilibrate following the minor disturbance that occurs during deployment;
- The groundwater samples were then collected by pulling the HydraSleeve up through the water column and to the surface. The recovered water sample was then decanted into the appropriate laboratory supplied sample bottles;
- Collected groundwater samples were immediately transferred to sample containers of appropriate composition (non-Teflon lined), which are pre-treated in a manner appropriate for the laboratory analysis. Groundwater samples were obtained in a manner that ensures no headspace remains in the bottles;
- Each of the sample bottles were labelled only using ball point pens with the project ID, date, sampler's initials and unique monitoring well ID (or QC sample name); and
- In order to minimise exposure to sunlight, sample bottles were placed immediately into a pre-chilled ice chest, for transport to the testing laboratories.

Following the sampling for PFAS/PFOS as described above, the wells were purged and sampled using a low-flow methodology for all other constituents. Purging was undertaken to ensure the sample collected is representative of groundwater conditions. Field parameters of pH, conductivity, redox and temperature will be measured with field electrodes in a flow cell and samples obtained once the parameters stabilised such that:

- Consecutive EC readings are within 3 %;
- Consecutive Eh readings are within 10 mV;
- Consecutive DO readings are within 10 %; and
- Consecutive pH readings are within 0.05.

JBS&G utilised a low-flow peristaltic pump with dedicated tubing to purge and sample wells. JBS&G considers that this method is appropriate and does not result in measurable loss of VOCs when sampling at low flow rates in shallow groundwater, and provides a significantly lower risk of cross-contamination between locations due to use of dedicated materials. Non-disposable groundwater monitoring equipment was decontaminated in accordance with the procedure detailed above in between each monitoring well.

Collected groundwater samples were immediately transferred to laboratory supplied sample bottles in the order of most-volatile to least volatile contaminants. Field filtering using a 0.45 µm filter was undertaken for metals/metalloid samples. The sample containers were then transferred to a chilled iced box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was completed and forwarded with the samples. Samples were analysed at a NATA accredited laboratory in accordance with the schedule presented in **Table 4.3.**

A record of gauging data, sample observations (including colour, odour, presence of LNAPL, DNAPL, sheens) and sampling method details were recorded.

Blind and split duplicate groundwater samples were collected at a rate of one per 20 primary samples. A trip spike (BTEX only) and rinsate blank (for non-dedicated equipment) were collected with each batch of samples.

4.2.3 Sub-Slab Vapour Assessment

A grid based sub-slab vapour assessment was undertaken within accessible areas of the site. A total of 30 sub-slab vapour locations were completed as shown on **Figure 4**.

Sub-Slab Vapour Probe Installation

The following methodology was adopted for the installation of sub-slab vapour probes installed across the extent of the site in hardstand areas:

- A 16 mm diameter hole was drilled through the concrete slab at each of the locations, whereby the encountered slab thickness was typically 100-250 mm; and
- Installation of a VaporPin metallic probe following the manufacturer's instructions, which briefly comprised hammering the probe with silicone sleeve (to ensure air-tight seal) into the drilled hole to a depth of the encountered slab thickness.

Sub-slab Sampling and Analysis

The following methodology was adopted to sample the installed sub-slab vapour probes:

- A GFM 435 gas detector was used to purge each probe for a period of approximately 90 seconds. Gas readings were monitored until oxygen and photo-ionisation detector (PID) readings had stabilised;
- Following this, a leak detection evaluation was completed via placement of an isopropyl alcohol soaked rag within an air tight box containing the sample train located on top of the probe. Elevated PID readings (in excess of previously established and stabile PID recordings) on the gas detector was assumed to indicate a leaking probe. Any leaking probes were required to be re-installed and re-checked prior to sampling using the same method;
- Following preliminary confirmation of the absence of any significant leaks, the sub-slab vapour samples were collected onto SKC-anasorb carbon tubes. An isopropyl alcohol saturated rag was maintained in an air tight box (sealed container containing sample train) throughout purging and sampling for laboratory confirmation of potential leaks. A shroud was used in the chamber to maintain an isopropyl alcohol rich atmosphere over the sampling location. At each sampled location, a 6L volume was collected using a calibrated pump at a flow rate of 200 mL/min onto a carbon tube; and
- Following sample collection, the carbon tubes were removed and capped and stored in a cool dry and dark container that excludes light, prior to analysis in accordance with the laboratory schedule in **Table 4.3**.

4.3 Analytical Methodology

JBS&G contracted Eurofins Environment Testing (Eurofins) as the primary laboratory and Envirolab Services (Envirolab) as the secondary laboratory. All laboratories are NATA registered for the required analyses. In addition, the laboratories are required to meet JBS&G's internal QA/QC requirements.

Table 4.3: Analytical Schedule

Sample Type	No. of Sampling Locations	Analyses (exc. QA/QC)
Soil	21 locations	Heavy metals – 25 samples Polycyclic aromatic hydrocarbons (PAHs) – 25 samples Total recoverable hydrocarbons (TRH) – 25 Samples Benzene, toluene, ethylbenzene, xylene (BTEX) – 25 samples Asbestos – 20 samples OCPs/PCBs – 25 samples PFAS – 15 samples Spocas – 15 samples
Groundwater	8 groundwater monitoring wells	Heavy metals – 8 samples PAHs (low level) – 8 samples TRH/BTEX – 8 samples VOCs – 8 samples OCPs/PCBs – 8 samples PFAS – 8 samples Phenols – 8 samples
Sub-slab/soil vapour	30 locations	VOC 8260 – 14 samples Isopropanol (tracer) – 14 samples Field monitoring of methane, carbon dioxide and oxygen – 30 samples

5. Assessment Criteria

5.1 Soil Assessment Criteria

Soil data collected on site were compared to health-based criteria derived from:

- Health investigation levels for commercial / industrial land use (HIL-D) land-use as provided in *National Environment Protection (Assessment of Site Contamination) Measure, 1999 (as amended 2013)*;
- Soil health screening levels for vapour intrusion for TRH, BTEX and naphthalene for clay based soils, and commercial / industrial land use as provided in NEPC (2013);
- Generic ecological screening / investigation levels for commercial / industrial land-use as provided in NEPC (2013);
- Aesthetic impacts have been assessed by on-site observations of soil staining and/or ACM and/or other anthropogenic materials; and
- PFAS National Environmental Management Plan Version 2.0. The Heads of EPAs Australia and New Zealand, January 2020 (HEPA 2020).

The health-based soil assessment criteria are summarised in **Table 5.1** and **5.2** following.

Table 5.1: Chemical Contaminants in Soil Health Based Assessment Criteria (all units in mg/kg)

	Limit of Reporting (LOR)	Laboratory Method	Health Based Assessment Criteria Commercial / Industrial (HIL-D HSL-D)	Management Limits for hydrocarbons Commercial/Industrial
METALS				
Arsenic	2.0	ICP-AES (USEPA 200.7)	3000	-
Cadmium	0.4	ICP-AES (USEPA 200.7)	900	-
Total Chromium [1]	1.0	ICP-AES (USEPA 200.7)	3600[1]	-
Chromium (VI)	1.0	ICP-AES (USEPA 7189)	3600	-
Copper	1.0	ICP-AES (USEPA 200.7)	240,000	-
Nickel	1.0	ICP-AES (USEPA 200.7)	6000	-
Lead	1.0	ICP-AES (USEPA 200.7)	1500	-
Zinc	1.0	ICP-AES (USEPA 200.7)	400,000	-
Mercury (inorganic)	0.05	Cold Vapour ASS (USEPA 7471A)	730	-
TRH (clay, 0 to <1m depth)				
F1 C_6-C_{10}	20	Purge Trap-GCMS (USEPA8260)	310	-
F2 >C_{10}-C_{16}	50	Purge Trap-GCMS (USEPA8260)	NL	-
C_6-C_{10}	20	Purge Trap-GCMS (USEPA8260)	-	800
C_6-C_{10}	50	Purge Trap-GCMS (USEPA8260)	-	1000
C_6-C_{10}	100	Purge Trap-GCMS (USEPA8260)	-	5000
C_6-C_{10}	100	Purge Trap-GCMS (USEPA8260)	-	10,000
BTEX (clay, 0 to <1m depth)				
Benzene	0.1	Purge Trap-GCMS (USEPA8260)	4	-
Toluene	0.1	Purge Trap-GCMS (USEPA8260)	NL	-
Ethylbenzene	0.1	Purge Trap-GCMS (USEPA8260)	NL	-
Total Xylenes	0.3	Purge Trap-GCMS (USEPA8260)	NL	-
Naphthalene	0.1	Purge Trap-GCMS (USEPA8260)	NL	-
OCPs				
DDT + DDD + DDE	0.3	GCECD (USEPA8140,8080)	3,600	-
Aldrin + Dieldrin	0.2	GCECD (USEPA8140,8080)	45	-
Chlordane	0.1	GCECD (USEPA8140,8080)	530	-
Endosulfan	0.3	GCECD (USEPA8140,8080)	2,000	-
Endrin	0.1	GCECD (USEPA8140,8080)	100	-
Heptachlor	0.1	GCECD (USEPA8140,8080)	50	-
Hexachlorobenzene	0.1	GCECD (USEPA8140,8080)	80	-

	Limit of Reporting (LOR)	Laboratory Method	Health Based Assessment Criteria Commercial / Industrial (HIL-D HSL-D)	Management Limits for hydrocarbons Commercial/Industrial
Methoxychlor	0.1	GCECD (USEPA8140,8080)	2,500	-
PAHs				
Carcinogenic PAHs (as B(a)P TEQ)	0.5	GCMS (USEPA8270)	40	-
Total PAHs	0.5	GCMS (USEPA8270)	4,000	-
PCBS				
PCBs (total)	0.5	GCECD (USEPA8140,8080)	7	-
PFAS				
PFOA	0.005	LC-MS	50	-
Sum of PFHxS and PFOS	0.005	LC-MS	20	-

1. Total chromium results used as an initial screening tool for chromium (VI). Where total chromium results exceeded screening criteria, confirmatory chromium (VI) analysis was completed for direct comparison to published criteria.
2. NL -denotes 'Not limiting'
3. For TRH fractions – health screening levels applicable to soils at a depth of 0 m to <1 m have been applied as screening criteria to this assessment.

Asbestos in soil thresholds adopted for the site assessment are nominated in **Table 5.2** below.

Table 5.2: Asbestos in Soil Health Based Assessment Criteria (all units in % w/w)

Form of Asbestos	Health Screening Level (w/w)
	Commercial / Industrial (D)
Bonded ACM	0.05 %
Fibrous asbestos or asbestos fines[3]	0.001 %
All forms of asbestos	No visible ACM for surface soil (0 – 0.1 m bgs).

The methodology to derive ecological investigation levels (EILs) as presented in NEPC (2013) accommodates consideration of ambient background concentrations (ABCs) and added contaminant limits (ACLs) based on a range of physicochemical soil properties. ABCs were selected from published values in Olzworthy et al. (1995[5]) and ACLs were derived based on the NEPC (2013) EIL calculator incorporating soil physicochemical properties including pH, cation exchange capacity (CEC) and percentage clay. The derived EILs for the site are presented in **Table 5.3** as applicable for commercial/industrial land use where it has been assumed that site contaminants in soils are from an 'aged' source.

Table 5.3: Derivation of EILs

Physicochemical Parameters (Average)		
CEC (meq/100g)	pH (pH units)	TOC %
11	5.4	0.6
Contaminant	**EIL Urban Commercial/Industrial**	
Arsenic	160	
Chromium (III)	310	
Copper	140	
Lead	1,800	
Nickel	180	
Zinc	370	
DDT	640	
Naphthalene	370	
Benzo(a)pyrene	67	

CRC CARE (2017[6]) provides alternative ESLs for B(a)P than those provided in NEPC (2013). The alternative ESLs are based on higher reliability, species sensitivity distribution data than was used to

[5] *Trace Element Concentrations in Soils from Rural and Urban Areas of Australia*. Henry Olzworth Et. Al, 1995, Ozlworthy Et Al 1995

[6] Technical Report No. 39 Risk-based management and remediation guidance for benzo(a)pyrene, CRC for Contamination Assessment and Remediation of the Environment, 2017 (CRC CARE 2017)

calculate the ESLs provided in NEPC (2013). CRC CARE (2017) provides an alternative ESLs for B(a)P for commercial/industrial use of 172 mg/kg. It is noted that upon review of CRC CARE (2017) by NSW Office of Environment and Heritage, Environment Protection Science Branch, adjusted ESLs were derived providing a value of 67 mg/kg for B(a)P, which has been adopted as the B(a)P ESL for the site.

Both the EILs and the ESLs are relevant for the root zone in soil which corresponds to the top 2 m of the finished level of the site.

Concentrations of COPCs have been compared against EILs/ESLs, however, it is noted that this has been undertaken for screening purposes and the application of EILs/ESLs would not typically apply where soils are located beneath pavement, as they would not be accessible to potential ecological receptors.

The assessment of acid sulfate soil conditions was completed via use of laboratory sPOCAS analysis methods with the results compared to the site acid sulfate soil action criteria published in the *Acid Sulfate Soil Manual* (ASSMAC 1998[7]), as presented in **Table 5.4** below. Where results exceeded the site action criteria, material was considered to comprise Potential/Actual Acid Sulfate Soil.

Table 5.4: ASS Assessment Criteria

Soil Type		Action Criteria (1-1000 tonnes disturbed)		Action Criteria (>1000 tonnes disturbed)	
Texture	Clay Content (%)	Sulfur Trail (S_{pos}%) - S %	Acid Trail (TPA/TSA) mol H^+/tonne	Sulfur Trail (S_{pos}%) - S %	Acid Trail (TPA/TSA) mol H^+/tonne
Coarse	<5	0.03	18	0.03	18
Medium	5-40	0.06	36	0.03	18
Fine	>40	0.1	62	0.03	18

5.2 Groundwater and Surface Water Assessment Criteria

Groundwater data collected on-site has been compared to guidelines provided to ANZG (August 2018[8]) for fresh ecosystems protective of 95% of species and the lowest of the criteria provided to NEPC (2013) for the protection of marine ecosystems, aquatic foods, recreational uses and visual amenity as consistent with the water quality objectives for the Parramatta River catchment. With respect to the assessment of recreational exposures down-gradient of the site, data has been compared to drinking water guidelines as summarised in NEPC (2013) and adjusted by an order of magnitude consistent with a recreational exposure being the most likely sensitive potential exposure pathway. Noting that elevated electrical conductivity (EC) readings reported in site groundwater (up to 14,403 CµS/cm), the comparison of groundwater data to drinking water guidelines is considered not applicable to this investigation.

The adopted groundwater and surface water investigation criteria are listed in **Table 5.5** following.

Table 5.5: Groundwater and Surfae Water Investigation Levels (all units are µg/L unless otherwise shown)

	Limit of Reporting	Laboratory Method	Recreational Criteria[1]	Aquatic Ecosystem Criteria[2]	HSL –Commercial / Indsutrial[3]
METALS					
Arsenic (As V)	1.0	ICP-AES (USEPA 200.8)	100	13	-
Cadmium	0.1	ICP-AES (USEPA 200.8)	20	0.2	-
Chromium (III)[4]	1.0	ICP-AES (USEPA 200.8)	-	3.3	-

[7] *Acid Sulfate Soil Manual*, New South Wales Acid Sulfate Management Advisory Committee, August 1998 (ASSMAC 1998)
[8] Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, August 2018)

	Limit of Reporting	Laboratory Method	Recreational Criteria[1]	Aquatic Ecosystem Criteria[2]	HSL –Commercial / Indsutrial[3]
Chromium (VI)[4]	1.0	ICP-AES (USEPA 200.8)	500	1.0	-
Copper	1.0	ICP-AES (USEPA 200.8)	20000	1.4	-
Lead	1.0	ICP-AES (USEPA 200.8)	100	3.4	-
Nickel	1.0	ICP-AES (USEPA 200.8)	200	11	-
Zinc	1.0	ICP-AES (USEPA 200.8)	-	8	-
Mercury	0.5	ICP-AES (USEPA 200.8)	10	0.6	-
TOTAL RECOVERABLE HYDROCARBONS					
F1 C_6-C_{10}	250	P&T GC/MS (USEPA 8020A, 8000)	-	-	NL
F2 >C_{10}-C_{16}	250	P&T GC/MS (USEPA 8020A, 8000)	-	-	NL
BTEX					
Benzene	1.0	P&T GC/MS (USEPA 8020A)	10	950	30,000
Toluene	1.0	P&T GC/MS (USEPA 8020A)	8000	180	NL
Ethylbenzene	1.0	P&T GC/MS (USEPA 8020A)	3000	80	NL
m-Xylene	1.0	P&T GC/MS (USEPA 8020A)	6000 (total Xylene)	75	NL
p-Xylene	1.0	P&T GC/MS (USEPA 8020A)		200	NL
o-Xylene	1.0	P&T GC/MS (USEPA 8020A)		350	NL
POLYCYCLIC AROMATIC HYDROCARBONS					
Naphthalene	0.01	GCMS (USEPA8270)	-	16	NL
Fluoranthene	0.01	GCMS (USEPA8270)	-	1.4	-
Phenanthrene	0.01	GCMS (USEPA8270)	-	2.0	-
Benzo(a)pyrene	0.01	GCMS (USEPA8270)	0.1	0.2	-
VOLATILE ORGANIC COMPOUNDS					
PCE	1.0	P&T GC/MS (USEPA 8020B)	500	70	-
TCE	1.0	P&T GC/MS (USEPA 8020B)	-	330	-
Cis-1,2-DCE	1.0	P&T GC/MS (USEPA 8020B)	360	-	-
Trans-1,2 DCE	1.0	P&T GC/MS (USEPA 8020B)	3600	-	-
VC	1.0	P&T GC/MS (USEPA 8020B)	3	100	-
POLYCHLORINATED BIPHENYLS					
Total PCBs	0.01	GCMS (USEPA8270)	ND	ND	-
Individual Compounds Arochlor 1254	0.01	GCMS (USEPA8270)	-	0.03	-
Arochlor 1242	0.01	GCMS (USEPA8270)	-	-	-
PFAS COMPOUNDS					
PFOS	0.01	LC-MS	-	0.13[5]	-
PFOA	0.01	LC-MS	10[6]	220[5]	-
Sum of PFHxS and PFOS	0.01	LC-MS	2[6]	-	-

Notes:

1. 10 times drinking water NHMRC (2011)
2. Ecological Criteria ANZG (2018) 95% Fresh Waters reliability, unless otherwise noted.
3. NEPC (2013) B1 – Table 1A(4) HSL health screening values for vapour intrusion – clay soils 2-4 m. NL: Non limiting.
4. Total chromium analysis results used as an initial screening tool. Where total chromium results exceeded screening criteria, confirmatory chromium speciation was required for direct comparison to published criteria.
5. Aquatic Criteria from NEMP (2020) for fresh waters with 95% protection level.
6. Recreational Criteria from NEMP (2020)

5.3 Vapour Assessment Criteria

Vapour concentrations in sub-slab vapour were compared against published levels as presented in **Table 5.6**, as sourced from Health based Investigation and Screening Levels (HILs and HSLs) for vapour intrusion under commercial / industrial land-use – NEPC 2013, HIL-D, HSL-D (clay, depth 0m to <1m bgs).

Table 5.6: Vapour Sample Analytical Schedule (mg/m^3)

	Limit of Reporting	Laboratory Method	NEPC (2013) HSL-D (clay, 0m to <1m bgs)	NEPC (2013) HIL-D
BTEX				
Benzene	0.02	USEPA 8260	5	-
Toluene	0.02	USEPA 8260	6500	-
Ethylbenzene	0.02	USEPA 8260	1800	-
Total Xylenes	0.02	USEPA 8260	1200	-
Naphthalene	0.02	USEPA 8260	4	-
VOCs				
PCE	0.02	USEPA 8260	-	8
TCE	0.02	USEPA 8260	-	0.08
Cis 1,2 DCE	0.02	USEPA 8260	-	0.3
1,1,1 TCA	0.02	USEPA 8260	-	230
VC	0.02	USEPA 8260	-	0.1

6. Quality Assurance /Quality Control

Data quality indicators (DQIs) have been calculated as per the requirements of **Table 4.2** and are summarised in **Table 6.1** following. Laboratory reports are provided as **Appendix E**, with summarised QA/QC results presented in **Appendix F**.

Table 6.1: Summary of Quality Assurance / Quality Control Assessment

Data Quality Indicator	Frequency	Results Reported	DQI met
Precision			
Blind duplicates – soil	2/25 soil	0-133 % RPD *	See discussion below
Blind duplicates – vapour (carbon tubes)	1/14 (comparison against analysis of tube front)	0 RPD	Yes
Blind duplicates – groundwater	1/6	0-67 % RPD *	See discussion below
Split duplicates – soil	2/25 Soil	0-193 % RPD *	See discussion below
Split duplicates – vapour (carbon tubes)	1/14 (comparison against analysis of tube front)	0 RPD	Yes
Split duplicates – groundwater	1/6	0-100 % RPD *	See discussion below
Accuracy			
Surrogate spikes – soil	All samples for organic constituent analysis	55-133 % recovery *	See discussion below
Surrogate spikes –vapour and air	All samples for organic constituent analysis	93-108 % recovery	Yes
Surrogate spikes – groundwater	All samples for organic constituent analysis	27-188 % recovery *	See discussion below
Laboratory control samples	-	43-135 % recovery *	See discussion below
Matrix spikes	-	73-123 % recovery *	Yes
Representativeness			
Sampling appropriate for media and analytes	All media	All sampling appropriate	Yes
Samples extracted and analysed within holding times.	Various	All samples extracted and analysed within holding times	Yes
Method blank	All analytes	<LOR	Yes
Trip blank (soil and groundwater) Trip Spike (soil and groundwater)	1/sampling event 1/sampling event	<LOR Recovery within 70-130%	Yes
Field Blank	Per media and sampling event	<LOR-detects	Yes
Leak detection (Vapour)	All samples	<10% leak detection compound concentration	Yes
Comparability			
Standard operating procedures for sample collection & handling	All samples	Standard procedures for all sampling	Yes
Standard analytical methods used for all analyses	All samples	Standard analytical methods	Yes
Consistent field conditions, sampling staff and laboratory analysis	All works	Consistent field staff and consistent field and laboratory conditions	Yes
Limits of reporting appropriate and consistent	All samples	LORs appropriate and generally consistent	Yes
Completeness			
Sample description and COCs completed and appropriate	All samples	Field documentation and COC provided and completed	Yes
Appropriate documentation	All works	Documentation provided and completed	Yes
Satisfactory frequency and result for QC samples	All samples	See discussion below	Yes

Data Quality Indicator	Frequency	Results Reported	DQI met
Data from critical samples is considered valid	-	Critical samples valid	Yes
Sensitivity			
Analytical methods and limits of recovery appropriate for media and adopted Site assessment criteria	All samples	LOR ≤ site assessment criteria	Yes

6.1 Discussion of QA/QC Results

The results of QA/QC samples outside the acceptance criteria are discussed below.

6.1.1 Precision

Soil Duplicates

Soil blind and split duplicates were collected at a rate of greater than 1 per 20 primary samples. The resultant RPDs were all within the preferred range with the exception of a limited number of heavy metal and PFAS compounds. The slight variations between the primary and duplicate samples is likely due to the difficulty in obtaining homogeneous undisturbed soil samples. Notwithstanding, the data was considered suitable for comparison against screening level criteria, and as a conservative measure, the highest reported concentrations will be considered when interpreting results.

Vapour Duplicates

Analysis of blind and split duplicate vapour samples met the required analysis frequency and all RPDs were zero. Results were all reported below the laboratory limit of reporting.

Groundwater Duplicates

Groundwater blind and split duplicates were collected at a rate of greater than 1 per 20 primary samples. The resultant RPDs were all within the preferred range with the exception of a limited number of heavy metal compounds. The differences were likely due to the relatively low level concentrations reported within the primary and duplicate pair. Overall, the data was considered suitable for comparison against screening level criteria, and as a conservative measure, the highest reported concentrations will be considered when interpreting results.

6.1.1 Accuracy

Surrogate Spikes

Soil, groundwater and soil vapour surrogate spikes were conducted on all samples submitted for organic constituent analysis and most recoveries were reported within the preferred range (70-130 %). A small number of surrogates (in soil and water) were reported outside the preferred range, but largely within the laboratories acceptable limits (typically between 50 and 150 %) under their NATA accreditation. In addition, where an individual surrogate recovery was outside the preferred range – the alternate surrogate (for each class of compounds) within the primary sample was within the preferred range. Most surrogate recoveries outside the preferred range related to PFAS analysis, which have a greater acceptable surrogate recovery range.

Elevated surrogate recoveries indicate the reported concentrations may potentially be greater than the actual concentrations, while low surrogate recoveries indicate the reported concentrations may potentially be less than the actual concentrations. Taking this into account, it is considered that samples with slightly elevated or lower surrogate recoveries do not affect the reliability of the data for this investigation noting that the concentration of contaminants in the primary samples analysed were largely well below the adopted site assessment criteria.

Matrix Spikes

The number of matrix spikes analysed exceeded the required frequency of 1 in 20 samples for both soil and groundwater analysis. The reported matrix spike recoveries were all within JBS&G's preferred range (70-130 %).

Matrix spikes are not conducted for laboratory analysis of carbon tubes.

Laboratory Control Samples

A sufficient number of laboratory control samples were analysed for all media types. The reported laboratory control sample recoveries were largely within the JBS&G preferred range (70-130 %). A small number of laboratory control samples (for PFAS compounds in groundwater) were reported outside the JBS&G acceptable range, but largely within the laboratories acceptable limits (typically between 50 and 150 % recovery) under their NATA accreditation. On this basis, the limited number of laboratory control samples that were reported outside the preferred range are considered to not affect the outcomes of the assessment.

6.1.2 Representativeness

Sampling appropriate for media and analytes

All soil, groundwater and soil vapour sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures. Soil sampling was conducted with the advancement of boreholes, considered appropriate for the potential site chemical contaminants. It is noted that boreholes are not the preferred method of investigation for asbestos, but, given the site was mostly paved with concrete/asphalt and operational, it was considered the only practical method for completing the assessment. Groundwater sampling was completed using a low flow peristaltic pump and Hydrasleeve (for PFAS) which are also considered appropriate for the potential site contaminants in groundwater. The sub-slab vapour sampling methods were considered appropriate for the media and the analytes targeted. Sub-slab vapour probes were correctly installed, sealed and leak detection was performed. The SKC Anasorb CSC tubes used were appropriate for the COPCs. Flow rate and total volume for each sample was recorded.

Laboratory Blanks

There were no reported concentrations of contaminant compounds above the laboratory LOR in the laboratory method blanks for soil, groundwater, soil vapour and indoor air analysis.

Holding Times

The extraction and analysis all soil, groundwater, sub-slab vapour and indoor air samples were completed within the recommended holding times for all analytes.

Trip Spike

A trip spike was submitted with each batch of soil and groundwater samples. All trip spike recoveries were within the acceptable limit of 70-130 %, indicating that the adopted assessment sample preservation methods were appropriate to result in a low risk of contaminant concentration loss during transport of the samples.

Trip Blank

A trip blank was submitted with each batch of soil and groundwater samples submitted to the laboratory. There were no reported concentrations of BTEX compounds above the laboratory LOR thus demonstrating the absence of significant contaminant cross contamination issues during the temporary storage and transportation of samples analysed during this investigation.

Rinsate

Rinsate samples were collected during the soil sampling and groundwater sampling program. The reported concentration of all COPCs within the samples were below detection limits thus demonstrating that the sampling procedures did not result in the cross-contamination of samples.

Leak Detection

Leak detection was conducted on all sub-slab probes during soil vapour sampling activities by firstly purging each probe with the gas detector. Following this an isopropyl soaked alcohol rag was placed around the base of each probe. PID readings were monitored and recorded. No significant leaks were identified by the PID during sampling as further evidenced by the lowest possible detection limits being achieved and the absence in the laboratory analysis results of any significant levels of 2-propanol.

6.1.3 Comparability

Eurofins (primary laboratory) and Envirolab (secondary laboratory) were NATA accredited for comparable methods of analysis. Field works have been undertaken by a team of experienced samplers in accordance with the same standard operating procedure. All field documentation was appropriately completed.

6.1.4 Completeness

Documentation

All documentation is complete and correct.

Frequency for QC Samples

Frequency of analysis for the QC samples is considered sufficient to meet the objectives of the assessment.

6.2 QA/QC Assessment

The field sampling and handling procedures produced QA/QC results which indicate that the soil, soil vapour and groundwater data are of an acceptable quality and suitable for use in site characterisation.

The NATA certified laboratory results sheets indicate that the project laboratory was generally achieving levels of performance within its recommended control limits during the period when the samples from this program were analysed.

On the basis of the results of the field and laboratory QA/QC program, the soil, groundwater and soil vapour data are of an acceptable quality in order to achieve the objectives of the assessment.

7. Soil Assessment

The lithology encountered at the site during the field works is summarised below. Borehole logs are included in **Appendix B**.

7.1 Field Observations

The soil investigation works comprised a total of twenty-one boreholes that was inclusive of seven boreholes in which groundwater monitoring wells were subsequently installed. Each borehole was advanced via solid flight augers (SFA). Most of the site was surfaced with either concrete or bitumen, which was initially cored prior to borehole advancement.

In the northern portion of the site, approximately 0.3 to 1.3 m of grey to dark brown silty clay was encountered with anthropogenic inclusions of gravel, concrete, brick fragments, asphalt, plastic, ash, slag and wood.

In the southern portion of the site, approximately 0.4 to 1.3 m of grey to dark brown sandy clay and gravelly sand was encountered with anthropogenic inclusions of gravel, metal, plastic, concrete, brick, asphalt and burnt wood.

Natural material was predominantly brown/grey/red clay and weathered shale at depth.

PID screening of most soil samples was undertaken, with values reported between 0 ppm and 1.4 ppm. No odour or staining as potentially associated with contamination was noted in soil samples with the exception of a slight organic odour present at samples collected from BH08 and BH12.

No visible asbestos containing material was identified during the soil assessment activities. It is noted that the assessment of the potential for asbestos in fill material at the site was completed during this investigation via installation of boreholes and subsequent field screening and laboratory analysis. The advancement of boreholes is acknowledged as not the preferred method of investigation, given the limited volumes of material able to be inspected. However, given existing pavement and operational nature of the site, pavement removal and subsequent test pitting was not feasible. As such, given the observation of varying levels of building and demolition wastes in site fill, there is the potential for site fill to contain asbestos.

7.2 Analytical Results

Laboratory analysis results for soil samples completed for the investigation are summarised in **Table A** in **Appendix A**, with the results discussed below for the various analyte groups.

7.2.1 Heavy Metals

Heavy metal concentrations in all analysed samples were reported to be below the adopted HILs in all samples selected for analysis.

Heavy metal concentrations in all analysed samples were reported to be below the adopted EILs in all samples selected for analysis.

7.2.2 TRH and BTEX

TRH and BTEX concentrations were reported to be below the laboratory LOR or less than the adopted site assessment criteria in all samples selected for analysis.

7.2.1 PAHs

All reported concentrations of PAHs and carcinogenic PAHs as B(a)P TEQ were below the laboratory LOR or less than the adopted site assessment criteria in all samples selected for analysis.

7.2.2 OCP/PCBs

The reported concentrations of OCPs and PCBs were below the laboratory LOR or less than the adopted site assessment criteria in all samples selected for analysis.

7.2.3 PFAS

The reported PFAS concentrations were below the laboratory LOR or less than the adopted site assessment criteria in all samples selected for analysis.

7.2.4 Asbestos

Asbestos in the form of fragments of ACM were not reported to have been observed within material at any of the sampling locations. Selected soil samples analysed from fill materials further did not report any ACM following laboratory analysis.

7.2.5 SPOCAS

Fithteen samples were collected from the unsaturated natural materials as well as saturated natural materials and assessed for the presence of ASS via the sPOCAS analysis method. Five of the samples across varying exhibited characteristics consistent with PASS. All remaining analysed samples did not exhibit PASS characteristics that would require management.

8. Groundwater and Surface Water Assessment

The monitoring well sampling locations are shown on **Figure 4** and installation details for newly installed wells are provided in **Appendix B**. Groundwater sampling field data sheets are provided in **Appendix G**. Detailed laboratory reports and chain of custody documentation are provided in **Appendix E.**

8.1 Field Observations and Field Measured Parameters

A summary of conditions encountered during sampling is presented in **Table 8.1** and **Table 8.2** below.

Table 8.1: Groundwater Field Physiochemical Parameters

Well Reference	Depth to Water (m bTOC*)	Dissolved Oxygen (% Saturation)	pH (units)	Redox (mV) (uncorrected)	Electrical Conductivity (EC) (µS/cm)	Temperature (°C)
MW04	3.215	1.2	6.98	-212.6	2798	23.9
MW06	3.591	Well not sampled				
MW07	5.711	1.6	5.12	-1.3	2453	226
MW08	Dry					
MW09	4.096	32.2	5.88	62	9036	21.1
MW10	2.558	24.8	7.18	11.5	1196	22.5
MW11	Dry					
MW12	3.577	28	6.35	-98.8	11755	21.3
MW13	2.394	29.9	6.16	96	14403	20.7

* m bTOC – meters below tio of casing

Review of the field parameters as presented above indicates that the groundwater is slightly acidic to neutral, characterised by relatively low to moderate dissolved oxygen levels and is brackish to saline. There were no odours or visible sheens in groundwater purged from monitoring wells.

All existing and newly installed monitoring wells were surveyed by a registered surveyor to measure relative heights of top of casing (metres Australian Height Datum, m AHD) to allow interpretation of groundwater flow directions at the site. Well survey data is provided in **Appendix I**.

Standing water levels (m AHD) and inferred groundwater contours are presented in **Figure 5B** and indicate a groundwater flow direction to the east toward the stormwater canal.

Table 8.2: Groundwater Observations

Well Reference	Odour	Sheen	Turbidity	Non-aqueous phase liquid (NAPL)	Standing Water Level (m bTOC)	Total Depth (m bTOC)
MW04	Slight	None	Moderate	None detected	3.215	4.964
MW06	Well not sampled				3.591	6.902
MW07	None	None	Very Low	None detected	5.711	6.861
MW08	Dry					
MW09	None	None	Low	None detected	4.096	6.693
MW10	None	None	Low	None Detected	2.558	4.779
MW11	Dry					
MW12	None	None	Low	None Detected	3.577	5.884
MW13	None	None	Low	None Detected	2.394	4.526

8.2 Groundwater and Surface Water Analytical Results

The water sampling locations are shown on **Figure 4** and laboratory results are summarised in **Table B** in **Appendix A**. Analytical results are discussed in the following sections.

Heavy Metals

The reported heavy metal concentrations were below the adopted criteria with the following exceptions:

- Arsenic exceeding the fresh water ecosystem criterion (0.013 mg/L) at MW09 (0.03 mg/L);

- Cadmium exceeding the fresh water ecosystem criterion (0.0002 mg/L) at MW09 (0.0005 mg/L); and MW13 (0.0005 mg/L);
- Total chromium exceeding the fresh water ecosystem criteriom (0.001 mg/L) at MW04 (0.001 mg/L), MW09 (0.002 mg/L), MW10 (0.002 mg/L) and MW13 (0.003 mg/L);
- Copper exceeding the fresh water ecosystem criterion (0.0014 mg/L) at MW09 (0.008 mg/L), MW10 (0.007 mg/L) and MW13 (0.008 mg/L);
- Lead exceeding the fresh water ecosystem criterion (0.0034 mg/L) at MW10 (0.007 mg/L);
- Nickel, exceeding the fresh water ecosystem criterion (0.011 mg/L) at MW09 (0.082 mg/L), and MW13 (0.029 mg/L); and
- Zinc, exceeding fresh water ecosystem criterion (0.008 mg/L) at MW09 (0.11 mg/L), MW10 (0.013 mg/L), MW12 (0.02 mg/L) and MW06 (0.032 mg/L).

PAHs

The reported concentrations of PAHs were below the laboratory LOR or less than the adopted criteria in all samples.

TRH and BTEX

TRH and BTEX concentrations were reported to be below the laboratory LOR in all samples and therefore less than the adopted site assessment criteria.

VOCs

All reported concentrations of VOCs were below the laboratory LOR or the adopted criteria in all samples.

Phenols

Phenol concentrations were reported to be below the laboratory LOR or the adopted criteria in all samples.

OCPs and PCBs

OCP and PCB concentrations were reported to be below the laboratory LOR in all samples and therefore less than the adopted site assessment criteria.

PFAS

All reported concentrations of PFAS compounds were below the adopted criteria protective of downgradient receptors with the exception of the following:

- PFOS (Perfluorooctanesulfonic acid) exceeding fresh water ecological criterion (0.13 µg/L) at MW04 (7.1 µg/L) and MW12 (0.26 µg/L); and
- Sum of PFHxS and PFOS exceeding health criterion (2 µg/L) at MW04 (9.6 µg/L).

9. Vapour Assessment

9.1 Sub-slab Vapour Field Observations

Sub-slab vapour probes were installed across 30 sample locations on the site. No significant odours or indicators of contamination were observed during placement of the holes for the sample locations.

Stabilised PID, methane, oxygen, LEL and carbon dioxide readings were obtained at each sample location prior to collection of the vapour sample and are summarised in **Table 9.1**.

Table 9.1: Summary of Field Measured Vapours / Gases at Sub-slab Vapour Probes

Sample ID	PID (ppm)	Oxygen (%)	Carbon Dioxide (%)	Lower Explosive Limit (%)	Methane (%)
SV01	8.9	15.3	0	0	0
SV02	0	15.6	0	0	0
SV03	0	18.2	0	0	0
SV04	0	13.5	5.2	0	0
SV05	0	17.3	0	0	0
SV06	0	16.0	0	0	0
SV07	0	16.0	0.1	0	0
SV08	7.8	14.2	0.1	0	0
SV09	0	17.1	0	0	0
SV10	0.1	16.1	0	0	0
SV11	8.2	16.9	0.1	0	0
SV12	0.2	16.3	0	0	0
SV13	8.8	16.1	0.6	0	0
SV14	0	16.2	0	0	0
SV15	Flooded				
SV16	10.1	18.4	0.9	0	0
SV17	0.1	16.4	0	0	0
SV18	0.1	17.2	0	0	0
SV19	8.7	16.7	0.2	0	0
SV20	0	17.3	0	0	0
SV21	0.1	17.5	0	0	0
SV22	0	16.1	0	0	0
SV23	0.3	13.3	0	0	0
SV24	0.4	16.1	0	0	0
SV25	0.3	17.2	0	0	0
SV26	0.4	16.6	0	0	0
SV27	0.3	16.2	0	0	0
SV28	0.3	16.4	0	0	0
SV29	0.2	16.4	0	0	0
SV30	0.4	16.3	0	0	0

9.2 Summary of Sub-Slab Analytical Results

Selected sub-slab vapour probe samples were submitted to the laboratory for VOC 8260 analysis. Summarised laboratory results are presented in **Table C**.

All reported sub-slab vapour results were below the laboratory LOR or the adopted guideline values for this assessment.

10. Site Characterisation

Based on the decision making process for evaluating land-use suitability detailed in EPA (2017) and outlined in **Section 4.1.5**, the decisions required to be made in order to satisfy the objectives of the assessment are discussed below.

10.1 Are there any unacceptable risks to likely future onsite receptors from soils?

Representative samples of fill material and natural soils within accessible areas of the site were analysed for a range of identified potential contaminants of concern including heavy metals, PAHs, TRH, BTEX, OCP/PCBs, PFAS and asbestos.

The reported concentrations of all contaminants of concern were below the adopted criteria protective of human health under the proposed land-use. In addition, contaminant levels within site soils were not considered to pose a risk to on-site ecological receptors. As such, there were no identified impacts within the soils assessed as part of this investigation that would present an unacceptable risk under the proposed land-use.

10.2 Are there any issues relating to local area background soil concentrations that exceed the appropriate soil criteria?

Soil contaminant results in natural soils indicate there are likely no issues relating to local area background conditions that require consideration with respect to the suitability of the site.

10.3 Are there any unacceptable human health and ecological risks present in groundwater underlying the site?

Similar to the soil assessment, representative samples of groundwater from six locations across the site were analysed for a range of identified potential contaminants of concern including heavy metals, PAHs, TRH, OCPs, PCBs, VOCs, phenols and PFAS.

Groundwater with elevated levels of heavy metals was recorded in several monitoring wells at the site as shown in **Figure 5A**. The reported concentrations are considered to reflect urban background conditions given that there was no significant change of these constituents between up and down gradient monitoring wells and no significant source material identified within site soils. On this basis, the elevated levels of heavy metals in site groundwater are not considered to require management.

Elevated levels of PFAS were reported in groundwater at MW4 and MW12. The monitoiring wells are located in close proximity to Haslams Creek stormwater channel, where site groundwater is expected to discharge. The highest concentrations of PFAS were recorded at MW4 and significantly lower concentrations at MW12 (which is downgradient of MW4) indicating downgradient attenuation of PFAS. Additionally, surface water sampling conducted by JBS&G (2021) identified the presence of PFAS at low concentrations (less than the adopted site assessment criteria) upgradient (SW01) and downgradient (SW02) of the site in Haslam Creek. As concentrations did not increase from the upgradient to downgradient locations it is considered that migration of PFAS in groundwater from the site does not currently pose an offsite risk.

It is further noted that chlorinated ethene impacted groundwater has been reported in the adjoining property of 11-13 Percy Stret (Geo-Logix 2019[9]) to the north-west of MW07. The reported concentrations of chlorinated ethenes within site groundwater (including at MW07) was below detection limits at all locations. In addition, the extensive soil vapour investigation did not identify any chlorinated ethene impacts within vapour. As such, the source of chlorinated ethene impacts on the property of 11-13 Percy Street, is not considered to be from the subject site.

[9] Detailed Site Investigation Report, 11-13 Percy Street, Auburn NSW, Geo-Logix Pty Ltd November 2019 (Geo-Logix 2019).

10.4 Are there any potential vapours present within the sub-surface that could present an unacceptable risk to future site receptors?

Contaminant levels as measured in sub-slab vapour were below the laboratory detection limits or the adopted guideline values for the assessment, thus indicating there were no volatile impacts within the sub-surface that would pose an unaceptable risk to future site receptors (via vapour intrusion to within encolosed spaces/buildings) in the areas assessed.

10.5 Are there any impacts of chemical mixtures?

There were no potential chemical mixtures identified during the investigation that may pose a management issue at the site.

10.6 Are there any aesthetic issues at the site?

There were no unacceptable odours or staining associated with contamination observed within site soil during the current investigation that may pose an aesthetic issue at the site. In addition, no ACM fragments or other anthropogenic materials were observed on the ground surface (noting the presence of hardstand across the extent of the site) at the subject site that may present an aesthetic issue. It is noted that the assessment of the potential for asbestos in fill material at the site was completed during this investigation via installation of boreholes and subsequent field screening and laboratory analysis. The advancement of boreholes is acknowledged as not the preferred method of investigation, given the limited volumes of material able to be inspected. However, given existing pavement and operational nature of the site, pavement removal and subsequent test pitting was not feasible. As such, given the observation of varying levels of building and demolition wastes in site fill, there is the potential for site fill to contain asbestos.

10.7 Is there any evidence of, or potential for, migration of contaminants from the site?

The site is covered in hardstand and therefore there is a low risk that contaminants can migrate from the site through the generation of windblown dusts or surface water erosion. During future construction activities, standard dust/odour suppression practices and sediment/erosion controls will require to be implemented to minimise the risk of contaminants in soils migrating from the site when additional soils are exposed.

With respect to groundwater, the elevated heavy metals are considered to be indicative of urban background concentrations. Previous assessment of PFAS in surface water in Haslam Creek indicated that migration of PFAS in groundwater from the site does not currently pose an offsite risk.

As noted in **Section 10.3**, the source of the chlorinate ethene impacted groundwater on 11-13 Percy Street is not considered to be from the subject site.

10.8 Is a site management strategy required?

Based on the findings of this investigation and subject to the limitations presented in **Section 12**, there were no identified impacts that would pose a risk to future site receptors under the proposed commercial / industrial land-use (HIL-D).

It is noted that the assessment of the potential for asbestos in fill material at the site was completed during this investigation via installation of boreholes and subsequent field screening and laboratory analysis. The advancement of boreholes is acknowledged as not the preferred method of investigation, given the limited volumes of material able to be inspected. However, given existing pavement and operational nature of the site, pavement removal and subsequent test pitting was not feasible. As such, given the observation of varying levels of building and demolition wastes in site fill, there is the potential for site fill to contain asbestos. Any asbestos impacts within site fill are unlikely to affect site suitability under the proposed land-use given the presence of hardstand across the majority of the site (thereby limiting the exposure to site soils for most users) but may trigger Work Health and Safety (WHS) requirements during construction and occupation of a future development.

11. Conclusions and Recommendations

Based on the findings of this investigation and subject to the limitations presented in **Section 12**, JBS&G concludes the following:

- The property has been used for various commercial / industrial purposes since the 1950s including stockyards and facilities for processing meat products, manufacture, storage and distribution of egg products (including pulp processing for paper production), flour and food ingredients, printing, warehousing and distribution and office spaces.
- The potential sources of contamination identified at the site included; anthropogenic fill materials of unknown origin used to create existing/current site levels, former/current structures potentially containing hazardous materials, historical manufacturing / industrial activities as well as potential off-site sources of contamination comprising current and former industry surrounding the site.
- Representative samples of fill material and natural soils within accessible areas of the site (at twenty one locations) were analysed for a range of identified potential contaminants of concern including heavy metals, PAHs, TRH, BTEX, OCP/PCBs, PFAS and asbestos. The reported concentrations of all contaminants of concern were below the adopted criteria protective of human health under the proposed land-use. On this basis, there were no identified impacts within site soil assessed as part of this investigation that would present an unacceptable risk under the proposed land-use.
- There were no unacceptable odours or staining associated with contamination observed within site soil during the current investigation that may pose an aesthetic issue at the site.
- Potential acid sulfate soils were identified in natural soils at depth. It is recommended that a acid sulfate soils management plan (ASSMP) be prepared to document the required management procedure to be implemented during future construction works that results in the disturbance of these materials.
- Similar to the soil assessment, representative samples of groundwater from seven locations across the site were analysed for a range of identified potential contaminants of concern including heavy metals, PAHs, TRH, OCPs, PCBs, VOCs and PFAS. All reported COPCs were below the adopted criteria within groundwater with the exception of some elevated levels of heavy metals been reported in several monitoring wells at the site as well as PFAS at two locaitons. The elevated concentrations of heavy metals are considered to be indicative of urban background concentrations.
- Elevated highest concentrations of PFAS were recorded at MW4 and lower concentrations at MW12 (which is downgradient of MW4) indicating downgradient attenuation of PFAS. Surface sampling conducted by JBS&G (2021) identified the presence of PFAS at low concentrations (less than the adopted site assessment criteria) upgradient (SW01) and downgradient (SW02) of the site in Haslam Creek. As concentrations did not increase from the upgradient to downgradient locations it is considered that migration of PFAS in groundwater from the site does not currently pose an offsite risk.
- A sub-slab vapour assessment was completed at 30 locations across the site. Contaminant levels as measured in sub-slab vapour were below the laboratory detection limits or the adopted guideline values for the assessment, thus indicating there were no volatile impacts within the sub-surface that would pose an unaceptable risk to future site receptors (via vapour intrusion to within encolosed spaces/buildings) in the areas assessed.
- Whilst not strictly required to make the site suitable for the proposed land-use, the UST present in the western portion of the site will require appropriate decommissioning Removal

and off-site disposal) in accordance with the *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019*.

- It is further recommended that an appropriate construction environmental management plan (CEMP) be prepared and implemented during future in-ground construction activities that includes an unexpected finds protocol and waste management protocol.
- Based on the findings of this investigation and subject to the limitations presented in **Section 12**, it is considered that the site is suitable for the proposed commercial / industrial land-use (HIL-D) subject to implementation of the unexpected finds protocol requirements during future construction activities.

12. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

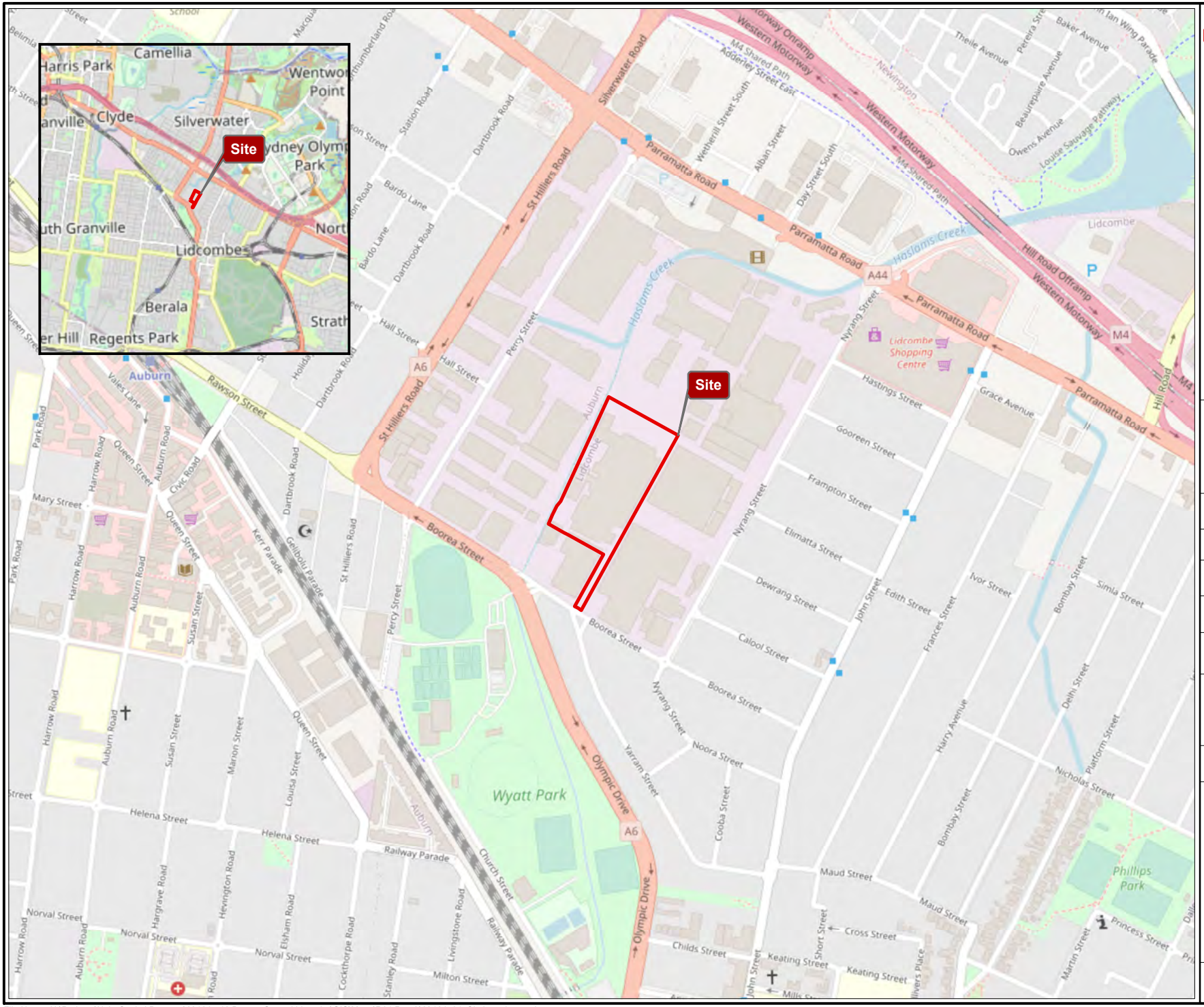
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures



Legend

Approximate Site Boundary

JBS&G

Job No: 62184	
Client: Hale Capital Partners	
Version: R01 Rev A	Date 15/02/2022
Drawn By: JA	Checked By: MD

Scale 1:10,000

0 200 400

metres

Coord. Sys. GDA 1994 MGA Zone 56

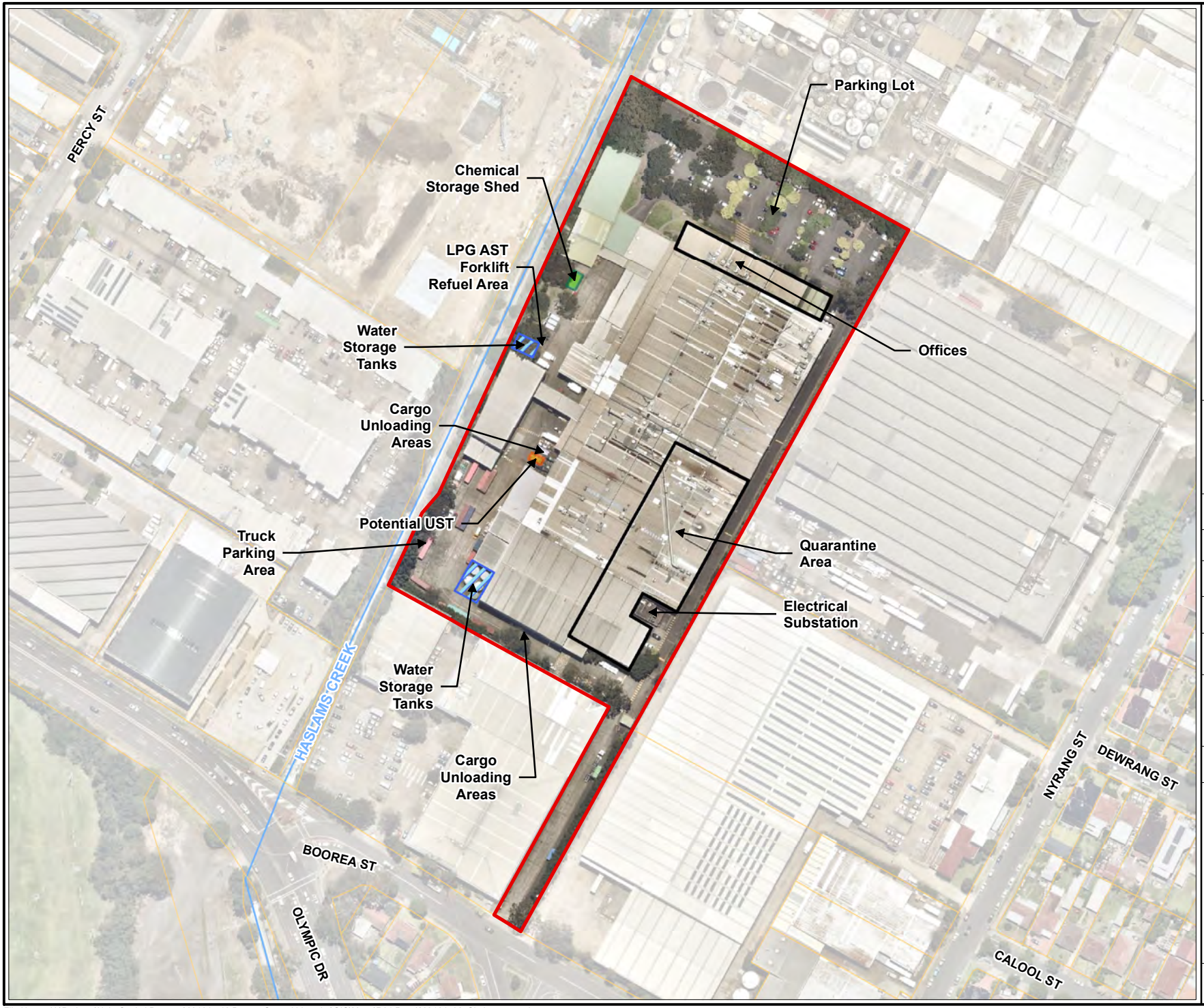
42-44 Boorea Street, Lidcombe, NSW

SITE LOCATION

FIGURE 1

File Name: N:\Projects\Hale Capital Partners\62184 - 42 Boorea Street Lidcombe\GIS\Maps\R01 Rev A\62184_01_SiteLocation.mxd

Reference: © OpenStreetMap (and) contributors, CC-BY-SA



Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)

Site Features

- Storage
- Structure
- Tanks
- UST

JBS&G

Job No: 62184	
Client: Hale Capital Partners	
Version: R01 Rev A	Date 16/02/2022
Drawn By: JA	Checked By: MD
Scale 1:2,500	

0 50 100
metres

Coord. Sys. GDA 1994 MGA Zone 56

42-44 Boorea Street, Lidcombe, NSW

SITE LAYOUT

FIGURE 2

File Name: N:\Projects\Hale Capital Partners\62184 - 42 Boorea Street Lidcombe\GIS\Maps\R01 Rev A\62184_02_SiteLayout.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 21/12/2021)

Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)

Site Features

- Storage
- Structure
- Tanks
- UST

Historic Sample Location

- Soil Vapour (JBS&G 2021)
- Soil Vapour / Borehole (JBS&G 2021)
- Soil Vapour / Monitoring Well (JBS&G 2021)
- Soil Vapour / Borehole / Monitoring Well (JBS&G 2021)
- Surface Water (JBS&G 2021)

JBS&G

Job No: 62184	
Client: Hale Capital Partners	
Version: R01 Rev A	Date 1/03/2022
Drawn By: JA	Checked By: MD
Scale 1:2,500	

0 50 100
metres

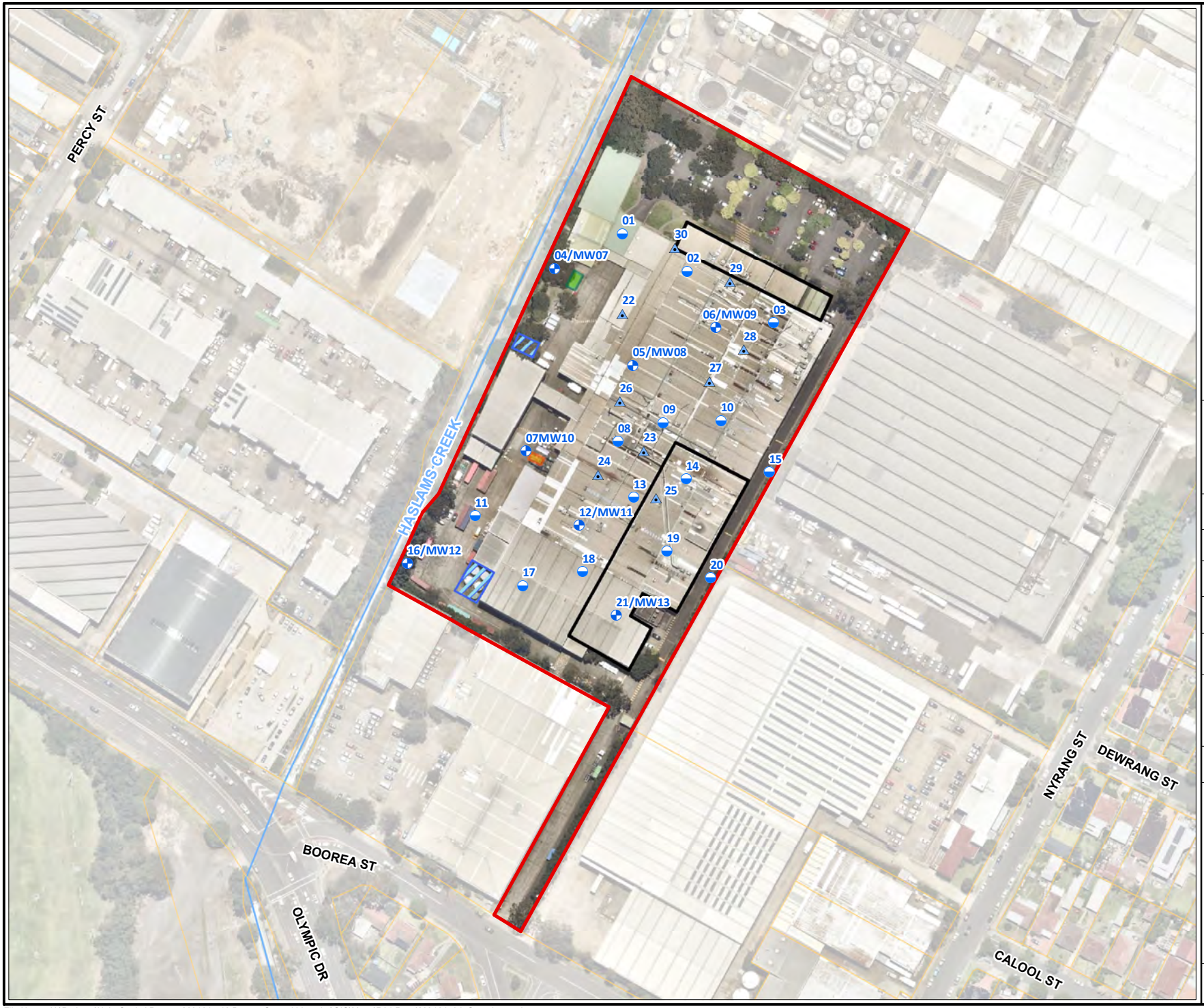
Coord. Sys. GDA 1994 MGA Zone 56

42-44 Boorea Street, Lidcombe, NSW

HISTORICAL SAMPLE LOCATIONS

FIGURE 3

File Name: N:\Projects\Hale Capital Partners\62184 - 42 Boorea Street Lidcombe\GIS\Maps\R01 Rev A\62184_03_HistoricalSamples.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 21/12/2021)



Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)

Site Features

- Storage
- Structure
- Tanks
- UST

Sample Location

- Soil Vapour (JBS&G 2022)
- Soil Vapour / Borehole (JBS&G 2022)
- Soil Vapour / Borehole / Monitoring Well (JBS&G 2022)

JBS&G

Job No: 62184	
Client: Hale Capital Partners	
Version: R01 Rev A	Date 16/02/2022
Drawn By: JA	Checked By: MD

Scale 1:2,500

0 50 100
metres

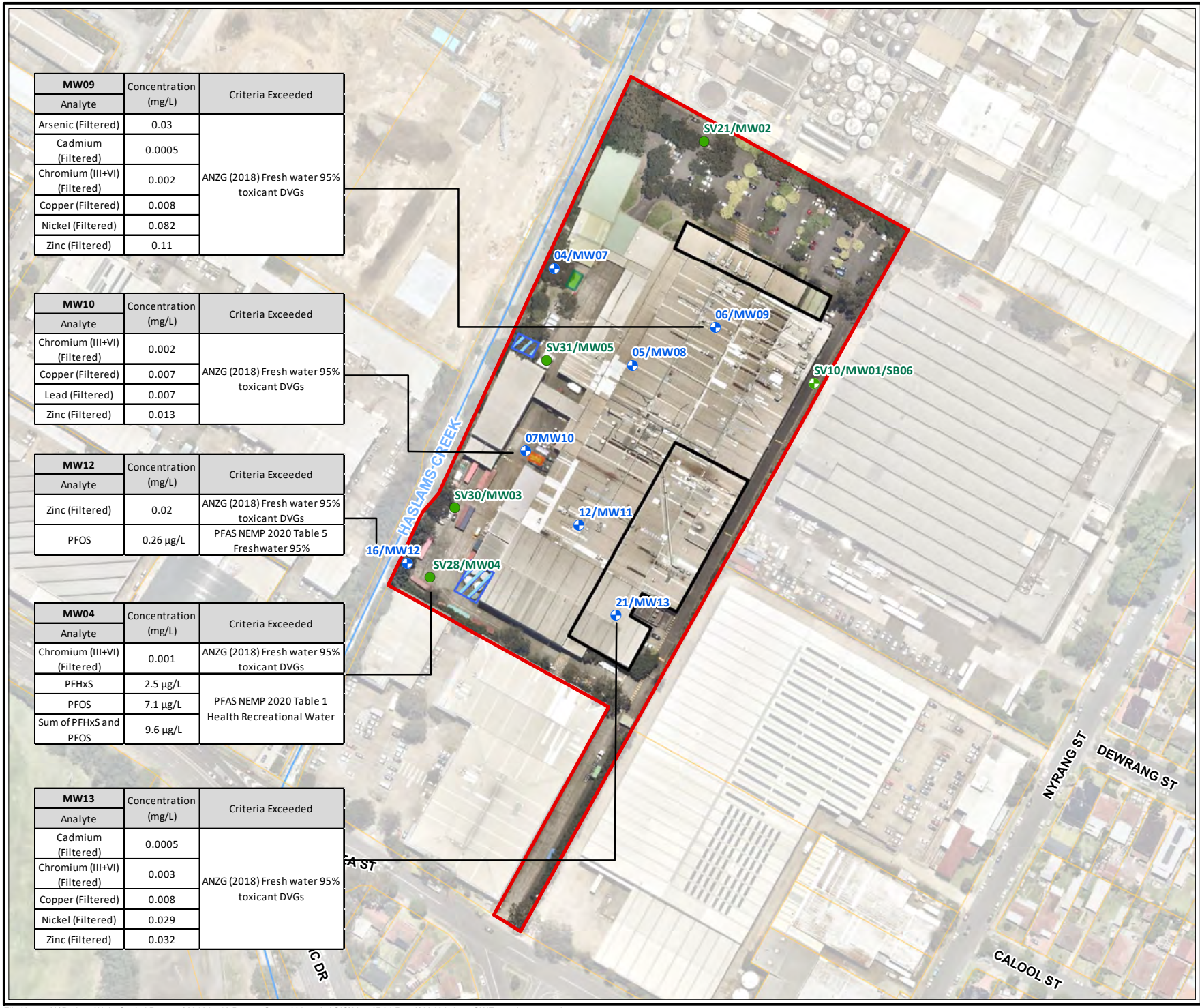
Coord. Sys. GDA 1994 MGA Zone 56

42-44 Boorea Street, Lidcombe, NSW

SAMPLE LOCATIONS

FIGURE 4

File Name: N:\Projects\Hale Capital Partners\62184 - 42 Boorea Street Lidcombe\GIS\Maps\R01 Rev A\62184_04_Samples.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 21/12/2021)



MW09 Analyte	Concentration (mg/L)	Criteria Exceeded
Arsenic (Filtered)	0.03	ANZG (2018) Fresh water 95% toxicant DVGs
Cadmium (Filtered)	0.0005	
Chromium (III+VI) (Filtered)	0.002	
Copper (Filtered)	0.008	
Nickel (Filtered)	0.082	
Zinc (Filtered)	0.11	

MW10 Analyte	Concentration (mg/L)	Criteria Exceeded
Chromium (III+VI) (Filtered)	0.002	ANZG (2018) Fresh water 95% toxicant DVGs
Copper (Filtered)	0.007	
Lead (Filtered)	0.007	
Zinc (Filtered)	0.013	

MW12 Analyte	Concentration (mg/L)	Criteria Exceeded
Zinc (Filtered)	0.02	ANZG (2018) Fresh water 95% toxicant DVGs
PFOS	0.26 µg/L	PFAS NEMP 2020 Table 5 Freshwater 95%

MW04 Analyte	Concentration (mg/L)	Criteria Exceeded
Chromium (III+VI) (Filtered)	0.001	ANZG (2018) Fresh water 95% toxicant DVGs
PFHxS	2.5 µg/L	PFAS NEMP 2020 Table 1 Health Recreational Water
PFOS	7.1 µg/L	
Sum of PFHxS and PFOS	9.6 µg/L	

MW13 Analyte	Concentration (mg/L)	Criteria Exceeded
Cadmium (Filtered)	0.0005	ANZG (2018) Fresh water 95% toxicant DVGs
Chromium (III+VI) (Filtered)	0.003	
Copper (Filtered)	0.008	
Nickel (Filtered)	0.029	
Zinc (Filtered)	0.032	

Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)

Site Features

- Storage
- Structure
- Tanks
- UST

Historic Sample Location

- Soil Vapour / Monitoring Well (JBS&G 2021)
- Soil Vapour / Borehole / Monitoring Well (JBS&G 2021)

Sample Location

- Soil Vapour / Borehole / Monitoring Well (JBS&G 2022)

JBS&G

Job No: 62184

Client: Hale Capital Partners

Version: R01 Rev A | Date 16/02/2022

Drawn By: JA | Checked By: MD

Scale 1:2,500

0 50 100

metres

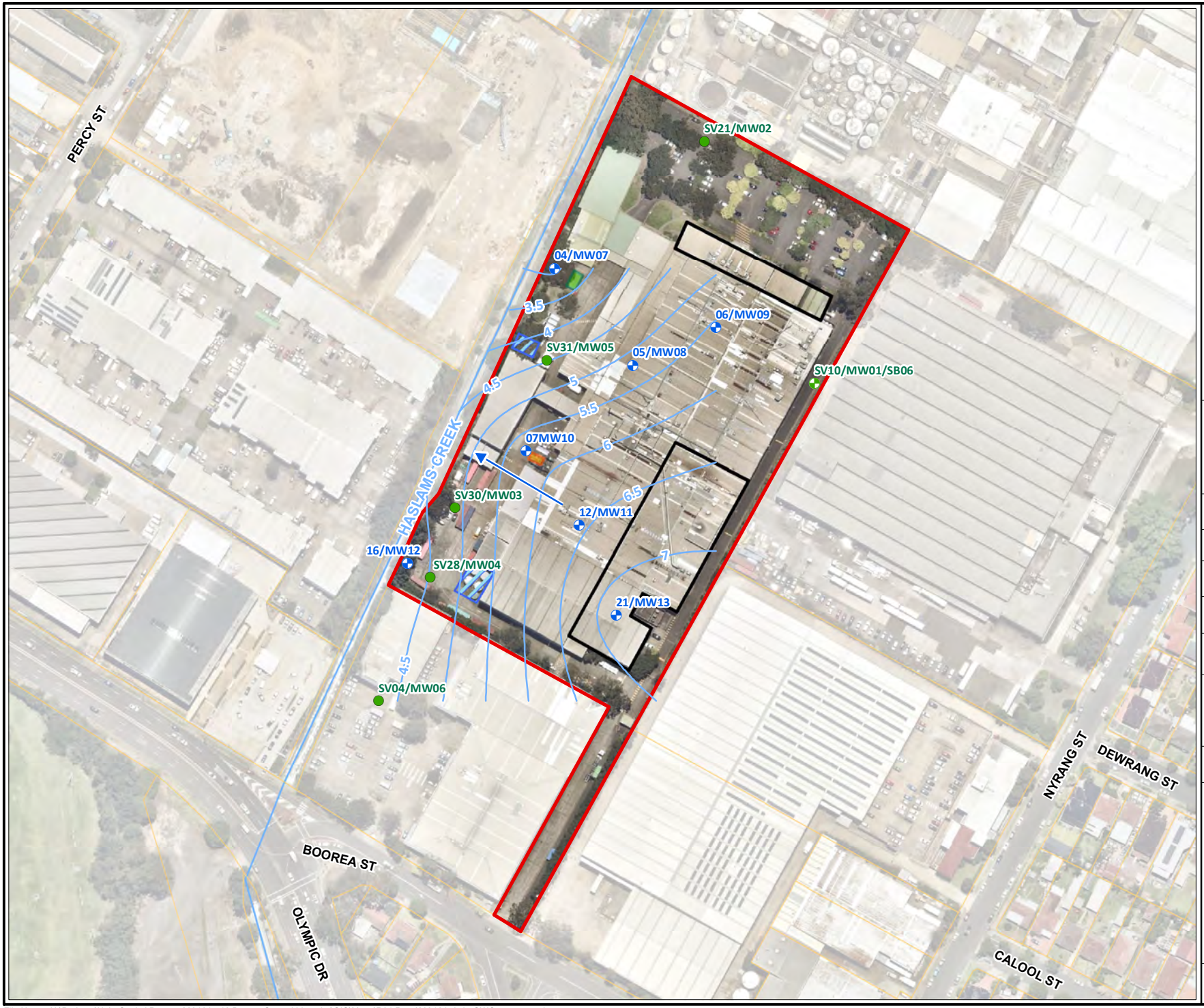
Coord. Sys. GDA 1994 MGA Zone 56

42-44 Boorea Street, Lidcombe, NSW

GROUNDWATER EXCEEDANCES

FIGURE 5A

File Name: N:\Projects\Hale Capital Partners\62184 - 42 Boorea Street Lidcombe\GIS\Maps\R01 Rev A\62184_05a_GWExceedances.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 21/12/2021)



Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)

Site Features

- Storage
- Structure
- Tanks
- UST
- Inferred Groundwater Direction
- Standing Water Level (m AHD)

Historic Sample Location

- Soil Vapour / Monitoring Well (JBS&G 2021)
- Soil Vapour / Borehole / Monitoring Well (JBS&G 2021)

Sample Location

- Soil Vapour / Borehole / Monitoring Well (JBS&G 2022)

JBS&G

Job No: 62184	
Client: Hale Capital Partners	
Version: R01 Rev A	Date 1/03/2022
Drawn By: JA	Checked By: MD
Scale 1:2,500	

0 50 100
metres

Coord. Sys. GDA 1994 MGA Zone 56

42-44 Boorea Street, Lidcombe, NSW

GROUNDWATER CONTOURS

FIGURE 5B

File Name: N:\Projects\Hale Capital Partners\62184 - 42 Boorea Street Lidcombe\GIS\Maps\R01 Rev A\62184_05b_GWContours.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 21/12/2021)

Appendix A Summary Analytical Tables

Table A1: Soil Analytical Results
Project Number: 62184
Project Name: Lidcombe

			Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEXN						PAH													
			Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum of Total)	C6-C10	C10-C16	C16-C34	C34-C40	C10-C40 (Sum of total)	F1 (C6-C10 minus BTEX)	F2 (C10-C16 less Naphthalene)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b+j)fluoranthene	Benzo(b+j+k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2	0.4	5	5	5	0.1	5	5	20	20	50	50	50	20	50	100	100	100	20	50	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil			3000	900	3600	240000	1500	730	6000	400000																								40	40	40						
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay 0-1m																					310	NL	4	NL	NL			NL															
Site Specific Derived EIL			160		310	140	1800		180	370																																	
CRC Carre B(a)P Guidance																																	67									
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil																		2500	6600		215	170	95	135	185			95					1.4									
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil																800	1000	5000	10000																								
Field ID	**Sampled Date**	**Lab Report Number**																																									
JBS&G 2022																																										
BH01_0.5-0.6	21/01/2022	858427	2.9	<0.4	21	10	11	<0.1	10	14	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH02_0.2-0.3	21/01/2022	858427	30	<0.4	10	35	46	<0.1	<5	23	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH03_0.2-0.3	21/01/2022	858427	5.2	<0.4	12	24	12	<0.1	24	28	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH03_0.5-0.6	21/01/2022	858427	3.6	<0.4	8.5	12	12	<0.1	11	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_0.0-0.1	21/01/2022	858427	5.2	<0.4	18	28	63	<0.1	21	110	<20	<20	100	140	240	<20	<50	200	<100	200	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
QSA02 (duplicate of BH04_0-0.1)	21/01/2022	858427	12	<0.4	36	49	110	<0.1	41	190	<20	<20	68	110	178	<20	<50	170	<100	170	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
QSC02 (triplicate of BH04_0-0.1)	21/01/2022	287148	4	<0.4	17	29	51	<0.1	21	100	<25	<50	<100	130	130	<25	<50	180	<100	180	<25	<50	<0.2	<0.5	<1	<1	<2	<3	<0.1	<0.1	<0.1	<0.1	0.09	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	<0.1	<0.1
BH04_1.0-1.1	21/01/2022	858427	7.8	<0.4	19	25	55	<0.1	21	75	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH05_0.5-0.6	21/01/2022	858427	4.9	<0.4	8.3	14	120	<0.1	<5	17	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH06_0.5-0.6	21/01/2022	858427	6.8	<0.4	14	12	16	<0.1	<5	<5	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH07_0.3-0.4	21/01/2022	858427	6	<0.4	26	35	24	<0.1	70	60	<20	<20	58	64	122	<20	<50	110	<100	110	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH07_2.0-2.1	21/01/2022	858427	2.3	<0.4	10	45	13	<0.1	31	34	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH08_1.0-1.1	21/01/2022	858427	7.6	<0.4	11	18	26	<0.1	<5	27	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH08_2.0-2.1	21/01/2022	858427	6.1	<0.4	22	17	28	<0.1	5	27	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH09_0.5-0.6	21/01/2022	858427	6	<0.4	10	20	21	<0.1	<5	9	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH10_0.3-0.4	21/01/2022	858427	12	<0.4	22	16	22	<0.1	14	19	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH11_1.0-1.1	21/01/2022	858427	11	<0.4	14	17	37	<0.1	9.3	62	<20	<20	61	65	126	<20	<50	110	<100	110	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH12_1.0-1.1	21/01/2022	858427	11	<0.4	17	25	34	<0.1	10	38	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH13_0.2-0.3	21/01/2022	858427	6	<0.4	8.3	13	13	<0.1	8.1	30	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH14_0.3-0.4	21/01/2022	858427	7.8	<0.4	16	24	17	<0.1	<5	14	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH15_0.5-0.6	21/01/2022	858427	14	<0.4	6	32	11	<0.1	<5	35	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH16_0.5-0.6	21/01/2022	858427	13	<0.4	29	33	61	<0.1	14	69	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH16_2.0-2.1	21/01/2022	858427	11	<0.4	29	35	49	<0.1	19	87	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
QSA01 (duplicate of BH16_2.0-2.1)	21/01/2022	858427	12	<0.4	31	36	50	<0.1	20	84	<20	<20	<50	52	52	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
QSC01 (triplicate of BH16_2.0-2.1)	21/01/2022	287148	6	<0.4	13	25	25	<0.1	9	39	<25	<50	<100	<100	<50	<25	<50	<100	<100	<50	<25	<50	<0.2	<0.5	<1	<1	<2	<3	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	<0.1	<0.1
BH17_0.5-0.6	21/01/2022	858427	15	<0.4	17	34	23	<0.1	21	80	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH19_0.5-0.6	21/01/2022	858427	3.4	<0.4	21	40	11	<0.1	12	44	<20	<20	61	100	161	<20	<50	130	120	250	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH20_0.5-0.6	21/01/2022	858427	7.4	<0.4	8	27	13	<0.1	<5	21	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH21_0.5-0.6	21/01/2022	858427	11	<0.4	25	24	17	<0.1	<5	5.7	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
JBS&G 2021																																										
MW2_0.5	800487	44344	<2	<0.4	6.6	9.3	15	<0.1	<5	20	<20	<100	<250	<250	<250	<20	<250	<500	<500	<500	<20	<250	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
MW2_2.5	800487	44344	12	<0.4	30	13	17	<0.1	6.2	35	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW3_0.5	800487	44344	15	<0.4	8.8	15	36	<0.1	<5	33	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
MW3_5.0	800487	44344	3.7	<0.4	13	20	20	<0.1	6.9	35	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW4_0.5	800487	44344	12	<0.4	100	25	52	1.1	<5	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
MW4_2.0	800487	44344	7.1	<0.4	24	46	54	<0.1	20	110	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
MW5_1.0	800487	44344	8.6	<0.4	39	22	29	<0.1	26	46	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
MW5_3.5	800487	44344	3.7	<0.4	9.1	13	42	<0.1	<5	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB01_0.1	800471	44342	9.4	<0.4	28	57	27	<0.1	84	69	<20	<20	<50	110	110	<20	<50	<100	120	120	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
SB01_0.6	800471	44342	13	<0.4	24	46	32	<0.1	27	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB02_0.7	800471	44342	24	<0.4	40	54	54	<0.1	62	93	<20	<20	<50	110	110	<20	<50	110	130	240	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
SB03_0.1	800471	44342	<2	<0.4	40	86	<5	<0.1	200	88	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
SB06_0.4	800471	44342	9.7	<0.4	9.7	38	15	<0.1	7	38	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
SB07_0.7	800471	44342	12	<0.4	16	28	29	<0.1	8.9	20	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
SB08_0.3	800471	44342	9.5	<0.4	16	32	29	<0.1	13	57	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
SB09_0.3	800471	44342	6.4	<0.4	21	32	29	<0.1	40	50	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
SB15_0.3	800456	44343	7.1	<0.4	35	35	71	<0.1	29	70	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
QS02 (duplicate SB15_0.3)	800456	44343	6.1	<0.4	24	36	74	<0.1	23	77	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.6	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
QS02A (triplicate SB15_0.3)	26221	44343	6	<0.4	15	29	81	<0.1	14	55	<25	<50	<100	<100	<50	<25	<50	<100	<100	<50	<25	<50	<0.2	<0.5	<1	<1	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A1: Soil Analytical Results
Project Number: 62184
Project Name: Lidcombe

									Organochlorine Pesticides																								Polychlorinated Biphenyls										
			Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	4,4-DDE	a-BHC	b-BHC	d-BHC	g-BHC (Lindane)	Aldrin	Dieldrin	Aldrin + Dieldrin	Chlordane	Chlordane (cis)	Chlordane (trans)	DDT	DDD	DDT+DDE+DDD	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Methoxychlor	Toxaphene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Hexachlorobenzene	Moisture Content (dried @ 103°C)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05	1
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil									4000								45	530					3600				100			50		2500	160								7	80	
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay 0-1m						NL																																					
Site Specific Derived EIL						370															340																						
CRC Carre B(a)P Guidance																																											
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil																																											
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil																																											
Field ID	**Sampled Date**	**Lab Report Number**																																										
JBS&G 2022																																											
BH01_0.5-0.6	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	13
BH02_0.2-0.3	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	13
BH03_0.2-0.3	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	0.06	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	12
BH03_0.5-0.6	21/01/2022	858427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
BH04_0.0-0.1	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	20
QSA02 (duplicate of BH04_0-0.1)	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	18
QSC02 (triplicate of BH04_0-0.1)	21/01/2022	287148	0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	19
BH04_1.0-1.1	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
BH05_0.5-0.6	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	18
BH06_0.5-0.6	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	27
BH07_0.3-0.4	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	18
BH07_2.0-2.1	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
BH08_1.0-1.1	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	17
BH08_2.0-2.1	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
BH09_0.5-0.6	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	19
BH10_0.3-0.4	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	18
BH11_1.0-1.1	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	15
BH12_1.0-1.1	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	12
BH13_0.2-0.3	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	12
BH14_0.3-0.4	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	21
BH15_0.5-0.6	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	9.3
BH16_0.5-0.6	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	16
BH16_2.0-2.1	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	12
QSA01 (duplicate of BH16_2.0-2.1)	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	14
QSC01 (triplicate of BH16_2.0-2.1)	21/01/2022	287148	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	10
BH17_0.5-0.6	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	11
BH19_0.5-0.6	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	6.8
BH20_0.5-0.6	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	14
BH21_0.5-0.6	21/01/2022	858427	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	25
JBS&G 2021																																											
MW2_0.5	800487	44344	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	8.2
MW2_2.5	800487	44344	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	11
MW3_0.5	800487	44344	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	16
MW3_5.0	800487	44344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
MW4_0.5	800487	44344	0.6	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
MW4_2.0	800487	44344	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	15
MW5_1.0	800487	44344	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	15
MW5_3.5	800487	44344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
SB01_0.1	800471	44342	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	8.2
SB01_0.6	800471	44342	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
SB02_0.7	800471	44342	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	11
SB03_0.1	800471	44342	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	7.2
SB06_0.4	800471	44342	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	15
SB07_0.7	800471	44342	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	17
SB08_0.3	800471	44342	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	14
SB09_0.3	800471	44342	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	20
SB15_0.3	800456	44343	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	13
QS02 (duplicate SB15_0.3)	800456	44343	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	17
QS02A (triplicate SB15_0.3)	26221	44343	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	12

Table A2: Soil PFAS Reuslts
Project Number: 62184
Project Name: Lidcombe

			PFAS																																				
			Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutanesulfonic acid (PFBS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecanesulfonic acid (PFDS)	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTSA)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTSA)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTSA)	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2 FTSA)	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS (WA DER List)	Sum of PFAS
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.01	0.05
PFAS NEMP 2020 Table 2 Health Industrial/Commercial							50																	20		20								20					
PFAS NEMP 2020 Table 3 Interim EDE All land uses							10																			1													
Field ID	**Sampled Date**	**Lab Report Number**																																					
JBS&G 2022																																							
BH04_0.0-0.1	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	0.006	<0.005	0.0061	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	0.0121	0.0121	0.0061	0.0121	<0.05
QSA02 (duplicate of BH04_0-0.1)	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
QSC02 (triplicate of BH04_0-0.1)	21/01/2022	287148	0.0002	0.0004	0.0006	0.0003	0.0004	0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.0002	<0.0002	-	<0.0001	<0.0001	0.0001	<0.0001	0.0015	-	<0.0002	<0.0001	<0.0001	<0.0002	<0.0002	0.0016	-	0.0018	-	0.0036
BH04_1.0-1.1	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
BH05_0.5-0.6	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
BH06_0.5-0.6	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
BH08_1.0-1.1	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
BH11_1.0-1.1	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
BH12_1.0-1.1	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
BH15_0.5-0.6	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
BH16_0.5-0.6	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	0.0067	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	0.0067	0.0067	0.0067	<0.01	<0.05
BH16_2.0-2.1	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
QSA01 (duplicate of BH16_2.0-2.1)	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
QSC01 (triplicate of BH16_2.0-2.1)	21/01/2022	287148	<0.0002	<0.0002	0.0001	<0.0001	0.0002	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.0002	<0.0002	-	<0.0001	<0.0001	0.0002	<0.0001	0.0043	-	<0.0002	<0.0001	<0.0001	<0.0002	<0.0002	0.0045	-	0.0045	-	0.0048
BH16_3.0-3.1	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
BH16_4.0-4.1	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	0.0066	<0.005	0.042	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	0.0486	0.0486	0.042	0.0486	<0.05
BH16_5.0-5.1	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	0.0059	<0.005	0.022	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	0.0279	0.0279	0.022	0.0279	<0.05
BH16_5.9-6.0	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	0.0052	<0.005	0.014	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	0.0192	0.0192	0.014	0.0192	<0.05
BH19_0.5-0.6	21/01/2022	858427	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
JBS&G 2021																																							
MW3_0.5	800487	28/05/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	-	-	-	-	-	
SB09_0.3	800471	26/05/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
SB10_0.3	800471	26/05/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
QS01 (duplicate SB10_0.3)	800471	26/05/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
QS01A (triplicate SB10_0.3)	26220	26/05/2021	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.0002	<0.0002	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0002	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	-	<0.0001	-	<0.0001
SB15_0.3	800456	27/05/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
QS02 (duplicate SB15_0.3)	800456	27/05/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
QS02A (triplicate SB15_0.3)	26221	27/05/2021	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.0002	<0.0002	-	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	-	<0.0002	<0.0001	<0.0001	<0.0002	<0.0002	0.0002	-	0.0002	-	0.0002

Table A3: Soil Asbestos Results
Project Number: 62184
Project Name: Lidcombe

			Asbestos									
			Approximate Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in Soil	Mass FA	Mass Asbestos in FA	Mass AF	Mass asbestos in AF	Asbestos from FA & AF in Soil	Mass Asbestos in FA & AF
			g	g	g	% (w/w)	g	g	g	g	% (w/w)	g
EQL												
NEPM 2013 Table 7 Comm/Ind D Soil HSL for Asbestos in Soil						0.05					0.001	
Field ID	**Sampled Date**	**Lab Report Number**										
JBS&G 2022												
BH01_0.3-1.3	21/01/2022	858427	607	0	0	0	0	0	0	0	0	0
BH02_0.2-0.9	21/01/2022	858427	644	0	0	0	0	0	0	0	0	0
BH03_0.2-0.4	21/01/2022	858427	796	0	0	0	0	0	0	0	0	0
QSA03 (duplicate of BH04_0-1.0)	21/01/2022	858427	500	0	0	0	0	0	0	0	0	0
QSC03 (triplicate of BH04_0-1.0)	21/01/2022	287148	-	-	-	<0.01	-	-	-	-	<0.001	-
BH05_0.2-0.7	21/01/2022	858427	500	0	0	0	0	0	0	0	0	0
BH06_0.2-0.4	21/01/2022	858427	662	0	0	0	0	0	0	0	0	0
BH07_0.3-1.3	21/01/2022	858427	651	0	0	0	0	0	0	0	0	0
BH07_1.3-2.2	21/01/2022	858427	673	0	0	0	0	0	0	0	0	0
BH08_0.3-1.3	21/01/2022	858427	617	0	0	0	0	0	0	0	0	0
BH09_0.2-0.4	21/01/2022	858427	647	0	0	0	0	0	0	0	0	0
BH10_0.25-0.4	21/01/2022	858427	771	0	0	0	0	0	0	0	0	0
BH11_0.3-1.3	21/01/2022	858427	506	0	0	0	0	0	0	0	0	0
BH11_1.3-1.8	21/01/2022	858427	500	0	0	0	0	0	0	0	0	0
BH12_0.9-1.5	21/01/2022	858427	778	0	0	0	0	0	0	0	0	0
BH13_0.2-1.2	21/01/2022	858427	685	0	0	0	0	0	0	0	0	0
BH14_0.3-0.5	21/01/2022	858427	522	0	0	0	0	0	0	0	0	0
BH16_0.0-0.2	21/01/2022	858427	522	0	0	0	0	0	0	0	0	0
BH17_0.3-1.3	21/01/2022	858427	630	0	0	0	0	0	0	0	0	0
BH19_0.3-1.1	21/01/2022	858427	1138	0	0	0	0	0	0	0	0	0
BH20_0.3-0.4	21/01/2022	858427	948	0	0	0	0	0	0	0	0	0
JBS&G 2021												
MW3_AQ_0.3-1.0	800487	28/05/2021	559	0	0	0	0	0	0	0	0	0
MW4_AQ_0.3-1.3	800487	28/05/2021	825	0	0	0	0	0	0	0	0	0
MW4_AQ_1.3-2.3	800487	28/05/2021	662	0	0	0	0	0	0	0	0	0
MW4_AQ_2.3-3.0	800487	28/05/2021	644	0	0	0	0	0	0	0	0	0
SB01_AQ_0.0-0.2	800471	26/05/2021	891	0	0	0	0	0	0	0	0	0
SB02_AQ_0.0-0.25	800471	26/05/2021	1070	0	0	0	0	0	0	0	0	0
SB03_AQ_0.0-0.15	800471	26/05/2021	1003	0	0	0	0	0	0	0	0	0
SB07_AQ_0-0.35	800471	26/05/2021	1034	0	0	0	0	0	0	0	0	0
QS_AQ1 (SB10_AQ_0.3-0.8)	800471	26/05/2021	608	0	0	0	0	0	0	0	0	0
QS_ASB1 (SB10_0.3)	800471	26/05/2021	600	0	0	0	0	0	0	0	0	0
QS_ASB1a (SB10_0.3)	26220	26/05/2021	690	0	0	0	0	0	0	0	0	0
SB08_AQ_0.2-0.5	800471	26/05/2021	647	0	0	0	0	0	0	0	0	0
SB15_0.3	800456	27/05/2021	613	0	0	0	0	0	0	0	0	0
QS_ASB2 (duplicate SB15_0.3)	800456	27/05/2021	613	0	0	0	0	0	0	0	0	0
QS_ASB2a (triplicate SB15_0.3)	26221	27/05/2021	590	0	0	0	0	0	0	0	0	0

Table A4: Acid Sulfate Soil Results
Project Number: 62184
Project Name: Lidcombe

			Acid Sulafte Soils						
			Liming Rate	pH (KCl)	Titratable Actual Acidity	Titratable Peroxide Acidity	Titratable Sulfidic Acidity	pH (Ox)	Peroxide Oxidisable Sulfur SPOS
			kg CaCO3/t	pH Unit	mol H+/t	mole H+/t	mole H+/t	pH Unit	%
EQL			1	0.1	2	2	2	0.1	0.02
ASSMAC (1998) Action Criteria (Fine >1000 tonnes disturbed)						18	18		0.03
ASSMAC (1998) Action Criteria (Fine 1-1000 tonnes disturbed)						62	62		0.1
Field ID	**Sampled Date**	**Lab Report Number**							
JBS&G 2022									
BH04_1.0-1.1	21/01/2022	858427	<1	8.1	<2	<2	<2	7.1	<0.02
BH04_3.0-3.1	21/01/2022	858427	1	6.4	<2	<2	<2	6.9	0.03
BH04_5.0-5.1	21/01/2022	858427	3	4.6	26	27	<2	5.1	0.02
BH06_2.0-2.1	21/01/2022	858427	8	4.3	79	79	<2	4.6	<0.02
BH06_3.0-3.1	21/01/2022	858427	5	4.2	52	64	12	4.5	0.03
BH06_5.0-5.1	21/01/2022	858427	1	4.8	15	<2	<2	6.8	<0.02
BH06_7.0-7.1	21/01/2022	858427	2	5.6	5	<2	<2	7	0.03
BH07_2.0-2.1	21/01/2022	858427	<1	7	<2	<2	<2	7.3	0.02
BH07_4.0-4.1	21/01/2022	858427	<1	6.2	<2	<2	<2	7	<0.02
BH16_1.0-1.1	21/01/2022	858427	<1	6.3	<2	<2	<2	6.3	<0.02
BH16_3.0-3.1	21/01/2022	858427	<1	8.4	<2	<2	<2	8.3	0.02
BH16_5.0-5.1	21/01/2022	858427	1	6.4	<2	<2	<2	6.9	0.03
BH21_0.5-0.6	21/01/2022	858427	11	4.2	140	140	<2	4.4	<0.02
BH21_2.0-2.1	21/01/2022	858427	10	3.9	130	130	<2	4.6	<0.02
BH21_5.0-5.1	21/01/2022	858427	<1	6.1	3	<2	<2	7.3	<0.02
JBS&G 2021									
MW4_0.5	28/05/2021	800487	<1	7.8	<2	<2	<2	7.7	0.03
SB04_0.7	26/05/2021	800471	<1	8.5	<2	<2	<2	8.1	<0.02
SB09_0.5	26/05/2021	800471	<1	6.8	<2	<2	<2	7.4	0.03

Table B: Groundwater Analytical Results
Project Number: 62184
Project Name: Lidcombe

										TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEXN						PAH											
				Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Lead (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum of Total)	C6-C10	C10-C16	C16-C34	C34-C40	C10-C40 (Sum of total)	F1 (C6-C10 minus BTEX)	F2 (C10-C16 less Naphthalene)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ	Benzo(b+j)fluoranthene	Benzo(b+j+k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL				0.001	0.0002	0.001	0.001	0.001	0.0001	0.001	0.005	0.02	0.05	0.1	0.1	0.1	0.02	0.05	0.1	0.1	0.1	0.02	0.05	0.001	0.001	0.001	0.001	0.002	0.003	0.00001	0.00001	0.00001	0.00001	0.00001	0.0005	0.00001	0.0002	0.00001	0.00001	0.00001	0.00001	0.00001
ANZG (2018) Freshwater 95% toxicant DGVs				0.013	0.0002	0.001	0.0014	0.0034	0.0006	0.011	0.008													0.95	0.18	0.08	0.35	0.075				0.0004		0.0002								0.0014
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 2-4m																						NL	NL	30	NL	NL		NL														
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 4-8m																						NL	NL	30	NL	NL		NL														
NEPM 2013 Table 1C GILs, Recreational (10x Drinking Water)				0.1	0.02	0.5	20	0.1	0.01	0.2														0.01	8	3			6					0.0001								
PFAS NEMP 2020 Table 1 Health Recreational Water																																									
PFAS NEMP 2020 Table 5 Freshwater 95%																																									
Field ID	**Sampled Date**	**Lab Report Number**	**Depth to Water (m TOC)**																																						
JBS&G 2022																																									
MW04	27/01/2022	859151	3.215	0.002	<0.0002	0.001	0.001	<0.001	<0.0001	0.006	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MW07	27/01/2022	859151	5.711	-	-	-	-	-	-	-	-	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MW09	27/01/2022	859151	4.096	0.03	0.0005	0.002	0.008	0.001	<0.0001	0.082	0.11	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MW10	27/01/2022	859151	2.558	0.003	<0.0002	0.002	0.007	0.007	<0.0001	0.009	0.013	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MW12	27/01/2022	859151		0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.003	0.018	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
QA20220127 (duplicate of MW12)	27/01/2022	287531	3.577	0.003	<0.0001	<0.001	<0.001	<0.001	<0.00005	0.003	0.014	<0.01	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	-	<0.0002	<0.0001	-	<0.0001	<0.0001	<0.0001
QC20220127 (triplicate of MW12)	27/01/2022	859151		0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	0.02	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MW13	27/01/2022	859151	2.394	0.012	0.0005	0.003	0.008	0.003	<0.0001	0.029	0.032	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
JBS&G 2022																																									
DRAIN1	26/05/2021	800471	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	0.041	<0.001	<0.001	<0.002	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01	3/06/2021	800946	2.265	-	-	-	-	-	-	-	-	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	0.002	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MW03	3/06/2021	800946	4.012	0.001	0.0003	<0.001	0.007	<0.001	<0.0001	0.084	0.083	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MW04	3/06/2021	800946		0.004	<0.0002	<0.001	0.014	<0.001	<0.0001	0.013	0.007	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
QW01 (duplicate MW04)	3/06/2021	800946	3.215	0.005	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.007	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
QW01a (triplicate MW04)	3/06/2021	271015		0.018	<0.0001	<0.001	<0.001	<0.001	<0.00005	0.008	0.004	<0.01	<0.05	<0.1	<0.1	-	<0.01	<0.05	<0.1	<0.1	-	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	-	<0.0002	<0.0001	-	<0.0001	<0.0001	<0.0001
MW05	3/06/2021	800946	5.425	0.004	<0.0002	<0.001	0.003	<0.001	<0.0001	0.031	0.13	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
SW1	17/06/2021	803421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW2	17/06/2021	803421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table B: Groundwater Analytical Results
Project Number: 62184
Project Name: Lidcombe

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	Organophosphorus Pesticides																													Chlorinated Alkane									
	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Tetrachlorvinphos	Tokuthion	Trichloronate	Parathion	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.002	0.02	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.02	0.002	0.02	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
ANZG (2018) Freshwater 95% toxicant DGVs					0.00001		0.00015					0.0002			0.00005															0.000004		0.27	0.4	6.5				1.9	0.9	1.1
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 2-4m																																								
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 4-8m																																								
NEPM 2013 Table 1C GILs, Recreational (10x Drinking Water)					0.04	0.05	0.07	0.04		0.04	0.01	0.07		0.07	0.7		0.007	0.06			0.01		0.9	0.2		0.009				0.2							0.03		
PFAS NEMP 2020 Table 1 Health Recreational Water																																								
PFAS NEMP 2020 Table 5 Freshwater 95%																																								

Field ID	Sampled Date	Lab Report Number	Depth to Water (m TOC)																																						
JBS&G 2022																																								
MW04	27/01/2022	859151	3.215	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
MW07	27/01/2022	859151	5.711	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
MW09	27/01/2022	859151	4.096	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
MW10	27/01/2022	859151	2.558	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
MW12	27/01/2022	859151		<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
QA20220127 (duplicate of MW12)	27/01/2022	287531	3.577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001
QC20220127 (triplicate of MW12)	27/01/2022	859151		<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
MW13	27/01/2022	859151	2.394	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
JBS&G 2022																																								
DRAIN1	26/05/2021	800471	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
MW01	3/06/2021	800946	2.265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
MW03	3/06/2021	800946	4.012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
MW04	3/06/2021	800946		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
QW01 (duplicate MW04)	3/06/2021	800946	3.215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
QW01a (triplicate MW04)	3/06/2021	271015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW05	3/06/2021	800946	5.425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
SW1	17/06/2021	803421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW2	17/06/2021	803421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table B: Groundwater Analytical Results
Project Number: 62184
Project Name: Lidcombe

	s								Chlorinated Alkenes												Solvents	Polychlorinated Biphenyls							Phenols											
	2,2-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1-dichloroethene	1,1-dichloropropene	1,2-dichlorotoluene	1,3-chloropropene	1,4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	Acetone	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,4-dinitrophenol	2,6-dichlorophenol	2-chlorophenol	2-Methylphenol	2-nitrophenol	3&4-Methylphenol (m&p-cresol)	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Choro-3-Methylphenol	4-nitrophenol
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.001	0.001	0.001	0.005	0.005	0.005	0.005	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.01	0.01	0.003	0.003	0.03	0.003	0.003	0.003	0.01	0.006	0.03	0.1	0.01	0.03
ANZG (2018) Freshwater 95% toxicant DGVs			0.24				4		0.7							0.07			0.33	0.1					0.0006		0.00003			0.02	0.16		0.045		0.49							
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 2-4m																																									
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 4-8m																																									
NEPM 2013 Table 1C GILs, Recreational (10x Drinking Water)			0.03				0.04		0.3							0.5				0.003										0.2	2				3							
PFAS NEMP 2020 Table 1 Health Recreational Water																																									
PFAS NEMP 2020 Table 5 Freshwater 95%																																									

Field ID	Sampled Date	Lab Report Number	Depth to Water (m TOC)																																							
JBS&G 2022																																									
MW04	27/01/2022	859151	3.215	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	-	-	-	-	-	-	-	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
MW07	27/01/2022	859151	5.711	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	-	-	-	-	-	-	-	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
MW09	27/01/2022	859151	4.096	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	-	-	-	-	-	-	-	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
MW10	27/01/2022	859151	2.558	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	-	-	-	-	-	-	-	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
MW12	27/01/2022	859151		-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	-	-	-	-	-	-	-	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
QA20220127 (duplicate of MW12)	27/01/2022	287531	3.577	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	<0.01	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20220127 (triplicate of MW12)	27/01/2022	859151		-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	-	-	-	-	-	-	-	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
MW13	27/01/2022	859151	2.394	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	-	-	-	-	-	-	-	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
JBS&G 2022																																									
DRAIN1	26/05/2021	800471	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.031	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01	3/06/2021	800946	2.265	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
MW03	3/06/2021	800946	4.012	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
MW04	3/06/2021	800946		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
QW01 (duplicate MW04)	3/06/2021	800946	3.215	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
QW01a (triplicate MW04)	3/06/2021	271015		<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	<0.01	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW05	3/06/2021	800946	5.425	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03
SW1	17/06/2021	803421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW2	17/06/2021	803421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table B: Groundwater Analytical Results
Project Number: 62184
Project Name: Lidcombe

| | | | | | | | | PFAS | | | | | | | |

Table B: Groundwater Analytical Results
Project Number: 62184
Project Name: Lidcombe

		MAH											Miscellaneous Hydrocarbons							Chlorinated Benzenes							Trihalomethanes						
	Sum of PFAS	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	Total MAH	Bromobenzene	Isopropylbenzene	1,2-dibromoethane	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	4-Methyl-2-pentanone	Methyl Ethyl Ketone	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Hexachlorobenzene	Dibromochloromethane	Chloroform	Tribromomethane	Bromodichloromethane	Dinoseb	Carbon disulfide	Hexachlorobutadiene
	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.005	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.0002	0.001	0.005	0.001	0.001	0.1	0.001	0.001
ANZG (2018) Freshwater 95% toxicant DGVs												0.03								0.01	0.17	0.16	0.26	0.06	0.055	0.0001		0.77					
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 2-4m																																	
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 4-8m																																	
NEPM 2013 Table 1C GILs, Recreational (10x Drinking Water)								0.3						0.01						0.3	0.3	15		0.4	3								0.007
PFAS NEMP 2020 Table 1 Health Recreational Water																																	
PFAS NEMP 2020 Table 5 Freshwater 95%																																	

Field ID	Sampled Date	Lab Report Number	Depth to Water (m TOC)																															
JBS&G 2022																																		
MW04	27/01/2022	859151	3.215	14.04	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
MW07	27/01/2022	859151	5.711	<0.1	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
MW09	27/01/2022	859151	4.096	<0.1	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
MW10	27/01/2022	859151	2.558	0.16	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
MW12	27/01/2022	859151		1.96	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
QA20220127 (duplicate of MW12)	27/01/2022	287531	3.577	1.7	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.01	<0.001	<0.001	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.001	-	-	<0.001
QC20220127 (triplicate of MW12)	27/01/2022	859151		2.56	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
MW13	27/01/2022	859151	2.394	<0.1	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
JBS&G 2022																																		
DRAIN1	26/05/2021	800471	-	-	<0.001	<0.001	-	-	-	-	<0.001	-	0.041	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.01	-	-	<0.001	<0.001	<0.001	<0.001	-	<0.001	0.007	<0.001	<0.001	-	0.001	-
MW01	3/06/2021	800946	2.265	<0.1	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
MW03	3/06/2021	800946	4.012	0.15	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.004	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
MW04	3/06/2021	800946		16.9	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
QW01 (duplicate MW04)	3/06/2021	800946	3.215	-	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
QW01a (triplicate MW04)	3/06/2021	271015		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.01	<0.001	<0.001	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.001	-	-	<0.001
MW05	3/06/2021	800946	5.425	<0.1	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.001	<0.005	<0.001	<0.001	<0.1	<0.001	-
SW1	17/06/2021	803421	-	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW2	17/06/2021	803421	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table C: Soil Vapour Analytical Results
Project Number: 62184
Project Name: Lidcombe

	TRHs (NEPC 2013)	BTEXN						PAH	Organochlorine Pesticides	Chlorinated Alkanes															
	C6-C10	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene	Epichlorohydrin	Nonane	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Carbon tetrachloride	Trichlorofluoromethane	1,1-dichloroethene
	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
EQL	8.335	0.0833335	0.0833335	0.0833335	0.8335	1.667	0.2500005	0.0833335	0.8335	0.8335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335
NEPM 2013 Table 1A(2) Comm/Ind D Soil Vap VOCC HILs												230													
NEPM 2013 Table 1A(5) Comm/Ind D Soil Vapour HSL for Vapour Intrusion, Clay																									
0-1m		5	6500	1800			1200	4																	
Field ID	**Sampled Date**	**Lab Report Number**																							
JBS&G 2022																									
SV01 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
QVA01 (duplicate of SV01)	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
QVC01 (triplicate of SV01)	21/01/2022	287149	<8.335	<0.3334	<0.834	<0.834	<0.834	<1.67	-	<0.834	<0.834	-	-	-	-	-	-	-	<0.834	-	-	-	-	<0.834	-	-
SV03 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	0.166667	<0.0833
SV04 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV05 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV06 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV07 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV08 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV09 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV12 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	1.13	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV13 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV14 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	0.4500	<0.0833
SV17 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV19 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV21 FRONT	21/01/2022	857946	-	<0.0833	<0.0833	<0.0833	-	-	<0.250	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
JBS&G 2021																									
SV06 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV07 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV08 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV09 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV10 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV14 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV16 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
QSV01 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV18 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV23 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV25 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV26 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV28 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV29 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV30 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV31 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV32 FRONT	24/05/2021	800369	-	<0.0714	<0.0714	<0.0714	-	-	<0.2143	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714

Table C: Soil Vapour Analytical Results
Project Number: 62184
Project Name: Lidcombe

			Chlorinated Alkenes									Solvents								MAH				
			1,1-dichloropropene	2-chlorotoluene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	Decane	Hexane	Cyclohexanone	Acetone	1,4-Dioxane	Ethyl Acetate	Acrylonitrile	Benzyl chloride	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene
			mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
EQL			0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.8335	0.8335	0.8335	0.8335	0.8335	0.8335	0.8335	0.8335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335
NEPM 2013 Table 1A(2) Comm/Ind D Soil Vap VOCC HILs						0.3		8		0.08	0.1													
NEPM 2013 Table 1A(5) Comm/Ind D Soil Vapour HSL for Vapour Intrusion, Clay																								
0-1m																								
Field ID	**Sampled Date**	**Lab Report Number**																						
JBS&G 2022																								
SV01 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
QVA01 (duplicate of SV01)	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
QVC01 (triplicate of SV01)	21/01/2022	287149	-	-	-	-	-	<0.834	-	<0.834	-	<0.834	<0.834	<0.834	<0.834	<0.834	<0.834	<0.834	<0.834	-	-	-	-	-
SV03 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV04 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV05 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV06 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV07 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV08 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV09 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV12 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV13 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV14 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV17 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV19 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
SV21 FRONT	21/01/2022	857946	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	-	-	-	-	-	-	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833
JBS&G 2021																								
SV06 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV07 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV08 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV09 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV10 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV14 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV16 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
QSV01 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV18 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV23 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV25 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV26 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV28 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV29 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV30 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
SV31 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	0.5	0.6286	0.1286	<0.0714	<0.0714
SV32 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	-	-	-	-	-	-	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714

Table C: Soil Vapour Analytical Results
Project Number: 62184
Project Name: Lidcombe

							Miscellaneous Hydrocarbons					Chlorinated Benzenes						Trihalomethanes				Organic Alcohols	Chlorinated Hydrocarbons	NA		Other			
			sec-butylbenzene	Styrene	tert-butylbenzene	Isopropylbenzene	1,2-dibromoethane	Cyclohexane	Dibromomethane	4-Methyl-2-pentanone	Methyl Ethyl Ketone	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Dibromochloromethane	Chloroform	Tribromomethane	Bromodichloromethane	2-Propanol	Hexachlorobutadiene	Ethyl acrylate	Methyl styrene (alpha)	1,2-butylacetate	Di-isobutyl Ketone	Dodecane	Propylene oxide
			mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
EQL			0.0833335	0.833335	0.0833335	0.0833335	0.0833335	0.8335	0.0833335	0.8335	0.8335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	0.0833335	1.66667	0.0833335	0.8335	0.8335	0.8335	0.8335	0.8335	0.8335	1.667
NEPM 2013 Table 1A(2) Comm/Ind D Soil Vap VOCC HILs																													
NEPM 2013 Table 1A(5) Comm/Ind D Soil Vapour HSL for Vapour Intrusion, Clay																													
0-1m																													
Field ID	**Sampled Date**	**Lab Report Number**																											
JBS&G 2022																													
SV01 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
QVA01 (duplicate of SV01)	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
QVC01 (triplicate of SV01)	21/01/2022	287149	-	<0.834	-	<0.834	-	<0.834	-	<0.834	<0.834	-	-	-	-	-	<0.834	-	-	-	-	-	-	<0.834	<0.834	<0.834	<0.834	<0.834	<1.667
SV03 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV04 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV05 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV06 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV07 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV08 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV09 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV12 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV13 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV14 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV17 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV19 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
SV21 FRONT	21/01/2022	857946	<0.0833	<0.8333	<0.0833	<0.0833	<0.0833	-	<0.0833	-	-	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<0.0833	<1.66	<0.0833	-	-	-	-	-	-
JBS&G 2021																													
SV06 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV07 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV08 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV09 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV10 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV14 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV16 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
QSV01 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV18 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV23 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV25 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV26 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV28 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV29 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	0.1143	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV30 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV31 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-
SV32 FRONT	24/05/2021	800369	<0.0714	<0.0714	<0.7143	<0.0714	<0.0714	-	<0.0714	-	-	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<1.429	-	-	-	-	-	-

Appendix B Borelogs

SOIL BOREHOLE BH01

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 21-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1 – 0.2		Concrete	Fill - CONCRETE				
PT/ SFA		0.3 – 1.3		Fill	Fill - sillty CLAY, dark grey, heterogeneous, damp, high plasticity, soft, inclusions of ash, wood, gravel, concrete, brick fragments	DP	BH01_0.3-0.4	0.7	No odour, staining or asbestos observed. 10L AQ collected from BH01_0.3-1.3.
							BH01_0.5-0.6	0.6	No odour, staining or asbestos observed.
							BH01_1.0-1.1	0.7	No odour, staining or asbestos observed.
		1.3 – 2.2		CL-ML	Natural - sillty CLAY, brown/grey, homogenous, damp, high plasticity, firm	DP	BH01_2.0-2.1	0.1	No odour, staining or asbestos observed. End of hole at 2.2 m bgs. Program depth.
		2.2			Termination Depth at: 2.20 m.				

Comments:

SOIL BOREHOLE BH02

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 19-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1		Concrete	Fill - CONCRETE				
PT/ SFA		0.2		Fill	Fill - sillty CLAY, brown, heterogeneous, damp, high plasticity, firm, inclusions of gravel, asphalt, ash and brick fragments	DP	BH02_0.2-0.3	0.3	No odour, staining or asbestos observed. 10L AQ collected from BH02_0.2-0.9.
		0.3							
		0.4							
		0.5					BH02_0.5-0.6	0.5	No odour, staining or asbestos observed.
		0.6							
		0.7							
		0.8							
		0.9		CL	Natural - sillty CLAY, brown/grey, homogenous, damp, high plasticity, soft	DP			
		1					BH02_1.0-1.1	0	No odour, staining or asbestos observed. End of hole at 1.2 m bgs. Program depth.
		1.1							
		1.2			Termination Depth at: 1.20 m.				
		1.3							
		1.4							
		1.5							
		1.6							
		1.7							
		1.8							
		1.9							
		2							
		2.1							
		2.2							

Comments:

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SOIL BOREHOLE BH03

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 19-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1		Concrete	CONCRETE				No odour, staining or asbestos observed. 10L AQ collected from BH03_0.2-0..4.
PT/ SFA		0.2		Fill	Fill - sillty CLAY, dark brown, heterogeneous, dry, medium plasticity, soft, inclusions of gravel, brick fragments, asphalt	DR	BH03_0.2-0.3	0.1	
		0.3							
		0.4		CL-ML	Natural - sillty CLAY, brown/grey, homogenous, dry, low plasticity, soft	DR			
		0.5					BH03_0.5-0.6	0	No odour, staining or asbestos observed.
		0.6		Shale	Natural - weathered SHALE, grey/brown, homogenous, dry, non-plastic, soft	DR			
		0.7							
		0.8							
		0.9							
		1					BH03_1.0-1.1	0.4	No odour, staining or asbestos observed. End of hole at 1.2 m bgs. Program depth.
		1.1							
		1.2			Termination Depth at: 1.20 m.				
		1.3							
		1.4							
		1.5							
		1.6							
		1.7							
		1.8							
		1.9							
		2							
		2.1							
		2.2							

Comments:

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GROUNDWATER WELL BH04/MW07

Project Number 62184	**Contractor** Terratest	**Easting** 318,852.93
Client Hale Capital Partners	**Date** 20-Jan-22	**Northing** 6,252,640.25
Project Name Lidcombe	**Plant** GeoProbe	**Coordinate System** GDA94_MGA_zone_56
Address 42 Boorea Street, Lidcombe	**Method**PT/SFA	**Logged By** AA
Ground Elevation 8.613 m AHD	**Permit No.** N/A	**Stickup** N/A
Top of Casing Elevation N/A	**Borehole Depth** 7 m bgl	**Casing Description** Class 18 PVC - 50mm
Completion Roadbox	**Borehole Diameter** 125 mm	**Screen Interval** 4 - 7 m bgl

Drilling Method	Water (m bgl)	Well Details	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
PT			0.5		Fill	Fill - sillty CLAY, brown, heterogeneous, dry, low plasticity, soft, inclsuions of gravel, rots, brick fragments, concrete	DR	BH04/MW07_0.0-0.1	0.2	No odour, staining or asbestos observed. 10L AQ collected from BH04_0.0-1.0. QSA/QSC02 collected from BH04_0.0-0.1.
			1					BH04/MW07_0.5-0.6	0.4	
								BH04/MW07_1.0-1.1	0.1	
SFA			1.5		CL-ML	Natural - sillty CLAY, brown/red/grey, homogenous, dry, high plasticity, firm, inclusion of weathered shale at 5.0 m bgs	DR			No odour, staining or asbestos observed. QSA/QSC03 collected from BH04_0.0-1.0.
			2					BH04/MW07_2.0-2.1	0	No odour, staining or asbestos observed.
			2.5							No odour, staining or asbestos observed.
			3					BH04/MW07_3.0-3.1	0.6	No odour, staining or asbestos observed.
			3.5							
			4					BH04/MW07_4.0-4.1	0.5	No odour, staining or asbestos observed.
	▽		4.5							
			5					BH04/MW07_5.0-5.1	0.1	No odour, staining or asbestos observed.
			5.5							
			6					BH04/MW07_6.0-6.1	0	No odour, staining or asbestos observed.
			6.5		Shale	Natural - weathered SHALE, grey, homogenous, moist, medium plasticity, soft	M			
			7					BH04/MW07_6.9-7.0	0	No odour, staining or asbestos observed. End of hole at 7.0 m bgs. Program depth.
						Termination Depth at: 7.00 m.				

Comments:

GROUNDWATER WELL BH05/MW08

Project Number 62184	**Contractor** Terratest	**Easting** 318,907.69
Client Hale Capital Partners	**Date** 19-Jan-22	**Northing** 6,252,629.01
Project Name Lidcombe	**Plant** GeoProbe	**Coordinate System** GDA94_MGA_zone_56
Address 42 Boorea Street, Lidcombe	**Method**CC/PT/SFA	**Logged By** AA
Ground Elevation 9.661 m AHD	**Permit No.** N/A	**Stickup** N/A
Top of Casing Elevation N/A	**Borehole Depth** 7.5 m bgl	**Casing Description** Class 18 PVC - 50mm
Completion Roadbox	**Borehole Diameter** 125 mm	**Screen Interval** 4.1 - 7.1 m bgl

Drilling Method	Water (m bgl)	Well Details	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC					Concrete	Fill - CONCRETE				
PT			0.5		CL	Fill - sillty CLAY, brown, heterogeneous, damp, high plasticity, firm, inclsuions of gravel, slag, ash, brick fragments	DP	BH05/MW08_0.2-0.3	0.5	No odour, staining or asbestos observed. 10L AQ collected from BH05/MW08_0.2-0.7
								BH05/MW08_0.5-0.6	0.8	
			1		CL-ML	Natural - sillty CLAY, brown/grey, homogenous, damp, high plasticity, firm, inclusion of weathered shale at 2.0 m bgs	DP	BH05/MW08_1.0-1.1	0.1	No odour, staining or asbestos observed.
SFA			1.5							No odour, staining or asbestos observed.
			2					BH05/MW08_2.0-2.1	0.3	No odour, staining or asbestos observed.
			2.5							
			3					BH05/MW08_3.0-3.1	0.2	No odour, staining or asbestos observed.
			3.5							
			4					BH05/MW08_4.0-4.1	0	No odour, staining or asbestos observed.
			4.5		Shale	Natural - weathered SHALE, brown/grey, homogenous, dry, non-plastic, stiff	DR			
			5					BH05/MW08_5.0-5.1	0.1	No odour, staining or asbestos observed.
	▽		5.5							
			6					BH05/MW08_6.0-6.1	0	No odour, staining or asbestos observed.
			6.5							
			7					BH05/MW08_7.0-7.1	0	No odour, staining or asbestos observed.
			7.5					BH05/MW08_7.4-7.5	0	No odour, staining or asbestos observed. End of hole at 7.5 m bgs. Program depth.
						Termination Depth at: 7.50 m.				

Comments:

GROUNDWATER WELL BH06/MW09

Project Number 62184	**Contractor** Terratest	**Easting** 318,941.43
Client Hale Capital Partners	**Date** 19-Jan-22	**Northing** 6,252,626.05
Project Name Lidcombe	**Plant** GeoProbe	**Coordinate System** GDA94_MGA_zone_56
Address 42 Boorea Street, Lidcombe	**Method** CC/PT/SFA	**Logged By** AA
Ground Elevation 9.682 m AHD	**Permit No.** N/A	**Stickup** N/A
Top of Casing Elevation N/A	**Borehole Depth** 7.5 m bgl	**Casing Description** Class 18 PVC - 50mm
Completion Roadbox	**Borehole Diameter** 125 mm	**Screen Interval** 3.9 - 6.9 m bgl

Drilling Method	Water (m bgl)	Depth (m bgl)	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0	Concrete	Fill - CONCRETE				
PT		0.5	Fill	Fill - sillty CLAY, grey/brown, heterogeneous, damp, low plasticity, soft, inclusions of gravel, brick fragments	DP	BH06/MW09_0.2-0.3	0.8	No odour, staining or asbestos observed. 10L AQ collected from BH06/MW09_0.2-0.4.
		0.5	CL-ML		DP	BH06/MW09_0.5-0.6	1.2	
		1		Natural - sillty CLAY, grey/brown, homogenous, damp, high plasticity, firm, inclusions of weathered shale at 3.0 m bgs		BH06/MW09_1.0-1.1	0.2	No odour, staining or asbestos observed.
SFA		1.5						No odour, staining or asbestos observed.
		2				BH06/MW09_2.0-2.1	0.4	No odour, staining or asbestos observed.
		2.5						
		3				BH06/MW09_3.0-3.1	0.4	
		3.5						No odour, staining or asbestos observed.
		4	CL-ML	Natural - sillty CLAY, dark brown, homogenous, damp, high plasticity, stiff, inclusions of weathered shale	DP	BH06/MW09_4.0-4.1	0.1	No odour, staining or asbestos observed.
		4.5						
		5	Shale	Natural - weathered SHALE, grey/brown, homogenous, dry, non-plastic, stiff	DR			
	▽	5.5						
		6				BH06/MW09_6.0-6.1	0.2	No odour, staining or asbestos observed.
		6.5						
		7				BH06/MW09_7.0-7.1	0	No odour, staining or asbestos observed.
		7.5				BH06/MW09_7.4-7.5	0	No odour, staining or asbestos observed. End of hole at 7.5 m bgs. Program depth.
				Termination Depth at: 7.50 m.				

Comments:

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GROUNDWATER WELL BH07/MW10

Project Number 62184	**Contractor** Terratest	**Easting** 318,851.25
Client Hale Capital Partners	**Date** 20-Jan-22	**Northing** 6,252,573.41
Project Name Lidcombe	**Plant** GeoProbe	**Coordinate System** GDA94_MGA_zone_56
Address 42 Boorea Street, Lidcombe	**Method** CC/PT/SFA	**Logged By** AA
Ground Elevation 8.361 m AHD	**Permit No.** N/A	**Stickup** N/A
Top of Casing Elevation N/A	**Borehole Depth** 5 m bgl	**Casing Description** Class 18 PVC - 50mm
Completion Roadbox	**Borehole Diameter** 125 mm	**Screen Interval** 2 - 5 m bgl

Drilling Method	Water (m bgl)	Well Details	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC					Concrete	Fill - CONCRETE				Slight odour, no staining or asbestos observed. 10L AQ collected from BH07/MW10_0.3-1.3
PT			0.5		Fill	Fill - sillty CLAY, brown/grey, heterogeneous, damp, high plasticity, soft, inclusions of gravel, brick fragments, ash	DP	BH07/MW10_0.3-0.4	0.8	
								BH07/MW10_0.5-0.6	1	
			1					BH07/MW10_1.0-1.1	0.7	Slight odour, no staining or asbestos observed.
			1.5					BH07/MW10_1.3-2.2	0.8	No odour, staining or asbestos observed.
			2					BH07/MW10_2.0-2.1	0.4	No odour, staining or asbestos observed. 10L AQ collected from BH07/MW10_1.3-2.2
SFA			2.5		CL-ML-SM	Natural - sandy silty CLAY, brown, homogenous, dry, high plasticity, soft	DR			
	▽		3		CL-ML	Natural - silty CLAY, red/light brown/grey, moist to wet, homogeneous, high plasticity, soft	M	BH07/MW10_3.0-3.1	0.5	No odour, staining or asbestos observed.
			3.5							
			4					BH07/MW10_4.0-4.1	0.7	No odour, staining or asbestos observed.
			4.5							
			5					BH07/MW10_4.9-5.0	0	No odour, staining or asbestos observed. End of hole at 5.0 m bgs. Program depth.
						Termination Depth at: 5.00 m.				
			5.5							
			6							
			6.5							
			7							

Comments:

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SOIL BOREHOLE BH08

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 19-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1 – 0.2		Concrete	Fill - CONCRETE				
PT/ SFA		0.3 – 1.3		Fill	Fill - sillty CLAY, brown, heterogeneous, dry-damp, high plasticity, soft-firm, inclusions of slag, roadbase gravel, asphalt and brick fragments	DR	BH08_0.3-1.3	0	No odour, staining or asbestos observed. 10L AQ collected from BH08_0.3-1.3.
							BH08_0.5-0.6	0.2	No odour, staining or asbestos observed.
		1.3 – 2.2		CL-ML	Natural - sillty CLAY, brown/red, homogenous, damp, high plasticity, soft	DP	BH08_2.0-2.1	0.4	No odour, staining or asbestos observed.
					Termination Depth at: 2.20 m.				Slight organic odour. No staining or asbestos observed. End of hole at 2.2 m bgs. Program depth.

Comments:

SOIL BOREHOLE BH09

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 19-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1		Concrete	Fill - CONCRETE				
		0.2							No odour, staining or asbestos observed. 10L AQ collected from BH09_0.2-0.6.
PT/ SFA		0.3		Fill	Fill - sillty CLAY, brown, heterogeneous, damp, medium plasticity, soft, inlcusions of gravel, ash and shale fragments	DP	BH09_0.2-0.6	0.2	
		0.4							
PT		0.5							No odour, staining or asbestos observed.
		0.6		CL-ML	Natural - sillty CLAY, brown/grey, heterogeneous, damp, medium plasticity, firm, inlcusions of iron stone	DP			
		0.7							
		0.8							
		0.9							
		1					BH09_1.0-1.1	0.1	No odour, staining or asbestos observed.
		1.1							
		1.2							
		1.3							
		1.4							
		1.5		Shale	Natural - weathered SHALE, light brown/grey, homogenous, dry, non-plastic, soft	DR			
		1.6							
		1.7							No odour, staining or asbestos observed. End of hole at 1.9 m bgs. Refusal on hard clay.
		1.8					BH09_1.8-1.9	0.8	
		1.9			Termination Depth at: 1.90 m.				
		2							
		2.1							
		2.2							

Comments:

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SOIL BOREHOLE BH10

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 19-Jan-22
Plant GeoProbe
Method CC/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1 – 0.2		Concrete	Fill - CONCRETE				
PT/ SFA		0.3		Fill	Fill - sillty CLAY, brown, heterogeneous, dry, medium plasticity, firm, inlcusions of ash and gravel	DR	BH10_0.3-0.4	0.2	No odour, staining or asbestos observed. 10L AQ collected from BH10_0.3-0.4.
		0.4 – 0.6		CL-ML	Natural - sillty CLAY, brown/grey, homogenous, dry, medium plasticity, soft	DR	BH10_0.5-0.6	0.1	No odour, staining or asbestos observed.
		0.7 – 1.1					BH10_1.0-1.1	0.8	No odour, staining or asbestos observed. End of hole at 1.2 m bgs. Program depth.
		1.2 – 2.2			Termination Depth at: 1.20 m.				

Comments:

SOIL BOREHOLE BH11

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 20-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1 – 0.2		Concrete	Fill - CONCRETE				
PT/ SFA		0.3 – 0.4		Fill	Fill - sillty CLAY, brown/grey, heterogeneous, moist, high plasticity, firm, inclusions of asphalt, slag, gravel, brick fragments, concrete and plastic	M	BH11_0.3-0.4	0.4	No odour, staining or asbestos observed. 10L AQ collected from BH11_0.3-1.3.
		0.5 – 0.6					BH11_0.5-0.6	1.2	No odour, staining or asbestos observed.
		0.7 – 1							
		1.1 – 1.8					BH11_1.3-1.8	0.9	No odour, staining or asbestos observed. 10L AQ collected from BH11_1.3-1.8.
		1.9 – 2		CL-ML	Natural - sillty CLAY, brown/grey, homogenous, damp, high plasticity, firm	DP	BH11_2.0-2.1	1.2	No odour, staining or asbestos observed. End of hole at 2.2 m bgs. Program depth.
		2.1 – 2.2							
					Termination Depth at: 2.20 m.				

Comments:

GROUNDWATER WELL BH12/MW11

Project Number 62184	**Contractor** Terratest	**Easting** 318,863.98
Client Hale Capital Partners	**Date** 21-Jan-22	**Northing** 6,252,552.44
Project Name Lidcombe	**Plant** GeoProbe	**Coordinate System** GDA94_MGA_zone_56
Address 42 Boorea Street, Lidcombe	**Method** CC/SFA	**Logged By** AA

Ground Elevation 9.775 m AHD	**Permit No.** N/A	**Stickup** N/A
Top of Casing Elevation N/A	**Borehole Depth** 6 m bgl	**Casing Description** Class 18 PVC - 50mm
Completion Roadbox	**Borehole Diameter** 125 mm	**Screen Interval** 1.6 - 5.6 m bgl

Drilling Method	Water (m bgl)	Well Details	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC					Concrete	Fill - CONCRETE				
SFA			0.5		Styrofoam	STYROFOAM				
					Concrete	Fill - CONCRETE				No odour, staining or asbestos observed. 10L AQ collected from BH12/MW11_0.9-1.5.
			1		Fill	Fill - sillty CLAY, brown, heterogeneous, dry, medium plasticity, firm, inclusions of slag, concrete, gravel, brick fragments, plastic	DR	BH12/MW11_0.9-1.5	1	
			1.5		CL-ML	Natural - sillty CLAY, brown/red, homogenous, damp, high plasticity, firm	DP			
			2					BH12/MW11_2.0-2.1	1	No odour, staining or asbestos observed.
			2.5							
			3					BH12/MW11_3.0-3.1	0.8	No odour, staining or asbestos observed.
	▽		3.5							
			4					BH12/MW11_4.0-4.1	0.9	No odour, staining or asbestos observed.
					Shale	Natural - weathered SHALE, brown/grey, homogenous, damp, non-plastic, stiff	DP			
			4.5							
			5					BH12/MW11_5.0-5.1	0.1	No odour, staining or asbestos observed.
			5.5							
			6					BH12/MW11_5.9-6.0	0.1	No odour, staining or asbestos observed. End of hole at 6.0 m bgs. Program depth.
						Termination Depth at: 6.00 m.				
			6.5							
			7							

Comments:

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SOIL BOREHOLE BH13

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 19-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1		Concrete	Fill - CONCRETE				
		0.2							No odour, staining or asbestos observed. 10L AQ collected from BH13_0.2-1.2.
PT/ SFA		0.3		Fill	Fill - sillty CLAY, brown, heterogeneous, damp, high plasticity, soft, inclusions of plastic, gravel and ash	DP	BH13_0.2-0.3	0.2	
		0.4							
		0.5					BH13_0.5-0.6	0	No odour, staining or asbestos observed.
		0.6							
		0.7							
		0.8							
		0.9							
		1							
		1.1					BH13_1.0-1.1	0	No odour, staining or asbestos observed.
		1.2		CL	Natural - sillty CLAY, brown/grey mottle, heterogeneous, damp, high plasticity, soft	DP			
		1.3							
		1.4							
		1.5							
		1.6							
		1.7							
		1.8							
		1.9							
		2					BH13_2.0-2.1	0.2	No odour, staining or asbestos observed. End of hole at 2.2 m bgs. Program depth.
		2.1							
		2.2			Termination Depth at: 2.20 m.				

Comments:

SOIL BOREHOLE BH14

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 20-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1		Concrete	Fill - CONCRETE				
		0.2							No odour, staining or asbestos observed. 10L AQ collected from BH14_0.3-0.5.
PT/ SFA		0.3		Fill	Fill - sillty CLAY, brown/grey, heterogeneous, damp, high plasticity, firm, inclusions of gravel, brick fragments, ash and concrete	DP	BH14_0.3-0.4	0.5	
		0.4							
		0.5		CL-ML	Natural - silty CLAY, brown/grey, homogenous, damp, high plasticity, firm	DP	BH14_0.5-0.6	0.2	No odour, staining or asbestos observed.
		0.6							
		0.7							
		0.8		Shale	Natural - weathered SHALE, grey, homogenous, dry, low plasticity, soft	DR			
		0.9							
		1					BH14_1.0-1.1	0.3	No odour, staining or asbestos observed. End of hole at 1.2 m bgs. Program depth.
		1.1							
		1.2			Termination Depth at: 1.20 m.				
		1.3							
		1.4							
		1.5							
		1.6							
		1.7							
		1.8							
		1.9							
		2							
		2.1							
		2.2							

Comments:

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SOIL BOREHOLE BH15

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 20-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1 – 0.2		Concrete	Fill - CONCRETE				
SFA		0.3		CL-ML	Natural - silty CLAY, brown/grey, homogenous, dry, low plasticity, soft, inclusions of weathered shale	DR	BH15_0.3-0.4	0.2	No odour, staining or asbestos observed.
		0.4 – 0.5					BH15_0.5-0.6	0.5	No odour, staining or asbestos observed.
		0.6 – 1							
		1.1					BH15_1.0-1.1	0	No odour, staining or asbestos observed. End of hole at 1.2 m bgs. Program depth.
		1.2			Termination Depth at: 1.20 m.				
		1.3 – 2.2							

Comments:

GROUNDWATER WELL BH16/MW12

Project Number 62184	**Contractor** Terratest	**Easting** 318,794.79
Client Hale Capital Partners	**Date** 20-Jan-22	**Northing** 6,252,505.17
Project Name Lidcombe	**Plant** GeoProbe	**Coordinate System** GDA94_MGA_zone_56
Address 42 Boorea Street, Lidcombe	**Method** PT/SFA	**Logged By** AA
Ground Elevation 7.72 m AHD	**Permit No.** N/A	**Stickup** N/A
Top of Casing Elevation N/A	**Borehole Depth** 6 m bgl	**Casing Description** Class 18 PVC - 50mm
Completion Roadbox	**Borehole Diameter** 125 mm	**Screen Interval** 3 - 6 m bgl

Drilling Method	Water (m bgl)	Well Details	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
PT			0		Fill	Fill - clayey SAND, dark brown, heterogeneous, damp, medium sand loose, inclusions of mulch, roots, organic matter	DP	BH16/MW12_0.0-0.1	0.5	Organic odour, no staining or asbestos observed. 10L AQ collected from BH16/MW12_0.0-0.2
					CL-ML		DP	BH16/MW12_0.5-0.6	0.2	
			0.5			Natural - silty CLAY, brown/grey, homogenous, damp, high plasticity, soft, inclusions of roots and weathered shale		BH16/MW12_0.9-1.0	1.1	No odour, staining or asbestos observed.
			1							
SFA			1.5							No odour, staining or asbestos observed.
			2					BH16/MW12_2.0-2.1	0.9	No odour, staining or asbestos observed.
			2.5							
			3		Shale	Natural - weathered SHALE, brown/grey, homogenous, dry, non-plastic, firm	DR	BH16/MW12_3.0-3.1	0.8	No odour, staining or asbestos observed.
	▽		3.5							
			4		Shale	Natural - weathered SHALE, brown/grey, homogenous, dry, high plasticity, soft	DR	BH16/MW12_4.0-4.1	1	No odour, staining or asbestos observed.
			4.5							
			5					BH16/MW12_5.0-5.1	1.2	No odour, staining or asbestos observed.
			5.5					BH16/MW12_5.9-6.0	1	No odour, staining or asbestos observed. End of hole at 6.0 m bgs. Program depth.
			6			Termination Depth at: 6.00 m.				
			6.5							
			7							

Comments:

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SOIL BOREHOLE BH17

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 21-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1 – 0.2		Concrete	Fill - CONCRETE				
PT/SFA		0.3 – 1.3		Fill	Fill - sandy silty CLAY, brown, heterogeneous, dry, low plasticity, stiff, inclusions of gravel, concrete, brick, asphalt	DR	BH17_0.3-0.4	0.4	No odour, staining or asbestos observed. 10L AQ collected from BH17_0.3-1.3.
									No odour, staining or asbestos observed.
							BH17_1.0-1.1	0.6	No odour, staining or asbestos observed.
		1.3 – 2.2		CL-ML	Natural - silty CLAY, red/brown, homogenous, damp, medium plasticity, soft	DP	BH17_2.0-2.1	0.5	No odour, staining or asbestos observed. End of hole at 2.2 m bgs. Program depth.
		2.2			Termination Depth at: 2.20 m.				

Comments:

SOIL BOREHOLE BH18

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 21-Jan-22
Plant GeoProbe
Method CC/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1		Concrete	Fill - CONCRETE				
		0.2							
		0.3		Styrofoam	Fill - STYROFOAM				
SFA		0.4							
		0.5							
		0.6		Concrete	Fill - CONCRETE				
		0.7							End of hole at 0.8 m bgs. Refusal on concrete.
		0.8			Termination Depth at: 0.80 m.				
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							
		1.5							
		1.6							
		1.7							
		1.8							
		1.9							
		2							
		2.1							
		2.2							

Comments:

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SOIL BOREHOLE BH19

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 20-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1 – 0.2		Concrete	Fill - CONCRETE				
PT/SFA		0.3 – 0.4		Fill	Fill - gravelly SAND, grey, heterogeneous, dry, coarse sand loose, inclusions of concrete, metal and plastic fragments	DR	BH19_0.3-1.1	0.5	No odour, staining or asbestos observed. 10L AQ collected from BH19_0.3-1.1.
		0.5 – 0.6					BH19_0.5-0.6	0.4	No odour, staining or asbestos observed.
		0.7 – 1							
		1.1 – 1.2			Termination Depth at: 1.20 m.		BH19_1.0-1.1	0.5	No odour, staining or asbestos observed. End of hole at 1.2 m bgs. Program depth.
		1.3 – 2.2							

Comments:

SOIL BOREHOLE BH20

Project Number 62184
Client Hale Capital Partners
Project Name Lidcombe
Address 42 Boorea Street, Lidcombe

Contractor Terratest
Date 20-Jan-22
Plant GeoProbe
Method CC/PT/SFA

Easting N/A
Northing N/A
Coordinate System GDA94_MGA_zone_56
Logged By AA

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC		0.1		Concrete	Fill - CONCRETE				
		0.2							No odour, staining or asbestos observed. 10L AQ collected from BH20_0.3-0.4.
PT/ SFA		0.3		Fill	Fill - gravelly SAND, dark brown, heterogeneous, damp, coarse sand loose	DP	BH20_0.3-0.4	0.4	
		0.4		Shale	Natural - weathered SHALE, grey/brown, homogenous, dry, medium plasticity, soft	DR			
		0.5					BH20_0.5-0.6	0.8	No odour, staining or asbestos observed.
		0.6							
		0.7							
		0.8							
		0.9							
		1							
		1.1					BH20_1.0-1.1	0.6	No odour, staining or asbestos observed. End of hole at 1.2 m bgs. Program depth.
		1.2							
		1.3			Termination Depth at: 1.20 m.				
		1.4							
		1.5							
		1.6							
		1.7							
		1.8							
		1.9							
		2							
		2.1							
		2.2							

Comments:

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GROUNDWATER WELL BH21/MW13

Project Number 62184	**Contractor** Terratest	**Easting** 318,883.76
Client Hale Capital Partners	**Date** 20-Jan-22	**Northing** 6,252,475.34
Project Name Lidcombe	**Plant** GeoProbe	**Coordinate System** GDA94_MGA_zone_56
Address 42 Boorea Street, Lidcombe	**Method** CC/SFA	**Logged By** AA

Ground Elevation 9.644 m AHD	**Permit No.** N/A	**Stickup** N/A
Top of Casing Elevation N/A	**Borehole Depth** 5.2 m bgl	**Casing Description** Class 18 PVC - 50mm
Completion Roadbox	**Borehole Diameter** 125 mm	**Screen Interval** 2.1 - 5.1 m bgl

Drilling Method	Water (m bgl)	Well Details	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
CC					Concrete	Fill - CONCRETE				No odour, staining or asbestos observed. 10L AQ collected from BH21/MW13_0.3-0.4
SFA					Fill	Fill - sandy CLAY, brown/grey, heterogeneous, damp, low plasticity, soft, inclusions of gravel, brick fragments, asphalt, burnt wood	DP	BH21/MW13_0.3-0.4	0.8	
			0.5		CL-ML		DP	BH21/MW13_0.5-0.6	1.2	
			1			Natural - silty CLAY, red/brown, homogenous, damp, medium plasticity, firm, inclusion of ironstone		BH21/MW13_1.0-1.1	0.9	No odour, staining or asbestos observed.
			1.5							No odour, staining or asbestos observed.
			2					BH21/MW13_2.0-2.1	0.7	No odour, staining or asbestos observed.
			2.5		CL-ML	Natural - silty CLAY, red/brown, homogenous, damp, medium plasticity, firm, inclusion of weathered shale	DP			
			3		Shale	Natural - weathered SHALE, light brown/grey, homogenous, dry, non-plastic, firm	DR	BH21/MW13_3.0-3.1	1.4	No odour, staining or asbestos observed.
			3.5							
			4					BH21/MW13_4.0-4.1	0.2	No odour, staining or asbestos observed.
			4.5							No odour, staining or asbestos observed. End of hole at 5.2 m bgs. Refusal on hard shale.
	▽		5		Shale	Natural - weathered SHALE, brown, homogenous, damp, non-plastic, firm	DP	BH21/MW13_5.0-5.1	0.3	
			5.5			Termination Depth at: 5.20 m.				
			6							
			6.5							
			7							

Comments:

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Appendix C Photographic Log

PHOTO 1 – ENTRY AREA TO 42 BOOREA STREET (FACING NORTH NEAR SB10)

PHOTO 2 – ELECTRICAL SUBSTATION

PHOTO 3 – SITE EAST BOUNDARY DRIVEWAY (FACING NORTH)

PHOTO 4 – LOADING AREA BETWEEN TWO WAREHOUSE COMPLEXES (FACING WEST)

JBS&G

Job No: 62184	
Client: Hale CP	
Version: R01 Rev A	Date: 16/02/2022
Drawn By: MD	Checked By: CB
Not to Scale	
Coord. Sys n/a	
Lidcombe	

APPENDIX C

PHOTO 5 – CARPARK NORTH PART OF SITE

PHOTO 6 – TOOHEYS BREWERY NORTH OF SITE BOUNDARY

PHOTO 7 – PICKUP/LOADING VEHICLE ENTRY (FACING SOUTH)

PHOTO 8 – POTENTIAL UST WEST LOADING AREA OF SITE (FACING EAST)

JBS&G

Job No: 62184	
Client: Hale CP	
Version: R01 Rev A	Date: 16/02/2022
Drawn By: MD	Checked By: CB
Not to Scale	
Coord. Sys n/a	
Lidcombe	

APPENDIX C

PHOTO 9 – LOADING AREA (FACING EAST NEAR SB15)

PHOTO 10 – PICKUP/LOADING AREA (FACING NORTH NEAR SB15)

PHOTO 11 – WATER STORAGE TANKS (FACING EAST NEAR MW04)

PHOTO 12 – CHEMICAL STORAGE SHED (NEAR SB15)

JBS&G

Job No: 62184	
Client: Hale CP	
Version: R01 Rev A	Date: 16/02/2022
Drawn By: MD	Checked By: CB
Not to Scale	
Coord. Sys n/a	
Lidcombe	

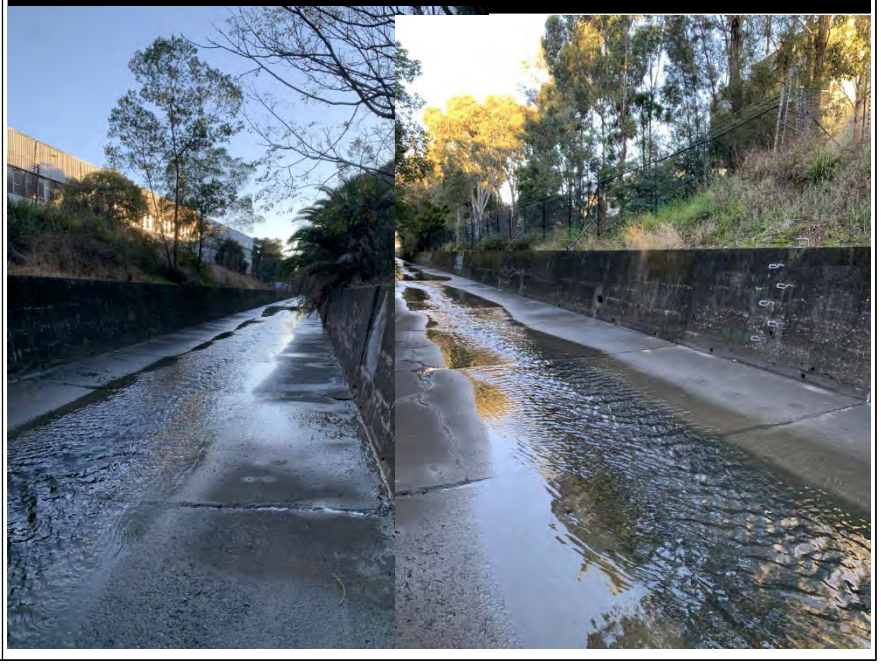
APPENDIX C

PHOTO 13 – LPG FORKLIFT REFUELLING AREA (FACING WEST NEAR MW05)

PHOTO 14 – WATER STORAGE TANK (FACING WEST NEAR MW05)

PHOTO 15 – AU EXPRESS/STS LOGISTICS PARKING AREA (FACING SOUTH NEAR MW04)

PHOTO 16 – DRAINAGE CANAL ALONG SITE WEST BOUNDARY



JBS&G

Job No: 62184	
Client: Hale CP	
Version: R01 Rev A	Date: 16/02/2022
Drawn By: MD	Checked By: CB
Not to Scale	
Coord. Sys n/a	
Lidcombe	

APPENDIX C

PHOTO 17 – OPEN WAREHOUSE AREA WITH SHELVING UNITS FOR STORAGE (FACING SOUTH)

PHOTO 18 – CENTRAL PORTION OF WAREHOUSE USED AS A VAN LOADING AREA

PHOTO 19 – FORKLIFT LPG CANISTER STORAGE

PHOTO 20 – CENTRAL PORTION OF THE WAREHOUSE USED FOR ELECTRONICS STORAGE

JBS&G

Job No: 62184	
Client: Hale CP	
Version: R01 Rev A	Date: 16/02/2022
Drawn By: MD	Checked By: CB
Not to Scale	
Coord. Sys n/a	
Lidcombe	

APPENDIX C

Appendix D EPA Records

Environment Protection Licence

Licence - 1912

Department of **Environment & Climate Change** NSW

Licence Details	
Number:	1912
Anniversary Date:	02-July
Review Due Date:	02-Apr-2010

Licensee

OFFSET ALPINE PRINTING PTY LIMITED
PO BOX 457
ERMINGTON NSW 2115

Licence Type

Premises

Premises

OFFSET ALPINE PRINTING
42 BOOREA STREET
LIDCOMBE NSW 2141

Scheduled Activity

Waste Activities

Fee Based Activity	Scale
Hazardous, Industrial or Group A Waste Generation or Storage (73)	> 10 - 100 T

Region

Waste Operations
59-61 Goulburn Street
SYDNEY NSW 2000
Phone: 02 9995 5000
Fax: 02 9995 5999

PO Box A290 SYDNEY SOUTH
NSW 1232

Environment Protection Licence

Department of Environment & Climate Change NSW

Licence - 1912

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees.

The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

OFFSET ALPINE PRINTING PTY LIMITED
PO BOX 457
ERMINGTON NSW 2115

subject to the conditions which follow.

1 Administrative conditions

A1 What the licence authorises and regulates

A1.1 Not applicable.

A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity
Waste Activities

Fee Based Activity	Scale
Hazardous, Industrial or Group A Waste Generation or Storage (73)	> 10 - 100 T

A1.3 Not applicable.

A2 Premises to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
OFFSET ALPINE PRINTING
42 BOOREA STREET
LIDCOMBE
NSW
2141
LOT 1 DP 740385

A3 Other activities

A3.1 Not applicable.

A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
(a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
(b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to air and water and applications to land

P1 Location of monitoring/discharge points and areas

P1.1 Not applicable.

P1.2 Not applicable.

P1.3 Not applicable.

3 Limit conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Load limits

L2.1 Not applicable.

L2.2 Not applicable.

L3 Concentration limits

L3.1 Not applicable.

L3.2 Not applicable.

L3.3 Not applicable.

L4 Volume and mass limits

L4.1 Not applicable.

L5 Waste

L5.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L5.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste

at the premises if those activities require an environment protection licence.

L5.3 Except as provided by any other condition of this licence, only the hazardous and/or industrial and/or Group A waste listed below may be generated and/or stored at the premises.

Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish (F100);
Waste from the production, formulation and use of organic solvents (G160); and
Waste oil/water, hydrocarbons/water mixtures or emulsions (J120)

L5.4 The quantity of hazardous/and/or industrial and/or Group A waste generated and/or stored on the premises must not exceed 100 tonnes per year.

L6 Noise Limits

L6.1 Noise from the premises must not exceed an $L_{A10(15\ minute)}$ noise emission criteria of 50 dB(A) when measured or computed at any point within one metre of any residential boundary or other noise sensitive premises such as schools and hospitals.

L6.2 Noise from the premises must not exceed:

(a) an $L_{A10\ (15\ minute)}$ noise emission criterion of 70dB(A) (7am to 10pm); and
(b) an $L_{A10\ (15\ minute)}$ noise emission criterion of 60dB(A) at all other times;
when measured or computed at any point within one metre of the premises boundary.

5dB(A) must be added to the measured level if the noise is substantially tonal or impulsive in character.

L6.3 Vehicles with a Gross Vehicle Mass exceeding 12 tonnes must only enter the premises between 6.00am and 9.30pm.

L7 Afterburner Temperature

L7.1 The afterburner must be operated at a temperature of not less than 710 degrees Celcius when vented gases are passed through the afterburner.

L8 Potentially offensive odour

L8.1 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

No condition of this licence identifies a potentially offensive odour for the purposes of Section 129 of the Protection of the Environment Operations Act 1997.

4 Operating conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:
(a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
(b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
(a) must be maintained in a proper and efficient condition; and
(b) must be operated in a proper and efficient manner.

O3 Emergency response

O3.1 The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.

O4 Processes and management

O4.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the EPA Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes, in force as at 1 July 1999.

O4.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

5 Monitoring and recording conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
(a) in a legible form, or in a form that can readily be reduced to a legible form;
(b) kept for at least 4 years after the monitoring or event to which they relate took place; and
(c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
(a) the date(s) on which the sample was taken;
(b) the time(s) at which the sample was collected;
(c) the point at which the sample was taken; and
(d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 Not applicable.

M3 Testing methods - concentration limits

M3.1 Not applicable.

M3.2 Not applicable.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:
(a) the date and time of the complaint;
(b) the method by which the complaint was made;

(c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
(d) the nature of the complaint;
(e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
(f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 Conditions M5.1 and M5.2 do not apply until 3 months after:
(a) the date of the issue of this licence or
(b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

M6 Requirement to monitor volume or mass

M6.1 Not applicable.

M6.2 Not applicable.

M7 Afterburner Temperature Recording Chart

M7.1 The operating temperature of the afterburner must be continuously recorded on a chart which is time and date marked at least once every 24 hours.

6 Reporting conditions

R1 Annual return documents

What documents must an Annual Return contain?

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
(a) a Statement of Compliance; and
(b) a Monitoring and Complaints Summary.
A copy of the form in which the Annual Return must be supplied to the EPA accompanies this licence. Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

Period covered by Annual Return

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
(a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
(b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
(a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
(b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

Deadline for Annual Return

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

Notification where actual load can not be calculated

R1.6 Not applicable.

Licensee must retain copy of Annual Return

R1.7 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4

years after the Annual Return was due to be supplied to the EPA.

Certifying of Statement of Compliance and signing of Monitoring and Complaints Summary

R1.8 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
(a) the licence holder; or
(b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.9 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

R2 Notification of environmental harm

Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the EPA's Pollution Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
(a) where this licence applies to premises, an event has occurred at the premises; or
(b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
(a) the cause, time and duration of the event;
(b) the type, volume and concentration of every pollutant discharged as a result of the event;
(c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
(d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
(e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;

(f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
(g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

General conditions

G1 Copy of licence kept at the premises

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Pollution studies and reduction programs

U1 Pollution Studies and Reduction Programs

U1.1 Not applicable.

Special conditions

Dictionary

General Dictionary

In this licence, unless the contrary is indicated, the terms below have the following meanings:

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.

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fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 1998.
flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
industrial waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
inert waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
reprocessing of waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997

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solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
treatment of waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste code	Means the waste codes listed in Appendix 5 of the EPA document A Guide to Licensing Part B.
waste type	Means Group A, Group B, Group C, inert, solid, industrial or hazardous waste

Mr Tim Gilbert

Environment Protection Authority

(By Delegation)

Date of this edition - 22-Dec-2006

End Notes

1	Licence varied by Typographical correction Premise Detail, issued on 13-Sep-2001, which came into effect on 13-Sep-2001.
2	Licence varied by notice 1027990, issued on 17-Jun-2003, which came into effect on 12-Jul-2003.
3	Licence varied by notice 1044784, issued on 04-Apr-2005, which came into effect on 29-Apr-2005.

End Notes

4	Licence varied by notice 1059552, issued on 23-May-2006, which came into effect on 23-May-2006.
5	Licence varied by notice 1067232, issued on 22-Dec-2006, which came into effect on 22-Dec-2006.

EPA POEO Public Register Search 'Auburn'

Number	Name	Location	Type	Status	Issued date
10935	ADDERLEY RECYCLING PTY LTD	3-5 DUCK STREET, AUBURN, NSW 2144	POEO licence	Issued	1-Aug-00
1533200	ADDERLEY RECYCLING PTY LTD	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	26-Aug-15
1598786	ADDERLEY RECYCLING PTY LTD	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	26-May-21
7414	AUBURN COUNCIL	AUBURN MUNICIPAL COUNCIL, AUBURN, NSW 2144	POEO licence	Surrendered	6-Sep-00
1009593	AUBURN COUNCIL	AUBURN MUNICIPAL COUNCIL, AUBURN, NSW 2144	s.58 Licence Variation	Issued	3-Oct-01
1506716	AUBURN COUNCIL	AUBURN MUNICIPAL COUNCIL, AUBURN, NSW 2144	s.80 Surrender of a Licence	Issued	29-Jun-12
1501153	AUBURN RECYCLING CENTRE PTY LTD	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	1-Sep-11
1505026	AUBURN RECYCLING CENTRE PTY LTD	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	8-Jun-12
1096093	CARDINAL GROUP PTY LTD	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	23-Dec-08
1111611	CARDINAL GROUP PTY LTD	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	17-Mar-10
1114041	CARDINAL GROUP PTY LTD	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	18-Aug-10
3694	CEMENT AUSTRALIA HOLDINGS PTY LTD	CNR RAWSON ROAD AND HIGHGATE STREET , AUBURN, NSW 2144	POEO licence	Issued	1-Nov-00
1009304	CEMENT AUSTRALIA HOLDINGS PTY LTD	CNR RAWSON ROAD AND HIGHGATE STREET , AUBURN, NSW 2144	s.58 Licence Variation	Issued	19-Feb-02
1105064	CEMENT AUSTRALIA HOLDINGS PTY LTD	CNR RAWSON ROAD AND HIGHGATE STREET , AUBURN, NSW 2144	s.58 Licence Variation	Issued	2-Oct-09
1511499	CEMENT AUSTRALIA HOLDINGS PTY LTD	CNR RAWSON ROAD AND HIGHGATE STREET , AUBURN, NSW 2144	s.58 Licence Variation	Issued	27-Mar-13
1523438	CEMENT AUSTRALIA HOLDINGS PTY LTD	CNR RAWSON ROAD AND HIGHGATE STREET , AUBURN, NSW 2144	s.58 Licence Variation	Issued	15-Jul-14
1523614	CEMENT AUSTRALIA HOLDINGS PTY LTD	CNR RAWSON ROAD AND HIGHGATE STREET , AUBURN, NSW 2144	s.58 Licence Variation	Issued	30-Jul-14
1526722	CEMENT AUSTRALIA HOLDINGS PTY LTD	CNR RAWSON ROAD AND HIGHGATE STREET , AUBURN, NSW 2144	s.58 Licence Variation	Issued	28-May-15
1603080	CEMENT AUSTRALIA HOLDINGS PTY LTD	CNR RAWSON ROAD AND HIGHGATE STREET , AUBURN, NSW 2144	s.58 Licence Variation	Issued	27-Apr-21
1069	CEMENT AUSTRALIA PACKAGED PRODUCTS PTY LIMITED	Highgate Street, AUBURN, NSW 2144	POEO licence	Issued	22-Aug-00
1007648	CEMENT AUSTRALIA PACKAGED PRODUCTS PTY LIMITED	Highgate Street, AUBURN, NSW 2144	s.58 Licence Variation	Issued	11-Sep-01
1026169	CEMENT AUSTRALIA PACKAGED PRODUCTS PTY LIMITED	Highgate Street, AUBURN, NSW 2144	s.58 Licence Variation	Issued	28-May-03
1093496	CEMENT AUSTRALIA PACKAGED PRODUCTS PTY LIMITED	Highgate Street, AUBURN, NSW 2144	s.58 Licence Variation	Issued	12-Nov-08
1104978	CEMENT AUSTRALIA PACKAGED PRODUCTS PTY LIMITED	Highgate Street, AUBURN, NSW 2144	s.58 Licence Variation	Issued	17-Aug-09
1511504	CEMENT AUSTRALIA PACKAGED PRODUCTS PTY LIMITED	Highgate Street, AUBURN, NSW 2144	s.58 Licence Variation	Issued	26-Sep-13
1585894	CEMENT AUSTRALIA PACKAGED PRODUCTS PTY LIMITED	Highgate Street, AUBURN, NSW 2144	s.58 Licence Variation	Issued	25-Sep-19
4933	CONCRITE PTY LTD	CNR SHORT AND DUCK STREETS, AUBURN, NSW 2144	POEO licence	No longer in force	25-Feb-00
1550660	CUMBERLAND COUNCIL	Oriole Park Tavistock Street , AUBURN, NSW 2144	s.91 Clean Up Notice	Issued	2-May-17
1556105	CUMBERLAND COUNCIL	Oriole Park Tavistock Street , AUBURN, NSW 2144	s.91 Clean Up Notice	Issued	21-Sep-17
2095	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	POEO licence	Issued	17-Nov-99
1007646	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	7-Feb-03
1038962	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	7-Sep-04
1041428	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	11-Nov-04
1047195	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	4-May-05
1072485	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	6-Jul-07
1101908	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	10-Jul-09
1106471	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	4-Nov-09
1502382	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	Mandatory Environmental Audit	Complete	25-Nov-11
1525206	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	1-Oct-14
1526714	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	11-Dec-14
1539036	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	25-May-16
1596122	DIC AUSTRALIA PTY LIMITED	323 CHISHOLM ROAD, AUBURN, NSW 2144	s.91 Clean Up Notice	Issued	16-Jun-20
11652	GILBARCO AUSTRALIA LIMITED	20 Highgate Street, AUBURN, NSW 2144	POEO licence	No longer in force	30-Apr-02
1041741	GILBARCO AUSTRALIA LIMITED	20 Highgate Street, AUBURN, NSW 2144	s.58 Licence Variation	Issued	25-Oct-04
1216	HANSON CONSTRUCTION MATERIALS PTY LTD	4 - 10 FISHER STREET, AUBURN, NSW 2144	POEO licence	No longer in force	1-May-00
7271	HY-TEC INDUSTRIES PTY LTD	155-157 ADDERLEY ST, AUBURN, NSW 2144	POEO licence	No longer in force	4-Feb-00
1058487	HY-TEC INDUSTRIES PTY LTD	155-157 ADDERLEY ST, AUBURN, NSW 2144	s.58 Licence Variation	Issued	19-Apr-06
2107	JAMES CUMMING & SONS PTY LTD	319 PARRAMATTA ROAD, AUBURN, NSW 2144	POEO licence	Surrendered	18-Jul-00
1010824	JAMES CUMMING & SONS PTY LTD	319 PARRAMATTA ROAD, AUBURN, NSW 2144	s.80 Surrender of a Licence	Issued	11-Sep-01

20412	JOHN HOLLAND PTY LTD	Clyde Marshalling Lands, AUBURN, NSW 2144	POEO licence	Surrendered	25-Feb-14
1521775	JOHN HOLLAND PTY LTD	Clyde Marshalling Lands, AUBURN, NSW 2144	s.58 Licence Variation	Issued	12-May-14
1522841	JOHN HOLLAND PTY LTD	Clyde Marshalling Lands, AUBURN, NSW 2144	s.58 Licence Variation	Issued	24-Jun-14
1523655	JOHN HOLLAND PTY LTD	Clyde Marshalling Lands, AUBURN, NSW 2144	s.58 Licence Variation	Issued	29-Jul-14
1526021	JOHN HOLLAND PTY LTD	Clyde Marshalling Lands, AUBURN, NSW 2144	s.58 Licence Variation	Issued	3-Nov-14
1528713	JOHN HOLLAND PTY LTD	Clyde Marshalling Lands, AUBURN, NSW 2144	s.80 Surrender of a Licence	Issued	10-Mar-15
20061	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	AUBURN, NSW 2144	POEO licence	Surrendered	11-May-12
1508425	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	AUBURN, NSW 2144	s.58 Licence Variation	Issued	30-Aug-12
1508946	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	AUBURN, NSW 2144	s.58 Licence Variation	Issued	21-Sep-12
1509748	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	AUBURN, NSW 2144	s.58 Licence Variation	Issued	26-Oct-12
1511408	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	AUBURN, NSW 2144	s.58 Licence Variation	Issued	31-Jan-13
20282	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	East of Lidcombe Station to west of Granville Station, AUBURN, NSW 2144	POEO licence	Surrendered	26-Jun-13
1515214	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	East of Lidcombe Station to west of Granville Station, AUBURN, NSW 2144	s.58 Licence Variation	Issued	1-Jul-13
1519875	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	East of Lidcombe Station to west of Granville Station, AUBURN, NSW 2144	s.58 Licence Variation	Issued	11-Feb-14
1521280	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	AUBURN, NSW 2144	s.80 Surrender of a Licence	Issued	21-Jul-14
1525712	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	East of Lidcombe Station to west of Granville Station, AUBURN, NSW 2144	s.58 Licence Variation	Issued	19-Nov-14
1529723	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	East of Lidcombe Station to west of Granville Station, AUBURN, NSW 2144	s.58 Licence Variation	Issued	8-Apr-15
1530083	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	East of Lidcombe Station to west of Granville Station, AUBURN, NSW 2144	s.58 Licence Variation	Issued	29-Apr-15
1531659	LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD	East of Lidcombe Station to west of Granville Station, AUBURN, NSW 2144	s.80 Surrender of a Licence	Issued	26-Jun-15
1901	MANILDRA STARCHES PTY LTD	THE CRSCENT, AUBURN, NSW 2144	POEO licence	Surrendered	27-Dec-00
1020177	MANILDRA STARCHES PTY LTD	THE CRSCENT, AUBURN, NSW 2144	s.80 Surrender of a Licence	Issued	28-Aug-02
3085767163	Metro Resource Group Pty Ltd	Railway parade, AUBURN, NSW 2144	Penalty Notice	Withdrawn	
3085767200	Metro Resource Group Pty Ltd	Railway parade, AUBURN, NSW 2144	Penalty Notice	Withdrawn	
1035214	MJB WASTE MANAGEMENT PTY. LIMITED	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	9-Mar-04
1041813	MJB WASTE MANAGEMENT PTY. LIMITED	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	22-Dec-04
1056456	MJB WASTE MANAGEMENT PTY. LIMITED	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	24-Feb-06
1081092	MJB WASTE MANAGEMENT PTY. LIMITED	3-5 DUCK STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	4-Jan-08
12368	SCHAEFFLER AUSTRALIA PTY LTD	Melissa St, AUBURN, NSW 2144	POEO licence	No longer in force	17-Aug-05
6073	SCIENTIFIC GAMES PRODUCTS (AUSTRALIA) PTY LTD	105 CARNARVON STREET, AUBURN, NSW 2144	POEO licence	Surrendered	19-Jan-00
1005900	SCIENTIFIC GAMES PRODUCTS (AUSTRALIA) PTY LTD	105 CARNARVON STREET, AUBURN, NSW 2144	s.80 Surrender of a Licence	Issued	4-Apr-01
11662	SILTECH INTERNATIONAL PTY LTD	58 Percy Street, AUBURN, NSW 2144	POEO licence	Surrendered	13-May-02
1056684	SILTECH INTERNATIONAL PTY LTD	58 Percy Street, AUBURN, NSW 2144	s.80 Surrender of a Licence	Issued	3-Mar-06
5550	SMORGON STEEL DISTRIBUTION PTY LTD	MANCHESTER ROAD WEST, AUBURN, NSW 2144	POEO licence	No longer in force	27-Mar-00
1042854	SMORGON STEEL DISTRIBUTION PTY LTD	MANCHESTER ROAD WEST, AUBURN, NSW 2144	s.58 Licence Variation	Issued	18-Feb-05
1049625	SMORGON STEEL DISTRIBUTION PTY LTD	MANCHESTER ROAD WEST, AUBURN, NSW 2144	s.58 Licence Variation	Issued	7-Jul-05
1054498	SMORGON STEEL DISTRIBUTION PTY LTD	MANCHESTER ROAD WEST, AUBURN, NSW 2144	s.58 Licence Variation	Issued	29-Mar-06
6592	ST. JOSEPH'S HOSPITAL LIMITED	NORMANBY ROAD, AUBURN, NSW 2144	POEO licence	No longer in force	31-Aug-00
1018992	ST. JOSEPH'S HOSPITAL LIMITED	NORMANBY ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	22-Oct-02
1048388	ST. JOSEPH'S HOSPITAL LIMITED	NORMANBY ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	2-Jun-05
3085773085	SYDNEY WATER CORPORATION	Duck Creek adjacent to Tavistock Street Auburn, AUBURN, NSW 2144	Penalty Notice	Issued	16-Jan-14
11683	SYDNEY WEST AREA HEALTH SERVICE	NORVAL STREET, AUBURN, NSW 2144	POEO licence	No longer in force	19-Jun-02
1041598	SYDNEY WEST AREA HEALTH SERVICE	NORVAL STREET, AUBURN, NSW 2144	s.58 Licence Variation	Issued	19-Oct-04
7444	THE HANNA GROUP PTY LTD	68-80 ADDERLEY STREET, AUBURN, NSW 2144	POEO licence	Surrendered	7-Feb-00
1009496	THE HANNA GROUP PTY LTD	68-80 ADDERLEY STREET, AUBURN, NSW 2144	s.80 Surrender of a Licence	Issued	4-Jul-01
96	UGL RAIL SERVICES PTY LIMITED	MANCHESTER ROAD, AUBURN, NSW 2144	POEO licence	No longer in force	31-Mar-00
1048615	UGL RAIL SERVICES PTY LIMITED	MANCHESTER ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	9-Jun-05
1067614	UGL RAIL SERVICES PTY LIMITED	MANCHESTER ROAD, AUBURN, NSW 2144	s.58 Licence Variation	Issued	11-Dec-06
21376	UGL UNIPART RAIL SERVICES PTY LTD	1 MANCHESTER RD, AUBURN, NSW 2144	POEO licence	Pending	
6953	VIP PLASTIC PACKAGING PTY LTD	11-13 PERCY ST, AUBURN, NSW 2144	POEO licence	No longer in force	6-Jul-00
1048733	VIP PLASTIC PACKAGING PTY LTD	11-13 PERCY ST, AUBURN, NSW 2144	s.58 Licence Variation	Issued	7-Jul-05

EPA POEO Register Search 'Lidcombe'

Number	Name	Location	Type	Status	Issued date
6203	A1 HARD CHROME PTY LTD	14 WETHERILL STREET, LIDCOMBE, NSW 2141	POEO licence	No longer in force	19-Jan-00
1044571	A1 HARD CHROME PTY LTD	14 WETHERILL STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	16-Feb-05
1011452	AUSTRALIAN CO-OPERATIVE FOODS LIMITED	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	2-Nov-01
1021604	AUSTRALIAN CO-OPERATIVE FOODS LIMITED	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	9-Apr-03
1089935	AUSTRALIAN CO-OPERATIVE FOODS LIMITED	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	3-Sep-08
1606703	BROHAR PTY LIMITED	160 ARTHUR STREET, LIDCOMBE, NSW 2141	s.91 Clean Up Notice	Issued	23-Apr-21
1573749	CON CONSTANTI	134 John Street , LIDCOMBE, NSW 2141	s.91 Clean Up Notice	Issued	30-Jan-19
1577507	CON CONSTANTI	134 John Street , LIDCOMBE, NSW 2141	s.110 Variation of Clean Up Notice	Issued	26-Mar-19
1579314	CON CONSTANTI	134 John Street , LIDCOMBE, NSW 2141	s.110 Variation of Clean Up Notice	Issued	8-May-19
1600719	CON CONSTANTI	134 John Street , LIDCOMBE, NSW 2141	s.110 Variation of Clean Up Notice	Issued	23-Nov-20
1008890	CSR LIMITED	LOT 2 BIRNIE AVENUE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	6-Aug-01
5604	HOLCIM (AUSTRALIA) PTY LTD	LOT 2 BIRNIE AVENUE, LIDCOMBE, NSW 2141	POEO licence	No longer in force	8-Dec-99
1552768	HOLCIM (AUSTRALIA) PTY LTD	40 Birnie Avenue, LIDCOMBE, NSW 2141	s.91 Clean Up Notice	Issued	4-Jun-17
3085777384	LACTALIS AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Withdrawn	
2108	LACTALIS AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	POEO licence	Issued	13-Mar-00
1529985	LACTALIS AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.96 Prevention Notice	Issued	23-Apr-15
1530304	LACTALIS AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.110 Variation of Prevention Notice	Issued	30-Apr-15
3085777393	LACTALIS AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Issued	21-Aug-15
3085777411	LACTALIS AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Issued	21-Aug-15
1534044	LACTALIS AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	2-Dec-15
1537446	LACTALIS AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	25-Jan-16
1540604	LACTALIS AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	18-Jul-16
1590079	LACTALIS AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	25-Feb-20
1167	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	POEO licence	Issued	9-May-00
1912	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	POEO licence	No longer in force	10-Jan-00
1027990	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	17-Jun-03
1044784	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	2-Apr-05
1059552	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	23-May-06
1067232	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	22-Dec-06
3085768043	PARMALAT FOOD PRODUCTS PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Issued	19-Feb-13
1517203	PARMALAT FOOD PRODUCTS PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	3-Oct-13
1525448	PARMALAT FOOD PRODUCTS PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	8-Oct-14
1525545	PARMALAT FOOD PRODUCTS PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	13-Oct-14
12390	RAIL CORPORATION NEW SOUTH WALES	Bachell Avenue, LIDCOMBE, NSW 2141	POEO licence	No longer in force	15-Dec-05
1058873	RAIL CORPORATION NEW SOUTH WALES	Bachell Avenue, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	9-May-06
1073476	RAIL CORPORATION NEW SOUTH WALES	Bachell Avenue, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	23-May-07
2179	SAINT-GOBAIN ABRASIVES PTY LTD	25 NYRANG STREET, LIDCOMBE, NSW 2141	POEO licence	No longer in force	17-Jan-00
1044018	SAINT-GOBAIN ABRASIVES PTY LTD	25 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	27-Jan-05
3085776376	SYDNEY TRAINS	Bachell Avenue, LIDCOMBE, NSW 2141	Penalty Notice	Withdrawn	
3085776403	SYDNEY TRAINS	Bachell Avenue, LIDCOMBE, NSW 2141	Penalty Notice	Issued	2-Apr-15
1021928	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	14-Apr-03
1036773	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	12-Jul-04
1097961	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	4-Mar-09
1099023	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	30-Mar-09
1112256	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	15-Mar-10
1502501	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	7-Dec-11
1503601	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	6-Feb-12

EPA POEO Register Search 'Lidcombe'

Number	Name	Location	Type	Status	Issued date
1510817	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	16-Apr-13
1520031	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	24-Feb-14
1529741	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	23-Apr-15
1537162	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	15-Jan-16

Suburb	SiteName	Address	ContaminationActivityType	ManagementClass	Latitude	Longitude
AUBURN	DIC Australia	323 Chisholm ROAD	Other Industry	Regulation under CLM Act not required	-33.87228962	151.0157032
AUBURN	Former Ajax Chemical Factory	9 Short STREET	Other Industry	Contamination formerly regulated under the CLM Act	-33.83671601	151.0292071
AUBURN	Janyon	Manchester ROAD	Other Industry	Regulation under CLM Act not required	-33.84467826	151.020745
AUBURN	Maintrain Facility - Sydney Trains Auburn	Manchester ROAD	Other Industry	Regulation under CLM Act not required	-33.84410947	151.0242502
AUBURN	Department of Corrective Services land adjacent to the former Auburn Landfill	Jamieson STREET	Landfill	Contamination formerly regulated under the CLM Act	-33.82928257	151.0590653
AUBURN	Commercial Premises	11-13 Percy STREET	Other Industry	Under assessment	-33.849995	151.040652
LIDCOMBE	Metro Lidcombe (former Liberty)	134 John STREET	Service Station	Contamination currently regulated under POEO Act	-33.85456019	151.0468136

Appendix E Laboratory Reports and Chain of Custody Documentation

Chain of Custody

JBS&G

PROJECT NO.: 62184
PROJECT NAME: Lidcombe
DATE NEEDED BY: Standard turnaround.
PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

LABORATORY BATCH NO.:
SAMPLERS: MD/AA/HD
QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAHs	TRH/BTEX	OCP/PCBs	PFAS	TOC, CEC, pH	VOCs	SPOCAS	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH01_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice												
BH01_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		x	x	x	x							
BH01_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice												
BH01_2.0-2.1	Soil	21/1/22		Jar+PFAS+ice												
BH01_0.3-1.3	Soil	21/1/22		Bag												
BH02_0.2-0.3	Soil	21/1/22		Jar+PFAS+ice											X	
BH02_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		x	x	x	X							
BH02_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice												
BH02_0.2-0.9	Soil	21/1/22		Bag												
BH03_0.2-0.3	Soil	21/1/22		Jar+PFAS+ice											X	
BH03_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		x	x	x	x							
BH03_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice		x					x					
BH03_0.2-0.4	Soil	21/1/22		Bag												
BH04_0.0-0.1	Soil	21/1/22		Jar+PFAS+ice											X	
BH04_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		x	x	x	x	X						
BH04_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice												
BH04_2.0-2.1	Soil	21/1/22		Jar+PFAS+ASS+ice		x	x	x		x		x	x			
BH04_3.0-3.1	Soil	21/1/22		Jar+PFAS+ASS+ice												
BH04_4.0-4.1	Soil	21/1/22		Jar+PFAS+ASS+ice									x			

RELINQUISHED BY:
NAME: M Darley DATE: 21/01/2021
OF: JBS&G
NAME: DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.
CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME: Alinaza
DATE: 25/1/22 4:19 PM
OF:
NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Alinaza C

Report: 858427

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Chain of Custody

JBS&G

PROJECT NO.: 62184

PROJECT NAME: Lidcombe

DATE NEEDED BY:

LABORATORY BATCH NO.:

SAMPLERS: MD/AA/HD

QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAHs	TRH/BTEX	OCP/PCBs	PFAS	TOC, CEC, pH	SPOCAS	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH04_5.0-5.1	Soil	21/1/22		Jar+PFAS+ASS+ice								X			
BH04_6.0-6.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH04_6.9-7.0	Soil	21/1/22		Jar+PFAS+ASS+ice								X			
BH04_0.0-1.0	Soil	21/1/22		Bag										X	
BH05_0.2-0.3	Soil	21/1/22		Jar+PFAS+ice											
BH05_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X	X					
BH05_1.0-1.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH05_2.0-2.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH05_3.0-3.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH05_4.0-4.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH05_5.0-5.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH05_6.0-6.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH05_7.0-7.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH05_7.4-7.5	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH05_0.2-0.7	Soil	21/1/22		Bag										X	
BH06_0.2-0.3	Soil	21/1/22		Jar+PFAS+ice											
BH06_0.5-0.6	Soil	21/1/22		Jar+PFAS+ASS+ice		X	X	X	X	X					
BH06_1.0-1.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH06_2.0-2.1	Soil	21/1/22		Jar+PFAS+ASS+ice								X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: M Darley DATE: 21/01/2021 OF: JBS&G	CONSIGNMENT NOTE NO.	NAME: A.S DATE: 25.1.22 4:19 PM OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
	TRANSPORT CO.		COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO.	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
	TRANSPORT CO		COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Report : 858427

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Chain of Custody

JBS&G

PROJECT NO.: 62184

PROJECT NAME: Lidcombe

DATE NEEDED BY:

LABORATORY BATCH NO.:

SAMPLERS: MD/AA/HD

QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAHs	TRH/BTEX	OCP/PCBs	PFAS	TOC, CEC, pH	SPOCAS	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH06_3.0-3.1	Soil	21/1/22		Jar+PFAS+ASS+ice								X			
BH06_4.0-4.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH06_5.0-5.1	Soil	21/1/22		Jar+PFAS+ASS+ice								X			
BH06_6.0-6.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH06_7.0-7.1	Soil	21/1/22		Jar+PFAS+ASS+ice								X			
BH06_7.4-7.5	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH06_0.2-0.4	Soil	21/1/22		Bag											
BH07_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice		x	x	x	X					x	
BH07_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice											
BH07_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice											
BH07_2.0-2.1	Soil	21/1/22		Jar+PFAS+ice		x	x	X				x			
BH07_3.0-3.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH07_4.0-4.1	Soil	21/1/22		Jar+PFAS+ASS+ice								X			
BH07_4.9-5.0	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH07_0.3-1.3	Soil	21/1/22		Bag											
BH07_1.3-2.2	Soil	21/1/22		Bag										x	
BH08_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice										x	
BH08_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice											
BH08_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice		x	x	x	x	x					

RELINQUISHED BY:

NAME: M Darley DATE: 21/01/2021

OF: JBS&G

NAME: DATE:

OF:

METHOD OF SHIPMENT:

CONSIGNMENT NOTE NO.

TRANSPORT CO.

CONSIGNMENT NOTE NO.

TRANSPORT CO

RECEIVED BY:

NAME: Alireza

DATE: 25/1/22 4:19PM

OF:

NAME: DATE:

OF:

FOR RECEIVING LAB USE ONLY:

COOLER SEAL – Yes..... No ..... Intact ..... Broken .....

COOLER TEMP ..... deg C

COOLER SEAL – Yes..... No ..... Intact ..... Broken .....

COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Chain of Custody

JBS&G

PROJECT NO.: 62184

PROJECT NAME: Lidcombe

DATE NEEDED BY:

LABORATORY BATCH NO.:

SAMPLERS: MD/AA/HD

QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAHs	TRH/BTEX	OCP/PCBs	PFAS	TOC, CEC, pH	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH08_2.0-2.1	Soil	21/1/22		Jar+PFAS+ice		x	x	x						
BH08_0.3-1.3	Soil	21/1/22		Bag									x	
BH09_0.2-0.3	Soil	21/1/22		Jar+PFAS+ice										
BH09_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		X	x	x	X					
BH09_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice										
BH09_1.8-1.9	Soil	21/1/22		Jar+PFAS+ice										
BH09_0.2-0.4	Soil	21/1/22		Bag									x	
BH10_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice		x	x	x	x					
BH10_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice										
BH10_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice										
BH10_0.25-0.4	Soil	21/1/22		Bag									x	
BH11_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice										
BH11_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice										
BH11_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice		x	x	x	x	x				
BH11_2.0-2.1	Soil	21/1/22		Jar+PFAS+ice										
BH11_0.3-1.3	Soil	21/1/22		Bag									x	
BH11_1.3-1.8	Soil	21/1/22		Bag									x	
BH12_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice		x	x	x	x	x				
BH12_2.0-2.1	Soil	21/1/22		Jar+PFAS+ASS+ice										

RELINQUISHED BY:

NAME: M Darley
DATE: 21/01/2021
OF: JBS&G

NAME:
DATE:
OF:

METHOD OF SHIPMENT:

CONSIGNMENT NOTE NO.
TRANSPORT CO.

CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:

NAME: Ahreza
DATE: 25/1/22 4:19 PM
OF:

NAME:
DATE:
OF:

FOR RECEIVING LAB USE ONLY:

COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

858427

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Eurofins 5/7

Chain of Custody

JBS&G

PROJECT NO.: 62184

PROJECT NAME: Lidcombe

DATE NEEDED BY:

LABORATORY BATCH NO.:

SAMPLERS: MD/AA/HD

QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAHs	TRH/BTEX	OCP/PCBs	PFAS	TOC, CEC, pH	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH12_3.0-3.1	Soil	21/1/22		Jar+PFAS+ASS+ice										
BH12_4.0-4.1	Soil	21/1/22		Jar+PFAS+ASS+ice										
BH12_5.0-5.1	Soil	21/1/22		Jar+PFAS+ASS+ice										
BH12_5.9-6.0	Soil	21/1/22		Jar+PFAS+ASS+ice										
BH12_0.9-1.5	Soil	21/1/22		Bag										
BH13_0.2-0.3	Soil	21/1/22		Jar+PFAS+ice									X	
BH13_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X					
BH13_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice										
BH13_2.0-2.1	Soil	21/1/22		Jar+PFAS+ice										
BH13_0.2-1.2	Soil	21/1/22		Bag										
BH14_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice									X	
BH14_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X					
BH14_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice										
BH14_0.3-0.5	Soil	21/1/22		Bag										
BH15_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice									X	
BH15_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice										
BH15_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X	X				
BH16_0.0-0.1	Soil	21/1/22		Jar+PFAS+ice										
BH16_0.5-0.6	Soil	21/1/22		Jar+PFAS+ASS+ice										
BH16_0.5-0.6	Soil	21/1/22		Jar+PFAS+ASS+ice		X	X	X	X	X				

RELINQUISHED BY:
NAME: M Darley
DATE: 21/01/2021
OF: JBS&G

NAME:
DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.

CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME: Alvera
DATE: 25/1/22 4:19pm
OF:

NAME:
DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Chain of Custody

JBS&G

PROJECT NO.: 62184

PROJECT NAME: Lidcombe

DATE NEEDED BY:

LABORATORY BATCH NO.:

SAMPLERS: MD/AA/HD

QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAHs	TRRH/BTEX	OCP/PCBs	PFAS	TOC, CEC, pH	spocas	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH16_1.0-1.1	Soil	21/1/22		Jar+PFAS+ASS+ice								X			
BH16_2.0-2.1	Soil	21/1/22		Jar+PFAS+ASS+ice		X	X	X	X	X					
BH16_3.0-3.1	Soil	21/1/22		Jar+PFAS+ASS+ice						X		X			
BH16_4.0-4.1	Soil	21/1/22		Jar+PFAS+ASS+ice						X					
BH16_5.0-5.1	Soil	21/1/22		Jar+PFAS+ASS+ice						X		X			
BH16_5.9-6.0	Soil	21/1/22		Jar+PFAS+ASS+ice						X					
BH16_0.0-0.2	Soil	21/1/22		Bag										X	
BH17_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice											
BH17_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X						
BH17_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice											
BH17_2.0-2.1	Soil	21/1/22		Jar+PFAS+ice											
BH17_0.3-1.3	Soil	21/1/22		Bag										X	
BH19_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice											
BH19_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X	X					
BH19_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice											
BH19_0.3-1.1	Soil	21/1/22		Bag										X	
BH20_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice											
BH20_0.5-0.6	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X						
BH20_1.0-1.1	Soil	21/1/22		Jar+PFAS+ice											

RELINQUISHED BY:

NAME: M Darley DATE: 21/01/2021
OF: JBS&G

NAME: DATE:
OF:

METHOD OF SHIPMENT:

CONSIGNMENT NOTE NO.

TRANSPORT CO.

CONSIGNMENT NOTE NO.

TRANSPORT CO

RECEIVED BY:

NAME: A.S
DATE: 25/1/22 4:19 PM
OF:

NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:

COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

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Chain of Custody

JBS&G

PROJECT NO.: 62184

PROJECT NAME: Lidcombe

DATE NEEDED BY:

LABORATORY BATCH NO.:

SAMPLERS: MD/AA/HD

QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAHs	TRH/BTEX	OCP/PCBs	PFAS	TOC, CEC, pH	spocas	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH20_0.3-0.4	Soil	21/1/22		Bag										X	
BH21_0.3-0.4	Soil	21/1/22		Jar+PFAS+ice											
BH21_0.5-0.6	Soil	21/1/22		Jar+PFAS+ASS+ice		X	X	X	X			X			
BH21_1.0-1.1	Soil	21/1/22		Jar+PFAS+ASS+ice								X			
BH21_2.0-2.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH21_3.0-3.1	Soil	21/1/22		Jar+PFAS+ASS+ice											
BH21_4.0-4.1	Soil	21/1/22		Jar+PFAS+ASS+ice								X			
BH21_5.0-5.1	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X	X					
QSA01	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X	X					
QSA02	Soil	21/1/22		Bag										X	
QSA03	Water	21/1/22		Metals, vials, amber, PFAS+ice		X	X	X	X	X					
Rinsate	Water	21/1/22		PFAS+ice											
Blank	Water	21/1/22		Vials				X							
TS/TB															

RELINQUISHED BY:
NAME: M Darley
DATE: 21/01/2021
OF: JBS&G

NAME:
DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.
CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME: A.S
DATE: 25/1/22 4:19pm
OF:
NAME:
DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Sydney
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NATA # 1261 Site # 18217

Brisbane
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
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PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd

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Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland
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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	JBS & G Australia (NSW) P/L
Contact name:	Chris Bielby
Project name:	LIDCOMBE
Project ID:	62184
Turnaround time:	5 Day
Date/Time received	Jan 25, 2022 4:19 PM
Eurofins reference	858427

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 16.4 degrees Celsius.
✗	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Acid Sulfate Soils (ASS) bags are missing for samples BH04-6.9-7.0, BH04-6.0-6.1, BH12-4.0-4.1 and BH12-5.0-5.1. SPOCAS analysis cancelled for sample BH04-6.9-7.0. Extra ASS bags received for samples BH21-0.5-0.6, BH21-4.0-4.1, BH21-5.0-5.1 and BH21-0.5-0.6. Extra asbestos bag received for sample BH21-0.3-0.4, logged on hold. Extra PFAS container received for sample BH21-5.0-5.1. BH04_0.0-1.0 asbestos bag not received.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Chris Bielby - cbielby@jbsg.com.au.

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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NATA # 1261 Site # 20794

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NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
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Christchurch
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																	
1	BH01_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32777											X			X			
2	BH01_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32778	X																
3	BH02_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32779											X			X			
4	BH02_0.2-0.9	Jan 21, 2022		Soil	S22-Ja32780	X																
5	BH03_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32781											X			X			
6	BH03_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32782					X	X	X				X	X					
7	BH03_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32783	X																
8	BH04_0.0-0.1	Jan 21, 2022		Soil	S22-Ja32784											X			X		X	
9	BH04_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32785								X	X		X		X			X	

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web: www.eurofins.com.au
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NATA # 1261 Site # 1254

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NATA # 1261 Site # 18217

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Phone : 0800 856 450
IANZ # 1290

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
10	BH04_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32786									X	X							
11	BH04_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32787									X	X							
12	BH04_6.9-7.0	Jan 21, 2022		Soil	S22-Ja32788		X															
13	BH04_0.0-1.0	Jan 21, 2022		Soil	S22-Ja32789		X															
14	BH05_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32790											X			X		X	
15	BH05_0.2-0.7	Jan 21, 2022		Soil	S22-Ja32791	X																
16	BH06_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32792											X			X		X	
17	BH06_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32793									X	X							
18	BH06_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32794									X	X							
19	BH06_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32795									X	X							
20	BH06_7.0-7.1	Jan 21, 2022		Soil	S22-Ja32796									X	X							

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NATA # 1261 Site # 25079

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IANZ # 1290

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
21	BH06_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32797	X																
22	BH07_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32798											X			X			
23	BH07_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32799									X		X		X				
24	BH07_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32800									X	X							
25	BH07_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32801	X																
26	BH07_1.3-2.2	Jan 21, 2022		Soil	S22-Ja32802	X																
27	BH08_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32803											X			X		X	
28	BH08_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32804											X		X				
29	BH08_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32805	X																
30	BH09_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32806											X			X			
31	BH09_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32807	X																

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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
32	BH10_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32808											X			X			
33	BH10_0.25-0.4	Jan 21, 2022		Soil	S22-Ja32809	X																
34	BH11_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32810											X			X		X	
35	BH11_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32811	X																
36	BH11_1.3-1.8	Jan 21, 2022		Soil	S22-Ja32812	X																
37	BH12_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32813											X			X		X	
38	BH12_0.9-1.5	Jan 21, 2022		Soil	S22-Ja32814	X																
39	BH13_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32815											X			X			
40	BH13_0.2-1.2	Jan 21, 2022		Soil	S22-Ja32816	X																
41	BH14_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32817											X			X			
42	BH14_0.3-0.5	Jan 21, 2022		Soil	S22-Ja32818	X																

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
43	BH15_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32819											X			X		X	
44	BH16_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32820											X			X		X	
45	BH16_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32821									X	X							
46	BH16_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32822											X			X		X	
47	BH16_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32823									X		X					X	
48	BH16_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32824											X					X	
49	BH16_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32825									X		X					X	
50	BH16_5.9-6.0	Jan 21, 2022		Soil	S22-Ja32826											X					X	
51	BH16_0.0-0.2	Jan 21, 2022		Soil	S22-Ja32827	X																
52	BH17_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32828											X			X			
53	BH17_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32829	X																

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
54	BH19_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32830											X			X		X	
55	BH19_0.3-1.1	Jan 21, 2022		Soil	S22-Ja32831	X																
56	BH20_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32832											X			X			
57	BH20_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32833				X													
58	BH21_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32834									X		X			X			
59	BH21_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32835									X	X							
60	BH21_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32836									X	X							
61	QSA01	Jan 21, 2022		Soil	S22-Ja32837											X			X		X	
62	QSA02	Jan 21, 2022		Soil	S22-Ja32838											X			X		X	
63	QSA03	Jan 21, 2022		Soil	S22-Ja32839	X																
64	RINSATE	Jan 21, 2022		Water	S22-Ja32840														X		X	

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
65	TB	Jan 21, 2022		Water	S22-Ja32841															X		
66	TS	Jan 21, 2022		Water	S22-Ja32842																	X
67	BH01_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32843				X													
68	BH01_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32844				X													
69	BH01_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32845				X													
70	BH02_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32846				X													
71	BH02_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32847				X													
72	BH03_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32848				X													
73	BH04_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32849				X													
74	BH04_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32850				X													
75	BH04_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32851				X													

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
76	BH04_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32852				X													
77	BH05_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32853				X													
78	BH05_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32854				X													
79	BH05_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32855				X													
80	BH05_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32856				X													
81	BH05_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32857				X													
82	BH05_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32858				X													
83	BH05_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32859				X													
84	BH05_7.0-7.1	Jan 21, 2022		Soil	S22-Ja32860				X													
85	BH05_7.4-7.5	Jan 21, 2022		Soil	S22-Ja32861				X													
86	BH06_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32862				X													

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
87	BH06_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32863				X													
88	BH06_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32864				X													
89	BH06_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32865				X													
90	BH06_7.4-7.5	Jan 21, 2022		Soil	S22-Ja32866				X													
91	BH07_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32867				X													
92	BH07_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32868				X													
93	BH07_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32869				X													
94	BH07_4.9-5.0	Jan 21, 2022		Soil	S22-Ja32870				X													
95	BH08_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32871				X													
96	BH08_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32872				X													
97	BH09_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32873				X													

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Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
98	BH09_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32874				X													
99	BH09_1.8-1.9	Jan 21, 2022		Soil	S22-Ja32875				X													
100	BH10_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32876				X													
101	BH10_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32877				X													
102	BH11_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32878				X													
103	BH11_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32879				X													
104	BH11_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32880				X													
105	BH12_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32881				X													
106	BH12_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32882				X													
107	BH12_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32883				X													
108	BH12_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32884				X													

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Company Name: JBS & G Australia (NSW) P/L
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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
109	BH12_5.9-6.0	Jan 21, 2022		Soil	S22-Ja32885				X													
110	BH13_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32886				X													
111	BH13_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32887				X													
112	BH13_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32888				X													
113	BH14_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32889				X													
114	BH14_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32890				X													
115	BH15_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32891				X													
116	BH15_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32892				X													
117	BH16_0.0-0.1	Jan 21, 2022		Soil	S22-Ja32893				X													
118	BH17_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32894				X													
119	BH17_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32895				X													

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Eurofins Analytical Services Manager : Ursula Long

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
120	BH17_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32896				X													
121	BH19_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32897				X													
122	BH19_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32898				X													
123	BH20_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32899	X																
124	BH20_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32900				X													
125	BH21_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32901				X													
126	BH21_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32902				X													
127	BH21_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32903				X													
128	BH21_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32904				X													
129	BLANK	Jan 21, 2022		Water	S22-Ja32905				X													
130	BH21_0.5-0.6	Jan 21, 2022		Soil	S22-Ja34558			X														

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Eurofins Analytical Services Manager : Ursula Long

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
131	BH2_2.0-2.1	Jan 21, 2022		Soil	S22-Ja34559			X														
Test Counts						20	2	65	65	1	1	1	1	15	41	41	1	3	24	1	18	1

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Chris Bielby
Report	858427-AID
Project Name	LIDCOMBE
Project ID	62184
Received Date	Jan 25, 2022
Date Reported	Feb 08, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name LIDCOMBE
Project ID 62184
Date Sampled Jan 21, 2022
Report 858427-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH01_0.3-1.3	22-Ja32778	Jan 21, 2022	Approximate Sample 607g Sample consisted of: Brown fine-grained clayey soil, cement, coal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH02_0.2-0.9	22-Ja32780	Jan 21, 2022	Approximate Sample 644g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH03_0.2-0.4	22-Ja32783	Jan 21, 2022	Approximate Sample 796g Sample consisted of: Brown fine-grained clayey soil, bitumen, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH05_0.2-0.7	22-Ja32791	Jan 21, 2022	Approximate Sample 500g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH06_0.2-0.4	22-Ja32797	Jan 21, 2022	Approximate Sample 662g Sample consisted of: Brown fine-grained clayey soil, bitumen and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH07_0.3-1.3	22-Ja32801	Jan 21, 2022	Approximate Sample 651g Sample consisted of: Brown fine-grained clayey soil, coal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH07_1.3-2.2	22-Ja32802	Jan 21, 2022	Approximate Sample 673g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH08_0.3-1.3	22-Ja32805	Jan 21, 2022	Approximate Sample 617g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH09_0.2-0.4	22-Ja32807	Jan 21, 2022	Approximate Sample 647g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH10_0.25-0.4	22-Ja32809	Jan 21, 2022	Approximate Sample 771g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH11_0.3-1.3	22-Ja32811	Jan 21, 2022	Approximate Sample 506g Sample consisted of: Brown fine-grained clayey soil, bitumen and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH11_1.3-1.8	22-Ja32812	Jan 21, 2022	Approximate Sample 500g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH12_0.9-1.5	22-Ja32814	Jan 21, 2022	Approximate Sample 778g Sample consisted of: Brown coarse-grained soil, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH13_0.2-1.2	22-Ja32816	Jan 21, 2022	Approximate Sample 685g Sample consisted of: Brown fine-grained clayey soil, glass, coal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH14_0.3-0.5	22-Ja32818	Jan 21, 2022	Approximate Sample 522g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH16_0.0-0.2	22-Ja32827	Jan 21, 2022	Approximate Sample 522g Sample consisted of: Brown coarse-grained sandy soil, cement, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Synthetic mineral fibre detected. Organic fibre detected. No trace asbestos detected.
BH17_0.3-1.3	22-Ja32829	Jan 21, 2022	Approximate Sample 630g Sample consisted of: Brown gss, cement, sand stone and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH19_0.3-1.1	22-Ja32831	Jan 21, 2022	Approximate Sample 1138g Sample consisted of: Brown fine-grained clayey soil, bitumen, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
QSA03	22-Ja32839	Jan 21, 2022	Approximate Sample 500g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH20_0.3-0.4	22-Ja32899	Jan 21, 2022	Approximate Sample 948g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Feb 02, 2022	Indefinite

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Sample Detail	Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794			X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																	
Perth Laboratory - NATA # 2377 Site # 2370																	
External Laboratory																	

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID													
1	BH01_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32777										X			X			
2	BH01_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32778	X															
3	BH02_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32779										X			X			
4	BH02_0.2-0.9	Jan 21, 2022		Soil	S22-Ja32780	X															
5	BH03_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32781										X			X			
6	BH03_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32782					X	X	X			X	X					
7	BH03_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32783	X															
8	BH04_0.0-0.1	Jan 21, 2022		Soil	S22-Ja32784										X			X		X	
9	BH04_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32785								X	X	X		X			X	

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Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
10	BH04_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32786									X	X							
11	BH04_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32787									X	X							
12	BH04_6.9-7.0	Jan 21, 2022		Soil	S22-Ja32788		X															
13	BH04_0.0-1.0	Jan 21, 2022		Soil	S22-Ja32789		X															
14	BH05_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32790											X			X		X	
15	BH05_0.2-0.7	Jan 21, 2022		Soil	S22-Ja32791	X																
16	BH06_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32792											X			X		X	
17	BH06_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32793									X	X							
18	BH06_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32794									X	X							
19	BH06_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32795									X	X							
20	BH06_7.0-7.1	Jan 21, 2022		Soil	S22-Ja32796									X	X							

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
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Eurofins Analytical Services Manager : Ursula Long

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
21	BH06_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32797	X																
22	BH07_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32798											X			X			
23	BH07_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32799									X		X		X				
24	BH07_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32800									X	X							
25	BH07_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32801	X																
26	BH07_1.3-2.2	Jan 21, 2022		Soil	S22-Ja32802	X																
27	BH08_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32803											X			X		X	
28	BH08_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32804											X		X				
29	BH08_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32805	X																
30	BH09_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32806											X			X			
31	BH09_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32807	X																

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
32	BH10_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32808											X			X			
33	BH10_0.25-0.4	Jan 21, 2022		Soil	S22-Ja32809	X																
34	BH11_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32810											X			X		X	
35	BH11_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32811	X																
36	BH11_1.3-1.8	Jan 21, 2022		Soil	S22-Ja32812	X																
37	BH12_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32813											X			X		X	
38	BH12_0.9-1.5	Jan 21, 2022		Soil	S22-Ja32814	X																
39	BH13_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32815											X			X			
40	BH13_0.2-1.2	Jan 21, 2022		Soil	S22-Ja32816	X																
41	BH14_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32817											X			X			
42	BH14_0.3-0.5	Jan 21, 2022		Soil	S22-Ja32818	X																

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
43	BH15_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32819											X			X		X	
44	BH16_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32820											X			X		X	
45	BH16_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32821									X	X							
46	BH16_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32822											X			X		X	
47	BH16_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32823									X		X					X	
48	BH16_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32824											X					X	
49	BH16_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32825									X		X					X	
50	BH16_5.9-6.0	Jan 21, 2022		Soil	S22-Ja32826											X					X	
51	BH16_0.0-0.2	Jan 21, 2022		Soil	S22-Ja32827	X																
52	BH17_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32828											X			X			
53	BH17_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32829	X																

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
54	BH19_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32830											X			X		X	
55	BH19_0.3-1.1	Jan 21, 2022		Soil	S22-Ja32831	X																
56	BH20_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32832											X			X			
57	BH20_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32833				X													
58	BH21_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32834									X		X			X			
59	BH21_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32835									X	X							
60	BH21_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32836									X	X							
61	QSA01	Jan 21, 2022		Soil	S22-Ja32837											X			X		X	
62	QSA02	Jan 21, 2022		Soil	S22-Ja32838											X			X		X	
63	QSA03	Jan 21, 2022		Soil	S22-Ja32839	X																
64	RINSATE	Jan 21, 2022		Water	S22-Ja32840														X		X	

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
65	TB	Jan 21, 2022		Water	S22-Ja32841															X		
66	TS	Jan 21, 2022		Water	S22-Ja32842																	X
67	BH01_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32843				X													
68	BH01_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32844				X													
69	BH01_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32845				X													
70	BH02_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32846				X													
71	BH02_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32847				X													
72	BH03_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32848				X													
73	BH04_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32849				X													
74	BH04_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32850				X													
75	BH04_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32851				X													

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
76	BH04_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32852				X													
77	BH05_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32853				X													
78	BH05_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32854				X													
79	BH05_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32855				X													
80	BH05_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32856				X													
81	BH05_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32857				X													
82	BH05_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32858				X													
83	BH05_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32859				X													
84	BH05_7.0-7.1	Jan 21, 2022		Soil	S22-Ja32860				X													
85	BH05_7.4-7.5	Jan 21, 2022		Soil	S22-Ja32861				X													
86	BH06_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32862				X													

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
87	BH06_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32863				X													
88	BH06_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32864				X													
89	BH06_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32865				X													
90	BH06_7.4-7.5	Jan 21, 2022		Soil	S22-Ja32866				X													
91	BH07_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32867				X													
92	BH07_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32868				X													
93	BH07_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32869				X													
94	BH07_4.9-5.0	Jan 21, 2022		Soil	S22-Ja32870				X													
95	BH08_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32871				X													
96	BH08_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32872				X													
97	BH09_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32873				X													

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
98	BH09_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32874				X													
99	BH09_1.8-1.9	Jan 21, 2022		Soil	S22-Ja32875				X													
100	BH10_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32876				X													
101	BH10_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32877				X													
102	BH11_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32878				X													
103	BH11_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32879				X													
104	BH11_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32880				X													
105	BH12_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32881				X													
106	BH12_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32882				X													
107	BH12_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32883				X													
108	BH12_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32884				X													

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
109	BH12_5.9-6.0	Jan 21, 2022		Soil	S22-Ja32885				X													
110	BH13_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32886				X													
111	BH13_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32887				X													
112	BH13_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32888				X													
113	BH14_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32889				X													
114	BH14_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32890				X													
115	BH15_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32891				X													
116	BH15_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32892				X													
117	BH16_0.0-0.1	Jan 21, 2022		Soil	S22-Ja32893				X													
118	BH17_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32894				X													
119	BH17_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32895				X													

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
120	BH17_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32896				X													
121	BH19_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32897				X													
122	BH19_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32898				X													
123	BH20_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32899	X																
124	BH20_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32900				X													
125	BH21_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32901				X													
126	BH21_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32902				X													
127	BH21_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32903				X													
128	BH21_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32904				X													
129	BLANK	Jan 21, 2022		Water	S22-Ja32905				X													
130	BH21_0.5-0.6	Jan 21, 2022		Soil	S22-Ja34558			X														

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Melbourne Laboratory - NATA # 1261 Site # 1254											X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																						
Perth Laboratory - NATA # 2377 Site # 2370																						
External Laboratory																						
131	BH2_2.0-2.1	Jan 21, 2022		Soil	S22-Ja34559			X														
Test Counts						20	2	65	65	1	1	1	1	15	41	41	1	3	24	1	18	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Chris Bielby**

Report **858427-S**
Project name LIDCOMBE
Project ID 62184
Received Date Jan 25, 2022

Client Sample ID			**BH01_0.5-0.6**	**BH02_0.2-0.3**	**BH03_0.2-0.3**	**BH03_0.5-0.6**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Ja32777**	**S22-Ja32779**	**S22-Ja32781**	**S22-Ja32782**
Date Sampled			**Jan 21, 2022**	**Jan 21, 2022**	**Jan 21, 2022**	**Jan 21, 2022**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	133	121	113	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			BH01_0.5-0.6	BH02_0.2-0.3	BH03_0.2-0.3	BH03_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32777	S22-Ja32779	S22-Ja32781	S22-Ja32782
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	103	105	133	-
p-Terphenyl-d14 (surr.)	1	%	107	100	122	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	0.06	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	0.06	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	132	124	135	-
Tetrachloro-m-xylene (surr.)	1	%	110	101	110	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	132	124	135	-
Tetrachloro-m-xylene (surr.)	1	%	110	101	110	-

Client Sample ID			BH01_0.5-0.6	BH02_0.2-0.3	BH03_0.2-0.3	BH03_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32777	S22-Ja32779	S22-Ja32781	S22-Ja32782
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.9	30	5.2	3.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	21	10	12	8.5
Copper	5	mg/kg	10	35	24	12
Lead	5	mg/kg	11	46	12	12
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	10	< 5	24	11
Zinc	5	mg/kg	14	23	28	11
% Moisture	1	%	13	13	12	12
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	-	63
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	-	5.4
Total Organic Carbon	0.1	%	-	-	-	0.6
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	11

Client Sample ID			BH04_0.0-0.1	BH04_1.0-1.1	BH04_3.0-3.1	BH04_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32784	S22-Ja32785	S22-Ja32786	S22-Ja32787
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	100	< 50	-	-
TRH C29-C36	50	mg/kg	140	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	240	< 50	-	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	200	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	200	< 100	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	120	103	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-

Client Sample ID			BH04_0.0-0.1	BH04_1.0-1.1	BH04_3.0-3.1	BH04_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32784	S22-Ja32785	S22-Ja32786	S22-Ja32787
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	83	97	-	-
p-Terphenyl-d14 (surr.)	1	%	77	104	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-HCH	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-HCH	0.05	mg/kg	< 0.05	-	-	-
d-HCH	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	0.5	mg/kg	< 0.5	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	71	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	61	-	-	-

Client Sample ID			BH04_0.0-0.1	BH04_1.0-1.1	BH04_3.0-3.1	BH04_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32784	S22-Ja32785	S22-Ja32786	S22-Ja32787
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	71	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	61	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	5.2	7.8	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	18	19	-	-
Copper	5	mg/kg	28	25	-	-
Lead	5	mg/kg	63	55	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	21	21	-	-
Zinc	5	mg/kg	110	75	-	-
% Moisture	1	%	20	13	11	12
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	-	-
13C4-PFBA (surr.)	1	%	100	98	-	-
13C5-PFPeA (surr.)	1	%	116	117	-	-
13C5-PFHxA (surr.)	1	%	103	98	-	-
13C4-PFHpA (surr.)	1	%	98	96	-	-
13C8-PFOA (surr.)	1	%	96	94	-	-
13C5-PFNA (surr.)	1	%	93	92	-	-
13C6-PFDA (surr.)	1	%	97	93	-	-
13C2-PFUnDA (surr.)	1	%	81	95	-	-
13C2-PFDoDA (surr.)	1	%	95	88	-	-
13C2-PFTeDA (surr.)	1	%	81	93	-	-

Client Sample ID			BH04_0.0-0.1	BH04_1.0-1.1	BH04_3.0-3.1	BH04_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32784	S22-Ja32785	S22-Ja32786	S22-Ja32787
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	-	-
13C8-FOSA (surr.)	1	%	84	86	-	-
D3-N-MeFOSA (surr.)	1	%	81	83	-	-
D5-N-EtFOSA (surr.)	1	%	85	81	-	-
D7-N-MeFOSE (surr.)	1	%	81	80	-	-
D9-N-EtFOSE (surr.)	1	%	80	83	-	-
D5-N-EtFOSAA (surr.)	1	%	96	90	-	-
D3-N-MeFOSAA (surr.)	1	%	81	90	-	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	6.0	< 5	-	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	6.1	< 5	-	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	-	-
13C3-PFBS (surr.)	1	%	101	94	-	-
18O2-PFHxS (surr.)	1	%	99	92	-	-
13C8-PFOS (surr.)	1	%	101	92	-	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	-
13C2-4:2 FTSA (surr.)	1	%	103	97	-	-
13C2-6:2 FTSA (surr.)	1	%	94	88	-	-
13C2-8:2 FTSA (surr.)	1	%	103	91	-	-
13C2-10:2 FTSA (surr.)	1	%	89	89	-	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	12.1	< 5	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	6.1	< 5	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	12.1	< 5	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	12.1	< 10	-	-
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	-	-

Client Sample ID			BH04_0.0-0.1	BH04_1.0-1.1	BH04_3.0-3.1	BH04_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32784	S22-Ja32785	S22-Ja32786	S22-Ja32787
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1-Dichloroethene	0.5	mg/kg	-	< 0.5	-	-
1.1.1-Trichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1.2-Trichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	< 0.5	-	-
1.2-Dibromoethane	0.5	mg/kg	-	< 0.5	-	-
1.2-Dichlorobenzene	0.5	mg/kg	-	< 0.5	-	-
1.2-Dichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.2-Dichloropropane	0.5	mg/kg	-	< 0.5	-	-
1.2.3-Trichloropropane	0.5	mg/kg	-	< 0.5	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	-	< 0.5	-	-
1.3-Dichlorobenzene	0.5	mg/kg	-	< 0.5	-	-
1.3-Dichloropropane	0.5	mg/kg	-	< 0.5	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	-	< 0.5	-	-
1.4-Dichlorobenzene	0.5	mg/kg	-	< 0.5	-	-
2-Butanone (MEK)	0.5	mg/kg	-	< 0.5	-	-
2-Propanone (Acetone)	0.5	mg/kg	-	< 0.5	-	-
4-Chlorotoluene	0.5	mg/kg	-	< 0.5	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	< 0.5	-	-
Allyl chloride	0.5	mg/kg	-	< 0.5	-	-
Benzene	0.1	mg/kg	-	< 0.1	-	-
Bromobenzene	0.5	mg/kg	-	< 0.5	-	-
Bromochloromethane	0.5	mg/kg	-	< 0.5	-	-
Bromodichloromethane	0.5	mg/kg	-	< 0.5	-	-
Bromoform	0.5	mg/kg	-	< 0.5	-	-
Bromomethane	0.5	mg/kg	-	< 0.5	-	-
Carbon disulfide	0.5	mg/kg	-	< 0.5	-	-
Carbon Tetrachloride	0.5	mg/kg	-	< 0.5	-	-
Chlorobenzene	0.5	mg/kg	-	< 0.5	-	-
Chloroethane	0.5	mg/kg	-	< 0.5	-	-
Chloroform	0.5	mg/kg	-	< 0.5	-	-
Chloromethane	0.5	mg/kg	-	< 0.5	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	-	< 0.5	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	-	< 0.5	-	-
Dibromochloromethane	0.5	mg/kg	-	< 0.5	-	-
Dibromomethane	0.5	mg/kg	-	< 0.5	-	-
Dichlorodifluoromethane	0.5	mg/kg	-	< 0.5	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
Iodomethane	0.5	mg/kg	-	< 0.5	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	-	< 0.5	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-
Methylene Chloride	0.5	mg/kg	-	< 0.5	-	-
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Styrene	0.5	mg/kg	-	< 0.5	-	-
Tetrachloroethene	0.5	mg/kg	-	< 0.5	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	-	< 0.5	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	-	< 0.5	-	-

Client Sample ID			BH04_0.0-0.1	BH04_1.0-1.1	BH04_3.0-3.1	BH04_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32784	S22-Ja32785	S22-Ja32786	S22-Ja32787
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Volatile Organics						
Trichloroethene	0.5	mg/kg	-	< 0.5	-	-
Trichlorofluoromethane	0.5	mg/kg	-	< 0.5	-	-
Vinyl chloride	0.5	mg/kg	-	< 0.5	-	-
Xylenes - Total*	0.3	mg/kg	-	< 0.3	-	-
Total MAH*	0.5	mg/kg	-	< 0.5	-	-
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	-	< 0.5	-	-
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	-	< 0.5	-	-
4-Bromofluorobenzene (surr.)	1	%	-	103	-	-
Toluene-d8 (surr.)	1	%	-	95	-	-
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	-	8.1	6.4	4.6
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	-	< 2	< 2	26
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	-	< 0.003	< 0.003	0.040
Potential Acidity - Titratable Peroxide						
pH-OX	0.1	pH Units	-	7.1	6.9	5.1
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	-	< 0.02	< 0.02	0.04
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	-	< 2	< 2	27
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	-	< 2	< 2	< 2
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	-	< 0.02	< 0.02	< 0.02
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	-	< 0.005	< 0.005	< 0.005
Peroxide Extractable Sulfur	0.005	% S	-	< 0.005	0.030	0.020
HCl Extractable Sulfur	0.005	% S	-	N/A	N/A	N/A
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.02	% S	-	< 0.02	0.03	0.02
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	10	mol H+/t	-	< 10	19	13
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1[S02]	0.02	% S	-	N/A	N/A	N/A
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	-	N/A	N/A	N/A
HCl Extractable Sulfur Correction Factor	1	factor	-	2.0	2.0	2.0
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	-	0.31	0.24	0.030
Calcium - Peroxide	0.005	% Ca	-	0.41	0.30	0.030
Calcium - Acid Reacted	0.005	% Ca	-	0.10	0.056	0.006
Calcium - Acid Reacted (s-aCa)	0.005	% S	-	0.082	0.045	< 0.005
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	51	28	2.8
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	-	0.050	0.060	0.10
Magnesium - Peroxide	0.005	% Mg	-	0.070	0.070	0.10
Magnesium - Acid Reacted	0.005	% Mg	-	0.020	0.015	< 0.005
Magnesium - Acid Reacted (s-aCa)	0.005	% S	-	0.027	0.019	< 0.005
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	17	12	< 0.005
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	-	0.68	0.48	N/A
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	-	0.22	0.15	N/A
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	-	140	95	n/a
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	-	1.5	1.5	1.5

Client Sample ID			BH04_0.0-0.1	BH04_1.0-1.1	BH04_3.0-3.1	BH04_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32784	S22-Ja32785	S22-Ja32786	S22-Ja32787
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	-	< 10	19	39
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	-	< 0.02	0.03	0.06
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	-	< 1	1.0	3.0
Extraneous Material						
<2mm Fraction	0.005	g	-	51	86	60
>2mm Fraction	0.005	g	-	< 0.005	< 0.005	< 0.005
Analysed Material	0.1	%	-	100	100	100
Extraneous Material	0.1	%	-	< 0.1	< 0.1	< 0.1

Client Sample ID			BH05_0.5-0.6	BH06_0.5-0.6	BH06_2.0-2.1	BH06_3.0-3.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32790	S22-Ja32792	S22-Ja32793	S22-Ja32794
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	< 50	< 50	-	-
TRH C29-C36	50	mg/kg	< 50	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	-	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	72	70	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-

Client Sample ID			BH05_0.5-0.6	BH06_0.5-0.6	BH06_2.0-2.1	BH06_3.0-3.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32790	S22-Ja32792	S22-Ja32793	S22-Ja32794
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	85	68	-	-
p-Terphenyl-d14 (surr.)	1	%	114	117	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-HCH	0.05	mg/kg	< 0.05	< 0.05	-	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	149	124	-	-
Tetrachloro-m-xylene (surr.)	1	%	114	107	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	-	-
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	149	124	-	-
Tetrachloro-m-xylene (surr.)	1	%	114	107	-	-

Client Sample ID			BH05_0.5-0.6	BH06_0.5-0.6	BH06_2.0-2.1	BH06_3.0-3.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32790	S22-Ja32792	S22-Ja32793	S22-Ja32794
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	4.9	6.8	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	8.3	14	-	-
Copper	5	mg/kg	14	12	-	-
Lead	5	mg/kg	120	16	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	< 5	< 5	-	-
Zinc	5	mg/kg	17	< 5	-	-
% Moisture	1	%	18	27	8.4	11
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	-	-
13C4-PFBA (surr.)	1	%	95	98	-	-
13C5-PFPeA (surr.)	1	%	114	110	-	-
13C5-PFHxA (surr.)	1	%	94	92	-	-
13C4-PFHpA (surr.)	1	%	88	93	-	-
13C8-PFOA (surr.)	1	%	87	91	-	-
13C5-PFNA (surr.)	1	%	89	92	-	-
13C6-PFDA (surr.)	1	%	84	84	-	-
13C2-PFUnDA (surr.)	1	%	83	83	-	-
13C2-PFDoDA (surr.)	1	%	93	86	-	-
13C2-PFTeDA (surr.)	1	%	94	85	-	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	-	-
13C8-FOSA (surr.)	1	%	78	79	-	-
D3-N-MeFOSA (surr.)	1	%	74	74	-	-
D5-N-EtFOSA (surr.)	1	%	79	81	-	-
D7-N-MeFOSE (surr.)	1	%	76	81	-	-
D9-N-EtFOSE (surr.)	1	%	79	81	-	-
D5-N-EtFOSAA (surr.)	1	%	81	69	-	-
D3-N-MeFOSAA (surr.)	1	%	74	59	-	-

Client Sample ID			BH05_0.5-0.6	BH06_0.5-0.6	BH06_2.0-2.1	BH06_3.0-3.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32790	S22-Ja32792	S22-Ja32793	S22-Ja32794
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	-	-
13C3-PFBS (surr.)	1	%	89	91	-	-
18O2-PFHxS (surr.)	1	%	85	85	-	-
13C8-PFOS (surr.)	1	%	89	89	-	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	-
13C2-4:2 FTSA (surr.)	1	%	93	94	-	-
13C2-6:2 FTSA (surr.)	1	%	88	75	-	-
13C2-8:2 FTSA (surr.)	1	%	87	81	-	-
13C2-10:2 FTSA (surr.)	1	%	89	77	-	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	-	-
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	-	-
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	-	-	4.3	4.2
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	-	-	79	52
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	-	-	0.13	0.080
Potential Acidity - Titratable Peroxide						
pH-OX	0.1	pH Units	-	-	4.6	4.5
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	-	-	0.13	0.10
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	-	-	79	64
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	-	-	< 2	12
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	-	-	< 0.02	0.02
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	-	-	< 0.005	< 0.005
Peroxide Extractable Sulfur	0.005	% S	-	-	< 0.005	0.030
HCl Extractable Sulfur	0.005	% S	-	-	0.030	< 0.005
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.02	% S	-	-	< 0.02	0.03
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	10	mol H+/t	-	-	< 10	20
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1[S02]	0.02	% S	-	-	0.04	< 0.02
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	-	-	25	< 10
HCl Extractable Sulfur Correction Factor	1	factor	-	-	2.0	2.0

Client Sample ID			BH05_0.5-0.6	BH06_0.5-0.6	BH06_2.0-2.1	BH06_3.0-3.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32790	S22-Ja32792	S22-Ja32793	S22-Ja32794
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	-	-	< 0.005	< 0.005
Calcium - Peroxide	0.005	% Ca	-	-	< 0.005	< 0.005
Calcium - Acid Reacted	0.005	% Ca	-	-	< 0.005	< 0.005
Calcium - Acid Reacted (s-aCa)	0.005	% S	-	-	< 0.005	< 0.005
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	-	< 0.005	< 0.005
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	-	-	0.040	0.040
Magnesium - Peroxide	0.005	% Mg	-	-	0.040	0.050
Magnesium - Acid Reacted	0.005	% Mg	-	-	< 0.005	< 0.005
Magnesium - Acid Reacted (s-aCa)	0.005	% S	-	-	< 0.005	< 0.005
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	-	< 0.005	< 0.005
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	-	-	N/A	N/A
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	-	-	N/A	N/A
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	-	-	n/a	n/a
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	-	-	1.5	1.5
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	-	-	100	72
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	-	-	0.17	0.12
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	-	-	8.0	5.0
Extraneous Material						
<2mm Fraction	0.005	g	-	-	69	88
>2mm Fraction	0.005	g	-	-	21	3.7
Analysed Material	0.1	%	-	-	77	96
Extraneous Material	0.1	%	-	-	23	4.1

Client Sample ID			BH06_5.0-5.1	BH06_7.0-7.1	BH07_0.3-0.4	BH07_2.0-2.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32795	S22-Ja32796	S22-Ja32798	S22-Ja32799
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	-	58	< 50
TRH C29-C36	50	mg/kg	-	-	64	< 50
TRH C10-C36 (Total)	50	mg/kg	-	-	122	< 50
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	< 20
TRH >C10-C16	50	mg/kg	-	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	-	110	< 100
TRH >C34-C40	100	mg/kg	-	-	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	110	< 100

Client Sample ID			BH06_5.0-5.1	BH06_7.0-7.1	BH07_0.3-0.4	BH07_2.0-2.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32795	S22-Ja32796	S22-Ja32798	S22-Ja32799
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	-	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	107	90
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	1.2
Acenaphthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	-	-	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	101	97
p-Terphenyl-d14 (surr.)	1	%	-	-	104	99
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-HCH	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-HCH	0.05	mg/kg	-	-	< 0.05	-
d-HCH	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-

Client Sample ID			BH06_5.0-5.1	BH06_7.0-7.1	BH07_0.3-0.4	BH07_2.0-2.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32795	S22-Ja32796	S22-Ja32798	S22-Ja32799
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	0.5	mg/kg	-	-	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	-	[Q09]INT	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	103	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1221	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1232	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1242	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1248	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1254	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1260	0.1	mg/kg	-	-	< 0.1	-
Total PCB*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	-	[Q09]INT	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	103	-
Heavy Metals						
Arsenic	2	mg/kg	-	-	6.0	2.3
Cadmium	0.4	mg/kg	-	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	-	26	10
Copper	5	mg/kg	-	-	35	45
Lead	5	mg/kg	-	-	24	13
Mercury	0.1	mg/kg	-	-	< 0.1	< 0.1
Nickel	5	mg/kg	-	-	70	31
Zinc	5	mg/kg	-	-	60	34
% Moisture	1	%	11	5.2	18	20
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	4.8	5.6	-	7.0
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	15	5.0	-	< 2
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	0.020	0.010	-	< 0.003
Potential Acidity - Titratable Peroxide						
pH-OX	0.1	pH Units	6.8	7.0	-	7.3
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	< 0.02	< 0.02	-	< 0.02
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	< 2	< 2	-	< 2
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	< 2	< 2	-	< 2
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	< 0.02	< 0.02	-	< 0.02
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	< 0.005	< 0.005	-	< 0.005
Peroxide Extractable Sulfur	0.005	% S	< 0.005	0.030	-	0.020
HCl Extractable Sulfur	0.005	% S	N/A	N/A	-	N/A
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.02	% S	< 0.02	0.03	-	0.02
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	10	mol H+/t	< 10	21	-	15

Client Sample ID			BH06_5.0-5.1	BH06_7.0-7.1	BH07_0.3-0.4	BH07_2.0-2.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32795	S22-Ja32796	S22-Ja32798	S22-Ja32799
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1[S02]	0.02	% S	N/A	N/A	-	N/A
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	N/A	N/A	-	N/A
HCl Extractable Sulfur Correction Factor	1	factor	2.0	2.0	-	2.0
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	< 0.005	< 0.005	-	0.25
Calcium - Peroxide	0.005	% Ca	< 0.005	0.050	-	0.31
Calcium - Acid Reacted	0.005	% Ca	< 0.005	0.052	-	0.063
Calcium - Acid Reacted (s-aCa)	0.005	% S	< 0.005	0.041	-	0.050
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	< 0.005	26	-	31
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	0.070	0.060	-	0.060
Magnesium - Peroxide	0.005	% Mg	0.070	0.10	-	0.080
Magnesium - Acid Reacted	0.005	% Mg	< 0.005	0.040	-	0.019
Magnesium - Acid Reacted (s-aCa)	0.005	% S	< 0.005	0.053	-	0.025
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	< 0.005	33	-	16
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	0.25	0.32	-	0.55
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	0.08	0.10	-	0.18
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	50	63	-	110
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	1.5	1.5	-	1.5
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	15	26	-	< 10
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	0.02	0.04	-	< 0.02
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	1.0	2.0	-	< 1
Extraneous Material						
<2mm Fraction	0.005	g	96	81	-	48
>2mm Fraction	0.005	g	< 0.005	< 0.005	-	< 0.005
Analysed Material	0.1	%	100	100	-	100
Extraneous Material	0.1	%	< 0.1	< 0.1	-	< 0.1

Client Sample ID			BH07_4.0-4.1	BH08_1.0-1.1	BH08_2.0-2.1	BH09_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32800	S22-Ja32803	S22-Ja32804	S22-Ja32806
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	< 50

Client Sample ID			BH07_4.0-4.1	BH08_1.0-1.1	BH08_2.0-2.1	BH09_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32800	S22-Ja32803	S22-Ja32804	S22-Ja32806
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	85	113	104
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	106	122	116
p-Terphenyl-d14 (surr.)	1	%	-	105	111	122
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05
d-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05

Client Sample ID			BH07_4.0-4.1	BH08_1.0-1.1	BH08_2.0-2.1	BH09_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32800	S22-Ja32803	S22-Ja32804	S22-Ja32806
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Toxaphene	0.5	mg/kg	-	< 0.5	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	129	-	133
Tetrachloro-m-xylene (surr.)	1	%	-	83	-	97
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	< 0.1
Total PCB*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	129	-	133
Tetrachloro-m-xylene (surr.)	1	%	-	83	-	97
Heavy Metals						
Arsenic	2	mg/kg	-	7.6	6.1	6.0
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	11	22	10
Copper	5	mg/kg	-	18	17	20
Lead	5	mg/kg	-	26	28	21
Mercury	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	-	< 5	5.0	< 5
Zinc	5	mg/kg	-	27	27	9.0
% Moisture	1	%	21	17	21	19
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	< 5	-	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	< 5	-	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	< 5	-	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	< 5	-	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	< 5	-	-
13C4-PFBA (surr.)	1	%	-	98	-	-
13C5-PFPeA (surr.)	1	%	-	117	-	-

Client Sample ID			BH07_4.0-4.1	BH08_1.0-1.1	BH08_2.0-2.1	BH09_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32800	S22-Ja32803	S22-Ja32804	S22-Ja32806
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C5-PFHxA (surr.)	1	%	-	97	-	-
13C4-PFHpA (surr.)	1	%	-	91	-	-
13C8-PFOA (surr.)	1	%	-	92	-	-
13C5-PFNA (surr.)	1	%	-	89	-	-
13C6-PFDA (surr.)	1	%	-	79	-	-
13C2-PFUnDA (surr.)	1	%	-	78	-	-
13C2-PFDoDA (surr.)	1	%	-	79	-	-
13C2-PFTeDA (surr.)	1	%	-	82	-	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	< 5	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	< 5	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	< 5	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	-	< 5	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	-	< 5	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	< 10	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	< 10	-	-
13C8-FOSA (surr.)	1	%	-	76	-	-
D3-N-MeFOSA (surr.)	1	%	-	72	-	-
D5-N-EtFOSA (surr.)	1	%	-	78	-	-
D7-N-MeFOSE (surr.)	1	%	-	77	-	-
D9-N-EtFOSE (surr.)	1	%	-	79	-	-
D5-N-EtFOSAA (surr.)	1	%	-	84	-	-
D3-N-MeFOSAA (surr.)	1	%	-	86	-	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	< 5	-	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	-	< 5	-	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	-	< 5	-	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	< 5	-	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	< 5	-	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	< 5	-	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	< 5	-	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	< 5	-	-
13C3-PFBS (surr.)	1	%	-	89	-	-
18O2-PFHxS (surr.)	1	%	-	84	-	-
13C8-PFOS (surr.)	1	%	-	81	-	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	-	< 10	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	-	< 5	-	-
13C2-4:2 FTSA (surr.)	1	%	-	91	-	-
13C2-6:2 FTSA (surr.)	1	%	-	76	-	-
13C2-8:2 FTSA (surr.)	1	%	-	83	-	-
13C2-10:2 FTSA (surr.)	1	%	-	80	-	-

Client Sample ID			BH07_4.0-4.1	BH08_1.0-1.1	BH08_2.0-2.1	BH09_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32800	S22-Ja32803	S22-Ja32804	S22-Ja32806
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	-	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	-	-
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	6.2	-	-	-
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	< 2	-	-	-
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	< 0.003	-	-	-
Potential Acidity - Titratable Peroxide						
pH-OX	0.1	pH Units	7.0	-	-	-
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	< 0.02	-	-	-
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	< 2	-	-	-
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	< 2	-	-	-
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	< 0.02	-	-	-
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	< 0.005	-	-	-
Peroxide Extractable Sulfur	0.005	% S	< 0.005	-	-	-
HCl Extractable Sulfur	0.005	% S	N/A	-	-	-
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.02	% S	< 0.02	-	-	-
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	10	mol H+/t	< 10	-	-	-
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1[S02]	0.02	% S	N/A	-	-	-
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	N/A	-	-	-
HCl Extractable Sulfur Correction Factor	1	factor	2.0	-	-	-
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	0.040	-	-	-
Calcium - Peroxide	0.005	% Ca	0.050	-	-	-
Calcium - Acid Reacted	0.005	% Ca	0.011	-	-	-
Calcium - Acid Reacted (s-aCa)	0.005	% S	0.009	-	-	-
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	5.4	-	-	-
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	0.10	-	-	-
Magnesium - Peroxide	0.005	% Mg	0.11	-	-	-
Magnesium - Acid Reacted	0.005	% Mg	0.011	-	-	-
Magnesium - Acid Reacted (s-aCa)	0.005	% S	0.014	-	-	-
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	8.8	-	-	-
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	0.27	-	-	-
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	0.09	-	-	-
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	54	-	-	-
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	1.5	-	-	-
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	< 10	-	-	-
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	< 0.02	-	-	-
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	< 1	-	-	-

Client Sample ID			BH07_4.0-4.1	BH08_1.0-1.1	BH08_2.0-2.1	BH09_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32800	S22-Ja32803	S22-Ja32804	S22-Ja32806
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Extraneous Material						
<2mm Fraction	0.005	g	49	-	-	-
>2mm Fraction	0.005	g	< 0.005	-	-	-
Analysed Material	0.1	%	100	-	-	-
Extraneous Material	0.1	%	< 0.1	-	-	-

Client Sample ID			BH10_0.3-0.4	BH11_1.0-1.1	BH12_1.0-1.1	BH13_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32808	S22-Ja32810	S22-Ja32813	S22-Ja32815
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	61	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	65	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	126	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	110	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	110	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	107	117	139	129
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH10_0.3-0.4	BH11_1.0-1.1	BH12_1.0-1.1	BH13_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32808	S22-Ja32810	S22-Ja32813	S22-Ja32815
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	97	102	117	96
p-Terphenyl-d14 (surr.)	1	%	95	95	115	94
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	102	89	134	106
Tetrachloro-m-xylene (surr.)	1	%	77	80	93	73
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	102	89	134	106
Tetrachloro-m-xylene (surr.)	1	%	77	80	93	73

Client Sample ID			BH10_0.3-0.4	BH11_1.0-1.1	BH12_1.0-1.1	BH13_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32808	S22-Ja32810	S22-Ja32813	S22-Ja32815
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	12	11	11	6.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	14	17	8.3
Copper	5	mg/kg	16	17	25	13
Lead	5	mg/kg	22	37	34	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	14	9.3	10	8.1
Zinc	5	mg/kg	19	62	38	30
% Moisture	1	%	18	15	12	12
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	< 5	< 5	-
13C4-PFBA (surr.)	1	%	-	104	102	-
13C5-PFPeA (surr.)	1	%	-	120	119	-
13C5-PFHxA (surr.)	1	%	-	101	102	-
13C4-PFHpA (surr.)	1	%	-	97	98	-
13C8-PFOA (surr.)	1	%	-	95	94	-
13C5-PFNA (surr.)	1	%	-	98	92	-
13C6-PFDA (surr.)	1	%	-	89	93	-
13C2-PFUnDA (surr.)	1	%	-	88	85	-
13C2-PFDoDA (surr.)	1	%	-	101	92	-
13C2-PFTeDA (surr.)	1	%	-	97	92	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	< 5	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	< 5	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	< 5	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	-	< 5	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	-	< 5	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	< 10	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	< 10	< 10	-
13C8-FOSA (surr.)	1	%	-	87	81	-
D3-N-MeFOSA (surr.)	1	%	-	79	79	-
D5-N-EtFOSA (surr.)	1	%	-	82	85	-
D7-N-MeFOSE (surr.)	1	%	-	77	86	-
D9-N-EtFOSE (surr.)	1	%	-	84	85	-
D5-N-EtFOSAA (surr.)	1	%	-	97	87	-
D3-N-MeFOSAA (surr.)	1	%	-	87	84	-

Client Sample ID			BH10_0.3-0.4	BH11_1.0-1.1	BH12_1.0-1.1	BH13_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32808	S22-Ja32810	S22-Ja32813	S22-Ja32815
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	< 5	< 5	-
13C3-PFBS (surr.)	1	%	-	97	91	-
18O2-PFHxS (surr.)	1	%	-	96	89	-
13C8-PFOS (surr.)	1	%	-	91	90	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	-	< 10	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5	-
13C2-4:2 FTSA (surr.)	1	%	-	110	95	-
13C2-6:2 FTSA (surr.)	1	%	-	93	89	-
13C2-8:2 FTSA (surr.)	1	%	-	100	89	-
13C2-10:2 FTSA (surr.)	1	%	-	92	85	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	< 50	-

Client Sample ID			BH14_0.3-0.4	BH15_0.5-0.6	BH16_0.5-0.6	BH16_1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32817	S22-Ja32819	S22-Ja32820	S22-Ja32821
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-

Client Sample ID			BH14_0.3-0.4	BH15_0.5-0.6	BH16_0.5-0.6	BH16_1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32817	S22-Ja32819	S22-Ja32820	S22-Ja32821
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	141	133	120	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	94	101	98	-
p-Terphenyl-d14 (surr.)	1	%	98	97	86	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-

Client Sample ID			BH14_0.3-0.4	BH15_0.5-0.6	BH16_0.5-0.6	BH16_1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32817	S22-Ja32819	S22-Ja32820	S22-Ja32821
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	110	102	87	-
Tetrachloro-m-xylene (surr.)	1	%	79	81	80	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	110	102	87	-
Tetrachloro-m-xylene (surr.)	1	%	79	81	80	-
Heavy Metals						
Arsenic	2	mg/kg	7.8	14	13	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	16	6.0	29	-
Copper	5	mg/kg	24	32	33	-
Lead	5	mg/kg	17	11	61	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	< 5	< 5	14	-
Zinc	5	mg/kg	14	35	69	-
% Moisture	1	%	21	9.3	16	14
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	< 5	< 5	-
13C4-PFBA (surr.)	1	%	-	100	99	-
13C5-PFPeA (surr.)	1	%	-	110	118	-
13C5-PFHxA (surr.)	1	%	-	92	95	-
13C4-PFHpA (surr.)	1	%	-	94	94	-
13C8-PFOA (surr.)	1	%	-	90	90	-
13C5-PFNA (surr.)	1	%	-	91	92	-

Client Sample ID			BH14_0.3-0.4	BH15_0.5-0.6	BH16_0.5-0.6	BH16_1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32817	S22-Ja32819	S22-Ja32820	S22-Ja32821
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C6-PFDA (surr.)	1	%	-	85	89	-
13C2-PFUnDA (surr.)	1	%	-	83	84	-
13C2-PFDoDA (surr.)	1	%	-	86	87	-
13C2-PFTeDA (surr.)	1	%	-	86	92	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	< 5	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	< 5	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	< 5	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	-	< 5	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	-	< 5	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	< 10	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	< 10	< 10	-
13C8-FOSA (surr.)	1	%	-	80	79	-
D3-N-MeFOSA (surr.)	1	%	-	71	74	-
D5-N-EtFOSA (surr.)	1	%	-	77	78	-
D7-N-MeFOSE (surr.)	1	%	-	74	80	-
D9-N-EtFOSE (surr.)	1	%	-	78	78	-
D5-N-EtFOSAA (surr.)	1	%	-	80	88	-
D3-N-MeFOSAA (surr.)	1	%	-	73	86	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	< 5	6.7	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	< 5	< 5	-
13C3-PFBS (surr.)	1	%	-	92	89	-
18O2-PFHxS (surr.)	1	%	-	88	86	-
13C8-PFOS (surr.)	1	%	-	83	84	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	-	< 10	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5	-
13C2-4:2 FTSA (surr.)	1	%	-	95	92	-
13C2-6:2 FTSA (surr.)	1	%	-	84	80	-
13C2-8:2 FTSA (surr.)	1	%	-	86	81	-
13C2-10:2 FTSA (surr.)	1	%	-	84	82	-

Client Sample ID			BH14_0.3-0.4	BH15_0.5-0.6	BH16_0.5-0.6	BH16_1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32817	S22-Ja32819	S22-Ja32820	S22-Ja32821
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	6.7	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	6.7	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	6.7	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	< 50	-
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	-	-	-	6.3
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	-	-	-	< 2
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	-	-	-	< 0.003
Potential Acidity - Titratable Peroxide						
pH-OX	0.1	pH Units	-	-	-	6.3
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	-	-	-	< 0.02
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	-	-	-	< 2
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	-	-	-	< 2
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	-	-	-	< 0.02
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	-	-	-	< 0.005
Peroxide Extractable Sulfur	0.005	% S	-	-	-	< 0.005
HCl Extractable Sulfur	0.005	% S	-	-	-	N/A
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.02	% S	-	-	-	< 0.02
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	10	mol H+/t	-	-	-	< 10
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1[S02]	0.02	% S	-	-	-	N/A
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	-	-	-	N/A
HCl Extractable Sulfur Correction Factor	1	factor	-	-	-	2.0
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	-	-	-	0.20
Calcium - Peroxide	0.005	% Ca	-	-	-	0.22
Calcium - Acid Reacted	0.005	% Ca	-	-	-	0.021
Calcium - Acid Reacted (s-aCa)	0.005	% S	-	-	-	0.017
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	-	-	10
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	-	-	-	0.050
Magnesium - Peroxide	0.005	% Mg	-	-	-	0.050
Magnesium - Acid Reacted	0.005	% Mg	-	-	-	< 0.005
Magnesium - Acid Reacted (s-aCa)	0.005	% S	-	-	-	< 0.005
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	-	-	< 0.005
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	-	-	-	N/A
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	-	-	-	N/A
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	-	-	-	n/a
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	-	-	-	1.5
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	-	-	-	< 10
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	-	-	-	< 0.02
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	-	-	-	< 1

Client Sample ID			BH14_0.3-0.4	BH15_0.5-0.6	BH16_0.5-0.6	BH16_1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32817	S22-Ja32819	S22-Ja32820	S22-Ja32821
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Extraneous Material						
<2mm Fraction	0.005	g	-	-	-	47
>2mm Fraction	0.005	g	-	-	-	5.1
Analysed Material	0.1	%	-	-	-	90
Extraneous Material	0.1	%	-	-	-	9.8

Client Sample ID			BH16_2.0-2.1	BH16_3.0-3.1	BH16_4.0-4.1	BH16_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32822	S22-Ja32823	S22-Ja32824	S22-Ja32825
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	-	-	-
TRH C10-C14	20	mg/kg	< 20	-	-	-
TRH C15-C28	50	mg/kg	< 50	-	-	-
TRH C29-C36	50	mg/kg	< 50	-	-	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-	-	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	< 100	-	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	108	-	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	-	-
Acenaphthene	0.5	mg/kg	< 0.5	-	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	-
Anthracene	0.5	mg/kg	< 0.5	-	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	-
Chrysene	0.5	mg/kg	< 0.5	-	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	-
Fluoranthene	0.5	mg/kg	< 0.5	-	-	-
Fluorene	0.5	mg/kg	< 0.5	-	-	-

Client Sample ID			BH16_2.0-2.1	BH16_3.0-3.1	BH16_4.0-4.1	BH16_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32822	S22-Ja32823	S22-Ja32824	S22-Ja32825
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	-
Naphthalene	0.5	mg/kg	< 0.5	-	-	-
Phenanthrene	0.5	mg/kg	< 0.5	-	-	-
Pyrene	0.5	mg/kg	< 0.5	-	-	-
Total PAH*	0.5	mg/kg	< 0.5	-	-	-
2-Fluorobiphenyl (surr.)	1	%	101	-	-	-
p-Terphenyl-d14 (surr.)	1	%	86	-	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-HCH	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-HCH	0.05	mg/kg	< 0.05	-	-	-
d-HCH	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	0.5	mg/kg	< 0.5	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	78	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	81	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	78	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	81	-	-	-

Client Sample ID			BH16_2.0-2.1	BH16_3.0-3.1	BH16_4.0-4.1	BH16_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32822	S22-Ja32823	S22-Ja32824	S22-Ja32825
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	11	-	-	-
Cadmium	0.4	mg/kg	< 0.4	-	-	-
Chromium	5	mg/kg	29	-	-	-
Copper	5	mg/kg	35	-	-	-
Lead	5	mg/kg	49	-	-	-
Mercury	0.1	mg/kg	< 0.1	-	-	-
Nickel	5	mg/kg	19	-	-	-
Zinc	5	mg/kg	87	-	-	-
% Moisture	1	%	12	14	18	16
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	99	103	96	98
13C5-PFPeA (surr.)	1	%	112	118	112	112
13C5-PFHxA (surr.)	1	%	95	101	103	95
13C4-PFHpA (surr.)	1	%	90	98	94	93
13C8-PFOA (surr.)	1	%	88	96	91	89
13C5-PFNA (surr.)	1	%	88	93	87	92
13C6-PFDA (surr.)	1	%	86	88	85	87
13C2-PFUnDA (surr.)	1	%	84	89	87	92
13C2-PFDoDA (surr.)	1	%	83	93	94	100
13C2-PFTeDA (surr.)	1	%	87	93	84	92
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	79	83	82	83
D3-N-MeFOSA (surr.)	1	%	73	80	74	77
D5-N-EtFOSA (surr.)	1	%	74	81	78	78
D7-N-MeFOSE (surr.)	1	%	73	83	74	74
D9-N-EtFOSE (surr.)	1	%	73	85	77	77
D5-N-EtFOSAA (surr.)	1	%	85	94	93	100
D3-N-MeFOSAA (surr.)	1	%	91	88	88	87

Client Sample ID			BH16_2.0-2.1	BH16_3.0-3.1	BH16_4.0-4.1	BH16_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32822	S22-Ja32823	S22-Ja32824	S22-Ja32825
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	6.6	5.9
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	42	22
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	90	96	88	91
18O2-PFHxS (surr.)	1	%	85	90	84	88
13C8-PFOS (surr.)	1	%	84	88	81	88
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	95	103	96	100
13C2-6:2 FTSA (surr.)	1	%	81	86	84	86
13C2-8:2 FTSA (surr.)	1	%	87	83	88	97
13C2-10:2 FTSA (surr.)	1	%	84	91	89	86
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	48.6	27.9
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	42	22
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	48.6	27.9
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	48.6	27.9
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	-	8.4	-	6.4
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	-	< 2	-	< 2
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	-	< 0.003	-	< 0.003
Potential Acidity - Titratable Peroxide						
pH-OX	0.1	pH Units	-	8.3	-	6.9
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	-	< 0.02	-	< 0.02
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	-	< 2	-	< 2
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	-	< 2	-	< 2
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	-	< 0.02	-	< 0.02
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	-	< 0.005	-	< 0.005
Peroxide Extractable Sulfur	0.005	% S	-	0.020	-	0.030
HCl Extractable Sulfur	0.005	% S	-	N/A	-	N/A
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.02	% S	-	0.02	-	0.03
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	10	mol H+/t	-	13	-	19
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1[S02]	0.02	% S	-	N/A	-	N/A
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	-	N/A	-	N/A
HCl Extractable Sulfur Correction Factor	1	factor	-	2.0	-	2.0

Client Sample ID			BH16_2.0-2.1	BH16_3.0-3.1	BH16_4.0-4.1	BH16_5.0-5.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32822	S22-Ja32823	S22-Ja32824	S22-Ja32825
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	-	0.35	-	0.13
Calcium - Peroxide	0.005	% Ca	-	0.53	-	0.18
Calcium - Acid Reacted	0.005	% Ca	-	0.17	-	0.050
Calcium - Acid Reacted (s-aCa)	0.005	% S	-	0.14	-	0.040
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	87	-	25
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	-	0.040	-	0.050
Magnesium - Peroxide	0.005	% Mg	-	0.060	-	0.070
Magnesium - Acid Reacted	0.005	% Mg	-	0.026	-	0.012
Magnesium - Acid Reacted (s-aCa)	0.005	% S	-	0.034	-	0.015
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	21	-	9.6
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	-	0.85	-	0.33
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	-	0.27	-	0.10
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	-	170	-	65
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	-	1.5	-	1.5
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	-	< 10	-	19
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	-	< 0.02	-	0.03
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	-	< 1	-	1.0
Extraneous Material						
<2mm Fraction	0.005	g	-	71	-	79
>2mm Fraction	0.005	g	-	16	-	< 0.005
Analysed Material	0.1	%	-	82	-	100
Extraneous Material	0.1	%	-	18	-	< 0.1

Client Sample ID			BH16_5.9-6.0	BH17_0.5-0.6	BH19_0.5-0.6	BH20_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32826	S22-Ja32828	S22-Ja32830	S22-Ja32832
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	61	< 50
TRH C29-C36	50	mg/kg	-	< 50	100	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50	161	< 50
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	130	< 100
TRH >C34-C40	100	mg/kg	-	< 100	120	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	250	< 100

Client Sample ID			BH16_5.9-6.0	BH17_0.5-0.6	BH19_0.5-0.6	BH20_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32826	S22-Ja32828	S22-Ja32830	S22-Ja32832
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	121	118	108
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	102	91	86
p-Terphenyl-d14 (surr.)	1	%	-	99	88	91
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05

Client Sample ID			BH16_5.9-6.0	BH17_0.5-0.6	BH19_0.5-0.6	BH20_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32826	S22-Ja32828	S22-Ja32830	S22-Ja32832
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	-	104	81	102
Tetrachloro-m-xylene (surr.)	1	%	-	83	80	77
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	-	104	81	102
Tetrachloro-m-xylene (surr.)	1	%	-	83	80	77
Heavy Metals						
Arsenic	2	mg/kg	-	15	3.4	7.4
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	17	21	8.0
Copper	5	mg/kg	-	34	40	27
Lead	5	mg/kg	-	23	11	13
Mercury	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	-	21	12	< 5
Zinc	5	mg/kg	-	80	44	21
% Moisture	1	%	19	11	6.8	14
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	-	< 5	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	-	< 5	-
13C4-PFBA (surr.)	1	%	94	-	75	-
13C5-PFPeA (surr.)	1	%	112	-	86	-
13C5-PFHxA (surr.)	1	%	94	-	73	-
13C4-PFHpA (surr.)	1	%	92	-	71	-
13C8-PFOA (surr.)	1	%	88	-	68	-
13C5-PFNA (surr.)	1	%	88	-	67	-

Client Sample ID			BH16_5.9-6.0	BH17_0.5-0.6	BH19_0.5-0.6	BH20_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32826	S22-Ja32828	S22-Ja32830	S22-Ja32832
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C6-PFDA (surr.)	1	%	86	-	68	-
13C2-PFUnDA (surr.)	1	%	86	-	65	-
13C2-PFDoDA (surr.)	1	%	100	-	71	-
13C2-PFTeDA (surr.)	1	%	89	-	71	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	-	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	-	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	-	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	-	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	-	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	-	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	-	< 10	-
13C8-FOSA (surr.)	1	%	81	-	59	-
D3-N-MeFOSA (surr.)	1	%	72	-	64	-
D5-N-EtFOSA (surr.)	1	%	73	-	68	-
D7-N-MeFOSE (surr.)	1	%	74	-	70	-
D9-N-EtFOSE (surr.)	1	%	75	-	73	-
D5-N-EtFOSAA (surr.)	1	%	96	-	63	-
D3-N-MeFOSAA (surr.)	1	%	88	-	55	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	-	< 5	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	-	< 5	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	-	< 5	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	5.2	-	< 5	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	-	< 5	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	14	-	< 5	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	-	< 5	-
13C3-PFBS (surr.)	1	%	86	-	74	-
18O2-PFHxS (surr.)	1	%	85	-	70	-
13C8-PFOS (surr.)	1	%	86	-	68	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	-	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	-	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	-	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	-	< 5	-
13C2-4:2 FTSA (surr.)	1	%	101	-	68	-
13C2-6:2 FTSA (surr.)	1	%	81	-	56	-
13C2-8:2 FTSA (surr.)	1	%	92	-	60	-
13C2-10:2 FTSA (surr.)	1	%	90	-	56	-

Client Sample ID			BH16_5.9-6.0	BH17_0.5-0.6	BH19_0.5-0.6	BH20_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32826	S22-Ja32828	S22-Ja32830	S22-Ja32832
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	19.2	-	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	14	-	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	19.2	-	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	19.2	-	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	< 50	-	< 50	-

Client Sample ID			BH21_0.5-0.6	BH21_2.0-2.1	BH21_5.0-5.1	QSA01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32834	S22-Ja32835	S22-Ja32836	S22-Ja32837
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	-	< 50
TRH C29-C36	50	mg/kg	< 50	-	-	52
TRH C10-C36 (Total)	50	mg/kg	< 50	-	-	52
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	< 100
TRH >C34-C40	100	mg/kg	< 100	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	91	-	-	120
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5

Client Sample ID			BH21_0.5-0.6	BH21_2.0-2.1	BH21_5.0-5.1	QSA01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32834	S22-Ja32835	S22-Ja32836	S22-Ja32837
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	78	-	-	96
p-Terphenyl-d14 (surr.)	1	%	84	-	-	95
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-HCH	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-HCH	0.05	mg/kg	< 0.05	-	-	< 0.05
d-HCH	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	-	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	91	-	-	88
Tetrachloro-m-xylene (surr.)	1	%	70	-	-	88
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	91	-	-	88
Tetrachloro-m-xylene (surr.)	1	%	70	-	-	88

Client Sample ID			BH21_0.5-0.6	BH21_2.0-2.1	BH21_5.0-5.1	QSA01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32834	S22-Ja32835	S22-Ja32836	S22-Ja32837
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	11	-	-	12
Cadmium	0.4	mg/kg	< 0.4	-	-	< 0.4
Chromium	5	mg/kg	25	-	-	31
Copper	5	mg/kg	24	-	-	36
Lead	5	mg/kg	17	-	-	50
Mercury	0.1	mg/kg	< 0.1	-	-	< 0.1
Nickel	5	mg/kg	< 5	-	-	20
Zinc	5	mg/kg	5.7	-	-	84
% Moisture	1	%	25	20	11	14
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	-	-	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	-	-	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	-	-	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	-	-	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	-	-	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	-	-	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	-	-	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	-	-	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	-	-	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	-	-	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	-	-	< 5
13C4-PFBA (surr.)	1	%	-	-	-	101
13C5-PFPeA (surr.)	1	%	-	-	-	117
13C5-PFHxA (surr.)	1	%	-	-	-	95
13C4-PFHpA (surr.)	1	%	-	-	-	94
13C8-PFOA (surr.)	1	%	-	-	-	93
13C5-PFNA (surr.)	1	%	-	-	-	90
13C6-PFDA (surr.)	1	%	-	-	-	86
13C2-PFUnDA (surr.)	1	%	-	-	-	85
13C2-PFDoDA (surr.)	1	%	-	-	-	89
13C2-PFTeDA (surr.)	1	%	-	-	-	91
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	-	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	-	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	-	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	-	-	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	-	-	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	-	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	-	-	< 10
13C8-FOSA (surr.)	1	%	-	-	-	79
D3-N-MeFOSA (surr.)	1	%	-	-	-	76
D5-N-EtFOSA (surr.)	1	%	-	-	-	77
D7-N-MeFOSE (surr.)	1	%	-	-	-	79
D9-N-EtFOSE (surr.)	1	%	-	-	-	77
D5-N-EtFOSAA (surr.)	1	%	-	-	-	92
D3-N-MeFOSAA (surr.)	1	%	-	-	-	87

Client Sample ID			BH21_0.5-0.6	BH21_2.0-2.1	BH21_5.0-5.1	QSA01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32834	S22-Ja32835	S22-Ja32836	S22-Ja32837
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	-	-	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	-	-	-	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	-	-	-	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	-	-	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	-	-	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	-	-	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	-	-	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	-	-	< 5
13C3-PFBS (surr.)	1	%	-	-	-	94
18O2-PFHxS (surr.)	1	%	-	-	-	91
13C8-PFOS (surr.)	1	%	-	-	-	85
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	-	-	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	-	-	-	< 5
13C2-4:2 FTSA (surr.)	1	%	-	-	-	96
13C2-6:2 FTSA (surr.)	1	%	-	-	-	84
13C2-8:2 FTSA (surr.)	1	%	-	-	-	92
13C2-10:2 FTSA (surr.)	1	%	-	-	-	82
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	-	-	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	-	-	< 10
Sum of PFASs (n=30)*	50	ug/kg	-	-	-	< 50
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	4.2	3.9	6.1	-
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	140	130	3.0	-
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	0.23	0.21	< 0.003	-
Potential Acidity - Titratable Peroxide						
pH-OX	0.1	pH Units	4.4	4.6	7.3	-
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	0.22	0.21	< 0.02	-
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	140	130	< 2	-
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	< 2	< 2	< 2	-
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	-
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	0.040	< 0.005	< 0.005	-
Peroxide Extractable Sulfur	0.005	% S	0.040	< 0.005	< 0.005	-
HCl Extractable Sulfur	0.005	% S	0.040	< 0.005	N/A	-
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.02	% S	< 0.02	< 0.02	< 0.02	-
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	10	mol H+/t	< 10	< 10	< 10	-
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1[S02]	0.02	% S	< 0.02	< 0.02	N/A	-
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	< 10	< 10	N/A	-
HCl Extractable Sulfur Correction Factor	1	factor	2.0	2.0	2.0	-

Client Sample ID			BH21_0.5-0.6	BH21_2.0-2.1	BH21_5.0-5.1	QSA01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja32834	S22-Ja32835	S22-Ja32836	S22-Ja32837
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	0.10	0.020	< 0.005	-
Calcium - Peroxide	0.005	% Ca	0.11	0.020	0.020	-
Calcium - Acid Reacted	0.005	% Ca	0.005	< 0.005	0.025	-
Calcium - Acid Reacted (s-aCa)	0.005	% S	< 0.005	< 0.005	0.020	-
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	2.5	< 0.005	12	-
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	0.070	0.050	0.070	-
Magnesium - Peroxide	0.005	% Mg	0.070	0.050	0.080	-
Magnesium - Acid Reacted	0.005	% Mg	< 0.005	< 0.005	0.008	-
Magnesium - Acid Reacted (s-aCa)	0.005	% S	< 0.005	< 0.005	0.011	-
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	< 0.005	< 0.005	6.6	-
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	N/A	N/A	0.23	-
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	N/A	N/A	0.07	-
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	n/a	n/a	46	-
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	1.5	1.5	1.5	-
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	140	130	< 10	-
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	0.23	0.21	< 0.02	-
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	11	10	< 1	-
Extraneous Material						
<2mm Fraction	0.005	g	36	63	63	-
>2mm Fraction	0.005	g	< 0.005	3.5	6.9	-
Analysed Material	0.1	%	100	95	90	-
Extraneous Material	0.1	%	< 0.1	5.2	9.8	-

Client Sample ID			QSA02
Sample Matrix			Soil
Eurofins Sample No.			S22-Ja32838
Date Sampled			Jan 21, 2022
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	68
TRH C29-C36	50	mg/kg	110
TRH C10-C36 (Total)	50	mg/kg	178
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	170
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	170

Client Sample ID			QSA02
Sample Matrix			Soil
Eurofins Sample No.			S22-Ja32838
Date Sampled			Jan 21, 2022
Test/Reference	LOR	Unit	
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	82
p-Terphenyl-d14 (surr.)	1	%	85
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-HCH	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-HCH	0.05	mg/kg	< 0.05
d-HCH	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05

Client Sample ID			QSA02
Sample Matrix			Soil
Eurofins Sample No.			S22-Ja32838
Date Sampled			Jan 21, 2022
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	0.5	mg/kg	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	86
Tetrachloro-m-xylene (surr.)	1	%	76
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	86
Tetrachloro-m-xylene (surr.)	1	%	76
Heavy Metals			
Arsenic	2	mg/kg	12
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	36
Copper	5	mg/kg	49
Lead	5	mg/kg	110
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	41
Zinc	5	mg/kg	190
% Moisture	1	%	18
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5
13C4-PFBA (surr.)	1	%	97
13C5-PFPeA (surr.)	1	%	118
13C5-PFHxA (surr.)	1	%	95
13C4-PFHpA (surr.)	1	%	92
13C8-PFOA (surr.)	1	%	92
13C5-PFNA (surr.)	1	%	88

Client Sample ID			QSA02
Sample Matrix			Soil
Eurofins Sample No.			S22-Ja32838
Date Sampled			Jan 21, 2022
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
13C6-PFDA (surr.)	1	%	82
13C2-PFUnDA (surr.)	1	%	80
13C2-PFDoDA (surr.)	1	%	88
13C2-PFTeDA (surr.)	1	%	75
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10
13C8-FOSA (surr.)	1	%	84
D3-N-MeFOSA (surr.)	1	%	73
D5-N-EtFOSA (surr.)	1	%	79
D7-N-MeFOSE (surr.)	1	%	75
D9-N-EtFOSE (surr.)	1	%	78
D5-N-EtFOSAA (surr.)	1	%	88
D3-N-MeFOSAA (surr.)	1	%	80
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	95
18O2-PFHxS (surr.)	1	%	89
13C8-PFOS (surr.)	1	%	90
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5
13C2-4:2 FTSA (surr.)	1	%	95
13C2-6:2 FTSA (surr.)	1	%	80
13C2-8:2 FTSA (surr.)	1	%	91
13C2-10:2 FTSA (surr.)	1	%	81

Client Sample ID			QSA02
Sample Matrix			**Soil**
Eurofins Sample No.			**S22-Ja32838**
Date Sampled			**Jan 21, 2022**
Test/Reference	LOR	Unit	
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jan 31, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 31, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jan 31, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
JBS&G Suite 2			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 31, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jan 31, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Jan 31, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Sydney	Jan 31, 2022	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Sydney	Jan 31, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Jan 27, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Feb 02, 2022	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Feb 02, 2022	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Jan 31, 2022	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Total Organic Carbon	Melbourne	Feb 02, 2022	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Volatile Organics	Sydney	Jan 31, 2022	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Jan 31, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Jan 31, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Jan 31, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Jan 31, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Jan 27, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Feb 03, 2022	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Feb 03, 2022	6 Week
- Method: LTM-GEN-7050/7070			

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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail	Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254							X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217	X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794				X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																		
Perth Laboratory - NATA # 2377 Site # 2370																		
External Laboratory																		
No / **Sample ID** / **Sample Date** / **Sampling Time** / **Matrix** / **LAB ID**																		
1 BH01_0.5-0.6 Jan 21, 2022 Soil S22-Ja32777												X			X			
2 BH01_0.3-1.3 Jan 21, 2022 Soil S22-Ja32778		X																
3 BH02_0.2-0.3 Jan 21, 2022 Soil S22-Ja32779												X			X			
4 BH02_0.2-0.9 Jan 21, 2022 Soil S22-Ja32780		X																
5 BH03_0.2-0.3 Jan 21, 2022 Soil S22-Ja32781												X			X			
6 BH03_0.5-0.6 Jan 21, 2022 Soil S22-Ja32782						X	X	X				X	X					
7 BH03_0.2-0.4 Jan 21, 2022 Soil S22-Ja32783		X																
8 BH04_0.0-0.1 Jan 21, 2022 Soil S22-Ja32784												X			X		X	
9 BH04_1.0-1.1 Jan 21, 2022 Soil S22-Ja32785									X	X		X		X			X	

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
10	BH04_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32786										X	X							
11	BH04_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32787										X	X							
12	BH04_6.9-7.0	Jan 21, 2022		Soil	S22-Ja32788			X															
13	BH04_0.0-1.0	Jan 21, 2022		Soil	S22-Ja32789	X																	
14	BH05_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32790												X			X		X	
15	BH05_0.2-0.7	Jan 21, 2022		Soil	S22-Ja32791		X																
16	BH06_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32792												X			X		X	
17	BH06_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32793										X	X							
18	BH06_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32794										X	X							
19	BH06_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32795										X	X							
20	BH06_7.0-7.1	Jan 21, 2022		Soil	S22-Ja32796										X	X							

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
21	BH06_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32797		X																
22	BH07_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32798												X			X			
23	BH07_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32799										X		X		X				
24	BH07_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32800										X	X							
25	BH07_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32801		X																
26	BH07_1.3-2.2	Jan 21, 2022		Soil	S22-Ja32802		X																
27	BH08_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32803												X			X		X	
28	BH08_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32804												X		X				
29	BH08_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32805		X																
30	BH09_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32806												X			X			
31	BH09_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32807		X																

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
32	BH10_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32808												X			X			
33	BH10_0.25-0.4	Jan 21, 2022		Soil	S22-Ja32809		X																
34	BH11_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32810												X			X		X	
35	BH11_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32811		X																
36	BH11_1.3-1.8	Jan 21, 2022		Soil	S22-Ja32812		X																
37	BH12_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32813												X			X		X	
38	BH12_0.9-1.5	Jan 21, 2022		Soil	S22-Ja32814		X																
39	BH13_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32815												X			X			
40	BH13_0.2-1.2	Jan 21, 2022		Soil	S22-Ja32816		X																
41	BH14_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32817												X			X			
42	BH14_0.3-0.5	Jan 21, 2022		Soil	S22-Ja32818		X																

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
43	BH15_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32819												X			X		X	
44	BH16_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32820												X			X		X	
45	BH16_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32821										X	X							
46	BH16_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32822												X			X		X	
47	BH16_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32823										X		X					X	
48	BH16_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32824												X					X	
49	BH16_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32825										X		X					X	
50	BH16_5.9-6.0	Jan 21, 2022		Soil	S22-Ja32826												X					X	
51	BH16_0.0-0.2	Jan 21, 2022		Soil	S22-Ja32827		X																
52	BH17_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32828												X			X			
53	BH17_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32829		X																

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
54	BH19_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32830												X			X		X	
55	BH19_0.3-1.1	Jan 21, 2022		Soil	S22-Ja32831		X																
56	BH20_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32832												X			X			
57	BH20_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32833					X													
58	BH21_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32834										X		X			X			
59	BH21_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32835										X	X							
60	BH21_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32836										X	X							
61	QSA01	Jan 21, 2022		Soil	S22-Ja32837												X			X		X	
62	QSA02	Jan 21, 2022		Soil	S22-Ja32838												X			X		X	
63	QSA03	Jan 21, 2022		Soil	S22-Ja32839		X																
64	RINSATE	Jan 21, 2022		Water	S22-Ja32840															X		X	

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
65	TB	Jan 21, 2022		Water	S22-Ja32841																X		
66	TS	Jan 21, 2022		Water	S22-Ja32842																		X
67	BH01_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32843					X													
68	BH01_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32844					X													
69	BH01_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32845					X													
70	BH02_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32846					X													
71	BH02_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32847					X													
72	BH03_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32848					X													
73	BH04_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32849					X													
74	BH04_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32850					X													
75	BH04_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32851					X													

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
76	BH04_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32852					X													
77	BH05_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32853					X													
78	BH05_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32854					X													
79	BH05_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32855					X													
80	BH05_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32856					X													
81	BH05_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32857					X													
82	BH05_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32858					X													
83	BH05_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32859					X													
84	BH05_7.0-7.1	Jan 21, 2022		Soil	S22-Ja32860					X													
85	BH05_7.4-7.5	Jan 21, 2022		Soil	S22-Ja32861					X													
86	BH06_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32862					X													

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
87	BH06_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32863					X													
88	BH06_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32864					X													
89	BH06_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32865					X													
90	BH06_7.4-7.5	Jan 21, 2022		Soil	S22-Ja32866					X													
91	BH07_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32867					X													
92	BH07_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32868					X													
93	BH07_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32869					X													
94	BH07_4.9-5.0	Jan 21, 2022		Soil	S22-Ja32870					X													
95	BH08_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32871					X													
96	BH08_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32872					X													
97	BH09_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32873					X													

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
98	BH09_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32874					X													
99	BH09_1.8-1.9	Jan 21, 2022		Soil	S22-Ja32875					X													
100	BH10_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32876					X													
101	BH10_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32877					X													
102	BH11_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32878					X													
103	BH11_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32879					X													
104	BH11_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32880					X													
105	BH12_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32881					X													
106	BH12_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32882					X													
107	BH12_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32883					X													
108	BH12_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32884					X													

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
109	BH12_5.9-6.0	Jan 21, 2022		Soil	S22-Ja32885					X													
110	BH13_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32886					X													
111	BH13_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32887					X													
112	BH13_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32888					X													
113	BH14_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32889					X													
114	BH14_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32890					X													
115	BH15_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32891					X													
116	BH15_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32892					X													
117	BH16_0.0-0.1	Jan 21, 2022		Soil	S22-Ja32893					X													
118	BH17_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32894					X													
119	BH17_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32895					X													

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
120	BH17_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32896					X													
121	BH19_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32897					X													
122	BH19_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32898					X													
123	BH20_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32899		X																
124	BH20_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32900					X													
125	BH21_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32901					X													
126	BH21_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32902					X													
127	BH21_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32903					X													
128	BH21_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32904					X													
129	BLANK	Jan 21, 2022		Water	S22-Ja32905					X													
130	BH21_0.5-0.6	Jan 21, 2022		Soil	S22-Ja34558				X														

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Melbourne Laboratory - NATA # 1261 Site # 1254							X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217	X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794				X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																		
Perth Laboratory - NATA # 2377 Site # 2370																		
External Laboratory																		
131 BH2_2.0-2.1 Jan 21, 2022 Soil S22-Ja34559				X														
Test Counts	1	20	1	65	65	1	1	1	1	15	41	41	1	3	24	1	18	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	86			70-130	Pass	
TRH C10-C14	%	102			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
TRH C6-C10	%	80			70-130	Pass	
TRH >C10-C16	%	103			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	94			70-130	Pass	
m&p-Xylenes	%	97			70-130	Pass	
o-Xylene	%	98			70-130	Pass	
Xylenes - Total*	%	97			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	79			70-130	Pass	
Acenaphthylene	%	84			70-130	Pass	
Anthracene	%	79			70-130	Pass	
Benz(a)anthracene	%	74			70-130	Pass	
Benzo(a)pyrene	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	%	74			70-130	Pass	
Benzo(g.h.i)perylene	%	79			70-130	Pass	
Benzo(k)fluoranthene	%	91			70-130	Pass	
Chrysene	%	78			70-130	Pass	
Dibenz(a.h)anthracene	%	82			70-130	Pass	
Fluoranthene	%	79			70-130	Pass	
Fluorene	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	83			70-130	Pass	
Naphthalene	%	80			70-130	Pass	
Phenanthrene	%	79			70-130	Pass	
Pyrene	%	78			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	75			70-130	Pass	
4.4'-DDD	%	78			70-130	Pass	
4.4'-DDE	%	73			70-130	Pass	
4.4'-DDT	%	125			70-130	Pass	
a-HCH	%	74			70-130	Pass	
Aldrin	%	71			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
b-HCH	%	78			70-130	Pass	
d-HCH	%	71			70-130	Pass	
Dieldrin	%	80			70-130	Pass	
Endosulfan I	%	71			70-130	Pass	
Endosulfan II	%	73			70-130	Pass	
Endosulfan sulphate	%	96			70-130	Pass	
Endrin	%	78			70-130	Pass	
Endrin aldehyde	%	72			70-130	Pass	
Endrin ketone	%	79			70-130	Pass	
g-HCH (Lindane)	%	78			70-130	Pass	
Heptachlor	%	108			70-130	Pass	
Heptachlor epoxide	%	82			70-130	Pass	
Hexachlorobenzene	%	76			70-130	Pass	
Methoxychlor	%	128			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	70			70-130	Pass	
Aroclor-1260	%	80			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	102			80-120	Pass	
Cadmium	%	100			80-120	Pass	
Chromium	%	101			80-120	Pass	
Copper	%	99			80-120	Pass	
Lead	%	98			80-120	Pass	
Mercury	%	96			80-120	Pass	
Nickel	%	100			80-120	Pass	
Zinc	%	85			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	106			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	109			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	108			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	109			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	112			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	110			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	111			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	112			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	107			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	113			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	109			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	101			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	111			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	107			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	106			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	108			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	99			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	110			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	100			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	103			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoropropanesulfonic acid (PFPrS)	%	103			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	90			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	104			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	97			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	90			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	100			50-150	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	116			70-130	Pass	
1.1.1-Trichloroethane	%	113			70-130	Pass	
1.2-Dichlorobenzene	%	106			70-130	Pass	
1.2-Dichloroethane	%	120			70-130	Pass	
Benzene	%	92			70-130	Pass	
Ethylbenzene	%	89			70-130	Pass	
m&p-Xylenes	%	90			70-130	Pass	
o-Xylene	%	94			70-130	Pass	
Toluene	%	87			70-130	Pass	
Trichloroethene	%	112			70-130	Pass	
Xylenes - Total*	%	91			70-130	Pass	
LCS - % Recovery							
Actual Acidity (NLM-3.2)							
pH-KCL (NLM-3.1)	%	90			80-120	Pass	
Titratable Actual Acidity (NLM-3.2)	%	117			80-120	Pass	
LCS - % Recovery							
Extractable Sulfur							
HCl Extractable Sulfur	%	107			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S22-Ja35010	NCP	%	94			70-130	Pass	
TRH C10-C14	S22-Ja33723	NCP	%	75			70-130	Pass	
Naphthalene	S22-Ja35010	NCP	%	105			70-130	Pass	
TRH C6-C10	S22-Ja35010	NCP	%	92			70-130	Pass	
TRH >C10-C16	S22-Ja33723	NCP	%	76			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S22-Ja35010	NCP	%	98			70-130	Pass	
Toluene	S22-Ja35010	NCP	%	96			70-130	Pass	
Ethylbenzene	S22-Ja35010	NCP	%	100			70-130	Pass	
m&p-Xylenes	S22-Ja35010	NCP	%	104			70-130	Pass	
o-Xylene	S22-Ja35010	NCP	%	104			70-130	Pass	
Xylenes - Total*	S22-Ja35010	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-Ja36749	NCP	%	100			70-130	Pass	
Acenaphthylene	S22-Ja36749	NCP	%	113			70-130	Pass	
Anthracene	S22-Ja36749	NCP	%	106			70-130	Pass	
Benz(a)anthracene	S22-Ja36749	NCP	%	101			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	S22-Ja36749	NCP	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	S22-Ja36749	NCP	%	90			70-130	Pass	
Benzo(g.h.i)perylene	S22-Ja36749	NCP	%	96			70-130	Pass	
Benzo(k)fluoranthene	S22-Ja36749	NCP	%	117			70-130	Pass	
Chrysene	S22-Ja36749	NCP	%	112			70-130	Pass	
Dibenz(a.h)anthracene	S22-Ja36749	NCP	%	106			70-130	Pass	
Fluoranthene	S22-Ja36749	NCP	%	102			70-130	Pass	
Fluorene	S22-Ja36749	NCP	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ja36749	NCP	%	108			70-130	Pass	
Naphthalene	S22-Ja36749	NCP	%	102			70-130	Pass	
Phenanthrene	S22-Ja36749	NCP	%	102			70-130	Pass	
Pyrene	S22-Ja36749	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Ja36749	NCP	%	93			70-130	Pass	
4.4'-DDD	S22-Ja36749	NCP	%	91			70-130	Pass	
4.4'-DDE	S22-Ja36749	NCP	%	89			70-130	Pass	
4.4'-DDT	S22-Ja36749	NCP	%	95			70-130	Pass	
a-HCH	S22-Ja36749	NCP	%	95			70-130	Pass	
Aldrin	S22-Ja36749	NCP	%	85			70-130	Pass	
b-HCH	S22-Ja36749	NCP	%	93			70-130	Pass	
d-HCH	S22-Ja36749	NCP	%	92			70-130	Pass	
Dieldrin	S22-Ja36749	NCP	%	103			70-130	Pass	
Endosulfan I	S22-Ja36749	NCP	%	98			70-130	Pass	
Endosulfan II	S22-Ja36749	NCP	%	99			70-130	Pass	
Endosulfan sulphate	S22-Ja36749	NCP	%	85			70-130	Pass	
Endrin	S22-Ja36749	NCP	%	111			70-130	Pass	
Endrin aldehyde	S22-Ja36749	NCP	%	76			70-130	Pass	
Endrin ketone	S22-Ja36749	NCP	%	92			70-130	Pass	
g-HCH (Lindane)	W22-Ja28079	NCP	%	89			70-130	Pass	
Heptachlor	S22-Ja36749	NCP	%	114			70-130	Pass	
Heptachlor epoxide	S22-Ja36749	NCP	%	88			70-130	Pass	
Hexachlorobenzene	S22-Ja36749	NCP	%	94			70-130	Pass	
Methoxychlor	S22-Ja36749	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S22-Ja36749	NCP	%	77			70-130	Pass	
Aroclor-1260	S22-Ja36749	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	S22-Ja31847	NCP	%	109			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Ja32779	CP	%	75			75-125	Pass	
Cadmium	S22-Ja32779	CP	%	92			75-125	Pass	
Chromium	S22-Ja32779	CP	%	121			75-125	Pass	
Copper	S22-Ja32779	CP	%	80			75-125	Pass	
Mercury	S22-Ja32779	CP	%	98			75-125	Pass	
Nickel	S22-Ja32779	CP	%	96			75-125	Pass	
Zinc	S22-Ja32779	CP	%	109			75-125	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	S22-Ja33718	NCP	%	90			70-130	Pass	
1.1.1-Trichloroethane	S22-Ja33718	NCP	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.2-Dichlorobenzene	S22-Ja33718	NCP	%	89			70-130	Pass	
1.2-Dichloroethane	S22-Ja33718	NCP	%	97			70-130	Pass	
Trichloroethene	S22-Ja33718	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S22-Ja32790	CP	%	103			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Ja32790	CP	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Ja32790	CP	%	108			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Ja32790	CP	%	107			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S22-Ja32790	CP	%	110			50-150	Pass	
Perfluorononanoic acid (PFNA)	S22-Ja32790	CP	%	112			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S22-Ja32790	CP	%	108			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Ja32790	CP	%	123			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Ja32790	CP	%	112			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-Ja32790	CP	%	100			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-Ja32790	CP	%	110			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S22-Ja32790	CP	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Ja32790	CP	%	105			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Ja32790	CP	%	105			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S22-Ja32790	CP	%	107			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S22-Ja32790	CP	%	106			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Ja32790	CP	%	100			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Ja32790	CP	%	107			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S22-Ja32790	CP	%	93			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-Ja32790	CP	%	103			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-Ja32790	CP	%	96			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-Ja32790	CP	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-Ja32790	CP	%	101			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S22-Ja32790	CP	%	99			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-Ja32790	CP	%	101			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S22-Ja32790	CP	%	92			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Ja32790	CP	%	94			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S22-Ja32790	CP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Ja32790	CP	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Ja32790	CP	%	103			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Ja35019	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S22-Ja33446	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S22-Ja33446	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S22-Ja33446	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	S22-Ja35019	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Ja35019	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S22-Ja33446	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S22-Ja33446	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S22-Ja33446	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Ja35019	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Ja35019	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Ja35019	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Ja35019	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Ja35019	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Ja35019	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Ja36748	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
d-HCH	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S22-Ja36748	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S22-Ja36748	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S22-Ja36748	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S22-Ja36748	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S22-Ja36748	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S22-Ja36748	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S22-Ja36748	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S22-Ja36748	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S22-Ja36748	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S22-Ja36748	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Ja32777	CP	mg/kg	2.9	2.8	4.0	30%	Pass	
Cadmium	S22-Ja32777	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Ja32777	CP	mg/kg	21	20	8.0	30%	Pass	
Copper	S22-Ja32777	CP	mg/kg	10	10	<1	30%	Pass	
Lead	S22-Ja32777	CP	mg/kg	11	11	5.0	30%	Pass	
Mercury	S22-Ja32777	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Ja32777	CP	mg/kg	10	11	9.0	30%	Pass	
Zinc	S22-Ja32777	CP	mg/kg	14	14	5.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Ja32777	CP	%	13	13	5.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (1:5 Aqueous extract at 25°C as rec.)	S22-Ja32782	CP	pH Units	5.4	5.2	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorotridecanoic acid (PFTrDA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Ja32784	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Ja32784	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-Ja32784	CP	ug/kg	6.0	< 5	130	30%	Fail	Q15
Perfluoroheptanesulfonic acid (PFHpS)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-Ja32784	CP	ug/kg	6.1	< 5	100	30%	Fail	Q15
Perfluorodecanesulfonic acid (PFDS)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S22-Ja32784	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Ja32784	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.2-Dichloroethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Iodomethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S22-Ja33722	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Actual Acidity (NLM-3.2)				Result 1	Result 2	RPD			
pH-KCL (NLM-3.1)	S22-Ja32785	CP	pH Units	8.1	8.1	<1	30%	Pass	
Titratable Actual Acidity (NLM-3.2)	S22-Ja32785	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
Titratable Actual Acidity (NLM-3.2)	S22-Ja32785	CP	% pyrite S	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Potential Acidity - Titratable Peroxide				Result 1	Result 2	RPD			
pH-OX	S22-Ja32785	CP	pH Units	7.1	7.0	<1	30%	Pass	
Titratable Peroxide Acidity (s-TPA)	S22-Ja32785	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Titratable Peroxide Acidity (a-TPA)	S22-Ja32785	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
Titratable Sulfidic Acidity (a-TSA)	S22-Ja32785	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
Titratable Sulfidic Acidity (s-TSA)	S22-Ja32785	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	

Duplicate									
Extractable Sulfur				Result 1	Result 2	RPD			
Sulfur - KCl Extractable	S22-Ja32785	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
Peroxide Extractable Sulfur	S22-Ja32785	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
HCl Extractable Sulfur	S22-Ja32785	CP	% S	N/A	N/A	N/A	30%	Pass	
Duplicate									
Potential Acidity (SPOS)				Result 1	Result 2	RPD			
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	S22-Ja32785	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	S22-Ja32785	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Duplicate									
Retained Acidity (S-NAS)				Result 1	Result 2	RPD			
Net Acid soluble sulfur (s-SNAS) NLM-4.1	S22-Ja32785	CP	% S	N/A	N/A	N/A	30%	Pass	
Net Acid soluble sulfur (a-SNAS) NLM-4.1	S22-Ja32785	CP	mol H+/t	N/A	N/A	N/A	30%	Pass	
Duplicate									
Extractable Calcium				Result 1	Result 2	RPD			
Calcium - KCl Extractable	S22-Ja32785	CP	% Ca	0.31	0.31	1.0	30%	Pass	
Calcium - Peroxide	S22-Ja32785	CP	% Ca	0.41	0.42	1.0	30%	Pass	
Calcium - Acid Reacted	S22-Ja32785	CP	% Ca	0.10	0.11	7.0	30%	Pass	
Calcium - Acid Reacted (s-aCa)	S22-Ja32785	CP	% S	0.082	0.089	7.0	30%	Pass	
Calcium - Acid Reacted (a-aCa)	S22-Ja32785	CP	mol H+/t	51	55	7.0	30%	Pass	
Duplicate									
Extractable Magnesium				Result 1	Result 2	RPD			
Magnesium - KCl Extractable	S22-Ja32785	CP	% Mg	0.050	0.050	1.0	30%	Pass	
Magnesium - Peroxide	S22-Ja32785	CP	% Mg	0.070	0.070	1.0	30%	Pass	
Magnesium - Acid Reacted	S22-Ja32785	CP	% Mg	0.020	0.022	6.0	30%	Pass	
Magnesium - Acid Reacted (s-aCa)	S22-Ja32785	CP	% S	0.027	0.029	6.0	30%	Pass	
Magnesium - Acid Reacted (a-aCa)	S22-Ja32785	CP	mol H+/t	17	18	6.0	30%	Pass	
Duplicate									
Acid Neutralising Capacity (ANCE)				Result 1	Result 2	RPD			
Acid Neutralising Capacity - (ANCE)	S22-Ja32785	CP	% CaCO3	0.68	0.64	6.0	30%	Pass	
Acid Neutralising Capacity - (a-ANCE)	S22-Ja32785	CP	mol H+/t	140	130	6.0	30%	Pass	
Duplicate									
Acid Neutralising Capacity (ANCbt)				Result 1	Result 2	RPD			
ANC Fineness Factor	S22-Ja32785	CP	factor	1.5	1.5	<1	30%	Pass	
Duplicate									
Net Acidity (Including ANC)				Result 1	Result 2	RPD			
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	S22-Ja32785	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	S22-Ja32785	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
SPOCAS - Liming rate - ASSMAC	S22-Ja32785	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Ja32796	CP	%	5.2	5.1	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Ja32803	CP	mg/kg	7.6	11	32	30%	Fail	Q15
Cadmium	S22-Ja32803	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Ja32803	CP	mg/kg	11	19	49	30%	Fail	Q15
Copper	S22-Ja32803	CP	mg/kg	18	26	35	30%	Fail	Q15
Lead	S22-Ja32803	CP	mg/kg	26	48	60	30%	Fail	Q15
Mercury	S22-Ja32803	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Ja32803	CP	mg/kg	< 5	5.9	60	30%	Fail	Q15
Zinc	S22-Ja32803	CP	mg/kg	27	43	46	30%	Fail	Q15

Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Ja32803	CP	%	17	19	8.0	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Ja32810	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Ja32810	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S22-Ja32810	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Ja32810	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Actual Acidity (NLM-3.2)				Result 1	Result 2	RPD			
pH-KCL (NLM-3.1)	S22-Ja32821	CP	pH Units	6.3	6.3	<1	30%	Pass	
Titratable Actual Acidity (NLM-3.2)	S22-Ja32821	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
Titratable Actual Acidity (NLM-3.2)	S22-Ja32821	CP	% pyrite S	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Potential Acidity - Titratable Peroxide				Result 1	Result 2	RPD			
pH-OX	S22-Ja32821	CP	pH Units	6.3	6.2	1.0	30%	Pass	
Titratable Peroxide Acidity (s-TPA)	S22-Ja32821	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Titratable Peroxide Acidity (a-TPA)	S22-Ja32821	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
Titratable Sulfidic Acidity (a-TSA)	S22-Ja32821	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
Titratable Sulfidic Acidity (s-TSA)	S22-Ja32821	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Extractable Sulfur				Result 1	Result 2	RPD			
Sulfur - KCl Extractable	S22-Ja32821	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
Peroxide Extractable Sulfur	S22-Ja32821	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
HCl Extractable Sulfur	S22-Ja32821	CP	% S	N/A	N/A	N/A	30%	Pass	
Duplicate									
Potential Acidity (SPOS)				Result 1	Result 2	RPD			
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	S22-Ja32821	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	S22-Ja32821	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Duplicate									
Retained Acidity (S-NAS)				Result 1	Result 2	RPD			
Net Acid soluble sulfur (s-SNAS) NLM-4.1	S22-Ja32821	CP	% S	N/A	N/A	N/A	30%	Pass	
Net Acid soluble sulfur (a-SNAS) NLM-4.1	S22-Ja32821	CP	mol H+/t	N/A	N/A	N/A	30%	Pass	
Duplicate									
Extractable Calcium				Result 1	Result 2	RPD			
Calcium - KCl Extractable	S22-Ja32821	CP	% Ca	0.20	0.20	<1	30%	Pass	
Calcium - Peroxide	S22-Ja32821	CP	% Ca	0.22	0.22	1.0	30%	Pass	
Calcium - Acid Reacted	S22-Ja32821	CP	% Ca	0.021	0.020	7.0	30%	Pass	
Calcium - Acid Reacted (s-aCa)	S22-Ja32821	CP	% S	0.017	0.016	7.0	30%	Pass	
Calcium - Acid Reacted (a-aCa)	S22-Ja32821	CP	mol H+/t	10	9.7	7.0	30%	Pass	
Duplicate									
Extractable Magnesium				Result 1	Result 2	RPD			
Magnesium - KCl Extractable	S22-Ja32821	CP	% Mg	0.050	0.050	<1	30%	Pass	
Magnesium - Peroxide	S22-Ja32821	CP	% Mg	0.050	0.050	1.0	30%	Pass	
Magnesium - Acid Reacted	S22-Ja32821	CP	% Mg	< 0.005	< 0.005	<1	30%	Pass	
Magnesium - Acid Reacted (s-aCa)	S22-Ja32821	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
Magnesium - Acid Reacted (a-aCa)	S22-Ja32821	CP	mol H+/t	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Acid Neutralising Capacity (ANCE)				Result 1	Result 2	RPD			
Acid Neutralising Capacity - (ANCE)	S22-Ja32821	CP	% CaCO3	N/A	N/A	N/A	30%	Pass	
Acid Neutralising Capacity - (a-ANCE)	S22-Ja32821	CP	mol H+/t	n/a	n/a	N/A	30%	Pass	
Duplicate									
Acid Neutralising Capacity (ANCbt)				Result 1	Result 2	RPD			
ANC Fineness Factor	S22-Ja32821	CP	factor	1.5	1.5	<1	30%	Pass	
Duplicate									
Net Acidity (Including ANC)				Result 1	Result 2	RPD			
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	S22-Ja32821	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	S22-Ja32821	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
SPOCAS - Liming rate - ASSMAC	S22-Ja32821	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Ja32822	CP	%	12	14	13	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Ja32838	CP	%	18	18	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Andrew Sullivan	Senior Analyst-PFAS (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Myles Clark	Senior Analyst-SPOCAS (QLD)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Accreditation Number 1261
Site Number 18217

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Attention: **Chris Bielby**

Report **858427-W**
Project name LIDCOMBE
Project ID 62184
Received Date Jan 25, 2022

Client Sample ID			**RINSATE**	**TB**	**TS**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins Sample No.			**S22-Ja32840**	**S22-Ja32841**	**S22-Ja32842**
Date Sampled			**Jan 21, 2022**	**Jan 21, 2022**	**Jan 21, 2022**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	-	-
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	-
TRH >C10-C16	0.05	mg/L	< 0.05	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-	-
BTEX					
Benzene	0.001	mg/L	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	-
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	96	88	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	-	-
Acenaphthylene	0.001	mg/L	< 0.001	-	-
Anthracene	0.001	mg/L	< 0.001	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	-	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-
Chrysene	0.001	mg/L	< 0.001	-	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-	-
Fluoranthene	0.001	mg/L	< 0.001	-	-
Fluorene	0.001	mg/L	< 0.001	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-

Client Sample ID			RINSATE	TB	TS
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S22-Ja32840	S22-Ja32841	S22-Ja32842
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Naphthalene	0.001	mg/L	< 0.001	-	-
Phenanthrene	0.001	mg/L	< 0.001	-	-
Pyrene	0.001	mg/L	< 0.001	-	-
Total PAH*	0.001	mg/L	< 0.001	-	-
2-Fluorobiphenyl (surr.)	1	%	50	-	-
p-Terphenyl-d14 (surr.)	1	%	90	-	-
Organochlorine Pesticides					
Chlordanes - Total	0.002	mg/L	< 0.002	-	-
4.4'-DDD	0.0002	mg/L	< 0.0002	-	-
4.4'-DDE	0.0002	mg/L	< 0.0002	-	-
4.4'-DDT	0.0002	mg/L	< 0.0002	-	-
a-HCH	0.0002	mg/L	< 0.0002	-	-
Aldrin	0.0002	mg/L	< 0.0002	-	-
b-HCH	0.0002	mg/L	< 0.0002	-	-
d-HCH	0.0002	mg/L	< 0.0002	-	-
Dieldrin	0.0002	mg/L	< 0.0002	-	-
Endosulfan I	0.0002	mg/L	< 0.0002	-	-
Endosulfan II	0.0002	mg/L	< 0.0002	-	-
Endosulfan sulphate	0.0002	mg/L	< 0.0002	-	-
Endrin	0.0002	mg/L	< 0.0002	-	-
Endrin aldehyde	0.0002	mg/L	< 0.0002	-	-
Endrin ketone	0.0002	mg/L	< 0.0002	-	-
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	-	-
Heptachlor	0.0002	mg/L	< 0.0002	-	-
Heptachlor epoxide	0.0002	mg/L	< 0.0002	-	-
Hexachlorobenzene	0.0002	mg/L	< 0.0002	-	-
Methoxychlor	0.0002	mg/L	< 0.0002	-	-
Toxaphene	0.005	mg/L	< 0.005	-	-
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	-	-
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	-	-
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	-	-
Dibutylchlorendate (surr.)	1	%	80	-	-
Tetrachloro-m-xylene (surr.)	1	%	78	-	-
Polychlorinated Biphenyls					
Aroclor-1016	0.005	mg/L	< 0.005	-	-
Aroclor-1221	0.005	mg/L	< 0.005	-	-
Aroclor-1232	0.005	mg/L	< 0.005	-	-
Aroclor-1242	0.005	mg/L	< 0.005	-	-
Aroclor-1248	0.005	mg/L	< 0.005	-	-
Aroclor-1254	0.005	mg/L	< 0.005	-	-
Aroclor-1260	0.005	mg/L	< 0.005	-	-
Total PCB*	0.005	mg/L	< 0.005	-	-
Dibutylchlorendate (surr.)	1	%	80	-	-
Tetrachloro-m-xylene (surr.)	1	%	78	-	-

Client Sample ID			RINSATE	TB	TS
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S22-Ja32840	S22-Ja32841	S22-Ja32842
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	0.001	mg/L	< 0.001	-	-
Cadmium	0.0002	mg/L	< 0.0002	-	-
Chromium	0.001	mg/L	< 0.001	-	-
Copper	0.001	mg/L	< 0.001	-	-
Lead	0.001	mg/L	< 0.001	-	-
Mercury	0.0001	mg/L	< 0.0001	-	-
Nickel	0.001	mg/L	< 0.001	-	-
Zinc	0.005	mg/L	< 0.005	-	-
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	-	-
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	-	-
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	-	-
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	-	-
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	-	-
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	-	-
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	-	-
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	-	-
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	-	-
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	-	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	-	-
13C4-PFBA (surr.)	1	%	92	-	-
13C5-PFPeA (surr.)	1	%	116	-	-
13C5-PFHxA (surr.)	1	%	108	-	-
13C4-PFHpA (surr.)	1	%	102	-	-
13C8-PFOA (surr.)	1	%	114	-	-
13C5-PFNA (surr.)	1	%	108	-	-
13C6-PFDA (surr.)	1	%	103	-	-
13C2-PFUnDA (surr.)	1	%	99	-	-
13C2-PFDoDA (surr.)	1	%	110	-	-
13C2-PFTeDA (surr.)	1	%	104	-	-
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	-	-
13C8-FOSA (surr.)	1	%	95	-	-
D3-N-MeFOSA (surr.)	1	%	74	-	-
D5-N-EtFOSA (surr.)	1	%	77	-	-
D7-N-MeFOSE (surr.)	1	%	85	-	-
D9-N-EtFOSE (surr.)	1	%	87	-	-
D5-N-EtFOSAA (surr.)	1	%	101	-	-
D3-N-MeFOSAA (surr.)	1	%	95	-	-

Client Sample ID			RINSATE	TB	TS
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S22-Ja32840	S22-Ja32841	S22-Ja32842
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	-	-
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	-	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	-	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	-	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	-	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	-	-
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	-	-
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	-	-
13C3-PFBS (surr.)	1	%	112	-	-
18O2-PFHxS (surr.)	1	%	120	-	-
13C8-PFOS (surr.)	1	%	107	-	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	-	-
13C2-4:2 FTSA (surr.)	1	%	113	-	-
13C2-6:2 FTSA (surr.)	1	%	115	-	-
13C2-8:2 FTSA (surr.)	1	%	[Q09]95	-	-
13C2-10:2 FTSA (surr.)	1	%	102	-	-
PFASs Summations					
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	-	-
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	-	-
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	-	-
TRH C6-C10	1	%	-	-	110
Total Recoverable Hydrocarbons					
Naphthalene	1	%	-	-	120
TRH C6-C9	1	%	-	-	100
BTEX					
Benzene	1	%	-	-	110
Ethylbenzene	1	%	-	-	110
m&p-Xylenes	1	%	-	-	110
o-Xylene	1	%	-	-	110
Toluene	1	%	-	-	110
Xylenes - Total	1	%	-	-	110
4-Bromofluorobenzene (surr.)	1	%	-	-	89

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Feb 02, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 27, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Jan 27, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jan 27, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
JBS&G Suite 2			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 02, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Feb 02, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Feb 02, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Sydney	Feb 02, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Sydney	Jan 27, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Jan 27, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Jan 27, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Jan 27, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Jan 27, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Jan 27, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail	Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254							X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217	X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794				X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																		
Perth Laboratory - NATA # 2377 Site # 2370																		
External Laboratory																		

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID															
1	BH01_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32777											X			X			
2	BH01_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32778		X															
3	BH02_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32779											X			X			
4	BH02_0.2-0.9	Jan 21, 2022		Soil	S22-Ja32780		X															
5	BH03_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32781											X			X			
6	BH03_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32782						X	X	X			X	X					
7	BH03_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32783		X															
8	BH04_0.0-0.1	Jan 21, 2022		Soil	S22-Ja32784											X			X		X	
9	BH04_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32785									X	X	X		X			X	

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Eurofins Analytical Services Manager : Ursula Long

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
10	BH04_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32786										X	X							
11	BH04_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32787										X	X							
12	BH04_6.9-7.0	Jan 21, 2022		Soil	S22-Ja32788			X															
13	BH04_0.0-1.0	Jan 21, 2022		Soil	S22-Ja32789	X																	
14	BH05_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32790												X			X		X	
15	BH05_0.2-0.7	Jan 21, 2022		Soil	S22-Ja32791		X																
16	BH06_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32792												X			X		X	
17	BH06_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32793										X	X							
18	BH06_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32794										X	X							
19	BH06_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32795										X	X							
20	BH06_7.0-7.1	Jan 21, 2022		Soil	S22-Ja32796										X	X							

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Fax:

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Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
21	BH06_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32797		X																
22	BH07_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32798												X			X			
23	BH07_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32799										X		X		X				
24	BH07_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32800										X	X							
25	BH07_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32801		X																
26	BH07_1.3-2.2	Jan 21, 2022		Soil	S22-Ja32802		X																
27	BH08_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32803												X			X		X	
28	BH08_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32804												X		X				
29	BH08_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32805		X																
30	BH09_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32806												X			X			
31	BH09_0.2-0.4	Jan 21, 2022		Soil	S22-Ja32807		X																

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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
32	BH10_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32808												X			X			
33	BH10_0.25-0.4	Jan 21, 2022		Soil	S22-Ja32809		X																
34	BH11_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32810												X			X		X	
35	BH11_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32811		X																
36	BH11_1.3-1.8	Jan 21, 2022		Soil	S22-Ja32812		X																
37	BH12_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32813												X			X		X	
38	BH12_0.9-1.5	Jan 21, 2022		Soil	S22-Ja32814		X																
39	BH13_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32815												X			X			
40	BH13_0.2-1.2	Jan 21, 2022		Soil	S22-Ja32816		X																
41	BH14_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32817												X			X			
42	BH14_0.3-0.5	Jan 21, 2022		Soil	S22-Ja32818		X																

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
43	BH15_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32819												X			X		X	
44	BH16_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32820												X			X		X	
45	BH16_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32821										X	X							
46	BH16_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32822												X			X		X	
47	BH16_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32823										X		X					X	
48	BH16_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32824												X					X	
49	BH16_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32825										X		X					X	
50	BH16_5.9-6.0	Jan 21, 2022		Soil	S22-Ja32826												X					X	
51	BH16_0.0-0.2	Jan 21, 2022		Soil	S22-Ja32827		X																
52	BH17_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32828												X			X			
53	BH17_0.3-1.3	Jan 21, 2022		Soil	S22-Ja32829		X																

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
54	BH19_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32830												X			X		X	
55	BH19_0.3-1.1	Jan 21, 2022		Soil	S22-Ja32831		X																
56	BH20_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32832												X			X			
57	BH20_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32833					X													
58	BH21_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32834										X		X			X			
59	BH21_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32835										X	X							
60	BH21_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32836										X	X							
61	QSA01	Jan 21, 2022		Soil	S22-Ja32837												X			X		X	
62	QSA02	Jan 21, 2022		Soil	S22-Ja32838												X			X		X	
63	QSA03	Jan 21, 2022		Soil	S22-Ja32839		X																
64	RINSATE	Jan 21, 2022		Water	S22-Ja32840															X		X	

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
65	TB	Jan 21, 2022		Water	S22-Ja32841																X		
66	TS	Jan 21, 2022		Water	S22-Ja32842																		X
67	BH01_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32843					X													
68	BH01_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32844					X													
69	BH01_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32845					X													
70	BH02_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32846					X													
71	BH02_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32847					X													
72	BH03_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32848					X													
73	BH04_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32849					X													
74	BH04_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32850					X													
75	BH04_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32851					X													

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
76	BH04_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32852					X													
77	BH05_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32853					X													
78	BH05_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32854					X													
79	BH05_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32855					X													
80	BH05_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32856					X													
81	BH05_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32857					X													
82	BH05_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32858					X													
83	BH05_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32859					X													
84	BH05_7.0-7.1	Jan 21, 2022		Soil	S22-Ja32860					X													
85	BH05_7.4-7.5	Jan 21, 2022		Soil	S22-Ja32861					X													
86	BH06_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32862					X													

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
87	BH06_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32863					X													
88	BH06_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32864					X													
89	BH06_6.0-6.1	Jan 21, 2022		Soil	S22-Ja32865					X													
90	BH06_7.4-7.5	Jan 21, 2022		Soil	S22-Ja32866					X													
91	BH07_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32867					X													
92	BH07_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32868					X													
93	BH07_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32869					X													
94	BH07_4.9-5.0	Jan 21, 2022		Soil	S22-Ja32870					X													
95	BH08_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32871					X													
96	BH08_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32872					X													
97	BH09_0.2-0.3	Jan 21, 2022		Soil	S22-Ja32873					X													

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
98	BH09_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32874					X													
99	BH09_1.8-1.9	Jan 21, 2022		Soil	S22-Ja32875					X													
100	BH10_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32876					X													
101	BH10_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32877					X													
102	BH11_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32878					X													
103	BH11_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32879					X													
104	BH11_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32880					X													
105	BH12_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32881					X													
106	BH12_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32882					X													
107	BH12_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32883					X													
108	BH12_5.0-5.1	Jan 21, 2022		Soil	S22-Ja32884					X													

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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 858427
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:19 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
109	BH12_5.9-6.0	Jan 21, 2022		Soil	S22-Ja32885					X													
110	BH13_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32886					X													
111	BH13_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32887					X													
112	BH13_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32888					X													
113	BH14_0.5-0.6	Jan 21, 2022		Soil	S22-Ja32889					X													
114	BH14_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32890					X													
115	BH15_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32891					X													
116	BH15_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32892					X													
117	BH16_0.0-0.1	Jan 21, 2022		Soil	S22-Ja32893					X													
118	BH17_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32894					X													
119	BH17_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32895					X													

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Project ID: 62184

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Fax:

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Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

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Melbourne Laboratory - NATA # 1261 Site # 1254												X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																							
Perth Laboratory - NATA # 2377 Site # 2370																							
External Laboratory																							
120	BH17_2.0-2.1	Jan 21, 2022		Soil	S22-Ja32896					X													
121	BH19_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32897					X													
122	BH19_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32898					X													
123	BH20_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32899		X																
124	BH20_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32900					X													
125	BH21_0.3-0.4	Jan 21, 2022		Soil	S22-Ja32901					X													
126	BH21_1.0-1.1	Jan 21, 2022		Soil	S22-Ja32902					X													
127	BH21_3.0-3.1	Jan 21, 2022		Soil	S22-Ja32903					X													
128	BH21_4.0-4.1	Jan 21, 2022		Soil	S22-Ja32904					X													
129	BLANK	Jan 21, 2022		Water	S22-Ja32905					X													
130	BH21_0.5-0.6	Jan 21, 2022		Soil	S22-Ja34558				X														

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Contact Name: Chris Bielby

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Sample Detail	Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Volatile Organics	SPOCAS Suite	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	JBS&G Suite 2	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254							X				X	X	X					
Sydney Laboratory - NATA # 1261 Site # 18217	X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794				X						X	X	X	X					
Mayfield Laboratory - NATA # 1261 Site # 25079																		
Perth Laboratory - NATA # 2377 Site # 2370																		
External Laboratory																		
131 BH2_2.0-2.1 Jan 21, 2022 Soil S22-Ja34559				X														
Test Counts	1	20	1	65	65	1	1	1	1	15	41	41	1	3	24	1	18	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1221	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB*	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	107			70-130	Pass	
TRH C10-C14	%	81			70-130	Pass	
Naphthalene	%	127			70-130	Pass	
TRH C6-C10	%	107			70-130	Pass	
TRH >C10-C16	%	78			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	108			70-130	Pass	
Toluene	%	107			70-130	Pass	
Ethylbenzene	%	111			70-130	Pass	
m&p-Xylenes	%	111			70-130	Pass	
o-Xylene	%	111			70-130	Pass	
Xylenes - Total*	%	111			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	75			70-130	Pass	
Acenaphthylene	%	82			70-130	Pass	
Anthracene	%	84			70-130	Pass	
Benz(a)anthracene	%	82			70-130	Pass	
Benzo(a)pyrene	%	86			70-130	Pass	
Benzo(b&j)fluoranthene	%	75			70-130	Pass	
Benzo(g.h.i)perylene	%	88			70-130	Pass	
Benzo(k)fluoranthene	%	81			70-130	Pass	
Chrysene	%	81			70-130	Pass	
Dibenz(a.h)anthracene	%	90			70-130	Pass	
Fluoranthene	%	84			70-130	Pass	
Fluorene	%	78			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	86			70-130	Pass	
Naphthalene	%	89			70-130	Pass	
Phenanthrene	%	86			70-130	Pass	
Pyrene	%	85			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	107			70-130	Pass	
4.4'-DDD	%	105			70-130	Pass	
4.4'-DDE	%	109			70-130	Pass	
4.4'-DDT	%	76			70-130	Pass	
a-HCH	%	98			70-130	Pass	
Aldrin	%	102			70-130	Pass	
b-HCH	%	72			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
d-HCH	%	75			70-130	Pass	
Dieldrin	%	72			70-130	Pass	
Endosulfan I	%	74			70-130	Pass	
Endosulfan II	%	108			70-130	Pass	
Endosulfan sulphate	%	74			70-130	Pass	
Endrin	%	113			70-130	Pass	
Endrin aldehyde	%	80			70-130	Pass	
Endrin ketone	%	73			70-130	Pass	
g-HCH (Lindane)	%	72			70-130	Pass	
Heptachlor	%	76			70-130	Pass	
Heptachlor epoxide	%	70			70-130	Pass	
Hexachlorobenzene	%	105			70-130	Pass	
Methoxychlor	%	82			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	85			70-130	Pass	
Aroclor-1260	%	89			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	100			80-120	Pass	
Cadmium	%	96			80-120	Pass	
Chromium	%	109			80-120	Pass	
Copper	%	110			80-120	Pass	
Lead	%	108			80-120	Pass	
Mercury	%	103			80-120	Pass	
Nickel	%	111			80-120	Pass	
Zinc	%	112			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	104			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	99			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	102			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	100			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	105			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	105			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	108			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	112			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	103			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	101			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	102			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	97			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	95			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	95			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	97			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	112			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	86			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	95			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	87			50-150	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoropentanesulfonic acid (PFPeS)			%	83			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)			%	95			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)			%	105			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	89			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)			%	99			50-150	Pass	
LCS - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)									
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)			%	91			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)			%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)			%	92			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)			%	96			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S22-Ja33303	NCP	%	104			70-130	Pass	
TRH >C10-C16	S22-Ja33303	NCP	%	129			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Ja33302	NCP	%	112			75-125	Pass	
Cadmium	S22-Ja33302	NCP	%	99			75-125	Pass	
Chromium	S22-Ja33302	NCP	%	110			75-125	Pass	
Copper	S22-Ja33302	NCP	%	107			75-125	Pass	
Lead	S22-Ja33302	NCP	%	109			75-125	Pass	
Mercury	S22-Ja33302	NCP	%	109			75-125	Pass	
Nickel	S22-Ja33302	NCP	%	109			75-125	Pass	
Zinc	S22-Ja33302	NCP	%	107			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S22-Ja34847	NCP	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Ja34847	NCP	%	103			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Ja09664	NCP	%	89			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Ja34847	NCP	%	118			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S22-Ja34847	NCP	%	85			50-150	Pass	
Perfluorononanoic acid (PFNA)	S22-Ja34847	NCP	%	97			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S22-Ja34847	NCP	%	107			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Ja34847	NCP	%	107			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Ja34847	NCP	%	103			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-Ja34847	NCP	%	110			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-Ja34847	NCP	%	103			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S22-Ja34847	NCP	%	101			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Ja34847	NCP	%	101			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Ja34847	NCP	%	97			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S22-Ja34847	NCP	%	93			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S22-Ja34847	NCP	%	96			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Ja34847	NCP	%	99			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Ja34847	NCP	%	104			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S22-Ja34847	NCP	%	99			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-Ja09664	NCP	%	82			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-Ja34847	NCP	%	99			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-Ja34847	NCP	%	103			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-Ja09664	NCP	%	89			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S22-Ja09664	NCP	%	99			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-Ja09664	NCP	%	83			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S22-Ja09664	NCP	%	73			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Ja34847	NCP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S22-Ja34847	NCP	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Ja34847	NCP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Ja34847	NCP	%	95			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Ja33358	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S22-Ja30611	NCP	mg/L	0.06	0.08	21	30%	Pass	
TRH C15-C28	S22-Ja30611	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S22-Ja30611	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Naphthalene	S22-Ja33358	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S22-Ja33358	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S22-Ja30611	NCP	mg/L	0.11	0.12	9.0	30%	Pass	
TRH >C16-C34	S22-Ja30611	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S22-Ja30611	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Ja33358	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S22-Ja33358	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S22-Ja33358	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S22-Ja33358	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S22-Ja33358	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S22-Ja33358	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Ja34817	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S22-Ja34817	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S22-Ja34817	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S22-Ja34817	NCP	mg/L	0.11	0.12	3.0	30%	Pass	
Lead	S22-Ja34817	NCP	mg/L	< 0.001	0.001	3.0	30%	Pass	
Mercury	S22-Ja34817	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S22-Ja34817	NCP	mg/L	< 0.001	0.001	130	30%	Fail	Q15
Zinc	S22-Ja34817	NCP	mg/L	0.032	0.033	3.0	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S22-Ja32840	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S22-Ja32840	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Ja32840	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Ja32840	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S22-Ja32840	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S22-Ja32840	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Ja32840	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Ja32840	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S22-Ja32840	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Ja32840	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Andrew Sullivan	Senior Analyst-PFAS (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Envirolab 1/1

Chain of Custody

287148
wc rec'd 27/1/22

JBS&G

PROJECT NO.: 62184	LABORATORY BATCH NO:
PROJECT NAME: Lidcombe	SAMPLERS: MD/AA/HD
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy metals	TRH/BTEX	PAHs	OCP/PCBs	PFAS	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
QSC01	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X	X			
QSC02	Soil	21/1/22		Jar+PFAS+ice		X	X	X	X	X			
QSC03	Soil	21/1/22		Bag								X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: M Darley DATE: 21/01/2021 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: OF:	COOLER SEAL – Yes / No / Intact / Broken COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes / No / Intact / Broken COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Envirolab 1/1

Chain of Custody

JBS&G

PROJECT NO.: 62184	LABORATORY BATCH NO.:
PROJECT NAME: Lidcombe	SAMPLERS: MD/AA/HD
DATE NEEDED BY:	QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
QSC01 1	Soil	21/1/22		Jar+PFAS+ice				
QSC02 2	Soil	21/1/22		Jar+PFAS+ice				
QSC03 3	Soil	21/1/22		Bag				

Envirolab Services
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 28748
Date Received: 21/01/22
Time Received: 17/1650
Received by: H
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None 4°C

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: M Darley DATE: 21/01/2021 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Phan DATE: 21/1/22 OF: ES	COOLER SEAL – Yes..... No..... Intact ..... Broken ..... COOLER TEMP 4 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	A Aloy, Chris Bielby, M Darley, H Dinan

Sample Login Details

Your reference	62184, Lidcombe
Envirolab Reference	287148
Date Sample Received	21/01/2022
Date Instructions Received	21/01/2022
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	3 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	4
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Misc Inorg - Soil	Asbestos ID - soils	On Hold
QSC01											✓
QSC02											✓
QSC03											✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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CERTIFICATE OF ANALYSIS 287148

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	A Aloy, Chris Bielby, M Darley, H Dinan
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**62184, Lidcombe**
Number of Samples	3 Soil
Date samples received	21/01/2022
Date completed instructions received	27/01/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	03/02/2022
Date of Issue	03/02/2022

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Hannah Nguyen, Metals Supervisor
Jeremy Faircloth, Operations Manager, Sydney
Josh Williams, LC Supervisor
Lucy Zhu, Asbestos Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		287148-1	287148-2
Your Reference	UNITS	QSC01	QSC02
Date Sampled		21/01/2022	21/01/2022
Type of sample		Soil	Soil
Date extracted	-	28/01/2022	28/01/2022
Date analysed	-	28/01/2022	28/01/2022
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<3	<3
Surrogate aaa-Trifluorotoluene	%	82	77

svTRH (C10-C40) in Soil			
Our Reference		287148-1	287148-2
Your Reference	UNITS	QSC01	QSC02
Date Sampled		21/01/2022	21/01/2022
Type of sample		Soil	Soil
Date extracted	-	28/01/2022	28/01/2022
Date analysed	-	29/01/2022	29/01/2022
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	130
Total +ve TRH (C10-C36)	mg/kg	<50	130
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	180
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	180
Surrogate o-Terphenyl	%	85	92

PFAS in Soils Extended			
Our Reference		287148-1	287148-2
Your Reference	UNITS	QSC01	QSC02
Date Sampled		21/01/2022	21/01/2022
Type of sample		Soil	Soil
Date prepared	-	28/01/2022	28/01/2022
Date analysed	-	28/01/2022	28/01/2022
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1
Perfluoropentanesulfonic acid	µg/kg	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.2	0.1
Perfluoroheptanesulfonic acid	µg/kg	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	4.3	1.5
Perfluorodecanesulfonic acid	µg/kg	<0.2	<0.2
Perfluorobutanoic acid	µg/kg	<0.2	0.2
Perfluoropentanoic acid	µg/kg	<0.2	0.4
Perfluorohexanoic acid	µg/kg	0.1	0.6
Perfluoroheptanoic acid	µg/kg	<0.1	0.3
Perfluorooctanoic acid PFOA	µg/kg	0.2	0.4
Perfluorononanoic acid	µg/kg	<0.1	0.1
Perfluorodecanoic acid	µg/kg	<0.5	<0.5
Perfluoroundecanoic acid	µg/kg	<0.5	<0.5
Perfluorododecanoic acid	µg/kg	<0.5	<0.5
Perfluorotridecanoic acid	µg/kg	<0.5	<0.5
Perfluorotetradecanoic acid	µg/kg	<5	<5
4:2 FTS	µg/kg	<0.1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2
10:2 FTS	µg/kg	<0.2	<0.2
Perfluorooctane sulfonamide	µg/kg	<1	<1
N-Methyl perfluorooctane sulfonamide	µg/kg	<1	<1
N-Ethyl perfluorooctanesulfon amide	µg/kg	<1	<1
N-Me perfluorooctanesulfonamid oethanol	µg/kg	<1	<1
N-Et perfluorooctanesulfonamid oethanol	µg/kg	<5	<5
MePerfluorooctanesulf- amid oacetic acid	µg/kg	<0.2	<0.2
EtPerfluorooctanesulf amid oacetic acid	µg/kg	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	100	101
Surrogate $^{13}C_2$ *PFOA*	%	100	100
Extracted ISTD $^{13}C_3$ *PFBS*	%	104	108
Extracted ISTD $^{18}O_2$ *PFHxS*	%	106	109
Extracted ISTD $^{13}C_4$ *PFOS*	%	106	107
Extracted ISTD $^{13}C_4$ *PFBA*	%	98	99

PFAS in Soils Extended			
Our Reference		287148-1	287148-2
Your Reference	UNITS	QSC01	QSC02
Date Sampled		21/01/2022	21/01/2022
Type of sample		Soil	Soil
Extracted ISTD $^{13}C_3$ *PFPeA*	%	99	99
Extracted ISTD $^{13}C_2$ *PFHxA*	%	98	99
Extracted ISTD $^{13}C_4$ *PFHpA*	%	98	99
Extracted ISTD $^{13}C_4$ *PFOA*	%	97	100
Extracted ISTD $^{13}C_5$ *PFNA*	%	108	105
Extracted ISTD $^{13}C_2$ *PFDA*	%	105	107
Extracted ISTD $^{13}C_2$ *PFUnDA*	%	109	94
Extracted ISTD $^{13}C_2$ *PFDoDA*	%	111	81
Extracted ISTD $^{13}C_2$ *PFTeDA*	%	105	102
Extracted ISTD $^{13}C_2$ *4:2FTS*	%	106	107
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	118	123
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	139	139
Extracted ISTD $^{13}C_8$ *FOSA*	%	102	102
Extracted ISTD d_3 *N MeFOSA*	%	98	82
Extracted ISTD d_5 *N EtFOSA*	%	96	93
Extracted ISTD d_7 *N MeFOSE*	%	96	95
Extracted ISTD d_9 *N EtFOSE*	%	94	93
Extracted ISTD d_3 *N MeFOSAA*	%	117	108
Extracted ISTD d_5 *N EtFOSAA*	%	121	86
Total Positive PFHxS & PFOS	µg/kg	4.5	1.6
Total Positive PFOS & PFOA	µg/kg	4.5	1.8
Total Positive PFAS	µg/kg	4.8	3.6

PAHs in Soil			
Our Reference		287148-1	287148-2
Your Reference	UNITS	QSC01	QSC02
Date Sampled		21/01/2022	21/01/2022
Type of sample		Soil	Soil
Date extracted	-	28/01/2022	28/01/2022
Date analysed	-	28/01/2022	28/01/2022
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.1
Pyrene	mg/kg	<0.1	0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.09
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	0.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	96	94

Organochlorine Pesticides in soil			
Our Reference		287148-1	287148-2
Your Reference	UNITS	QSC01	QSC02
Date Sampled		21/01/2022	21/01/2022
Type of sample		Soil	Soil
Date extracted	-	28/01/2022	28/01/2022
Date analysed	-	28/01/2022	28/01/2022
alpha-BHC	mg/kg	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate TCMX	%	92	95

PCBs in Soil			
Our Reference		287148-1	287148-2
Your Reference	UNITS	QSC01	QSC02
Date Sampled		21/01/2022	21/01/2022
Type of sample		Soil	Soil
Date extracted	-	28/01/2022	28/01/2022
Date analysed	-	28/01/2022	28/01/2022
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	92	95

Acid Extractable metals in soil			
Our Reference		287148-1	287148-2
Your Reference	UNITS	QSC01	QSC02
Date Sampled		21/01/2022	21/01/2022
Type of sample		Soil	Soil
Date prepared	-	28/01/2022	28/01/2022
Date analysed	-	28/01/2022	28/01/2022
Arsenic	mg/kg	6	4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	13	17
Copper	mg/kg	25	29
Lead	mg/kg	25	51
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	9	21
Zinc	mg/kg	39	100

Moisture			
Our Reference		287148-1	287148-2
Your Reference	UNITS	QSC01	QSC02
Date Sampled		21/01/2022	21/01/2022
Type of sample		Soil	Soil
Date prepared	-	28/01/2022	28/01/2022
Date analysed	-	29/01/2022	29/01/2022
Moisture	%	10	19

Asbestos ID - soils NEPM - ASB-001		
Our Reference	UNITS	287148-3
Your Reference		QSC03
Date Sampled		21/01/2022
Type of sample		Soil
Date analysed	-	03/02/2022
Sample mass tested	g	550.59
Sample Description	-	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	–
FA and AF Estimation*	g	–
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.

Method ID	Methodology Summary
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Method ID	Methodology Summary
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.3 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Date analysed	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	78	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	78	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	70	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	76	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	85	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	80	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	78	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	96	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Date analysed	-			29/01/2022	[NT]	[NT]	[NT]	[NT]	29/01/2022	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	81	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	81	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	109	[NT]
Surrogate o-Terphenyl	%		Org-020	83	[NT]	[NT]	[NT]	[NT]	92	[NT]

QUALITY CONTROL: PFAS in Soils Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date prepared	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Date analysed	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluoropentanesulfonic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Perfluoroheptanesulfonic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Perfluorodecanesulfonic acid	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	103	[NT]
Perfluorobutanoic acid	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluoropentanoic acid	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorohexanoic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluoroheptanoic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorononanoic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluorodecanoic acid	µg/kg	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	106	[NT]
Perfluoroundecanoic acid	µg/kg	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorododecanoic acid	µg/kg	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluorotridecanoic acid	µg/kg	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	92	[NT]
Perfluorotetradecanoic acid	µg/kg	5	Org-029	<5	[NT]	[NT]	[NT]	[NT]	106	[NT]
4:2 FTS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	106	[NT]
10:2 FTS	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	122	[NT]
Perfluorooctane sulfonamide	µg/kg	1	Org-029	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
N-Methyl perfluorooctane sulfonamide	µg/kg	1	Org-029	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
N-Ethyl perfluorooctanesulfon amide	µg/kg	1	Org-029	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
N-Me perfluorooctanesulfonamid oethanol	µg/kg	1	Org-029	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
N-Et perfluorooctanesulfonamid oethanol	µg/kg	5	Org-029	<5	[NT]	[NT]	[NT]	[NT]	111	[NT]
MePerfluorooctanesulf- amid oacetic acid	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	102	[NT]
EtPerfluorooctanesulf amid oacetic acid	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	105	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	99	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: PFAS in Soils Extended					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	117	[NT]	[NT]	[NT]	[NT]	116	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	120	[NT]	[NT]	[NT]	[NT]	116	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	116	[NT]	[NT]	[NT]	[NT]	119	[NT]
Extracted ISTD $^{13}C_4$ *PFBA*	%		Org-029	107	[NT]	[NT]	[NT]	[NT]	105	[NT]
Extracted ISTD $^{13}C_3$ *PFPeA*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	105	[NT]
Extracted ISTD $^{13}C_2$ *PFHxA*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	107	[NT]
Extracted ISTD $^{13}C_4$ *PFHpA*	%		Org-029	107	[NT]	[NT]	[NT]	[NT]	102	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	108	[NT]
Extracted ISTD $^{13}C_5$ *PFNA*	%		Org-029	112	[NT]	[NT]	[NT]	[NT]	115	[NT]
Extracted ISTD $^{13}C_2$ *PFDA*	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	106	[NT]
Extracted ISTD $^{13}C_2$ *PFUnDA*	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	114	[NT]
Extracted ISTD $^{13}C_2$ *PFDoDA*	%		Org-029	110	[NT]	[NT]	[NT]	[NT]	112	[NT]
Extracted ISTD $^{13}C_2$ *PFTeDA*	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	104	[NT]
Extracted ISTD $^{13}C_2$ *4:2FTS*	%		Org-029	107	[NT]	[NT]	[NT]	[NT]	109	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	107	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	120	[NT]	[NT]	[NT]	[NT]	119	[NT]
Extracted ISTD $^{13}C_8$ *FOSA*	%		Org-029	115	[NT]	[NT]	[NT]	[NT]	112	[NT]
Extracted ISTD d_3 *N MeFOSA*	%		Org-029	111	[NT]	[NT]	[NT]	[NT]	108	[NT]
Extracted ISTD d_5 *N EtFOSA*	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	106	[NT]
Extracted ISTD d_7 *N MeFOSE*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	108	[NT]

QUALITY CONTROL: PFAS in Soils Extended					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Extracted ISTD d_9 *N EtFOSE*	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	102	[NT]
Extracted ISTD d_3 *N MeFOSAA*	%		Org-029	115	[NT]	[NT]	[NT]	[NT]	111	[NT]
Extracted ISTD d_5 *N EtFOSAA*	%		Org-029	113	[NT]	[NT]	[NT]	[NT]	109	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Date analysed	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	75	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	90	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	100	[NT]	[NT]	[NT]	[NT]	119	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Date analysed	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	76	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	103	[NT]	[NT]	[NT]	[NT]	118	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Date analysed	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	103	[NT]	[NT]	[NT]	[NT]	118	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Date analysed	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	102	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	104	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Chain of Custody

JBS&G

PROJECT NO.: 62184

PROJECT NAME: Lidcombe

LABORATORY BATCH NO.:

DATE NEEDED BY: Standard

SAMPLERS: MD/AA/HD

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

QC LEVEL: NEPM (2013)

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	VOC 8260	Isopropanol	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SV01	Gas	21/1/22		Carbon Tube		x	x			
SV02	Gas	21/1/22		Carbon Tube						
SV03	Gas	21/1/22		Carbon Tube		x	X			
SV04	Gas	21/1/22		Carbon Tube		x	x			
SV05	Gas	21/1/22		Carbon Tube		x	x			
SV06	Gas	21/1/22		Carbon Tube		x	X			
SV07	Gas	21/1/22		Carbon Tube		X	X			
SV08	Gas	21/1/22		Carbon Tube		x	X			
SV09	Gas	21/1/22		Carbon Tube		X	x			
SV10	Gas	21/1/22		Carbon Tube						
SV11	Gas	21/1/22		Carbon Tube						
SV12	Gas	21/1/22		Carbon Tube		x	x			
SV13	Gas	21/1/22		Carbon Tube		x	x			
SV14	Gas	21/1/22		Carbon Tube		X	x			
SV16	Gas	21/1/22		Carbon Tube						
SV17	Gas	21/1/22		Carbon Tube		x	x			
SV18	Gas	21/1/22		Carbon Tube						
SV19	Gas	21/1/22		Carbon Tube		x	x			
SV20	Gas	21/1/22		Carbon Tube						

RELINQUISHED BY:

NAME: M Darley DATE: 21/01/2021
OF: JBS&G

NAME: DATE:
OF:

METHOD OF SHIPMENT:

CONSIGNMENT NOTE NO.

TRANSPORT CO.

CONSIGNMENT NOTE NO.

TRANSPORT CO

RECEIVED BY:

NAME: Adam Bartell 4:14PM
DATE: 21/1/22
OF: Eurofins.

NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:

COOLER SEAL – Yes..... No ..... Intact ..... Broken .....

COOLER TEMP ..... deg C

COOLER SEAL – Yes..... No ..... Intact ..... Broken .....

COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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857946

No chill / NA / courier

Chain of Custody

JBS&G

PROJECT NO.: 62184

PROJECT NAME: Lidcombe

DATE NEEDED BY:

LABORATORY BATCH NO.:

SAMPLERS: MD/AA/HD

QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	VOC 8260	Isopropanol	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SV21	Gas	21/1/22		Carbon Tube		X	x			
SV22	Gas	21/1/22		Carbon Tube						
SV23	Gas	21/1/22		Carbon Tube						
SV24	Gas	21/1/22		Carbon Tube						
SV25	Gas	21/1/22		Carbon Tube						
SV26	Gas	21/1/22		Carbon Tube						
SV27	Gas	21/1/22		Carbon Tube						
SV28	Gas	21/1/22		Carbon Tube						
SV29	Gas	21/1/22		Carbon Tube						
SV30	Gas	21/1/22		Carbon Tube						
QVA01	Gas	21/1/22		Carbon Tube						
QVA02	Gas	21/1/22		Carbon Tube		X	X			
FB	Gas	21/1/22		Carbon Tube						
						X	X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: M Darley DATE: 21/01/2021 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Sample Receipt Advice

Company name:	JBS & G Australia (NSW) P/L
Contact name:	Chris Bielby
Project name:	LIDCOMBE
Project ID:	62184
Turnaround time:	5 Day
Date/Time received	Jan 25, 2022 4:14 PM
Eurofins reference	857946

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
N/A	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

No sample was received for SV20, analysis has been cancelled. A duplicate of sample SV19 has been received, this has been logged on hold as "SV19 DUPLICATE".

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Chris Bielby - cbielby@jbsg.com.au.

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 857946
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:14 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	SV01 FRONT	Jan 21, 2022		Air	S22-Ja29633				X	X
2	SV03 FRONT	Jan 21, 2022		Air	S22-Ja29634				X	X
3	SV04 FRONT	Jan 21, 2022		Air	S22-Ja29635				X	X
4	SV05 FRONT	Jan 21, 2022		Air	S22-Ja29636				X	X
5	SV06 FRONT	Jan 21, 2022		Air	S22-Ja29637				X	X
6	SV07 FRONT	Jan 21, 2022		Air	S22-Ja29638				X	X
7	SV08 FRONT	Jan 21, 2022		Air	S22-Ja29639				X	X
8	SV09 FRONT	Jan 21, 2022		Air	S22-Ja29640				X	X
9	SV12 FRONT	Jan 21, 2022		Air	S22-Ja29641				X	X

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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 857946
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:14 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
10	SV13 FRONT	Jan 21, 2022		Air	S22-Ja29642				X	X
11	SV14 FRONT	Jan 21, 2022		Air	S22-Ja29643				X	X
12	SV17 FRONT	Jan 21, 2022		Air	S22-Ja29644				X	X
13	SV19 FRONT	Jan 21, 2022		Air	S22-Ja29645				X	X
14	SV21 FRONT	Jan 21, 2022		Air	S22-Ja29646				X	X
15	QVA01 FRONT	Jan 21, 2022		Air	S22-Ja29647				X	X
16	FB FRONT	Jan 21, 2022		Air	S22-Ja29648				X	X
17	SV01 BACK	Jan 21, 2022		Air	S22-Ja29649				X	X
18	SV03 BACK	Jan 21, 2022		Air	S22-Ja29650				X	X
19	SV04 BACK	Jan 21, 2022		Air	S22-Ja29651				X	X

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Address: Level 1, 50 Margaret St
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Project Name: LIDCOMBE
Project ID: 62184

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Fax:

Received: Jan 25, 2022 4:14 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
20	SV05 BACK	Jan 21, 2022		Air	S22-Ja29652				X	X
21	SV06 BACK	Jan 21, 2022		Air	S22-Ja29653				X	X
22	SV07 BACK	Jan 21, 2022		Air	S22-Ja29654				X	X
23	SV08 BACK	Jan 21, 2022		Air	S22-Ja29655				X	X
24	SV09 BACK	Jan 21, 2022		Air	S22-Ja29656				X	X
25	SV12 BACK	Jan 21, 2022		Air	S22-Ja29657				X	X
26	SV13 BACK	Jan 21, 2022		Air	S22-Ja29658				X	X
27	SV14 BACK	Jan 21, 2022		Air	S22-Ja29659				X	X
28	SV17 BACK	Jan 21, 2022		Air	S22-Ja29660				X	X
29	SV19 BACK	Jan 21, 2022		Air	S22-Ja29661				X	X
30	SV21 BACK	Jan 21, 2022		Air	S22-Ja29662				X	X

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Company Name: JBS & G Australia (NSW) P/L
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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 857946
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Fax:

Received: Jan 25, 2022 4:14 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
31	QVA01 BACK	Jan 21, 2022		Air	S22-Ja29663				X	X
32	FB BACK	Jan 21, 2022		Air	S22-Ja29664				X	X
33	SV02 FRONT	Jan 21, 2022		Air	S22-Ja29665		X			
34	SV10 FRONT	Jan 21, 2022		Air	S22-Ja29666		X			
35	SV11 FRONT	Jan 21, 2022		Air	S22-Ja29667		X			
36	SV16 FRONT	Jan 21, 2022		Air	S22-Ja29668		X			
37	SV18 FRONT	Jan 21, 2022		Air	S22-Ja29669		X			
38	SV20 FRONT	Jan 21, 2022		Air	S22-Ja29670	X				
39	SV22 FRONT	Jan 21, 2022		Air	S22-Ja29671		X			
40	SV23 FRONT	Jan 21, 2022		Air	S22-Ja29672		X			
41	SV24 FRONT	Jan 21, 2022		Air	S22-Ja29673		X			

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Eurofins Analytical Services Manager : Ursula Long

Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
42	SV25 FRONT	Jan 21, 2022		Air	S22-Ja29674		X			
43	SV26 FRONT	Jan 21, 2022		Air	S22-Ja29675		X			
44	SV27 FRONT	Jan 21, 2022		Air	S22-Ja29676		X			
45	SV28 FRONT	Jan 21, 2022		Air	S22-Ja29677		X			
46	SV29 FRONT	Jan 21, 2022		Air	S22-Ja29678		X			
47	SV30 FRONT	Jan 21, 2022		Air	S22-Ja29679		X			
48	QVA02 FRONT	Jan 21, 2022		Air	S22-Ja29680		X			
49	SV02 BACK	Jan 21, 2022		Air	S22-Ja29681		X			
50	SV10 BACK	Jan 21, 2022		Air	S22-Ja29682		X			
51	SV11 BACK	Jan 21, 2022		Air	S22-Ja29683		X			

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Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
52	SV16 BACK	Jan 21, 2022		Air	S22-Ja29684		X			
53	SV18 BACK	Jan 21, 2022		Air	S22-Ja29685		X			
54	SV20 BACK	Jan 21, 2022		Air	S22-Ja29686	X				
55	SV22 BACK	Jan 21, 2022		Air	S22-Ja29687		X			
56	SV23 BACK	Jan 21, 2022		Air	S22-Ja29688		X			
57	SV24 BACK	Jan 21, 2022		Air	S22-Ja29689		X			
58	SV25 BACK	Jan 21, 2022		Air	S22-Ja29690		X			
59	SV26 BACK	Jan 21, 2022		Air	S22-Ja29691		X			
60	SV27 BACK	Jan 21, 2022		Air	S22-Ja29692		X			
61	SV28 BACK	Jan 21, 2022		Air	S22-Ja29693		X			
62	SV29 BACK	Jan 21, 2022		Air	S22-Ja29694		X			

eurofins | Environment Testing

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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 857946
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:14 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
63	SV30 BACK	Jan 21, 2022		Air	S22-Ja29695		X			
64	QVA02 BACK	Jan 21, 2022		Air	S22-Ja29696		X			
65	SV19 DUPLICATE	Jan 21, 2022		Air	S22-Ja29817			X		
Test Counts						2	31	31	32	32

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Chris Bielby**

Report **857946-A**
Project name LIDCOMBE
Project ID 62184
Received Date Jan 25, 2022

Client Sample ID			**SV01 FRONT**	**SV03 FRONT**	**SV04 FRONT**	**SV05 FRONT**
Sample Matrix			**Air**	**Air**	**Air**	**Air**
Eurofins Sample No.			**S22-Ja29633**	**S22-Ja29634**	**S22-Ja29635**	**S22-Ja29636**
Date Sampled			**Jan 21, 2022**	**Jan 21, 2022**	**Jan 21, 2022**	**Jan 21, 2022**
Test/Reference	LOR	Unit				
Isopropanol	10	Total ug	< 10	< 10	< 10	< 10
VOCs in Ambient Air by GC/MS						
1.1-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromo-3-chloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Propylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV01 FRONT	SV03 FRONT	SV04 FRONT	SV05 FRONT
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29633	S22-Ja29634	S22-Ja29635	S22-Ja29636
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
VOCs in Ambient Air by GC/MS						
Naphthalene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
p-Isopropyltoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
sec-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	5	Total ug	< 5	< 5	< 5	< 5
tert-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	Total ug	< 0.5	1.0	< 0.5	< 0.5
Vinyl chloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	1.5	Total ug	< 1.5	< 1.5	< 1.5	< 1.5
Fluorobenzene (surr.)	1	%	106	106	107	103
4-Bromofluorobenzene (surr.)	1	%	102	99	100	97
Dibromofluoromethane (surr.)	1	%	108	106	107	107
1.2-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV06 FRONT	SV07 FRONT	SV08 FRONT	SV09 FRONT
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29637	S22-Ja29638	S22-Ja29639	S22-Ja29640
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Isopropanol	10	Total ug	< 10	< 10	< 10	< 10
VOCs in Ambient Air by GC/MS						
1.1-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromo-3-chloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV06 FRONT	SV07 FRONT	SV08 FRONT	SV09 FRONT
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29637	S22-Ja29638	S22-Ja29639	S22-Ja29640
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
VOCs in Ambient Air by GC/MS						
Benzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Propylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
p-Isopropyltoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
sec-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	5	Total ug	< 5	< 5	< 5	< 5
tert-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	1.5	Total ug	< 1.5	< 1.5	< 1.5	< 1.5
Fluorobenzene (surr.)	1	%	103	105	102	103
4-Bromofluorobenzene (surr.)	1	%	98	97	94	97
Dibromofluoromethane (surr.)	1	%	105	103	104	103
1.2-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV12 FRONT	SV13 FRONT	SV14 FRONT	SV17 FRONT
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29641	S22-Ja29642	S22-Ja29643	S22-Ja29644
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Isopropanol	10	Total ug	< 10	< 10	< 10	< 10

Client Sample ID			SV12 FRONT	SV13 FRONT	SV14 FRONT	SV17 FRONT
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29641	S22-Ja29642	S22-Ja29643	S22-Ja29644
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
VOCs in Ambient Air by GC/MS						
1.1-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromo-3-chloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	Total ug	6.8	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Propylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
p-Isopropyltoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
sec-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	5	Total ug	< 5	< 5	< 5	< 5
tert-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	Total ug	< 0.5	< 0.5	2.7	< 0.5
Vinyl chloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	1.5	Total ug	< 1.5	< 1.5	< 1.5	< 1.5
Fluorobenzene (surr.)	1	%	102	104	105	99
4-Bromofluorobenzene (surr.)	1	%	94	97	98	94
Dibromofluoromethane (surr.)	1	%	98	102	104	101
1.2-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV12 FRONT	SV13 FRONT	SV14 FRONT	SV17 FRONT
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29641	S22-Ja29642	S22-Ja29643	S22-Ja29644
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
VOCs in Ambient Air by GC/MS						
1.2.3-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV19 FRONT	SV21 FRONT	QVA01 FRONT	FB FRONT
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29645	S22-Ja29646	S22-Ja29647	S22-Ja29648
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Isopropanol	10	Total ug	< 10	< 10	< 10	< 10
VOCs in Ambient Air by GC/MS						
1.1-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromo-3-chloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Propylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV19 FRONT	SV21 FRONT	QVA01 FRONT	FB FRONT
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29645	S22-Ja29646	S22-Ja29647	S22-Ja29648
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
VOCs in Ambient Air by GC/MS						
p-Isopropyltoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
sec-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	5	Total ug	< 5	< 5	< 5	< 5
tert-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	1.5	Total ug	< 1.5	< 1.5	< 1.5	< 1.5
Fluorobenzene (surr.)	1	%	100	99	101	99
4-Bromofluorobenzene (surr.)	1	%	93	93	96	94
Dibromofluoromethane (surr.)	1	%	100	99	102	100
1.2-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV01 BACK	SV03 BACK	SV04 BACK	SV05 BACK
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29649	S22-Ja29650	S22-Ja29651	S22-Ja29652
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Isopropanol	10	Total ug	< 10	< 10	< 10	< 10
VOCs in Ambient Air by GC/MS						
1.1-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromo-3-chloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV01 BACK	SV03 BACK	SV04 BACK	SV05 BACK
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29649	S22-Ja29650	S22-Ja29651	S22-Ja29652
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
VOCs in Ambient Air by GC/MS						
Bromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Propylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
p-Isopropyltoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
sec-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	5	Total ug	< 5	< 5	< 5	< 5
tert-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	1.5	Total ug	< 1.5	< 1.5	< 1.5	< 1.5
Fluorobenzene (surr.)	1	%	108	111	104	111
4-Bromofluorobenzene (surr.)	1	%	105	106	101	104
Dibromofluoromethane (surr.)	1	%	110	108	106	107
1.2-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV06 BACK	SV07 BACK	SV08 BACK	SV09 BACK
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29653	S22-Ja29654	S22-Ja29655	S22-Ja29656
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Isopropanol	10	Total ug	< 10	< 10	< 10	< 10
VOCs in Ambient Air by GC/MS						
1.1-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV06 BACK	SV07 BACK	SV08 BACK	SV09 BACK
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29653	S22-Ja29654	S22-Ja29655	S22-Ja29656
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
VOCs in Ambient Air by GC/MS						
1.1.1.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromo-3-chloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Propylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
p-Isopropyltoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
sec-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	5	Total ug	< 5	< 5	< 5	< 5
tert-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	1.5	Total ug	< 1.5	< 1.5	< 1.5	< 1.5
Fluorobenzene (surr.)	1	%	103	106	105	106
4-Bromofluorobenzene (surr.)	1	%	97	100	100	99
Dibromofluoromethane (surr.)	1	%	102	103	101	100
1.2-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV12 BACK	SV13 BACK	SV14 BACK	SV17 BACK
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29657	S22-Ja29658	S22-Ja29659	S22-Ja29660
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Isopropanol	10	Total ug	< 10	< 10	< 10	< 10
VOCs in Ambient Air by GC/MS						
1.1-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromo-3-chloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Propylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
p-Isopropyltoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
sec-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	5	Total ug	< 5	< 5	< 5	< 5
tert-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	1.5	Total ug	< 1.5	< 1.5	< 1.5	< 1.5
Fluorobenzene (surr.)	1	%	101	103	107	103
4-Bromofluorobenzene (surr.)	1	%	96	99	103	98

Client Sample ID			SV12 BACK	SV13 BACK	SV14 BACK	SV17 BACK
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29657	S22-Ja29658	S22-Ja29659	S22-Ja29660
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
VOCs in Ambient Air by GC/MS						
Dibromofluoromethane (surr.)	1	%	99	102	106	103
1.2-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV19 BACK	SV21 BACK	QVA01 BACK	FB BACK
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29661	S22-Ja29662	S22-Ja29663	S22-Ja29664
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
Isopropanol	10	Total ug	< 10	< 10	< 10	< 10
VOCs in Ambient Air by GC/MS						
1.1-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromo-3-chloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
2.2-Dichloropropane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
n-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SV19 BACK	SV21 BACK	QVA01 BACK	FB BACK
Sample Matrix			Air	Air	Air	Air
Eurofins Sample No.			S22-Ja29661	S22-Ja29662	S22-Ja29663	S22-Ja29664
Date Sampled			Jan 21, 2022	Jan 21, 2022	Jan 21, 2022	Jan 21, 2022
Test/Reference	LOR	Unit				
VOCs in Ambient Air by GC/MS						
n-Propylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
p-Isopropyltoluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
sec-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	5	Total ug	< 5	< 5	< 5	< 5
tert-Butylbenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	1.5	Total ug	< 1.5	< 1.5	< 1.5	< 1.5
Fluorobenzene (surr.)	1	%	104	105	105	100
4-Bromofluorobenzene (surr.)	1	%	100	101	98	96
Dibromofluoromethane (surr.)	1	%	103	104	102	100
1.2-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	Total ug	< 0.5	< 0.5	< 0.5	< 0.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Isopropanol	Melbourne	Jan 25, 2022	14 Days
- Method: LTM-ORG-2030 VOCs in Ambient Air by GC/MS			
VOCs in Ambient Air by GC/MS	Melbourne	Jan 25, 2022	14 Days
- Method: LTM-ORG-2030 VOCs in Ambient Air by GC/MS			

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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 857946
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:14 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	SV01 FRONT	Jan 21, 2022		Air	S22-Ja29633				X	X
2	SV03 FRONT	Jan 21, 2022		Air	S22-Ja29634				X	X
3	SV04 FRONT	Jan 21, 2022		Air	S22-Ja29635				X	X
4	SV05 FRONT	Jan 21, 2022		Air	S22-Ja29636				X	X
5	SV06 FRONT	Jan 21, 2022		Air	S22-Ja29637				X	X
6	SV07 FRONT	Jan 21, 2022		Air	S22-Ja29638				X	X
7	SV08 FRONT	Jan 21, 2022		Air	S22-Ja29639				X	X
8	SV09 FRONT	Jan 21, 2022		Air	S22-Ja29640				X	X
9	SV12 FRONT	Jan 21, 2022		Air	S22-Ja29641				X	X

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Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
10	SV13 FRONT	Jan 21, 2022		Air	S22-Ja29642				X	X
11	SV14 FRONT	Jan 21, 2022		Air	S22-Ja29643				X	X
12	SV17 FRONT	Jan 21, 2022		Air	S22-Ja29644				X	X
13	SV19 FRONT	Jan 21, 2022		Air	S22-Ja29645				X	X
14	SV21 FRONT	Jan 21, 2022		Air	S22-Ja29646				X	X
15	QVA01 FRONT	Jan 21, 2022		Air	S22-Ja29647				X	X
16	FB FRONT	Jan 21, 2022		Air	S22-Ja29648				X	X
17	SV01 BACK	Jan 21, 2022		Air	S22-Ja29649				X	X
18	SV03 BACK	Jan 21, 2022		Air	S22-Ja29650				X	X
19	SV04 BACK	Jan 21, 2022		Air	S22-Ja29651				X	X

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Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
20	SV05 BACK	Jan 21, 2022		Air	S22-Ja29652				X	X
21	SV06 BACK	Jan 21, 2022		Air	S22-Ja29653				X	X
22	SV07 BACK	Jan 21, 2022		Air	S22-Ja29654				X	X
23	SV08 BACK	Jan 21, 2022		Air	S22-Ja29655				X	X
24	SV09 BACK	Jan 21, 2022		Air	S22-Ja29656				X	X
25	SV12 BACK	Jan 21, 2022		Air	S22-Ja29657				X	X
26	SV13 BACK	Jan 21, 2022		Air	S22-Ja29658				X	X
27	SV14 BACK	Jan 21, 2022		Air	S22-Ja29659				X	X
28	SV17 BACK	Jan 21, 2022		Air	S22-Ja29660				X	X
29	SV19 BACK	Jan 21, 2022		Air	S22-Ja29661				X	X
30	SV21 BACK	Jan 21, 2022		Air	S22-Ja29662				X	X

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Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
31	QVA01 BACK	Jan 21, 2022		Air	S22-Ja29663				X	X
32	FB BACK	Jan 21, 2022		Air	S22-Ja29664				X	X
33	SV02 FRONT	Jan 21, 2022		Air	S22-Ja29665		X			
34	SV10 FRONT	Jan 21, 2022		Air	S22-Ja29666		X			
35	SV11 FRONT	Jan 21, 2022		Air	S22-Ja29667		X			
36	SV16 FRONT	Jan 21, 2022		Air	S22-Ja29668		X			
37	SV18 FRONT	Jan 21, 2022		Air	S22-Ja29669		X			
38	SV20 FRONT	Jan 21, 2022		Air	S22-Ja29670	X				
39	SV22 FRONT	Jan 21, 2022		Air	S22-Ja29671		X			
40	SV23 FRONT	Jan 21, 2022		Air	S22-Ja29672		X			
41	SV24 FRONT	Jan 21, 2022		Air	S22-Ja29673		X			

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Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
42	SV25 FRONT	Jan 21, 2022		Air	S22-Ja29674		X			
43	SV26 FRONT	Jan 21, 2022		Air	S22-Ja29675		X			
44	SV27 FRONT	Jan 21, 2022		Air	S22-Ja29676		X			
45	SV28 FRONT	Jan 21, 2022		Air	S22-Ja29677		X			
46	SV29 FRONT	Jan 21, 2022		Air	S22-Ja29678		X			
47	SV30 FRONT	Jan 21, 2022		Air	S22-Ja29679		X			
48	QVA02 FRONT	Jan 21, 2022		Air	S22-Ja29680		X			
49	SV02 BACK	Jan 21, 2022		Air	S22-Ja29681		X			
50	SV10 BACK	Jan 21, 2022		Air	S22-Ja29682		X			
51	SV11 BACK	Jan 21, 2022		Air	S22-Ja29683		X			

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Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
52	SV16 BACK	Jan 21, 2022		Air	S22-Ja29684		X			
53	SV18 BACK	Jan 21, 2022		Air	S22-Ja29685		X			
54	SV20 BACK	Jan 21, 2022		Air	S22-Ja29686	X				
55	SV22 BACK	Jan 21, 2022		Air	S22-Ja29687		X			
56	SV23 BACK	Jan 21, 2022		Air	S22-Ja29688		X			
57	SV24 BACK	Jan 21, 2022		Air	S22-Ja29689		X			
58	SV25 BACK	Jan 21, 2022		Air	S22-Ja29690		X			
59	SV26 BACK	Jan 21, 2022		Air	S22-Ja29691		X			
60	SV27 BACK	Jan 21, 2022		Air	S22-Ja29692		X			
61	SV28 BACK	Jan 21, 2022		Air	S22-Ja29693		X			
62	SV29 BACK	Jan 21, 2022		Air	S22-Ja29694		X			

eurofins | Environment Testing

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

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NATA # 2377 Site # 2370

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IANZ # 1327

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 857946
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 4:14 PM
Due: Feb 2, 2022
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						CANCELLED	HOLD	HOLD	Isopropanol	VOCs in Ambient Air by GC/MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
63	SV30 BACK	Jan 21, 2022		Air	S22-Ja29695		X			
64	QVA02 BACK	Jan 21, 2022		Air	S22-Ja29696		X			
65	SV19 DUPLICATE	Jan 21, 2022		Air	S22-Ja29817			X		
Test Counts						2	31	31	32	32

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Isopropanol	Total ug	< 10			10	Pass	
Method Blank							
VOCs in Ambient Air by GC/MS							
1.1-Dichloroethane	Total ug	< 0.5			0.5	Pass	
1.1-Dichloroethene	Total ug	< 0.5			0.5	Pass	
1.1-Dichloropropene	Total ug	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	Total ug	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	Total ug	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	Total ug	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	Total ug	< 0.5			0.5	Pass	
1.2-Dibromo-3-chloropropane	Total ug	< 0.5			0.5	Pass	
1.2-Dibromoethane	Total ug	< 0.5			0.5	Pass	
1.2-Dichloroethane	Total ug	< 0.5			0.5	Pass	
1.2-Dichloropropane	Total ug	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	Total ug	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	Total ug	< 0.5			0.5	Pass	
1.3-Dichloropropane	Total ug	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	Total ug	< 0.5			0.5	Pass	
2-Chlorotoluene	Total ug	< 0.5			0.5	Pass	
2.2-Dichloropropane	Total ug	< 0.5			0.5	Pass	
4-Chlorotoluene	Total ug	< 0.5			0.5	Pass	
Benzene	Total ug	< 0.5			0.5	Pass	
Bromochloromethane	Total ug	< 0.5			0.5	Pass	
Bromodichloromethane	Total ug	< 0.5			0.5	Pass	
Bromoform	Total ug	< 0.5			0.5	Pass	
Carbon Tetrachloride	Total ug	< 0.5			0.5	Pass	
Chlorobenzene	Total ug	< 0.5			0.5	Pass	
Chloroform	Total ug	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	Total ug	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	Total ug	< 0.5			0.5	Pass	
Dibromochloromethane	Total ug	< 0.5			0.5	Pass	
Dibromomethane	Total ug	< 0.5			0.5	Pass	
Ethylbenzene	Total ug	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	Total ug	< 0.5			0.5	Pass	
n-Butylbenzene	Total ug	< 0.5			0.5	Pass	
n-Propylbenzene	Total ug	< 0.5			0.5	Pass	
Naphthalene	Total ug	< 0.5			0.5	Pass	
p-Isopropyltoluene	Total ug	< 0.5			0.5	Pass	
sec-Butylbenzene	Total ug	< 0.5			0.5	Pass	
Styrene	Total ug	< 5			5	Pass	
tert-Butylbenzene	Total ug	< 0.5			0.5	Pass	
Tetrachloroethene	Total ug	< 0.5			0.5	Pass	
Toluene	Total ug	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	Total ug	< 0.5			0.5	Pass	
Trichloroethene	Total ug	< 0.5			0.5	Pass	
Trichlorofluoromethane	Total ug	< 0.5			0.5	Pass	
Vinyl chloride	Total ug	< 0.5			0.5	Pass	
Xylenes - Total*	Total ug	< 1.5			1.5	Pass	
1.2-Dichlorobenzene	Total ug	< 0.5			0.5	Pass	
1.2.3-Trichlorobenzene	Total ug	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	Total ug	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.3-Dichlorobenzene	Total ug	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	Total ug	< 0.5			0.5	Pass	
Hexachlorobutadiene	Total ug	< 0.5			0.5	Pass	
LCS - % Recovery							
Isopropanol	%	89			70-130	Pass	
LCS - % Recovery							
VOCs in Ambient Air by GC/MS							
1.1-Dichloroethene	%	98			70-130	Pass	
1.1-Dichloropropene	%	111			70-130	Pass	
1.1.1-Trichloroethane	%	109			70-130	Pass	
1.2-Dibromo-3-chloropropane	%	124			75-125	Pass	
1.2-Dichloroethane	%	108			70-130	Pass	
Benzene	%	110			70-130	Pass	
Ethylbenzene	%	118			70-130	Pass	
Naphthalene	%	108			70-130	Pass	
Toluene	%	120			70-130	Pass	
Trichloroethene	%	111			70-130	Pass	
Xylenes - Total*	%	116			70-130	Pass	
1.2-Dichlorobenzene	%	116			70-130	Pass	
1.2.3-Trichlorobenzene	%	112			70-130	Pass	
1.2.4-Trichlorobenzene	%	112			70-130	Pass	
1.4-Dichlorobenzene	%	117			70-130	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Ursula Long	Analytical Services Manager
Joseph Edouard	Senior Analyst-Organic (VIC)
Vivian Wang	Senior Analyst-Volatile (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Eurofins 1/1

Chain of Custody

287149
Lab rec'd 27/1

JBS&G

PROJECT NO.: 62184	LABORATORY BATCH NO.:
PROJECT NAME: Lidcombe	SAMPLERS: MD/AA/HD
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	VOCs 8260	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
QVC01 1	Gas	21/1/22		Carbon Tube		X			
QVC02 2	Gas	21/1/22		Carbon Tube					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: M Darley DATE: 21/01/2021 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: OF:	COOLER SEAL – Yes ..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes ..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Eurofins 1/1

Chain of Custody

JBS&G

PROJECT NO.: 62184	LABORATORY BATCH NO.:
PROJECT NAME: Lidcombe	SAMPLERS: MD/AA/HD
DATE NEEDED BY:	QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3211 5350 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBielby@jbsg.com.au; (3) MDarley@jbsg.com.au; (4) AAloy@jbsg.com.au; (5) HDinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
C Bielby to email analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
QVC01 1	Gas	21/1/22		Carbon Tube				
QVC02 2	Gas	21/1/22		Carbon Tube				

Ph: (02) 9910 6200

Job No: 287149

Date Received: 21/1/22

Time Received: 1650

Received by:

Temp: Cool/Ambient 4°C

Cooling: Ice/Icepack

Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: M Darley DATE: 21/01/2021 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: 21/1/22 1650 OF:	COOLER SEAL – Yes..... No..... Intact ..... Broken ..... COOLER TEMP 4 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	A Aloy, Chris Bielby, M Darley, H Dinan

Sample Login Details

Your reference	62184, Lidcombe
Envirolab Reference	287149
Date Sample Received	21/01/2022
Date Instructions Received	21/01/2022
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	2 Carbon tube
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	4
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	On Hold
QVC01	✓
QVC02	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 287149

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	A Aloy, Chris Bielby, M Darley, H Dinan
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**62184, Lidcombe**
Number of Samples	2 Carbon tube
Date samples received	21/01/2022
Date completed instructions received	27/01/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

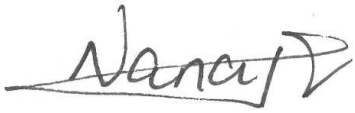
Date results requested by	03/02/2022
Date of Issue	03/02/2022

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Dragana Tomas, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

VOC in Carbon tubes		
Our Reference		287149-1
Your Reference	UNITS	QVC01
Date Sampled		21/01/2022
Type of sample		Carbon tube
Date extracted	-	01/02/2022
Date analysed	-	01/02/2022
Acetone	µg/tube	<5
Acrylonitrile	µg/tube	<5
Methylethylketone (MEK)	µg/tube	<5
Hexane	µg/tube	<5
Ethylacetate	µg/tube	<5
1,2-Dichloroethane	µg/tube	<5
Benzene	µg/tube	<2
Carbon Tetrachloride	µg/tube	<5
Cyclohexane	µg/tube	<5
Ethylacrylate	µg/tube	<5
Trichloroethene	µg/tube	<5
1,4-Dioxane	µg/tube	<5
Propylene Oxide	µg/tube	<10
Epichlorohydrin	µg/tube	<5
Methylisobutylketone (MIBK)	µg/tube	<5
Toluene	µg/tube	<5
Tetrachloroethene	µg/tube	<5
n-Butylacetate	µg/tube	<5
Chlorobenzene	µg/tube	<5
Ethylbenzene	µg/tube	<5
m+p-Xylene	µg/tube	<10
Styrene	µg/tube	<5
o-Xylene	µg/tube	<5
Cyclohexanone	µg/tube	<5
Nonane	µg/tube	<5
Isopropylbenzene	µg/tube	<5
Diisobutylketone (DIBK)	µg/tube	<5
a-Methylstyrene	µg/tube	<5
Decane	µg/tube	<5
Benzylchloride	µg/tube	<5
Naphthalene	µg/tube	<5
Dodecane	µg/tube	<5
TVOC's as hexane in tubes*	µg/tube	<50
Surrogate Toluene-d8	%	102

VOC in Carbon tubes		
Our Reference		287149-1
Your Reference	UNITS	QVC01
Date Sampled		21/01/2022
Type of sample		Carbon tube
Surrogate 4-Bromofluorobenzene	%	123

Method ID	Methodology Summary
ORG-022	Determination of volatile organic compounds in charcoal tubes/badges/sorbents using CS2 extraction, based on NIOSH methods using GC/GC-MS. Desorption efficiencies are not applied to results in µg/tube. Note where µg/m^3 results are supplied for SKC badges, the factors used are for 575-001, if 575-001 data is unavailable for an analyte then use 575-002 then 575-003 (exposure time must be supplied). Note - air volume measurements are not covered by Envirolab's NATA accreditation.

QUALITY CONTROL: VOC in Carbon tubes					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			01/02/2022	[NT]	[NT]	[NT]	[NT]	01/02/2022	[NT]
Date analysed	-			01/02/2022	[NT]	[NT]	[NT]	[NT]	01/02/2022	[NT]
Acetone	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	94	[NT]
Acrylonitrile	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	103	[NT]
Methylethylketone (MEK)	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	102	[NT]
Hexane	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	104	[NT]
Ethylacetate	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	92	[NT]
1,2-Dichloroethane	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	100	[NT]
Benzene	µg/tube	2	ORG-022	<2	[NT]	[NT]	[NT]	[NT]	104	[NT]
Carbon Tetrachloride	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	97	[NT]
Cyclohexane	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	101	[NT]
Ethylacrylate	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	89	[NT]
Trichloroethene	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	100	[NT]
1,4-Dioxane	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	96	[NT]
Propylene Oxide	µg/tube	10	ORG-022	<10	[NT]	[NT]	[NT]	[NT]	101	[NT]
Epichlorohydrin	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	91	[NT]
Methylisobutylketone (MIBK)	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	96	[NT]
Toluene	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	102	[NT]
Tetrachloroethene	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	100	[NT]
n-Butylacetate	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	93	[NT]
Chlorobenzene	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	102	[NT]
Ethylbenzene	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	105	[NT]
m+p-Xylene	µg/tube	10	ORG-022	<10	[NT]	[NT]	[NT]	[NT]	109	[NT]
Styrene	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	101	[NT]
o-Xylene	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	112	[NT]
Cyclohexanone	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	99	[NT]
Nonane	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	112	[NT]
Isopropylbenzene	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	107	[NT]
Diisobutylketone (DIBK)	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	107	[NT]
a-Methylstyrene	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	98	[NT]
Decane	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	124	[NT]
Benzylchloride	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	96	[NT]
Dodecane	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	107	[NT]
TVOC's as hexane in tubes*	µg/tube	50	ORG-022	<50	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Toluene-d8	%		ORG-022	114	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate 4-Bromofluorobenzene	%		ORG-022	115	[NT]	[NT]	[NT]	[NT]	118	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Mail - #AU04_Enviro_Sample_NSW - Outlook

Eurofins.

Chain of Custody

JBS&G

PROJECT NO.: 67184
PROJECT NAME: Lidcome, 47 Boorea st Lidcombe
DATE NEEDED BY: Standard TAT.
PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ...@jbsg.com.au; (3) ...@jbsg.com.au
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:
SAMPLERS: ML HD
QC LEVEL: NEPM (2013)

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	HM	Low level PAH	TRH/BTEX	VOC	OCP/PCB	PFAS	Phenols	Asb	FSHD	Rinse Hold	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
MW04	water	27/1	—	Bottles Vials Fixed.		X	X	X	X	X	X	X						
MW07	water																	
MW 09																		
MW 10																		
MW 12																		
MW 13.																		
QC 20220127																		
Rin 01																		
TS/TB.																		
Blank															X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: Matt Linz DATE: 27-1-22.	CONSIGNMENT NOTE NO.	NAME: ROOPESH K	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 27/1/22	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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1/28/22, 9:49 AM
https://outlook.office365.com/mail/EnviroSampleNSW@eurofins.com/inbox/id/AAMkADIwNDdlNTg5LTBlYjYtNDkzNC05NThlLWMxMDFlZmY0ZW...

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Rolleston, Christchurch 7675
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IANZ # 1290

Sample Receipt Advice

Company name:	JBS & G Australia (NSW) P/L
Contact name:	Chris Bielby
Project name:	LIDCOME 42 BOOREA ST LIDCOMBE
Project ID:	62184
Turnaround time:	7 Day
Date/Time received	Jan 28, 2022 9:47 AM
Eurofins reference	859151

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Metals container not received for MW07 metals analysis cancelled.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Chris Bielby - cbielby@jbsg.com.au.

Global Leader - Results you can trust

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: LIDCOME 42 BOOREA ST LIDCOME
Project ID: 62184

Order No.:
Report #: 859151
Phone: 02 8245 0300
Fax:

Received: Jan 28, 2022 9:47 AM
Due: Feb 8, 2022
Priority: 7 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						HOLD	Phenols (Speciated)	BTEX	Suite B14: OCP/OPP	Volatile Organics	Eurofins Suite B1	Per- and Polyfluoroalkyl Substances (PFASs)	BTEX	Polycyclic Aromatic Hydrocarbons (Trace level)	Eurofins Suite B7 (PAH trace level)	Eurofins Suite B7 (filtered metals/PAH trace level)
Melbourne Laboratory - NATA # 1261 Site # 1254														X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X		X	X
Brisbane Laboratory - NATA # 1261 Site # 20794																
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	MW04	Jan 27, 2022		Water	S22-Ja38050		X		X	X		X				X
2	MW07	Jan 27, 2022		Water	S22-Ja38051		X		X	X	X	X		X		
3	MW09	Jan 27, 2022		Water	S22-Ja38052		X		X	X		X			X	
4	MW10	Jan 27, 2022		Water	S22-Ja38053		X		X	X		X			X	
5	MW12	Jan 27, 2022		Water	S22-Ja38054		X		X	X		X				X
6	MW13	Jan 27, 2022		Water	S22-Ja38055		X		X	X		X				X
7	QC20220127	Jan 27, 2022		Water	S22-Ja38056		X		X	X		X				X
8	RIN01	Jan 27, 2022		Water	S22-Ja38057		X		X	X		X			X	
9	TS	Jan 27, 2022		Water	S22-Ja38058								X			

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: LIDCOME 42 BOOREA ST LIDCOMBE
Project ID: 62184

Order No.:
Report #: 859151
Phone: 02 8245 0300
Fax:

Received: Jan 28, 2022 9:47 AM
Due: Feb 8, 2022
Priority: 7 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						HOLD	Phenols (Speciated)	BTEX	Suite B14: OCP/OPP	Volatile Organics	Eurofins Suite B1	Per- and Polyfluoroalkyl Substances (PFASs)	BTEX	Polycyclic Aromatic Hydrocarbons (Trace level)	Eurofins Suite B7 (PAH trace level)	Eurofins Suite B7 (filtered metals/PAH trace level)
Melbourne Laboratory - NATA # 1261 Site # 1254														X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X		X	X
Brisbane Laboratory - NATA # 1261 Site # 20794																
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
10	TB	Jan 27, 2022		Water	S22-Ja38059			X								
11	BLANK	Jan 27, 2022		Water	S22-Ja38060	X										
Test Counts						1	8	1	8	8	1	8	1	1	3	4

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NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Chris Bielby**

Report **859151-W**
Project name LIDCOME 42 BOOREA ST LIDCOMBE
Project ID 62184
Received Date Jan 28, 2022

Client Sample ID			**MW04**	**MW07**	**MW09**	**MW10**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S22-Ja38050**	**S22-Ja38051**	**S22-Ja38052**	**S22-Ja38053**
Date Sampled			**Jan 27, 2022**	**Jan 27, 2022**	**Jan 27, 2022**	**Jan 27, 2022**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	83	79	83	85
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			MW04	MW07	MW09	MW10
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38050	S22-Ja38051	S22-Ja38052	S22-Ja38053
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Volatile Organics						
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total MAH*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Bromofluorobenzene (surr.)	1	%	83	79	83	85
Toluene-d8 (surr.)	1	%	84	83	84	90

Client Sample ID			MW04	MW07	MW09	MW10
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38050	S22-Ja38051	S22-Ja38052	S22-Ja38053
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	57	71	74	74
Tetrachloro-m-xylene (surr.)	1	%	63	73	77	78
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002

Client Sample ID			MW04	MW07	MW09	MW10
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38050	S22-Ja38051	S22-Ja38052	S22-Ja38053
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	64	72	76	79
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
Total cresols*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Phenol-d6 (surr.)	1	%	24	30	29	27
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001

Client Sample ID			MW04	MW07	MW09	MW10
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38050	S22-Ja38051	S22-Ja38052	S22-Ja38053
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	0.00010	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	0.0001	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	89	57	54	93
p-Terphenyl-d14 (surr.)	1	%	96	99	110	101
Heavy Metals						
Arsenic	0.001	mg/L	-	-	0.030	0.003
Arsenic (filtered)	0.001	mg/L	0.002	-	-	-
Cadmium	0.0002	mg/L	-	-	0.0005	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	-	-	-
Chromium	0.001	mg/L	-	-	0.002	0.002
Chromium (filtered)	0.001	mg/L	0.001	-	-	-
Copper	0.001	mg/L	-	-	0.008	0.007
Copper (filtered)	0.001	mg/L	0.001	-	-	-
Lead	0.001	mg/L	-	-	0.001	0.007
Lead (filtered)	0.001	mg/L	< 0.001	-	-	-
Mercury	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	-	-	-
Nickel	0.001	mg/L	-	-	0.082	0.009
Nickel (filtered)	0.001	mg/L	0.006	-	-	-
Zinc	0.005	mg/L	-	-	0.11	0.013
Zinc (filtered)	0.005	mg/L	< 0.005	-	-	-
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.14	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.54	< 0.01	< 0.01	0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.81	< 0.01	< 0.01	0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	0.14	< 0.01	< 0.01	0.02
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	0.27	< 0.01	< 0.01	0.04
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	0.42	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	78	56	51	93
13C5-PFPeA (surr.)	1	%	54	38	53	98
13C5-PFHxA (surr.)	1	%	69	70	92	111
13C4-PFHpA (surr.)	1	%	90	100	101	118
13C8-PFOA (surr.)	1	%	94	112	110	119
13C5-PFNA (surr.)	1	%	109	128	104	127
13C6-PFDA (surr.)	1	%	97	124	110	125
13C2-PFUnDA (surr.)	1	%	140	112	119	132
13C2-PFDoDA (surr.)	1	%	135	103	124	140
13C2-PFTeDA (surr.)	1	%	128	45	150	162

Client Sample ID			MW04	MW07	MW09	MW10
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38050	S22-Ja38051	S22-Ja38052	S22-Ja38053
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	108	77	90	107
D3-N-MeFOSA (surr.)	1	%	59	35	70	84
D5-N-EtFOSA (surr.)	1	%	62	33	74	88
D7-N-MeFOSE (surr.)	1	%	74	58	87	104
D9-N-EtFOSE (surr.)	1	%	78	63	97	109
D5-N-EtFOSAA (surr.)	1	%	163	92	132	153
D3-N-MeFOSAA (surr.)	1	%	152	99	117	134
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.33	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.15	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	0.31	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	2.5	0.02	< 0.01	0.02
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	0.29	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	7.1	0.03	< 0.01	0.06
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	103	101	119	128
18O2-PFHxS (surr.)	1	%	107	125	126	134
13C8-PFOS (surr.)	1	%	105	129	121	132
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	1.0	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	0.03	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	199	96	102	164
13C2-6:2 FTSA (surr.)	1	%	166	166	111	166
13C2-8:2 FTSA (surr.)	1	%	141	193	183	94
13C2-10:2 FTSA (surr.)	1	%	104	166	132	145
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	9.6	0.05	< 0.01	0.08
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	7.37	0.03	< 0.01	0.1
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	9.87	0.05	< 0.01	0.12
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	12.86	0.05	< 0.05	0.16
Sum of PFASs (n=30)*	0.1	ug/L	14.04	< 0.1	< 0.1	0.16

Client Sample ID			MW12	MW13	QC20220127	RIN01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38054	S22-Ja38055	S22-Ja38056	S22-Ja38057
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	83	81	78	84
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			MW12	MW13	QC20220127	RIN01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38054	S22-Ja38055	S22-Ja38056	S22-Ja38057
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Volatile Organics						
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total MAH*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Bromofluorobenzene (surr.)	1	%	83	81	78	84
Toluene-d8 (surr.)	1	%	84	80	78	87
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002

Client Sample ID			MW12	MW13	QC20220127	RIN01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38054	S22-Ja38055	S22-Ja38056	S22-Ja38057
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	70	67	68	73
Tetrachloro-m-xylene (surr.)	1	%	77	81	76	79
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	71	73	74	73

Client Sample ID			MW12	MW13	QC20220127	RIN01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38054	S22-Ja38055	S22-Ja38056	S22-Ja38057
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
Total cresols*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Phenol-d6 (surr.)	1	%	32	32	30	31
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	72	126	57	92
p-Terphenyl-d14 (surr.)	1	%	119	147	96	115
Heavy Metals						
Arsenic	0.001	mg/L	-	-	-	< 0.001
Arsenic (filtered)	0.001	mg/L	0.001	0.012	0.002	-
Cadmium	0.0002	mg/L	-	-	-	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	0.0005	< 0.0002	-
Chromium	0.001	mg/L	-	-	-	< 0.001

Client Sample ID			MW12	MW13	QC20220127	RIN01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38054	S22-Ja38055	S22-Ja38056	S22-Ja38057
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Chromium (filtered)	0.001	mg/L	< 0.001	0.003	< 0.001	-
Copper	0.001	mg/L	-	-	-	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.008	0.002	-
Lead	0.001	mg/L	-	-	-	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	0.003	< 0.001	-
Mercury	0.0001	mg/L	-	-	-	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	-	-	-	< 0.001
Nickel (filtered)	0.001	mg/L	0.003	0.029	0.003	-
Zinc	0.005	mg/L	-	-	-	< 0.005
Zinc (filtered)	0.005	mg/L	0.018	0.032	0.020	-
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.06	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.12	< 0.01	0.18	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.21	< 0.01	0.30	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	0.04	< 0.01	0.05	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	0.06	< 0.01	0.08	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	0.04	< 0.01	0.04	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	74	70	75	95
13C5-PFPeA (surr.)	1	%	60	73	59	122
13C5-PFHxA (surr.)	1	%	86	97	87	109
13C4-PFHpA (surr.)	1	%	105	105	117	109
13C8-PFOA (surr.)	1	%	113	107	124	112
13C5-PFNA (surr.)	1	%	131	110	148	109
13C6-PFDA (surr.)	1	%	125	120	155	105
13C2-PFUnDA (surr.)	1	%	132	149	178	108
13C2-PFDoDA (surr.)	1	%	118	146	167	118
13C2-PFTeDA (surr.)	1	%	56	145	134	123
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	94	99	110	96
D3-N-MeFOSA (surr.)	1	%	31	63	26	86
D5-N-EtFOSA (surr.)	1	%	27	65	25	93
D7-N-MeFOSE (surr.)	1	%	67	88	69	96
D9-N-EtFOSE (surr.)	1	%	68	92	75	103

Client Sample ID			MW12	MW13	QC20220127	RIN01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Ja38054	S22-Ja38055	S22-Ja38056	S22-Ja38057
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSAA (surr.)	1	%	119	168	188	133
D3-N-MeFOSAA (surr.)	1	%	128	149	181	119
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.13	< 0.01	0.17	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.06	< 0.01	0.08	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	0.11	< 0.01	0.15	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	0.76	< 0.01	0.97	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	0.04	< 0.01	0.05	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	0.26	< 0.01	0.26	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	117	122	120	118
18O2-PFHxS (surr.)	1	%	117	123	123	129
13C8-PFOS (surr.)	1	%	131	119	140	114
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	0.13	< 0.05	0.17	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	152	137	168	118
13C2-6:2 FTSA (surr.)	1	%	189	146	133	111
13C2-8:2 FTSA (surr.)	1	%	101	184	125	181
13C2-10:2 FTSA (surr.)	1	%	194	112	119	114
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	1.02	< 0.01	1.23	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.32	< 0.01	0.34	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	1.08	< 0.01	1.31	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	1.71	< 0.05	2.24	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	1.96	< 0.1	2.56	< 0.1

Client Sample ID			TS	TB
Sample Matrix			Water	Water
Eurofins Sample No.			S22-Ja38058	S22-Ja38059
Date Sampled			Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.001	mg/L	-	< 0.001
Toluene	0.001	mg/L	-	< 0.001
Ethylbenzene	0.001	mg/L	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002
o-Xylene	0.001	mg/L	-	< 0.001
Xylenes - Total*	0.003	mg/L	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	91

Client Sample ID			TS	TB
Sample Matrix			Water	Water
Eurofins Sample No.			S22-Ja38058	S22-Ja38059
Date Sampled			Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit		
BTEX				
Benzene	1	%	110	-
Ethylbenzene	1	%	110	-
m&p-Xylenes	1	%	110	-
o-Xylene	1	%	99	-
Toluene	1	%	110	-
Xylenes - Total	1	%	100	-
4-Bromofluorobenzene (surr.)	1	%	85	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Feb 07, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 07, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 07, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Feb 07, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Feb 08, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)			
Metals M8 filtered	Sydney	Feb 07, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Volatile Organics	Sydney	Feb 07, 2022	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Organochlorine Pesticides	Sydney	Feb 07, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Feb 07, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Phenols (Halogenated)	Sydney	Feb 07, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Sydney	Feb 07, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Feb 07, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Feb 02, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Feb 02, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Feb 02, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Feb 02, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Feb 02, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Project Name: LIDCOME 42 BOOREA ST LIDCOME
Project ID: 62184

Order No.:
Report #: 859151
Phone: 02 8245 0300
Fax:

Received: Jan 28, 2022 9:47 AM
Due: Feb 8, 2022
Priority: 7 Day
Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						HOLD	Phenols (Speciated)	BTEX	Suite B14: OCP/OPP	Volatile Organics	Eurofins Suite B1	Per- and Polyfluoroalkyl Substances (PFASs)	BTEX	Polycyclic Aromatic Hydrocarbons (Trace level)	Eurofins Suite B7 (PAH trace level)	Eurofins Suite B7 (filtered metals/PAH trace level)
Melbourne Laboratory - NATA # 1261 Site # 1254														X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X		X	X
Brisbane Laboratory - NATA # 1261 Site # 20794																
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	MW04	Jan 27, 2022		Water	S22-Ja38050		X		X	X		X				X
2	MW07	Jan 27, 2022		Water	S22-Ja38051		X		X	X	X	X		X		
3	MW09	Jan 27, 2022		Water	S22-Ja38052		X		X	X		X			X	
4	MW10	Jan 27, 2022		Water	S22-Ja38053		X		X	X		X			X	
5	MW12	Jan 27, 2022		Water	S22-Ja38054		X		X	X		X				X
6	MW13	Jan 27, 2022		Water	S22-Ja38055		X		X	X		X				X
7	QC20220127	Jan 27, 2022		Water	S22-Ja38056		X		X	X		X				X
8	RIN01	Jan 27, 2022		Water	S22-Ja38057		X		X	X		X			X	
9	TS	Jan 27, 2022		Water	S22-Ja38058								X			

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Contact Name: Chris Bielby

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						HOLD	Phenols (Speciated)	BTEX	Suite B14: OCP/OPP	Volatile Organics	Eurofins Suite B1	Per- and Polyfluoroalkyl Substances (PFASs)	BTEX	Polycyclic Aromatic Hydrocarbons (Trace level)	Eurofins Suite B7 (PAH trace level)	Eurofins Suite B7 (filtered metals/PAH trace level)
Melbourne Laboratory - NATA # 1261 Site # 1254														X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X		X	X
Brisbane Laboratory - NATA # 1261 Site # 20794																
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
10	TB	Jan 27, 2022		Water	S22-Ja38059			X								
11	BLANK	Jan 27, 2022		Water	S22-Ja38060	X										
Test Counts						1	8	1	8	8	1	8	1	1	3	4

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Total PAH*	mg/L	-			0.00001	N/A	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	126			70-130	Pass	
TRH C10-C14	%	87			70-130	Pass	
Naphthalene	%	123			70-130	Pass	
TRH C6-C10	%	115			70-130	Pass	
TRH >C10-C16	%	82			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	117			70-130	Pass	
Toluene	%	111			70-130	Pass	
Ethylbenzene	%	108			70-130	Pass	
m&p-Xylenes	%	107			70-130	Pass	
o-Xylene	%	106			70-130	Pass	
Xylenes - Total*	%	106			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	100			70-130	Pass	
1.1.1-Trichloroethane	%	102			70-130	Pass	
1.2-Dichlorobenzene	%	101			70-130	Pass	
1.2-Dichloroethane	%	101			70-130	Pass	
Trichloroethene	%	96			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	70			70-130	Pass	
4.4'-DDD	%	73			70-130	Pass	
4.4'-DDE	%	76			70-130	Pass	
4.4'-DDT	%	74			70-130	Pass	
a-HCH	%	73			70-130	Pass	
Aldrin	%	78			70-130	Pass	
b-HCH	%	72			70-130	Pass	
d-HCH	%	73			70-130	Pass	
Dieldrin	%	72			70-130	Pass	
Endosulfan I	%	78			70-130	Pass	
Endosulfan II	%	75			70-130	Pass	
Endosulfan sulphate	%	72			70-130	Pass	
Endrin aldehyde	%	72			70-130	Pass	
Endrin ketone	%	72			70-130	Pass	
g-HCH (Lindane)	%	74			70-130	Pass	
Heptachlor	%	75			70-130	Pass	
Heptachlor epoxide	%	70			70-130	Pass	
Hexachlorobenzene	%	70			70-130	Pass	
Methoxychlor	%	73			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organophosphorus Pesticides							
Diazinon	%	79			70-130	Pass	
Dimethoate	%	78			70-130	Pass	
Ethion	%	73			70-130	Pass	
Methyl parathion	%	81			70-130	Pass	
Mevinphos	%	81			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	82			25-140	Pass	
2.4-Dichlorophenol	%	80			25-140	Pass	
2.4.5-Trichlorophenol	%	94			25-140	Pass	
2.4.6-Trichlorophenol	%	86			25-140	Pass	
2.6-Dichlorophenol	%	78			25-140	Pass	
4-Chloro-3-methylphenol	%	87			25-140	Pass	
Pentachlorophenol	%	74			25-140	Pass	
Tetrachlorophenols - Total	%	80			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	66			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	74			25-140	Pass	
2-Nitrophenol	%	82			25-140	Pass	
2.4-Dimethylphenol	%	79			25-140	Pass	
2.4-Dinitrophenol	%	64			25-140	Pass	
2-Methylphenol (o-Cresol)	%	80			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	80			25-140	Pass	
4-Nitrophenol	%	43			25-140	Pass	
Dinoseb	%	78			25-140	Pass	
Phenol	%	56			25-140	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	%	102			70-130	Pass	
Acenaphthylene	%	75			70-130	Pass	
Anthracene	%	88			70-130	Pass	
Benz(a)anthracene	%	96			70-130	Pass	
Benzo(a)pyrene	%	86			70-130	Pass	
Benzo(b&j)fluoranthene	%	78			70-130	Pass	
Benzo(g.h.i)perylene	%	79			70-130	Pass	
Benzo(k)fluoranthene	%	74			70-130	Pass	
Chrysene	%	90			70-130	Pass	
Dibenz(a.h)anthracene	%	74			70-130	Pass	
Fluoranthene	%	82			70-130	Pass	
Fluorene	%	79			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	81			70-130	Pass	
Naphthalene	%	82			70-130	Pass	
Phenanthrene	%	80			70-130	Pass	
Pyrene	%	113			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	96			80-120	Pass	
Arsenic (filtered)	%	102			80-120	Pass	
Cadmium	%	107			80-120	Pass	
Cadmium (filtered)	%	110			80-120	Pass	
Chromium	%	97			80-120	Pass	
Chromium (filtered)	%	118			80-120	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	%	98			80-120	Pass	
Copper (filtered)	%	117			80-120	Pass	
Lead	%	94			80-120	Pass	
Lead (filtered)	%	109			80-120	Pass	
Mercury	%	90			80-120	Pass	
Mercury (filtered)	%	98			80-120	Pass	
Nickel	%	97			80-120	Pass	
Nickel (filtered)	%	120			80-120	Pass	
Zinc	%	107			80-120	Pass	
Zinc (filtered)	%	119			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	101			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	99			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	104			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	101			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	103			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	106			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	106			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	108			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	107			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	135			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	107			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	99			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	103			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	99			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	97			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	95			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	96			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	108			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	89			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	99			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	93			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	94			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	108			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	104			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	90			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S22-Ja34847	NCP	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Ja34847	NCP	%	103			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Ja09664	NCP	%	89			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Ja34847	NCP	%	118			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S22-Ja34847	NCP	%	85			50-150	Pass	
Perfluorononanoic acid (PFNA)	S22-Ja34847	NCP	%	97			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S22-Ja34847	NCP	%	107			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Ja34847	NCP	%	107			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Ja34847	NCP	%	103			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-Ja34847	NCP	%	110			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-Ja34847	NCP	%	103			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S22-Ja34847	NCP	%	101			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Ja34847	NCP	%	101			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Ja34847	NCP	%	97			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S22-Ja34847	NCP	%	93			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S22-Ja34847	NCP	%	96			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Ja34847	NCP	%	99			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Ja34847	NCP	%	104			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S22-Ja34847	NCP	%	99			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-Ja09664	NCP	%	82			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-Ja34847	NCP	%	99			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-Ja34847	NCP	%	103			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-Fe12032	NCP	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S22-Ja38050	CP	%	110			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-Fe12032	NCP	%	88			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S22-Ja09664	NCP	%	73			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Ja34847	NCP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S22-Fe12032	NCP	%	84			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Ja38050	CP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Ja38050	CP	%	88			50-150	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Fe06698	NCP	%	119			75-125	Pass	
Cadmium	S22-Fe06698	NCP	%	116			75-125	Pass	
Chromium	L22-Fe09367	NCP	%	80			75-125	Pass	
Copper	S22-Fe06698	NCP	%	119			75-125	Pass	
Lead	S22-Fe06698	NCP	%	102			75-125	Pass	
Mercury	S22-Fe06698	NCP	%	101			75-125	Pass	
Nickel	S22-Fe06698	NCP	%	100			75-125	Pass	
Zinc	S22-Fe06698	NCP	%	110			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium (filtered)	S22-Ja38056	CP	%	116			75-125	Pass	
Chromium (filtered)	S22-Ja38056	CP	%	99			75-125	Pass	
Copper (filtered)	S22-Ja38056	CP	%	85			75-125	Pass	
Lead (filtered)	S22-Ja38056	CP	%	86			75-125	Pass	
Nickel (filtered)	S22-Ja38056	CP	%	90			75-125	Pass	
Zinc (filtered)	S22-Ja38056	CP	%	92			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1	Result 2	RPD			
Acenaphthene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Acenaphthylene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Anthracene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benz(a)anthracene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(a)pyrene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Chrysene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluoranthene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluorene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Naphthalene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Phenanthrene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Pyrene	M22-Fe07254	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S22-Ja38050	CP	mg/L	0.002	0.002	6.0	30%	Pass	
Cadmium (filtered)	S22-Ja38050	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S22-Ja38050	CP	mg/L	0.001	< 0.001	13	30%	Pass	
Copper (filtered)	S22-Ja38050	CP	mg/L	0.001	0.001	7.0	30%	Pass	
Lead (filtered)	S22-Ja38050	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S22-Ja38050	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S22-Ja38050	CP	mg/L	0.006	0.006	1.0	30%	Pass	
Zinc (filtered)	S22-Ja38050	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S22-Fe01048	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S22-Fe01048	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Fe01048	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Fe01048	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S22-Fe01048	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S22-Fe01048	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Fe01048	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Fe01048	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-Fe04349	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S22-Fe04349	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-Fe04349	NCP	ug/L	0.02	0.02	9.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Fe01048	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S22-Fe04349	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Fe04349	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Fe04349	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Ja38057	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S22-Ja38057	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S22-Ja38057	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S22-Ja38057	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S22-Ja38057	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S22-Ja38057	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S22-Ja38057	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S22-Ja38057	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B22-Ja37020	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	B22-Ja37020	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	B22-Ja37020	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	B22-Ja37020	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	B22-Ja37020	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	B22-Ja37020	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Joseph Edouard	Senior Analyst-Organic (VIC)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)
Andrew Sullivan	Senior Analyst-PFAS (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Enviro lab.

Chain of Custody

JBS&G

PROJECT NO.:	LABORATORY BATCH NO.:
PROJECT NAME: Lidcombe, 42 Boorea St Lidcombe.	SAMPLERS: ML HD
DATE NEEDED BY: Standard TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) c.bilby.....@jbsg.com.au; (3) m.lin.....@jbsg.com.au hdinan@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	HM	Lead/PAH	TRH/BTEX	VOC's	OCP/PCB	PFAS	Phenols	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
1 QA20220127	water	27/1	-	Bottles/vials Rinse.		x	x	x	x	x	x	x.			

Environ Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 28753
Date Received: 28/1/2022
Time Received: 11:10
Received by: THAN
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: Hugo Dinan DATE: 27/1/22.	CONSIGNMENT NOTE NO.	NAME: THAN	COOLER SEAL – (Yes) ..... No ..... (Intact) ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 28-1-22 11:10	
		OF: ENVIROLAB	COOLER TEMP 1.0 deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	Chris Bielby, H Dinan, M Linz

Sample Login Details

Your reference	62184, Lidcombe
Envirolab Reference	287531
Date Sample Received	28/01/2022
Date Instructions Received	28/01/2022
Date Results Expected to be Reported	04/02/2022

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in water	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water - Low Level	Organochlorine Pesticides in Water	PCBs in Water	HM in water - dissolved	PFAS in Waters Extended	Total Phenolics in Water
QA20220127	✓	✓	✓	✓	✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 287531

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	Chris Bielby, H Dinan, M Linz
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**62184, Lidcombe**
Number of Samples	1 water
Date samples received	28/01/2022
Date completed instructions received	28/01/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	04/02/2022
Date of Issue	04/02/2022

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Diego Bigolin, Inorganics Supervisor
Dragana Tomas, Senior Chemist
Josh Williams, LC Supervisor
Loren Bardwell, Development Chemist
Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

VOCs in water		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Date extracted	-	31/01/2022
Date analysed	-	31/01/2022
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1

VOCs in water		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Bromoform	µg/L	<1
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1
1,2,3-trichloropropane	µg/L	<1
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	97
Surrogate toluene-d8	%	97
Surrogate 4-BFB	%	102

vTRH(C6-C10)/BTEXN in Water		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Date extracted	-	31/01/2022
Date analysed	-	31/01/2022
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	97
Surrogate toluene-d8	%	97
Surrogate 4-BFB	%	102

svTRH (C10-C40) in Water		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Date extracted	-	31/01/2022
Date analysed	-	31/01/2022
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	78

PAHs in Water - Low Level		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Date extracted	-	31/01/2022
Date analysed	-	31/01/2022
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	<0.1
Surrogate p-Terphenyl-d14	%	93

Organochlorine Pesticides in Water		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Date extracted	-	31/01/2022
Date analysed	-	31/01/2022
alpha-BHC	µg/L	<0.2
HCB	µg/L	<0.2
beta-BHC	µg/L	<0.2
gamma-BHC	µg/L	<0.2
Heptachlor	µg/L	<0.2
delta-BHC	µg/L	<0.2
Aldrin	µg/L	<0.2
Heptachlor Epoxide	µg/L	<0.2
gamma-Chlordane	µg/L	<0.2
alpha-Chlordane	µg/L	<0.2
Endosulfan I	µg/L	<0.2
pp-DDE	µg/L	<0.2
Dieldrin	µg/L	<0.2
Endrin	µg/L	<0.2
Endosulfan II	µg/L	<0.2
pp-DDD	µg/L	<0.2
Endrin Aldehyde	µg/L	<0.2
pp-DDT	µg/L	<0.2
Endosulfan Sulphate	µg/L	<0.2
Methoxychlor	µg/L	<0.2
Surrogate TCMX	%	85

PCBs in Water		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Date extracted	-	31/01/2022
Date analysed	-	31/01/2022
Aroclor 1016	µg/L	<2
Aroclor 1221	µg/L	<2
Aroclor 1232	µg/L	<2
Aroclor 1242	µg/L	<2
Aroclor 1248	µg/L	<2
Aroclor 1254	µg/L	<2
Aroclor 1260	µg/L	<2
Surrogate TCMX	%	85

HM in water - dissolved		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Date prepared	-	04/02/2022
Date analysed	-	04/02/2022
Arsenic-Dissolved	µg/L	3
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	3
Zinc-Dissolved	µg/L	14

PFAS in Waters Extended		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Date prepared	-	28/01/2022
Date analysed	-	28/01/2022
Perfluorobutanesulfonic acid	µg/L	0.12
Perfluoropentanesulfonic acid	µg/L	0.09
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.69
Perfluoroheptanesulfonic acid	µg/L	0.04
Perfluorooctanesulfonic acid PFOS	µg/L	0.21
Perfluorodecanesulfonic acid	µg/L	<0.02
Perfluorobutanoic acid	µg/L	0.03
Perfluoropentanoic acid	µg/L	0.1
Perfluorohexanoic acid	µg/L	0.18
Perfluoroheptanoic acid	µg/L	0.03
Perfluorooctanoic acid PFOA	µg/L	0.06
Perfluorononanoic acid	µg/L	0.03
Perfluorodecanoic acid	µg/L	<0.02
Perfluoroundecanoic acid	µg/L	<0.02
Perfluorododecanoic acid	µg/L	<0.05
Perfluorotridecanoic acid	µg/L	<0.1
Perfluorotetradecanoic acid	µg/L	<0.5
4:2 FTS	µg/L	<0.01
6:2 FTS	µg/L	0.14
8:2 FTS	µg/L	<0.02
10:2 FTS	µg/L	<0.02
Perfluorooctane sulfonamide	µg/L	<0.1
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05
N-Ethyl perfluorooctanesulfon amide	µg/L	<0.1
N-Me perfluorooctanesulfonamid oethanol	µg/L	<0.05
N-Et perfluorooctanesulfonamid oethanol	µg/L	<0.5
MePerfluorooctanesulf- amid oacetic acid	µg/L	<0.02
EtPerfluorooctanesulf- amid oacetic acid	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	98
Surrogate $^{13}C_2$ *PFOA*	%	100
Extracted ISTD $^{13}C_3$ *PFBS*	%	98
Extracted ISTD $^{18}O_2$ *PFHxS*	%	107
Extracted ISTD $^{13}C_4$ *PFOS*	%	109
Extracted ISTD $^{13}C_4$ *PFBA*	%	49

PFAS in Waters Extended		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Extracted ISTD $^{13}C_3$ *PFPeA*	%	79
Extracted ISTD $^{13}C_2$ *PFHxA*	%	93
Extracted ISTD $^{13}C_4$ *PFHpA*	%	89
Extracted ISTD $^{13}C_4$ *PFOA*	%	96
Extracted ISTD $^{13}C_5$ *PFNA*	%	105
Extracted ISTD $^{13}C_2$ *PFDA*	%	104
Extracted ISTD $^{13}C_2$ *PFUnDA*	%	111
Extracted ISTD $^{13}C_2$ *PFDoDA*	%	112
Extracted ISTD $^{13}C_2$ *PFTeDA*	%	91
Extracted ISTD $^{13}C_2$ *4:2FTS*	%	62
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	67
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	84
Extracted ISTD $^{13}C_8$ *FOSA*	%	104
Extracted ISTD d_3 *N MeFOSA*	%	103
Extracted ISTD d_5 *N EtFOSA*	%	102
Extracted ISTD d_7 *N MeFOSE*	%	103
Extracted ISTD d_9 *N EtFOSE*	%	100
Extracted ISTD d_3 *N MeFOSAA*	%	77
Extracted ISTD d_5 *N EtFOSAA*	%	77
Total Positive PFHxS & PFOS	µg/L	0.90
Total Positive PFOA & PFOS	µg/L	0.26
Total Positive PFAS	µg/L	1.7

Total Phenolics in Water		
Our Reference		287531-1
Your Reference	UNITS	QA20220127
Date Sampled		27/01/2022
Type of sample		water
Date extracted	-	01/02/2022
Date analysed	-	01/02/2022
Total Phenolics (as Phenol)	mg/L	<0.05

Method ID	Methodology Summary
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.3 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			31/01/2022	1	31/01/2022	01/02/2022		31/01/2022	[NT]
Date analysed	-			31/01/2022	1	31/01/2022	01/02/2022		31/01/2022	[NT]
Dichlorodifluoromethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Chloromethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Bromomethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Chloroethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	84	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chloroform	µg/L	1	Org-023	<1	1	<1	<1	0	85	[NT]
2,2-dichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	85	[NT]
1,1,1-trichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	84	[NT]
1,1-dichloropropene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Cyclohexane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Dibromomethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Trichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	84	[NT]
Bromodichloromethane	µg/L	1	Org-023	<1	1	<1	<1	0	80	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-023	<1	1	<1	<1	0	78	[NT]
1,2-dibromoethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	83	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromoform	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	[NT]	[NT]
Styrene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	99	1	97	96	1	101	[NT]
Surrogate toluene-d8	%		Org-023	97	1	97	96	1	99	[NT]
Surrogate 4-BFB	%		Org-023	101	1	102	101	1	98	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			31/01/2022	1	31/01/2022	01/02/2022		31/01/2022	[NT]
Date analysed	-			31/01/2022	1	31/01/2022	01/02/2022		31/01/2022	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	1	<10	<10	0	91	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	1	<10	<10	0	91	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	88	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	87	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	92	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	93	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	90	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	99	1	97	96	1	101	[NT]
Surrogate toluene-d8	%		Org-023	97	1	97	96	1	99	[NT]
Surrogate 4-BFB	%		Org-023	101	1	102	101	1	98	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			31/01/2022	[NT]	[NT]	[NT]	[NT]	31/01/2022	[NT]
Date analysed	-			31/01/2022	[NT]	[NT]	[NT]	[NT]	31/01/2022	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	105	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	105	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
Surrogate o-Terphenyl	%		Org-020	85	[NT]	[NT]	[NT]	[NT]	77	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			31/01/2022	[NT]	[NT]	[NT]	[NT]	31/01/2022	[NT]
Date analysed	-			31/01/2022	[NT]	[NT]	[NT]	[NT]	31/01/2022	[NT]
Naphthalene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	92	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	65	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	94	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: Organochlorine Pesticides in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			31/01/2022	[NT]	[NT]	[NT]	[NT]	31/01/2022	[NT]
Date analysed	-			31/01/2022	[NT]	[NT]	[NT]	[NT]	31/01/2022	[NT]
alpha-BHC	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	94	[NT]
HCB	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	92	[NT]
gamma-BHC	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	83	[NT]
delta-BHC	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	95	[NT]
Heptachlor Epoxide	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	82	[NT]
gamma-Chlordane	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	80	[NT]
Dieldrin	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	86	[NT]
Endrin	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	76	[NT]
Endosulfan II	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	86	[NT]
Endrin Aldehyde	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	76	[NT]
Methoxychlor	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	85	[NT]	[NT]	[NT]	[NT]	93	[NT]

QUALITY CONTROL: PCBs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			31/01/2022	[NT]	[NT]	[NT]	[NT]	31/01/2022	[NT]
Date analysed	-			31/01/2022	[NT]	[NT]	[NT]	[NT]	31/01/2022	[NT]
Aroclor 1016	µg/L	2	Org-021	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	2	Org-021	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	2	Org-021	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	2	Org-021	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	2	Org-021	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	µg/L	2	Org-021	<2	[NT]	[NT]	[NT]	[NT]	92	[NT]
Aroclor 1260	µg/L	2	Org-021	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	85	[NT]	[NT]	[NT]	[NT]	93	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	[NT]
Date analysed	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	109	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]

QUALITY CONTROL: PFAS in Waters Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Date analysed	-			28/01/2022	[NT]	[NT]	[NT]	[NT]	28/01/2022	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	100	[NT]
Perfluoropentanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluoroheptanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Perfluorodecanesulfonic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	98	[NT]
Perfluorobutanoic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	99	[NT]
Perfluoropentanoic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluorohexanoic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluoroheptanoic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	99	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorononanoic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	100	[NT]
Perfluorodecanoic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	106	[NT]
Perfluoroundecanoic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorododecanoic acid	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluorotridecanoic acid	µg/L	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Perfluorotetradecanoic acid	µg/L	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	102	[NT]
4:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	99	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	110	[NT]
10:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	138	[NT]
Perfluorooctane sulfonamide	µg/L	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
N-Methyl perfluorooctane sulfonamide	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	104	[NT]
N-Ethyl perfluorooctanesulfon amide	µg/L	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
N-Me perfluorooctanesulfonamid oethanol	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	109	[NT]
N-Et perfluorooctanesulfonamid oethanol	µg/L	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	106	[NT]
MePerfluorooctanesulf- amid oacetic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	99	[NT]
EtPerfluorooctanesulf- amid oacetic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	96	[NT]	[NT]	[NT]	[NT]	93	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: PFAS in Waters Extended					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	121	[NT]	[NT]	[NT]	[NT]	86	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	117	[NT]	[NT]	[NT]	[NT]	84	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	118	[NT]	[NT]	[NT]	[NT]	86	[NT]
Extracted ISTD $^{13}C_4$ *PFBA*	%		Org-029	113	[NT]	[NT]	[NT]	[NT]	79	[NT]
Extracted ISTD $^{13}C_3$ *PFPeA*	%		Org-029	113	[NT]	[NT]	[NT]	[NT]	79	[NT]
Extracted ISTD $^{13}C_2$ *PFHxA*	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	81	[NT]
Extracted ISTD $^{13}C_4$ *PFHpA*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	83	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	83	[NT]
Extracted ISTD $^{13}C_5$ *PFNA*	%		Org-029	113	[NT]	[NT]	[NT]	[NT]	82	[NT]
Extracted ISTD $^{13}C_2$ *PFDA*	%		Org-029	115	[NT]	[NT]	[NT]	[NT]	84	[NT]
Extracted ISTD $^{13}C_2$ *PFUnDA*	%		Org-029	110	[NT]	[NT]	[NT]	[NT]	90	[NT]
Extracted ISTD $^{13}C_2$ *PFDoDA*	%		Org-029	117	[NT]	[NT]	[NT]	[NT]	91	[NT]
Extracted ISTD $^{13}C_2$ *PFTeDA*	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	75	[NT]
Extracted ISTD $^{13}C_2$ *4:2FTS*	%		Org-029	118	[NT]	[NT]	[NT]	[NT]	88	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	128	[NT]	[NT]	[NT]	[NT]	96	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	139	[NT]	[NT]	[NT]	[NT]	91	[NT]
Extracted ISTD $^{13}C_8$ *FOSA*	%		Org-029	118	[NT]	[NT]	[NT]	[NT]	81	[NT]
Extracted ISTD d_3 *N MeFOSA*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	82	[NT]
Extracted ISTD d_5 *N EtFOSA*	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	81	[NT]
Extracted ISTD d_7 *N MeFOSE*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	85	[NT]

QUALITY CONTROL: PFAS in Waters Extended					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Extracted ISTD d_9 *N EtFOSE*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	83	[NT]
Extracted ISTD d_3 *N MeFOSAA*	%		Org-029	134	[NT]	[NT]	[NT]	[NT]	96	[NT]
Extracted ISTD d_5 *N EtFOSAA*	%		Org-029	130	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: Total Phenolics in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			01/02/2022	[NT]	[NT]	[NT]	[NT]	01/02/2022	[NT]
Date analysed	-			01/02/2022	[NT]	[NT]	[NT]	[NT]	01/02/2022	[NT]
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	[NT]	[NT]	[NT]	[NT]	107	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

Appendix F QA / QC Results

Soil RPDs
Project Number: 62184
Project Name: Lidcombe

Field Duplicates (soil)
Filter: ALL

SDG	858427	858427		858427	858427		858427	ENVIROLAB 2022-01-24		858427	ENVIROLAB 2022-01-24	
Field ID	BH16_2.0-2.1	QSA01	RPD	BH04_0.0-0.1	QSA02	RPD	BH16_2.0-2.1	QSC01	RPD	BH04_0.0-0.1	QSC02	RPD
Sampled Date/Time	21/01/2022	21/01/2022		21/01/2022	21/01/2022		21/01/2022	21/01/2022		21/01/2022	21/01/2022	
Chem_Group	**ChemName**	**Units**	**EQL**									
Metals & Metalloids	Arsenic	mg/kg	2 : 4 (Interlab)	11	12	9	**5.2**	**12**	**79**	**11**	**6**	**59**	5.2	4	26
	Cadmium	mg/kg	0.4	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0
	Chromium (III+VI)	mg/kg	5 : 1 (Interlab)	29	31	7	**18**	**36**	**67**	**29**	**13**	**76**	18	17	6
	Copper	mg/kg	5 : 1 (Interlab)	35	36	3	**28**	**49**	**55**	**35**	**25**	**33**	28	29	4
	Lead	mg/kg	5 : 1 (Interlab)	49	50	2	**63**	**110**	**54**	**49**	**25**	**65**	63	51	21
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	5 : 1 (Interlab)	19	20	5	**21**	**41**	**65**	**19**	**9**	**71**	21	21	0
	Zinc	mg/kg	5 : 1 (Interlab)	87	84	4	**110**	**190**	**53**	**87**	**39**	**76**	110	100	10
TPHs (NEPC 1999)	C6-C9 Fraction	mg/kg	20 : 25 (Interlab)	<20	<20	0	<20	<20	0	<20	<25	0	<20	<25	0
	C10-C14 Fraction	mg/kg	20 : 50 (Interlab)	<20	<20	0	<20	<20	0	<20	<50	0	<20	<50	0
	C15-C28 Fraction	mg/kg	50 : 100 (Interlab)	<50	<50	0	**100**	**68**	**38**	<50	<100	0	100	<100	0
	C29-C36 Fraction	mg/kg	50 : 100 (Interlab)	<50	52	4	140	110	24	<50	<100	0	140	130	7
	C10-C36 Fraction (Sum of Total)	mg/kg	50	<50	52	4	240	178	30	<50	<50	0	**240**	**130**	**59**
TRHs (NEPC 2013)	C6-C10	mg/kg	20 : 25 (Interlab)	<20	<20	0	<20	<20	0	<20	<25	0	<20	<25	0
	C10-C16	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
	C16-C34	mg/kg	100	<100	<100	0	200	170	16	<100	<100	0	200	180	11
	C34-C40	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
	C10-C40 (Sum of total)	mg/kg	100 : 50 (Interlab)	<100	<100	0	200	170	16	<100	<50	0	200	180	11
	F1 (C6-C10 minus BTEX)	mg/kg	20 : 25 (Interlab)	<20	<20	0	<20	<20	0	<20	<25	0	<20	<25	0
	F2 (C10-C16 less Naphthalene)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
BTEXN	Benzene	mg/kg	0.1 : 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.2	0	<0.1	<0.2	0
	Toluene	mg/kg	0.1 : 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0
	Ethylbenzene	mg/kg	0.1 : 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<1	0	<0.1	<1	0
	Xylene (o)	mg/kg	0.1 : 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<1	0	<0.1	<1	0
	Xylene (m & p)	mg/kg	0.2 : 2 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<2	0	<0.2	<2	0
	Xylene Total	mg/kg	0.3 : 3 (Interlab)	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<3	0	<0.3	<3	0
PAH	Acenaphthene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Acenaphthylene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Anthracene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Benz(a)anthracene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Benzo(a)pyrene	mg/kg	0.5 : 0.05 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.05	0	<0.5	0.09	0
	Benzo(b+j)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5			<0.5		
	Benzo(g,h,i)perylene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5			<0.5		
	Chrysene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Dibenz(a,h)anthracene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Fluoranthene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	0.1	0
	Fluorene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Naphthalene	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Naphthalene	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Phenanthrene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Pyrene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	0.1	0
	PAHs (Sum of total)	mg/kg	0.5 : 0.05 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.05	0	<0.5	0.4	0
Organochlorine Pesticides	4,4-DDE	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	a-BHC	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	b-BHC	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	d-BHC	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	g-BHC (Lindane)	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Aldrin	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Dieldrin	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Aldrin + Dieldrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05			<0.05		
	Chlordane	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1			<0.1		
	DDT	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	DDD	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	DDT+DDE+DDD	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endosulfan I	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endosulfan II	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endosulfan sulphate	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endrin	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0

Soil RPDs
Project Number: 62184
Project Name: Lidcombe

Field Duplicates (soil)
Filter: ALL

				SDG	858427	858427		858427	858427		858427	ENVIROLAB 2022-01-24		858427	ENVIROLAB 2022-01-24	
				Field ID	BH16_2.0-2.1	QSA01	RPD	BH04_0.0-0.1	QSA02	RPD	BH16_2.0-2.1	QSC01	RPD	BH04_0.0-0.1	QSC02	RPD
				Sampled Date/Time	21/01/2022	21/01/2022		21/01/2022	21/01/2022		21/01/2022	21/01/2022		21/01/2022	21/01/2022	
	Endrin aldehyde	mg/kg	0.05 : 0.1 (Interlab)		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endrin ketone	mg/kg	0.05		<0.05	<0.05	0	<0.05	<0.05	0	<0.05			<0.05		
	Heptachlor	mg/kg	0.05 : 0.1 (Interlab)		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Heptachlor Epoxide	mg/kg	0.05 : 0.1 (Interlab)		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Methoxychlor	mg/kg	0.05 : 0.1 (Interlab)		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Toxaphene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0	<0.5			<0.5		
Polychlorinated Biphenyls	Arochlor 1016	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Arochlor 1221	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Arochlor 1232	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Arochlor 1242	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Arochlor 1248	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Arochlor 1254	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Arochlor 1260	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	PCBs (Sum of total)	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
PFAS	Perfluorobutanoic acid (PFBA)	mg/kg	0.005 : 0.0002 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0	<0.005	0.0002	0
	Perfluoropentanoic acid (PFPeA)	mg/kg	0.005 : 0.0002 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0	<0.005	0.0004	0
	Perfluorohexanoic acid (PFHxA)	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	0.0001	0	<0.005	0.0006	0
	Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0001	0	<0.005	0.0003	0
	Perfluorooctanoic acid (PFOA)	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	0.0002	0	<0.005	0.0004	0
	Perfluorononanoic acid (PFNA)	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0001	0	<0.005	0.0001	0
	Perfluorodecanoic acid (PFDA)	mg/kg	0.005 : 0.0005 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0	<0.005	<0.0005	0
	Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.005 : 0.0005 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0	<0.005	<0.0005	0
	Perfluorododecanoic acid (PFDoDA)	mg/kg	0.005 : 0.0005 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0	<0.005	<0.0005	0
	Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.005 : 0.0005 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0	<0.005	<0.0005	0
	Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.005		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
	Perfluorooctane sulfonamide (FOSA)	mg/kg	0.005 : 0.001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.001	0	<0.005	<0.001	0
	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	mg/kg	0.005 : 0.001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.001	0	<0.005	<0.001	0
	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	mg/kg	0.005 : 0.001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.001	0	<0.005	<0.001	0
	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	mg/kg	0.005 : 0.001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.001	0	<0.005	<0.001	0
	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	mg/kg	0.005		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	mg/kg	0.01 : 0.0002 (Interlab)		<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.0002	0	<0.01	<0.0002	0
	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	mg/kg	0.01 : 0.0002 (Interlab)		<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.0002	0	<0.01	<0.0002	0
	Perfluoropropanesulfonic acid (PFPrS)	mg/kg	0.005		<0.005	<0.005	0	<0.005	<0.005	0	<0.005			<0.005		
	Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0001	0	<0.005	<0.0001	0
	Perfluoropentanesulfonic acid (PFPeS)	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0001	0	<0.005	<0.0001	0
	Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	0.006	<0.005	18	<0.005	0.0002	0	**0.006**	**0.0001**	**193**
	Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0001	0	<0.005	<0.0001	0
	Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	0.0061	<0.005	20	<0.005	0.0043	0	**0.0061**	**0.0015**	**121**
	Perfluorononanesulfonic acid (PFNS)	mg/kg	0.005		<0.005	<0.005	0	<0.005	<0.005	0	<0.005			<0.005		
	Perfluorodecanesulfonic acid (PFDS)	mg/kg	0.005 : 0.0002 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0	<0.005	<0.0002	0
	1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0001	0	<0.005	<0.0001	0
	1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	mg/kg	0.01 : 0.0001 (Interlab)		<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.0001	0	<0.01	<0.0001	0
	1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	mg/kg	0.005 : 0.0002 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0	<0.005	<0.0002	0
	1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	mg/kg	0.005 : 0.0002 (Interlab)		<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0	<0.005	<0.0002	0
	Sum of PFHxS and PFOS	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	**0.0121**	**<0.005**	**131**	<0.005	0.0045	0	**0.0121**	**0.0016**	**153**
	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	mg/kg	0.005		<0.005	<0.005	0	**0.0121**	**<0.005**	**131**	<0.005			0.0121		
	Sum of US EPA PFAS (PFOS + PFOA)*	mg/kg	0.005 : 0.0001 (Interlab)		<0.005	<0.005	0	0.0061	<0.005	20	<0.005	0.0045	0	**0.0061**	**0.0018**	**109**
	Sum of PFAS (WA DER List)	mg/kg	0.01		<0.01	<0.01	0	0.0121	<0.01	19	<0.01			0.0121		
	Sum of PFAS	mg/kg	0.05 : 0.0001 (Interlab)		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	0.0048	0	<0.05	0.0036	0
Chlorinated Benzenes	Hexachlorobenzene	mg/kg	0.05 : 0.1 (Interlab)		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
EPA VIC - IWRG621	Organochlorine Pesticides EPAVic	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0	<0.1			<0.1		
	Other Organochlorine Pesticides EPAVic	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0	<0.1			<0.1		
Other	Moisture Content (dried @ 103°C)	%	1		12	14	15	20	18	11	12			20		

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Soil Vapour RPDs
Project Number: 62184
Project Name: Lidcombe
Field Duplicates (gas)
Filter: ALL

SDG	857946	857946		857946	ENVIROLAB 2022-01-24	
Field ID	SV01 FRONT	QVA01 FRONT	RPD	SV01 FRONT	QVC01	RPD
Sampled Date/Time	21/01/2022	21/01/2022		21/01/2022	21/01/2022	

Chem_Group	ChemName	Units	EQL						
BTEXN	Benzene	mg/m3	0.0833335 : 0.3334 (Interlab)	<0.0833335	<0.0833335	0	<0.0833335	<0.3334	0
	Toluene	mg/m3	0.0833335 : 0.8335 (Interlab)	<0.0833335	<0.0833335	0	<0.0833335	<0.8335	0
	Ethylbenzene	mg/m3	0.0833335 : 0.8335 (Interlab)	<0.0833335	<0.0833335	0	<0.0833335	<0.8335	0
	Xylene Total	mg/m3	0.250001	<0.2500005	<0.2500005	0	<0.2500005		
PAH	Naphthalene	mg/m3	0.0833335 : 0.8335 (Interlab)	<0.0833335	<0.0833335	0	<0.0833335	<0.8335	0
Chlorinated Alkanes	1,1,1,2-tetrachloroethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,1,1-trichloroethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,1,2,2-tetrachloroethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,1,2-trichloroethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,1-dichloroethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,2,3-trichloropropane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,2-dibromo-3-chloropropane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,2-dichloroethane	mg/m3	0.0833335 : 0.8335 (Interlab)	<0.0833335	<0.0833335	0	<0.0833335	<0.8335	0
	1,2-dichloropropane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,3-dichloropropane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	2,2-dichloropropane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Bromochloromethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Carbon tetrachloride	mg/m3	0.0833335 : 0.8335 (Interlab)	<0.0833335	<0.0833335	0	<0.0833335	<0.8335	0
	Trichlorofluoromethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
Alkanes									
Chlorinated Alkenes	1,1-dichloroethene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,1-dichloropropene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	2-chlorotoluene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	4-chlorotoluene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	cis-1,2-dichloroethene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	cis-1,3-dichloropropene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Tetrachloroethene	mg/m3	0.0833335 : 0.8335 (Interlab)	<0.0833335	<0.0833335	0	<0.0833335	<0.8335	0
	trans-1,3-dichloropropene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Trichloroethene	mg/m3	0.0833335 : 0.8335 (Interlab)	<0.0833335	<0.0833335	0	<0.0833335	<0.8335	0
	Vinyl Chloride	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
Alkenes									
MAH	1,2,4-trimethylbenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,3,5-trimethylbenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	n-butylbenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	n-propylbenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	p-isopropyltoluene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	sec-butylbenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Styrene	mg/m3	0.833335 : 0.8335 (Interlab)	<0.833335	<0.833335	0	<0.833335	<0.8335	0
	tert-butylbenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Isopropylbenzene	mg/m3	0.0833335 : 0.8335 (Interlab)	<0.0833335	<0.0833335	0	<0.0833335	<0.8335	0
Miscellaneous Hydrocarbons	1,2-dibromoethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Dibromomethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
us Hydrocarbons									
Chlorinated Benzenes	1,2,3-trichlorobenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,2,4-trichlorobenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,2-Dichlorobenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,3-dichlorobenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	1,4-dichlorobenzene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Chlorobenzene	mg/m3	0.0833335 : 0.8335 (Interlab)	<0.0833335	<0.0833335	0	<0.0833335	<0.8335	0
Benzenes									
Trihalomethanes	Dibromochloromethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Chloroform	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Tribromomethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
	Bromodichloromethane	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		
anes									
Organic Alcohols	2-Propanol	mg/m3	1.66667	<1.66667	<1.66667	0	<1.66667		
ohols									
Chlorinated Hydrocarbons	Hexachlorobutadiene	mg/m3	0.0833335	<0.0833335	<0.0833335	0	<0.0833335		

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Groundwater RPDs
Project Number: 62184
Project Name: Lidcombe

Field Duplicates (water)
Filter: ALL

SDG	859151	859151		859151	ENVIROLAB 2022-01-28T00:00:00	
Field ID	MW12	QC20220127	**RPD**	MW12	QA20220127	**RPD**
Sampled Date/Time	27/01/2022	27/01/2022		27/01/2022	27/01/2022	

Chem_Group	ChemName	Units	EQL						
Metals & Metalloids	Arsenic (Filtered)	mg/l	0.001	**0.001**	**0.002**	**67**	**0.001**	**0.003**	**100**
	Cadmium (Filtered)	mg/l	0.0002 : 0.0001 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0001	0
	Chromium (III+VI) (Filtered)	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Copper (Filtered)	mg/l	0.001	**<0.001**	**0.002**	**67**	<0.001	<0.001	0
	Lead (Filtered)	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Mercury (Filtered)	mg/l	0.0001 : 5e-005 (Interlab)	<0.0001	<0.0001	0	<0.0001	<0.00005	0
	Nickel (Filtered)	mg/l	0.001	0.003	0.003	0	0.003	0.003	0
	Zinc (Filtered)	mg/l	0.005 : 0.001 (Interlab)	0.018	0.02	11	0.018	0.014	25
TPHs (NEPC 1999)	C6-C9 Fraction	mg/l	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
	C10-C14 Fraction	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05	0
	C15-C28 Fraction	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	C29-C36 Fraction	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	C10-C36 Fraction (Sum of Total)	mg/l	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
TRHs (NEPC 2013)	C6-C10	mg/l	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
	C10-C16	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05	0
	C16-C34	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	C34-C40	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	C10-C40 (Sum of total)	mg/l	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	F1 (C6-C10 minus BTEX)	mg/l	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
	F2 (C10-C16 less Naphthalene)	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05	0
BTEXN	Benzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Toluene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Ethylbenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Xylene (o)	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Xylene (m & p)	mg/l	0.002	<0.002	<0.002	0	<0.002	<0.002	0
	Xylene Total	mg/l	0.003	<0.003	<0.003	0	<0.003		
PAH	Acenaphthene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Acenaphthylene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Anthracene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Benz(a)anthracene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Benzo(a)pyrene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Benzo(b+j)fluoranthene	mg/l	1e-005	<0.00001	<0.00001	0	<0.00001		
	Benzo(g,h,i)perylene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Benzo(k)fluoranthene	mg/l	1e-005	<0.00001	<0.00001	0	<0.00001		
	Chrysene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Dibenz(a,h)anthracene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Fluoranthene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Fluorene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Indeno(1,2,3-c,d)pyrene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Naphthalene	mg/l	1e-005 : 0.001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0002	0
	Naphthalene	mg/l	0.01 : 0.001 (Interlab)	<0.01	<0.01	0	<0.01	<0.0002	0
	Phenanthrene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	Pyrene	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
	PAHs (Sum of total)	mg/l	1e-005 : 0.0001 (Interlab)	<0.00001	<0.00001	0	<0.00001	<0.0001	0
Organochlorine Pesticides	Pentachlorophenol	mg/l	0.01	<0.01	<0.01	0	<0.01		
	4,4-DDE	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	a-BHC	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	b-BHC	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	d-BHC	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	g-BHC (Lindane)	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Aldrin	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Dieldrin	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Aldrin + Dieldrin	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002		
	Chlordane	mg/l	0.002	<0.002	<0.002	0	<0.002		
	DDT	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	DDD	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	DDT+DDE+DDD	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002		
	Endosulfan I	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Endosulfan II	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Endosulfan sulphate	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Endrin	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Endrin aldehyde	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Endrin ketone	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002		
	Heptachlor	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Heptachlor Epoxide	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Methoxychlor	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
	Toxaphene	mg/l	0.005	<0.005	<0.005	0	<0.005		
Organophosphorus Pesticides	Azinophos methyl	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Bolstar (Sulprofos)	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Chlorfenvinphos	mg/l	0.02	<0.02	<0.02	0	<0.02		
	Chlorpyrifos	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Chlorpyrifos-methyl	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Coumaphos	mg/l	0.02	<0.02	<0.02	0	<0.02		
	Demeton-O	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Demeton-S	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Diazinon	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Dichlorvos	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Dimethoate	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Disulfoton	mg/l	0.002	<0.002	<0.002	0	<0.002		
	EPN	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Ethion	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Ethoprop	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Fenitrothion	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Fensulfothion	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Fenthion	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Malathion	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Merphos	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Methyl parathion	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Mevinphos (Phosdrin)	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Monocrotophos	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Naled (Dibrom)	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Omethoate	mg/l	0.02	<0.02	<0.02	0	<0.02		
	Phorate	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Pirimiphos-methyl	mg/l	0.02	<0.02	<0.02	0	<0.02		
	Pyrazophos	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Ronnel	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Terbufos	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Tetrachlorvinphos	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Tokuthion	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Trichloronate	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Parathion	mg/l	0.002	<0.002	<0.002	0	<0.002		
Chlorinated Alkanes	1,1,1,2-tetrachloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1,1-trichloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1,2,2-tetrachloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1,2-trichloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1-dichloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,2,3-trichloropropane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,2-dichloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,2-dichloropropane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0

Groundwater RPDs
Project Number: 62184
Project Name: Lidcombe

Field Duplicates (water)
Filter: ALL

	SDG	859151	859151		859151	ENVIROLAB 2022-01-28T00:00:00	
	Field ID	MW12	QC20220127	**RPD**	MW12	QA20220127	**RPD**
	Sampled Date/Time	27/01/2022	27/01/2022		27/01/2022	27/01/2022	
	1,3-dichloropropane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Bromochloromethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Carbon tetrachloride	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Chloroethane	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
	Chloromethane	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
	Dichlorodifluoromethane	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
	Dichloromethane	mg/l	0.005	<0.005	<0.005	0	<0.005		
	Trichlorofluoromethane	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
Chlorinated Alkenes	1,1-dichloroethene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	3-chloropropene	mg/l	0.001	<0.001	<0.001	0	<0.001		
	4-chlorotoluene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	cis-1,2-dichloroethene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	cis-1,3-dichloropropene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Tetrachloroethene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	trans-1,2-dichloroethene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	trans-1,3-dichloropropene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Trichloroethene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Vinyl Chloride	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
Solvents	Acetone	mg/l	0.005	<0.005	<0.005	0	<0.005		
Phenols	2,4,5-trichlorophenol	mg/l	0.01	<0.01	<0.01	0	<0.01		
	2,4,6-trichlorophenol	mg/l	0.01	<0.01	<0.01	0	<0.01		
	2,4-dichlorophenol	mg/l	0.003	<0.003	<0.003	0	<0.003		
	2,4-dimethylphenol	mg/l	0.003	<0.003	<0.003	0	<0.003		
	2,4-dinitrophenol	mg/l	0.03	<0.03	<0.03	0	<0.03		
	2,6-dichlorophenol	mg/l	0.003	<0.003	<0.003	0	<0.003		
	2-chlorophenol	mg/l	0.003	<0.003	<0.003	0	<0.003		
	2-Methylphenol	mg/l	0.003	<0.003	<0.003	0	<0.003		
	2-nitrophenol	mg/l	0.01	<0.01	<0.01	0	<0.01		
	3&4-Methylphenol (m&p-cresol)	mg/l	0.006	<0.006	<0.006	0	<0.006		
	4,6-Dinitro-2-methylphenol	mg/l	0.03	<0.03	<0.03	0	<0.03		
	4,6-Dinitro-o-cyclohexyl phenol	mg/l	0.1	<0.1	<0.1	0	<0.1		
	4-Chloro-3-Methylphenol	mg/l	0.01	<0.01	<0.01	0	<0.01		
	4-nitrophenol	mg/l	0.03	<0.03	<0.03	0	<0.03		
	Cresol Total	mg/l	0.01	<0.01	<0.01	0	<0.01		
	Phenol	mg/l	0.003	<0.003	<0.003	0	<0.003		
	Tetrachlorophenols	mg/l	0.03	<0.03	<0.03	0	<0.03		
	Phenols (Total Halogenated)	mg/l	0.01	<0.01	<0.01	0	<0.01		
	Phenols (Total Non Halogenated)	mg/l	0.1	<0.1	<0.1	0	<0.1		
PFAS	Perfluorobutanoic acid (PFBA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	0.06	18	<0.05	0.03	0
	Perfluoropentanoic acid (PFPeA)	µg/L	0.01 : 0.02 (Interlab)	**0.12**	**0.18**	**40**	0.12	0.1	18
	Perfluorohexanoic acid (PFHxA)	µg/L	0.01	**0.21**	**0.3**	**35**	0.21	0.18	15
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	0.04	0.05	22	0.04	0.03	29
	Perfluorooctanoic acid (PFOA)	µg/L	0.01	0.06	0.08	29	0.06	0.06	0
	Perfluorononanoic acid (PFNA)	µg/L	0.01	0.04	0.04	0	0.04	0.03	29
	Perfluorodecanoic acid (PFDA)	µg/L	0.01 : 0.02 (Interlab)	<0.01	<0.01	0	<0.01	<0.02	0
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01 : 0.02 (Interlab)	<0.01	<0.01	0	<0.01	<0.02	0
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.01 : 0.05 (Interlab)	<0.01	<0.01	0	<0.01	<0.05	0
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.1	0
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01 : 0.5 (Interlab)	<0.01	<0.01	0	<0.01	<0.5	0
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	µg/L	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	µg/L	0.05 : 0.5 (Interlab)	<0.05	<0.05	0	<0.05	<0.5	0
	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
	Perfluoropropanesulfonic acid (PFPrS)	µg/L	0.01	0.06	0.08	29	0.06		
	Perfluorobutanesulfonic acid (PFBS)	µg/L	0.01	0.13	0.17	27	0.13	0.12	8
	Perfluoropentanesulfonic acid (PFPeS)	µg/L	0.01	**0.11**	**0.15**	**31**	0.11	0.09	20
	Perfluorohexanesulfonic acid (PFHxS)	µg/L	0.01	0.76	0.97	24	0.76	0.69	10
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	0.04	0.05	22	0.04	0.04	0
	Perfluorooctanesulfonic acid (PFOS)	µg/L	0.01	0.26	0.26	0	0.26	0.21	21
	Perfluorononanesulfonic acid (PFNS)	µg/L	0.01	<0.01	<0.01	0	<0.01		
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.01 : 0.02 (Interlab)	<0.01	<0.01	0	<0.01	<0.02	0
	1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0
	1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	µg/L	0.05 : 0.01 (Interlab)	0.13	0.17	27	0.13	0.14	7
	1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	µg/L	0.01 : 0.02 (Interlab)	<0.01	<0.01	0	<0.01	<0.02	0
	1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	µg/L	0.01 : 0.02 (Interlab)	<0.01	<0.01	0	<0.01	<0.02	0
	Sum of PFHxS and PFOS	µg/L	0.01	1.02	1.23	19	1.02	0.9	13
	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	µg/L	0.01	1.08	1.31	19	1.08		
	Sum of US EPA PFAS (PFOS + PFOA)*	µg/L	0.01	0.32	0.34	6	0.32	0.26	21
	Sum of PFAS (WA DER List)	µg/L	0.05	1.71	2.24	27	1.71		
	Sum of PFAS	µg/L	0.1 : 0.01 (Interlab)	1.96	2.56	27	1.96	1.7	14
MAH	1,2,4-trimethylbenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,3,5-trimethylbenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Styrene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Total MAH	mg/l	0.003	<0.003	<0.003	0	<0.003		
	Bromobenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Isopropylbenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Miscellaneous Hydrocarbons	1,2-dibromoethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Bromomethane	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
	Dibromomethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Iodomethane	mg/l	0.001	<0.001	<0.001	0	<0.001		
	4-Methyl-2-pentanone	mg/l	0.005	<0.005	<0.005	0	<0.005		
	Methyl Ethyl Ketone	mg/l	0.005	<0.005	<0.005	0	<0.005		
Chlorinated Benzenes	1,2-Dichlorobenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,3-dichlorobenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,4-dichlorobenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Chlorobenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Hexachlorobenzene	mg/l	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0002	0
Trihalomethanes	Dibromochloromethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Chloroform	mg/l	0.005 : 0.001 (Interlab)	<0.005	<0.005	0	<0.005	<0.001	0
	Tribromomethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Bromodichloromethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Herbicides & Fungicides	Dinoseb	mg/l	0.1	<0.1	<0.1	0	<0.1		
Organic Sulfur Compounds	Carbon disulfide	mg/l	0.001	<0.001	<0.001	0	<0.001		
EPA VIC - IWRG621	Chlorinated Hydrocarbons EPAVic	mg/l	0.005	<0.005	<0.005	0	<0.005		
	Other Chlorinated Hydrocarbons EPAVic	mg/l	0.005	<0.005	<0.005	0	<0.005		
	Organochlorine Pesticides EPAVic	mg/l	0.002	<0.002	<0.002	0	<0.002		
	Other Organochlorine Pesticides EPAVic	mg/l	0.002	<0.002	<0.002	0	<0.002		

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Appendix G Field Records and Calibration Certificates

Field Equipment Calibration and Decontamination

PROJECT NAME: Lidcombe	**PROJECT NO:** 62184
FIELDWORK DATES: 18 – 21/1/22	**SAMPLERS:** MD/AA/HG
TYPE OF INVESTIGATION:	**PROJECT MANAGER:** CB.

CALIBRATION SUMMARY

EQUIPMENT: PID
CALIBRATION STANDARD: 100ppm isobutylene

DATE	TIME	READING (ppm)	COMMENTS
18/1/22	9:41	0	Zero
		100	Cal
		101.8	Bump
19/1/22	8.10	0	Zero
		100	Cal
		100.2	Bump
20/1/22	7.00	0	Zero
		100	Cal
		100.7	Bump.
21/1/22	8.10	0	Zero
		100	Cal
		101.2	Bump.

DECONTAMINATION SUMMARY

EQUIPMENT: Auger, sieve, bucket, shovel.

1	Was the equipment decontaminated appropriately prior to sampling at each location?	(Y)	N	NA
2	Was excess soil removed by scraping, brushing or wiping with disposable towels?	(Y)	N	NA
3	Was the equipment contaminated with grease, tar or similar material?	Y	(N)	NA
	If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y	N	(NA)
4	Was phosphate-free detergent used to wash the equipment?	(Y)	N	NA
5	Was the equipment rinsed with clean water?	(Y)	N	NA
6	Was the equipment then rinsed with deionised water?	(Y)	N	NA
7	Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	(NA)

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS

New pair of nitrile gloves used at each sample location.

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Field Acid Sulfate Soil Screening

PROJECT NAME: Lidcombe	**PROJECT NO:** 62184
FIELDWORK DATES: 18-21/1/22	**SAMPLERS:** MD/AA/LtD
TYPE OF INVESTIGATION: —	**PROJECT MANAGER:** CB

SAMPLE MAP

* see map.

SAMPLE ID	DEPTH	pHinitial	pHox-initial	pHox-5mins	pHox-15mins	Δ pH	Soil Description	Reaction Description and Observations
BH04-2.0-2.1	2.0	6.0	5.1	5.7	5.5	0.5	(brown/grey/red silty clay	none
BH16-5.9-6.0	6.0	6.9	4.6	4.4	3.7	3.2	brown/grey shale, wet.	slight bubbles
BH21-1.0-1.1	1.0	6.1	4.1	3.6	3.1	3.0	red-brown silty clay	slight-mod bubbles
* BH21-2.0-2.1	2.0	5.1	3.5	3.9	4.2	0.9	red-brown silty clay with shale incl	aggressive bubbles, smoke Least
BH21-3.0-3.1	3.0	5.4	4.4	4.3	3.8	1.6	weathered shale, brown/grey	slight bubbles.
BH07-4.4-4.5	5.0	6.2	4.2	4.5	4.1	2.1	brown/grey silty clay	slight-mod bubbles
BH07-3.0-3.1	3.0	5.9	4.8	4.5	4.2	1.7	& brown sandy silty clay	slight bubbles.
BH12-1.0-1.1	1.0	6.1	5.2	4.8	4.7	1.4	(brown/grey, silty clay	slight bubbles
BH09-1.0-1.1	1.0	5.6	4.2	4.5	4.1	1.5	brown silty clay	slight-mod bubbles.
BH06-7.0-7.1	7.0	5.5	4.6	4.5	4.4	1.1	grey weathered shale	none

Reaction Rate Scale: L=Low Reaction M=Medium Reaction H=High Reaction X=Explosive Reaction V=Volcanic Reaction

Note details on reaction – fizzing/bubbling, heat produced?

Additional Notes:

Legend

- Approximate Site Boundary
- Water Storage Tanks
- Hydro Line

Sampling Locations

- Soil Vapour
- Soil Vapour/ Monitoring Well
- Soil Vapour/ Soil Bore
- Soil Vapour/ Monitoring Well/ Soil Bore
- Surface Water

SV

QVA/QVC01-SV01

QVA/QVC02-SV17

JBS&G

Job No: 60940	
Client: Hale Investments	
Version: R01 Rev A	Date 17/06/2021
Drawn By: RH	Checked By: JDC

Scale 1:2,500

0 30 60

metres

Coord. Sys. GDA 1994 MGA Zone 56

42-44 Boorea Street, Lidcombe, NSW

SAMPLE LOCATIONS

FIGURE 03

Vapour Purging Form

JBS&G

Project Number: 62184	Date: 18/11/22	Sampler/s: MD/AA.
Site Address:	Sample Method: Carbon tube	Weather: Rain

Field Measurements

Sample ID	Time	Oxygen	Carbon Dioxide	PID	Methane	LEL	Leak Detection PID (HZ)	
SV4	10:31	13.6	5	0	0	0	0	On 10:37
	+30	13.5	5.3	0	0	0	0	AC186
	+30	13.4	5.3	0	0	0	0	
	+30	13.5	5.2	0	0	0	0	On 10:51
SV7	10:48	16.2	0.1	0	0	0	0	
		16.2	0.1	0	0	0	0	
		16.1	0.1	0	0	0	0	
		16.6	0.1	0	0	0	0	On 10:59
SV11	10:56	17.0	0.1	9.7	0	0	0	
	+30	16.9	0.6	8.4	0	0	0	
		16.9	0.1	8.3	0	0	0	
	~~11:05~~	16.7	0.1	8.2	0	0	0	On 11:10
SV 16	11:05	16.6	0.5	10.2	0	0	0	
	+30	18.5	0.9	10.1	0	0	0	
	+30	18.4	0.9	10.1	0	0	0	
	+30	18.4	0.9	10.1	0	0	0	11:35
QA/QC 01 ~~QA/QC 9~~ SV1	11:25	15.2	0.1	11.2	0	0	0	
	+30	15.2	0.1	7.3	0	0	0	
	+30	15.3	0.0	8.9	0	0	0	
	+30	11.7	0	8.8	0	0	0	
SV19	12:27	16.8	0.1	8.7	0	0	0	On 12:~~30~~ 24
	+30	16.7	0.2	8.8	0	0	0	
	+30	16.8	0.2	8.6	0	0	0	
	+30	16.7	0.2	8.7	0	0	0	
SV15	12:~~33~~	—	—	Flooded.		—	—	On 12:35
	+30							
	+30							
	+30							

Vapour Purging Form

JBS&G

Project Number: 62184	**Date:** 18/1/27	**Sampler/s:** MD/NA
Site Address:	**Sample Method:** Carbon tube	**Weather:** Rain.

Field Measurements

Sample ID	Time	Oxygen	Carbon Dioxide	PID	Methane	LEL	~~Leak Detection~~ 1725 PID
SV13	13.39	16.1	0.6	9.6	0	0	0
	+30	16.0	0.5	8.9	0	0	0
	+30	16.1	0.6	8.8	0	0	0
	+30	16.1	0.6	8.8	0	0	0
SV8	13:46	14.0	0.1	7.9	0	0	0
	+30	14.1	0.2	7.9	0	0	0
	+30	14.2	0.1	7.8	0	0	0
	+30	14.2	0.1	7.8	0	0	0

Vapour Purging Form

JBS&G

Project Number: 62184	Date: 19/11/22	Sampler/s: AA/MO
Site Address:	Sample Method:	Weather: Rain

Field Measurements

Pump	Sample ID	Time	Oxygen	Carbon Dioxide	PID	Methane	LEL	~~Leak Detection PID~~ H2S
12:13	SV6	12:07	16.2	0	0	0	0	0
		+30	16.1	0	0	0	0	0
		+30	16.1	0	0	0	0	0
		+30	16.0	0	0	0	0	0
12:30	SV3	12:27	18.3	0	0	0	0	0
		+30	18.2	0	0	0	0	0
		+30	18.2	0	0	0	0	0
		+30	18.2	0	0	0	0	0
12:48	SV2	12:45	16.2	0	0	0	0	0
		+30	15.7	0	0	0	0	0
		+30	15.6	0	0	0	0	0
		+30	15.6	0	0	0	0	0
13:25	SV9	13:20	17.2	0	0	0	0	0
		+30	17.2	0	0	0	0	0
		+30	17.2	0	0	0	0	0
		+30	17.1	0	0	0	0	0
14:07	SV10	14:03	16.4	0	0.7	0	0	0
		+30	16.2	0	0.3	0	0	0
		+30	16.2	0	0.2	0	0	0
		+30	16.1	0	0.1	0	0	0

Vapour Purging Form

JBS&G

Project Number: 62184	Date: 20-1-22	Sampler/s: AA/MO
Site Address:	Sample Method:	Weather: Rain

Field Measurements

pump	Sample ID	Time	Oxygen	Carbon Dioxide	PID	Methane	LEL	~~Leak Detection~~ H_2S PID
8:15	SV14	8:09	16.2	0	0	0	0	0
			16.1	0	0	0	0	0
			16.2	0	0	0	0	0
			16.2	0	0	0	0	0
8:38	SV19	8:35	17.4	0	0	0	0	0
			17.1	0	0.2	0	0	0
			17.1	0	0.2	0	0	0
			17.1	0	0.1	0	0	0
9:09	SV21	9:06	17.8	0	0.3	0	0	0
			17.6	0	0.2	0	0	0
			17.5	0	0.1	0	0	0
			17.5	0	0.1	0	0	0
9:41	SV18	9:37	17.5	0	0.5	0	0	0
			17.3	0	0.4	0	0	0
			17.3	0	0.2	0	0	0
			17.2	0	0.1	0	0	0
10:17	SV12	10:14	16.3	0	0.3	0	0	0
			16.5	0	0.2	0	0	0
			16.3	0	0.2	0	0	0
			16.3	0	0.2	0	0	0
10:39	SV17	10:36	16.4	0	0.2	0	0	0
	*		16.4	0	0.2	0	0	0
11:12	QVA02		16.4	0	0.1	0	0	0
11:50	QVC02		16.4	0	0.1	0	0	0

Vapour Purging Form

JBS&G

Project Number: 60284	Date: 21-11-22	Sampler/s: AA/MN
Site Address:	Sample Method:	Weather: Overcast

Field Measurements

pump	Sample ID	Time	Oxygen	Carbon Dioxide	PID	Methane	LEL	~~Leak Detection PID~~ H2S
9:18	SV22	9:17	16.2	0	6.2	0	0	0
		+30	16.2	0	0	0	0	0
		+30	16.2	0	0	0	0	0
		+30	16.1	0	0	0	0	0
9:41	SV23	9:45	14.4	0	0.3	0	0	0
		+30	13.9	0	0.4	0	0	0
		+30	13.4	0	0.3	0	0	0
		+30	13.3	0	0.3	0	0	0
10:02	SV24	10:06	16.2	0	0.8	0	0	0
		+30	16.2	0	0.6	0	0	0
		+30	16.2	0	0.5	0	0	0
		+30	16.1	0	0.4	0	0	0
10:40	SV25	10:36	17.3	0	0.5	0	0	0
			17.3	0	0.4	0	0	0
			17.2	0	0.4	0	0	0
			17.2	0	0.3	0	0	0
10:54	SV26	10:52	17.4	0	0.8	0	0	0
			17.0	0	0.6	0	0	0
			16.7	0	0.4	0	0	0
			16.6	0	0.4	0	0	0
11:05	SV27	11:02	16.2	0	0.6	0	0	0
			16.3	0	0.4	0	0	0
			16.2	0	0.4	0	0	0
			16.1	0	0.3	0	0	0
11:39	SV28	11:35	16.8	0	0.7	0	0	0
			16.7	0	0.5	0	0	0
			16.5	0	0.3	0	0	0
			16.4	0	0.3	0	0	0
12:05	SV29	11:59	16.3	0	0.5	0	0	0
			16.4	0	0.3	0	0	0
			16.4	0	0.2	0	0	0
			16.3	0	0.1	0	0	0
12:17	SV30	12:15	16.5	0	0.6	0	0	0
			16.4	0	0.4	0	0	0
			16.4	0	0.4	0	0	0
			16.3	0	0.4	0	0	0

airmet
Work with Confidence

Calibration Certificate

AirMet Scientific P/L
Level 3, 18-26 Dickson Avenue
Artarmon
NSW 2064, Australia
Tel: 02 8425 8300
Fax: 02 8425 8399

This document certifies that the instrument detailed has been calibrated to the parameters

Certificate Print Date: 8-Oct-2021
Calibration Date: 08-Oct-2021
Next Calibration Due: 6-Apr-2022

Call ID / Order No: 252564
Job No / Pack No: S2525640002

Customer: JBS&G Australia Pty Ltd-ID 202507 Serial No: T-113497
Description: PhoCheck Tiger Li-ion Battery Battery Charger

Calibration Summary

Frequency: 180 Days Temp: 22°C As Found: In Tolerance Result: Pass
Humidity: 45% Certificate: S2525640002

Desc	As Found Actual	As Found Result	As Left (Cal Status) Actual	As Left (Cal Status) Result
ISOBUTYLENE 100ppm	104.7	Pass	100.1	Pass
ISOBUTYLENE 1000ppm	992.1	Pass	1002.4	Pass

Standard Used

Equip ID	Description	Valid Until	Cert
SY421	Isobutylene 100 ppm, Air Balance	01-07-2026	400299246
SY356	Zero Grade Air 20.9%VOL O2, N2 Balance	26-09-2025	400293734
SY336	ISO-BUTYLENE 1000PPM, AIR BALANCE	28-07-2023	BU 70910-041220

Plese note -This instrument is not Intrinsic Safety device.

Completed By: Jason Cheng Signed:

ANRI INSTRUMENTS & CONTROLS PTY LTD ABN 21 004 771 564

UNIT 29, 756-758 BURWOOD HWY • FERNTREE GULLY • VIC 3156 • AUSTRALIA • PH: +61 3 9752 3782 • FAX: +61 3 9752 3783
EMAIL: sales@anri.com.au www.anri.com.au

Date: 16.12.21

Attn: Miljan
JBS&G Environmental Pty. Ltd.
Level 1, 50 Margaret Street
Sydney
NSW 2000

Ref. O/N TBA

Calibration Certificate # 5231

Manufacture/Model	: Gas Data GFM436
S/N	: 13136
Gases Monitored	: CH4, 0-100%, CO2 0-100%, O2 0-25%, H2S & CO
Zero setting CH4/CO2/O2/H2S/CO	: 0.0
Gas used	: N2
Cylinder No.	: BOC High Purity
Span setting CH4	: 60.0%
Gas used	: 60.0% CH4 in CO2
Cylinder No.	: Air Liquide 72927 (NATA)
60.0% CH4 in CO2 reads	: 59.8%
5.1% CH4 in CO2 reads	: 5.2%
Span setting CO2	: 40.0%
Gas used	: 40.0% CO2 in CH4
Cylinder No.	: Air Liquide 72927 (NATA)
40.0% CO2 in CH4 reads	: 40.1%
5.2% CO2 in CH4	: 5.1%
Span setting O2	: 20.9% (Air) Reads 20.9%
Span setting 50ppm H2S reads	: 50ppm
Span setting 1100ppm CO reads	: 1088ppm
Hexane	: Factory setting
Cells replaced	: -
Estimated Date of cell replacement	: Oxygen 16.12.22
Comments	: Calibration OK
Flow rate	: 550ml/min. OK
Atm. Pressure 1004mb	: 1003mb
Next Service/calibration Due	: 16.12.22

Stephen Hurst
ANRI Instruments & Controls Pty Ltd

4

Groundwater Sampling Form

PROJECT NAME: 42 Boore St.	PROJECT NO: 62184
SAMPLING DATES: 27-01-21	SAMPLERS: ML HD
TYPE OF INVESTIGATION:	PROJECT MANAGER: LB
WELL ID: ~~BH~~ MW02 MW04	WEATHER: Hot

Casing Diameter (mm):		Depth to NAPL (mBTOC):	
Well Completion:	Flush Mount / Monument	Depth to SWL (mBTOC): ~~3.215~~ 3.215m	
Well Cap Type:	Locking Cap / PVC / Other	NAPL Thickness (m):	
Well Condition:	Good / Compromised	Depth to EoH (mbtoc): ~~4.964~~ 4.964m	
Calculated Well Volume (L):		Water Column Depth (m):	
Sampling Method:		NAPL Visually Verified?	
Purge Volume	4 Casings Vol. (L)		
Low Flow	Pump Submersion depth (mBTOC)		

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☐ % ☐ mgL/ppm	TEMP °C	pH pH units	EC µS/cm	ORP mV	Comments Inc SWL for low flow (mBTOC)
8:40	-	PFAS Hydro sleeve					
11:15	1	21	23.7	7.44	2790	-178	cloudy, turbid, slight odour, No Sheen
11:19	2	4.8	23.1	7.00	2728	-191.1	"
11:22	3	2.0	23.3	6.98	2737	-194.1	"
11:25	4	1.5	23.5	6.97	2760	-196.8	"
11:29	5	1.2	23.5	6.98	2783	-204.3	"
11:33	6	1.2	23.7	6.98	2796	-211.5	"
11:35	7	1.2	23.9	6.98	2798	-212.6	"
Acceptable Variations*		+/-10%	+/- 0.2 °C	+/-0.05 pH	0.3 +/-3%	+/-10mV	Results Acceptable: YES / NO

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		Sheen:	YES / NO
Colour:		Odour:	YES / NO

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MW06

Groundwater Sampling Form

PROJECT NAME: 42-Boore St Lidcombe	PROJECT NO: 62184
SAMPLING DATES: 27-1-21	SAMPLERS: ML
TYPE OF INVESTIGATION:	PROJECT MANAGER: CB
WELL ID: MW06	WEATHER: fine

Casing Diameter (mm):	Depth to NAPL (mBTOC):
Well Completion: Flush Mount / Monument	Depth to SWL (mBTOC): 3.591
Well Cap Type: Locking Cap / PVC / Other	NAPL Thickness (m):
Well Condition: Good / Compromised	Depth to EoH (mbtoc): 6.902
Calculated Well Volume (L):	Water Column Depth (m):
Sampling Method: Purge Volume 4 Casings Vol. (L) Low Flow Pump Submersion depth (mBTOC)	NAPL Visually Verified?

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☐ % ☐ mgL/ppm	TEMP °C	pH pH units	EC _S/cm	ORP mV	Comments Inc SWL for low flow (mBTOC)
300							
Acceptable Variations*		+/-10%	+/- 0.2 °C	+/-0.05 pH	+/-3%	+/-10mV	Results Acceptable: YES / NO

LOW FLOW: Typical flow rate = 0.2-0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		**Sheen:**	**YES / NO**
Colour:		**Odour:**	**YES / NO**

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Groundwater Sampling Form

MW07 → 7

PROJECT NAME: 42 Boore St	PROJECT NO: 62184
SAMPLING DATES: 27-1-21	SAMPLERS: ML
TYPE OF INVESTIGATION:	PROJECT MANAGER: CB
WELL ID: ~~MW07~~ ~~MW07~~ MW07	WEATHER: Fine

Casing Diameter (mm):		Depth to NAPL (mBTOC):	
Well Completion:	Flush Mount / Monument	Depth to SWL (mBTOC):	5.711
Well Cap Type:	Locking Cap / PVC / Other	NAPL Thickness (m):	
Well Condition:	Good / Compromised	Depth to EoH (mbtoc):	6.861.
Calculated Well Volume (L):		Water Column Depth (m):	
Sampling Method:		NAPL Visually Verified?	
Purge Volume	4 Casings Vol. (L)		
Low Flow	Pump Submersion depth (mBTOC)		

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☐ % ☐ mgL/ppm	TEMP °C	pH pH units	EC µS/cm	ORP mV	Comments Inc SWL for low flow (mBTOC)
9:50	–	-	Hydro sleve				
12:40	1	3.1	21.7	6.13	3175	-24.4	Clear, No odour, or sheen
12:42	2	2.4	22.3	6.12	3173	-24.3	↓ ↓
12:45	3	1.6	22.5	5.13	2454	-1.1	
12:50	4	1.7	22.6	5.14	2453	-1.2	
12:51	5	1.6	22.6	5.12	2453	-1.3	
Acceptable Variations*		+/-10%	+/- 0.2 °C	+/-0.05 pH	+/-3%	+/-10mV	Results Acceptable: YES / NO

(5)

LOW FLOW: Typical flow rate = 0.2-0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		**Sheen:**	**YES / NO**
Colour:		**Odour:**	**YES / NO**

4, 8, 7, 6, 12, 16, 21

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Groundwater Sampling Form

#8

PROJECT NAME: 42 Boore St	PROJECT NO: 62184
SAMPLING DATES: 27-1-21	SAMPLERS: ML HD
TYPE OF INVESTIGATION:	PROJECT MANAGER: CB
WELL ID: MW08	WEATHER: Fine

Casing Diameter (mm):	Depth to NAPL (mBTOC):
Well Completion: Flush Mount / Monument	Depth to SWL (mBTOC): dry.
Well Cap Type: Locking Cap / PVC / Other	NAPL Thickness (m):
Well Condition: Good / Compromised	Depth to EoH (mbtoc): dry @ 5.984
Calculated Well Volume (L):	Water Column Depth (m):
Sampling Method:	NAPL Visually Verified?
Purge Volume 4 Casings Vol. (L)	
Low Flow Pump Submersion depth (mBTOC)	

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☐ % ☐ mgL/ppm	TEMP °C	pH pH units	EC _S/cm	ORP mV	Comments Inc SWL for low flow (mBTOC)
Acceptable Variations*		+/-10%	+/- 0 2 °C	+/- 0 05 pH	+/-3%	+/-10mV	Results Acceptable: YES / NO

LOW FLOW: Typical flow rate = 0 2- 0 4 L/min - Max. drawdown = 0 1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		**Sheen:**	YES / NO
Colour:		**Odour:**	YES / NO

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Groundwater Sampling Form

PROJECT NAME: 42 Boore st	PROJECT NO: 62184
SAMPLING DATES: 27-1-21.	SAMPLERS: ML
TYPE OF INVESTIGATION:	PROJECT MANAGER: CB
WELL ID: ~~MW09~~ MW09	WEATHER: fine

Casing Diameter (mm):		Depth to NAPL (mBTOC):	
Well Completion:	Flush Mount / Monument	Depth to SWL (mBTOC):	4.096.
Well Cap Type:	Locking Cap / PVC / Other	NAPL Thickness (m):	
Well Condition:	Good / Compromised	Depth to EoH (mbtoc):	6.693.
Calculated Well Volume (L):		Water Column Depth (m):	
Sampling Method:		NAPL Visually Verified?	
Purge Volume	4 Casings Vol. (L)		
Low Flow	Pump Submersion depth (mBTOC)		

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☒ % ☐ mg/L/ppm	TEMP °C	pH pH units	EC µS/cm	ORP mV	Comments Inc SWL for low flow (mBTOC)
8:50	Hydro sleve						
9:01	1	90.6	28.5	5.35	4616	54.6	slightly turbid No odour or sheen
9:05	2	50.5	22	5.78	9240	49.4	
9:09	3	37.5	21.3	5.86	9051	52.1	
9:11	4	37.4	21.3	5.89	9053	52.9	
9:14	5	32.2	21.1	5.88	9036	62.0	
Acceptable Variations*		+/-10%	+/- 0.2 °C	+/-0.05 pH	+/-3%	+/-10mV	Results Acceptable: YES / NO

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		**Sheen:**	**YES / NO**
Colour:		**Odour:**	**YES / NO**

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Sleve.

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Groundwater Sampling Form

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PROJECT NAME: 42 Boore st lidcombe	PROJECT NO: 62184
SAMPLING DATES: 27-1-22	SAMPLERS: ML
TYPE OF INVESTIGATION:	PROJECT MANAGER: CB
WELL ID: ~~MW07~~ MW10	WEATHER: Fine

Casing Diameter (mm):	Depth to NAPL (mBTOC):
Well Completion: Flush Mount / Monument	Depth to SWL (mBTOC): 2.558
Well Cap Type: Locking Cap / PVC / Other	NAPL Thickness (m):
Well Condition: Good / Compromised	Depth to EoH (mbtoc): 4.779.
Calculated Well Volume (L):	Water Column Depth (m):
Sampling Method:	NAPL Visually Verified?
Purge Volume 4 Casings Vol. (L)	
Low Flow Pump Submersion depth (mBTOC)	

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☑% ☐ mgL/ppm	TEMP °C	pH pH units	EC µS/cm	ORP mV	Comments Inc SWL for low flow (mBTOC)
9:50	–	Hydrosleve	–	–	–	–	–
12:25	2	24.9	22.5	7.19	1200	11.5	Clear, No odour or sheen
12:30	3	24.9	22.5	7.19	1198	11.3	clear, " "
12:11	4	24.8	22.5	7.18	1196	11.5	clear, " "
Acceptable Variations*		+/-10%	+/- 0.2 °C	+/-0.05 pH	+/-3%	+/-10mV	Results Acceptable: YES / NO

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		Sheen:	YES / NO
Colour:		Odour:	YES / NO

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Groundwater Sampling Form

PROJECT NAME: 42 Boore St Ridgmere	PROJECT NO: 62184
SAMPLING DATES: 27-1-21	SAMPLERS: ML HD
TYPE OF INVESTIGATION:	PROJECT MANAGER: CB
WELL ID: mw11	WEATHER: fine

Casing Diameter (mm):	Depth to NAPL (mBTOC):
Well Completion: Flush Mount / Monument	Depth to SWL (mBTOC):
Well Cap Type: Locking Cap / PVC / Other	NAPL Thickness (m):
Well Condition: Good / Compromised	Depth to EoH (mbtoc): 5.794
Calculated Well Volume (L):	Water Column Depth (m):
Sampling Method:	NAPL Visually Verified?
Purge Volume 4 Casings Vol. (L)	
Low Flow Pump Submersion depth (mBTOC)	

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☐ % ☐ mgL/ppm	TEMP °C	pH pH units	EC _S/cm	ORP mV	Comments Inc SWL for low flow (mBTOC)
							dry.
Acceptable Variations*		+/-10%	+/- 0.2 °C	+/-0.05 pH	+/-3%	+/-10mV	Results Acceptable: YES / NO

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		Sheen:	YES / NO
Colour:		Odour:	YES / NO

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Groundwater Sampling Form

QA/QC

PROJECT NAME: 42 Boore st.	PROJECT NO: 62184
SAMPLING DATES: 27-1-22	SAMPLERS: ML HD
TYPE OF INVESTIGATION:	PROJECT MANAGER: CB
WELL ID: BR MW 12	WEATHER: fine

Casing Diameter (mm):		Depth to NAPL (mBTOC):	
Well Completion:	Flush Mount / Monument	Depth to SWL (mBTOC):	3.577 m.
Well Cap Type:	Locking Cap / PVC / Other	NAPL Thickness (m):	
Well Condition:	Good / Compromised	Depth to EoH (mbtoc):	5.884
Calculated Well Volume (L):		Water Column Depth (m):	
Sampling Method:		NAPL Visually Verified?	
Purge Volume	4 Casings Vol. (L)		
Low Flow	Pump Submersion depth (mBTOC)		

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☐ % ☐ mgL/ppm	TEMP °C	pH pH units	EC _S/cm	ORP mV	Comments Inc SWL for low flow (mBTOC)
8:50	–	Hydro sleve instal					
12:00	1	2.9	21.3	6.35	11760	-102.5	clear, odourless, No sheen.
12:05	2	28	21.3	6.35	11755	-99.5	↓
12:09	3	28	21.4	6.35	11754	-98.9	
12:15.	4	28	21.3	6.35	11755	-98.8	
Acceptable Variations*		+/-10%	+/- 0.2 °C	+/-0.05 pH	+/-3%	+/-10mV	Results Acceptable YES / NO

LOW FLOW Typical flow rate = 0.2- 0.4 L/min - Max drowdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE Min sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		**Sheen:**	**YES / NO**
Colour:		**Odour:**	**YES / NO**

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Primary sample ID:	QA MW12.	No.	Container / Preservative
Duplicate sample:	YES / NO ID:	1	QC20220122
Triplicate sample:	YES / NO ID:	1	QA20220122
Rinsate sample:	(YES) / NO ID:		Rinsate
Sample on ice:	(YES) / NO		
Field Filter Method:	(0.45µm filter) / not filtered		
Water Quality Metre:			
Gauging Equipment:			
Pump Type:			
NOTES:			

*Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)*

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

*Volume of water in well (L) = ∏ * radius of gravel pack (m)2 * height of water column (m)*

**SA EPA Guidelines (June 2007) as referenced in NEPM*

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Groundwater Sampling Form

PROJECT NAME: 42 - Boore st Lidcombe	PROJECT NO: 62184
SAMPLING DATES: 27-1-22	SAMPLERS: ML HD
TYPE OF INVESTIGATION:	PROJECT MANAGER: CB
WELL ID: MW ~~22~~ 13.	WEATHER: Fine

Casing Diameter (mm):	Depth to NAPL (mBTOC):
Well Completion: Flush Mount / Monument	Depth to SWL (mBTOC): 2.394
Well Cap Type: Locking Cap / PVC / Other	NAPL Thickness (m):
Well Condition: Good / Compromised	Depth to EoH (mbtoc): ~~4.55~~ 4.526.
Calculated Well Volume (L):	Water Column Depth (m):
Sampling Method:	NAPL Visually Verified?
Purge Volume 4 Casings Vol. (L)	
Low Flow Pump Submersion depth (mBTOC)	

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☑% ☐ mgL/ppm	TEMP °C	pH pH units	EC _S/cm	ORP mV	Comments Inc SWL for low flow (mBTOC)
10:08	-	-	Hydra sleve.				
1306	1	31.1	20.5	6.17	16662	91.3	clear, no odour/sheen
1307	2	37.5	20.5	6.17	16155	92.6	"
1310	3	38.3	20.5	6.17	15986	93.2	"
1312.	4	40.1	20.6	6.16	15143	95.1	
1313		39.9	20.7	6.16	14403	96.	
Acceptable Variations*		+/-10%	+/- 0.2 °C	+/- 0.05 pH	+/-3%	+/-10mV	Results Acceptable: YES / NO

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		Sheen:	YES / NO
Colour:		Odour:	YES / NO

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Primary sample ID:	@ MW12.	No.	Container / Preservative
Duplicate sample:	YES / NO ID:	1	QC20220122
Triplicate sample:	YES / NO ID:	1	QA20220122
Rinsate sample:	(YES) / NO ID:		Ring1
Sample on ice:	(YES) / NO		
Field Filter Method:	(0.45µm filter) / not filtered		
Water Quality Metre:			
Gauging Equipment:			
Pump Type:			
NOTES:			

*Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)*

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

*Volume of water in well (L) = ∏ * radius of gravel pack (m)2 * height of water column (m)*

**SA EPA Guidelines (June 2007) as referenced in NEPM*

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Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **11K101257**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 10.00		pH 10.00		364961	pH 9.96
2. pH 7.00		pH 7.00		368081	pH 7.16
3. pH 4.00		pH 4.00		367234	pH 3.96
4. mV		229.6mV		365451/370891	229.4mV
5. EC		2.76mS		362912	2.74mS
6. D.O		0.00ppm		371864	0.00ppm
7. Temp		21.6°C		MultiTherm	21.6°C

Calibrated by: Evan Weller

Calibration date: **17/01/2022**

Next calibration due: **17/02/2022**

Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **20M101174**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. PH 10.00		PH1 10.00		370064	pH 9.91
2. pH 7.00		pH 7.00		368081	pH 7.15
3. pH 4.00		pH 4.00		380327	pH 3.95
4. mV		229.6mV		365451/370891	231.1mV
5. EC		2.76mS		377099	2.74mS
6. D.O		0.00 ppm		371864	0.00 ppm
7. Temp		22.0°C		MultiTherm	21.9°C

Calibrated by: **Evan Weller**

Calibration date: **17/01/2022**

Next calibration due: **19/07/2022**

Oil / Water Interface Meter

Instrument Geotech Interface Meter (30M)
Serial No. 3985

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: Jacqualine Begman

Calibration date: 14/01/2022

Next calibration due: 15/03/2022

Oil / Water Interface Meter

Instrument Geotech Interface Meter (30M)
Serial No. 4019

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: Jacqualine Begman

Calibration date: 20-Dec-21

Next calibration due: 18-Feb-22

AES
sensing safety

Calibration and Service Report – PID

Company:	JBS&G Australia Pty Ltd	**Manufacturer:**	RAE	**Serial #:**	592-932272
Contact:	Miljan Ruzic	**Instrument:**	RAE Systems: MiniRAE 3000 PI	**Asset #:**	
Address:	Level 1 50 Margaret Street Sydney NSW 2000	**Model:**	MiniRAE 3000	**Part #:**	059-B116-100
		Configuration:	10.6EV	**Sold:**	14.12.2021
		Wireless:	-	**Last Cal:**	
Phone:	02 8245 0300	**Network ID:**	-	**Job #:**	133005
Fax:		**Unit ID:**	-	**Cal Spec:**	Standard
Email:	miljan.ruzic@jbsg.com.au	**Details:**	-	**Order #:**	10000

Item	Test	Pass/Fail	Comments	Serial Number
Battery	NiCd, NiMH, Dry cell, LiIon	P		
Charger	Power Supply	P		
	Cradle, Travel Charger	P		
Pump	Flow	P		
Filter	Filter, fitting, etc	F	Replaced	
Alarms	Audible, visual, vibration	P		
Display	Operation	P		
Switches	Operation	P		
PCB	Operation	P		
Connectors	Condition	P		
Firmware	Version	P		
Datalogger	Operation	P		
Monitor Housing	Condition	P		
Case	Condition / Type	P		
Sensors	Sensor module	P		
PID	Sensor	P		
PID	Lamp	P		
THP	THP	P		

Engineer's Report

Initial Setup and Calibration

Appendix H Development Plans

HALE

42-44 BOOREA STREET, LIDCOMBE
PROPOSED INDUSTRIAL DEVELOPMENT

DRAWING LIST

Sheet Number	Sheet Name	Current Revision
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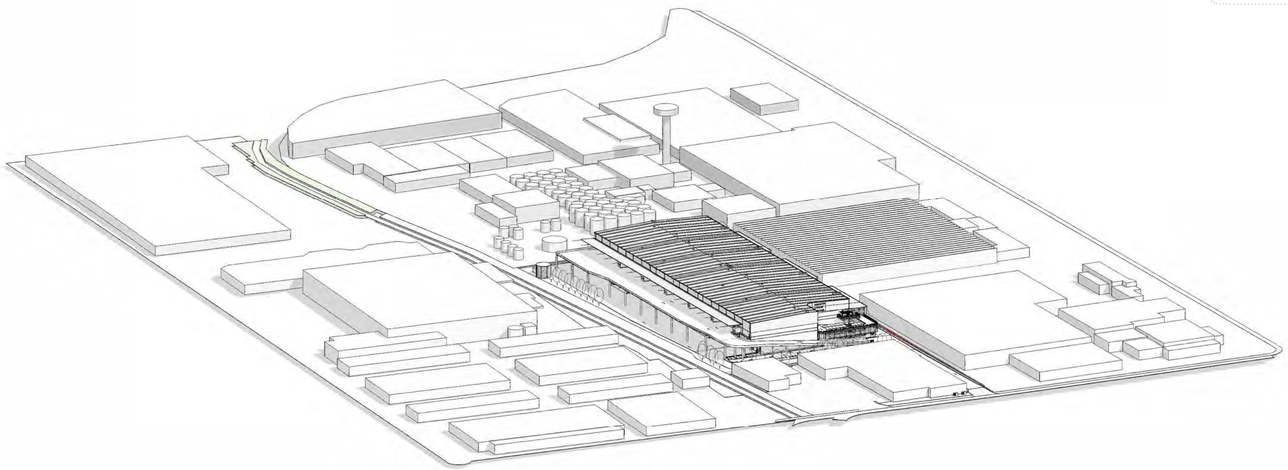
DA011	3D - 2	H
DA012	3D - 3	H
DA013	3D - 4	H
DA050	SITE ANALYSIS PLAN & SUMMARY	F
DA100	GROUND FLOOR	J
DA101	GROUND FLOOR MEZZ PLAN	E
DA102	LEVEL 1 OFFICE ACCESS	E
DA103	LEVEL 1	I
DA104	ROOF PLAN	E
DA105	SERVICES/CONSTRAINS PLAN	H
DA106	SERVICES/CONSTRAINS PLAN	H
DA107	GFA PLANS	F
DA120	OFFICES - GROUND 01 - 02	E
DA121	OFFICES - GROUND 03 - 04	D
DA125	OFFICE - LEVEL 1 - 05 - 06	D
DA126	OFFICE - LEVEL 1 - 07 - 08	D
DA127	OFFICE - LEVEL 1 - 09 - 10	D
DA130	DOCK OFFICES	B
DA200	ELEVATIONS	F
DA300	SECTIONS	H
DA301	SECTIONS	D
DA350	SHADOW DIAGRAMS	D



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H	ISSUE FOR COORDINATION	21.04.2022
G	FOR CLIENT REVIEW AND COORDINATION	07.04.2022
F	FOR CLIENT REVIEW	30.03.2022
E	FOR CLIENT REVIEW	25.03.2022
D	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
COVERPAGE

DATE 21.04.2022 | SCALE 1 : 1 @ A1 | JOB NO. 21165 | DWG NO. DA000 | REVISION H

21/04/2022 2:41:49 PM C:\Users\Luke\Documents\21165 - HALE - BOOREA ST_BASE_4 - R19_luke4dRE.rvt

Hale

DEVELOPMENT SUMMARY

GFA CALCULATIONS:

SITE AREA:	41,069 sqm
OFFICE AREA:	4,138 sqm
WAREHOUSE & DOCK OFFICE AREA	35,111 sqm
TOTAL GFA	**39,249 sqm**

PROPOSED FSR:	0.96:1
LOADING (TO BE CONSIDERED ON PARKING CALC.)	10,218 sqm
LANDSCAPE AREA 11.6%	4,579 sqm
PARKING REQUIRED:	187
CARPARKING PROVIDED:	191
MOTORCYCLES PARKING	10
BICYCLES PARKING	34

GFA AREA SCHEDULE

UNIT NAME	WH AREA	OFFICE AREA	TOTAL
TENANCY 01	3620 m²	460 m²	4080 m²
TENANCY 02	4515 m²	508 m²	5023 m²
TENANCY 03	4554 m²	508 m²	5062 m²
TENANCY 04	4589 m²	459 m²	5048 m²
TENANCY 05	3040 m²	384 m²	3424 m²
TENANCY 06	2718 m²	322 m²	3040 m²
TENANCY 07	2760 m²	338 m²	3098 m²
TENANCY 08	2730 m²	322 m²	3052 m²
TENANCY 09	2726 m²	322 m²	3048 m²
TENANCY 10	3706 m²	339 m²	4045 m²
LOBBY	0 m²	176 m²	176 m²
GROUND DOCK OFFICE	64 m²	0 m²	64 m²
L1 DOCK OFFICE	89 m²	0 m²	89 m²
TOTAL:	35111 m²	4138 m²	39249 m²

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CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
SITE ANALYSIS PLAN & SUMMARY

DATE 27.04.2022 | SCALE As indicated @ A1 | JOB NO. 21165 | DWG NO. DA050 | REVISION G

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Hale

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

272523

20923 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 14300

12981 | 4792 | 13875 | 57075 | 56500 | 56500 | 57100 | 1200 | 12500

WAREHOUSE 1 | WAREHOUSE 2 | WAREHOUSE 3 | WAREHOUSE 4

SITE BOUNDARY

10m LANDSCAPE SETBACK

BIO RETENTION BASIN 1 - APROX LOCATION

APROX. LOCATION OSD TANK

SPRINKLER TANK

FIRE SERVICES

PUMP ROOM

1 DP 740385

LEVEL 1 OUTLINE

EASEMENT

NEIGHBOUR

TURNING BAY

DOCK OFFICE 16 m²

DOCK OFFICE 15 m²

DOCK OFFICE 16 m²

DOCK OFFICE 17 m²

RECESSED DOCK

35m HARDSTAND RL.10.000 +/- 500mm

FIRE STAIRS 1

FIRE STAIRS 2

FIRE STAIRS 3

FIRE STAIRS 4

LOADING AREA

GEF

SEF

EXIT

RW

INDICATIVE RACKING

WAREHOUSE 01 3,620 m² RL.10.000 +/- 500mm

WAREHOUSE 02 4,515 m² RL.10.000 +/- 500mm

WAREHOUSE 03 4,554 m² RL.10.000 +/- 500mm

WAREHOUSE 04 4,589 m² RL.10.000 +/- 500mm

BIO RETENTION BASIN 2 - APROX LOCATION

PARKING (37)

PARKING (11)

PARKING (61)

BIKE PARKING (34)

FCC

NEW SUBSTATIONS. LOCATION TBC (AS ELEC. ENG PROPOSED)

RWT UNDER RAMP (2x 50,000 L)

CARS RAMP 16.9

TRUCKS RAMP 1:6

RAMP UP 1:8

RAMP UP 1:16

EXIT STAIR

FIRE STAIRS 5

FIRE STAIRS 6

FIRE STAIRS 7

WH ENTRY/ EXIT

LOBBY

OFFICE 1 & 2 / 5 & 6 ACCESS

OFFICE 7 & 8 ACCESS

OFFICE 3 & 4 / 8 & 9 ACCESS

MEZZANINE OFFICE OUTLINE

MEZZANINE OFFICE

CAR ENTRY / EXIT

CAR EXIT

PEDESTRIAN CROSSING

EXISTING RETAINING WALL

BICYCLE PATH (1m)

TURNING BAY

SG-1

SG-2

P1

P2

P3

P4

MBS

SITE BOUNDARY

NEIGHBOUR

3 DA200

2 DA200

1 DA301

2 DA301

1 DA300

3 DA300

4 DA300

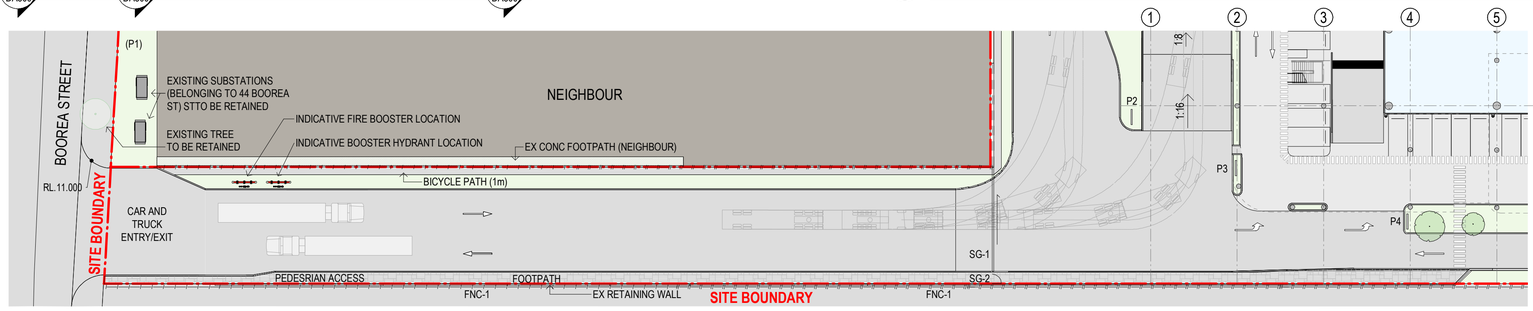
1 DA200

4 DA200

650 | 3687 | 3687 | 15000 | 80000 | 1088

7139 | 49898 | 27861 | 15000 | 10000 | 15000 | 10000 | 10000 | 10000 | 10000 | 10000 | 1088 | 5500 | 1088 | 6200 | 965 | 9500 | 22146 | 153632

1 GROUND FLOOR PLAN 1 : 400



2 GF PLAN - SITE ACCESS 1 : 400

GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
EF - EXISTING FENCE
DP - DOWNPIPES
RW - RETAINING WALL
GEF - GROUND EXHAUST FAN
SEF - SMOKE EXHAUST FAN
ME - MECHANICAL EQUIPMENT
SG1 - SLIDING GATE - PEDESTRIAN
SG2 - SWING GATE
EX - EXIT
MBS- MOTORBIKE PARKING SPACE
P1 - PYLON SIGN 1
P2 - PYLON SIGN 2
P3 - PYLON SIGN 3
P4 - PYLON SIGN 4

- SITE BOUNDARY
- TO BE DEMOLISHED
- EF - EXISTING CHAINLINK FENCE
- FNC-1 - FENCE TYPE 1-PALISADE
- OFFICE AREA
- WAREHOUSE AREA
- FIRE SERVICES
- LANDSCAPE AREA
- LOBBY AREA
- EXISTING TREES TO BE RETAINED
- NEW TREES TBC

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G	FOR CLIENT REVIEW	25.03.2022
F	FOR LANDSCAPE ARCHITECT	18.03.2022
E	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: GROUND FLOOR

DATE: 21.04.2022 | SCALE: As indicated @ A1 | JOB NO.: 21165 | DWG NO.: DA100 | REVISION: J

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Hale

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

SITE BOUNDARY

3 DA200

2 DA200

2 DA301

1 DA301

4 DA200

A B C D E F G H I

FIRE STAIRS 1

FIRE STAIRS 2

FIRE STAIRS 3

FIRE STAIRS 4

GEF

SEF

RL. 13.800

COL-C

MBS

16.9

EXIT STAIR

RAMP UP

PARKING (8)

OUTDOOR AREA RL. 13.810

OFFICE 01
460 m²
RL. 13.800

OFFICE 02
508 m²
RL. 13.800

OUTDOOR AREA RL. 13.800

OFFICE 03
508 m²
RL. 13.800

OFFICE 04
459 m²
RL. 13.800

METAL STAIRS

LOBBY
23 m²

8485

1188

11593

2488

598

12896

21525

9220

1 DA300 3 DA300 4 DA300 1 DA200 SITE BOUNDARY

700 27799 5016 23685 23685 10215 806 832 10215 23685 23685 10215 879

OFFICE 01 OFFICE 02 OFFICE 03 OFFICE 04

11564 TRUCK RAMP 33515 47369 11021 43563 11047 47369 11095

1 GROUND MEZZ OFFICE LEVEL(1) 1 : 400

GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
FNC-1 - FENCE TYPE 1
EF - EXISTING FENCE
DP - DOWNPIPES
RW - RETAINING WALL
GEF - GROUND EXHAUST FAN-tbc
SEF - SMOKE EXHAUST FAN-tbc
TG1 - TELESCOPIC GATE-tbc
SG1 - SLIDING GATE
SG2 - SWING GATE
EX - EXIT

SITE BOUNDARY
TO BE DEMOLISHED
EF - EXISTING CHAINLINK FENCE
OFFICE AREA
WAREHOUSE AREA
FIRE SERVICES
LANDSCAPE AREA
LOBBY AREA

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A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: GROUND FLOOR MEZZ PLAN

DATE: 21.04.2022 SCALE: As indicated @ A1 JOB NO.: 21165 DWG NO.: DA101 REVISION: E

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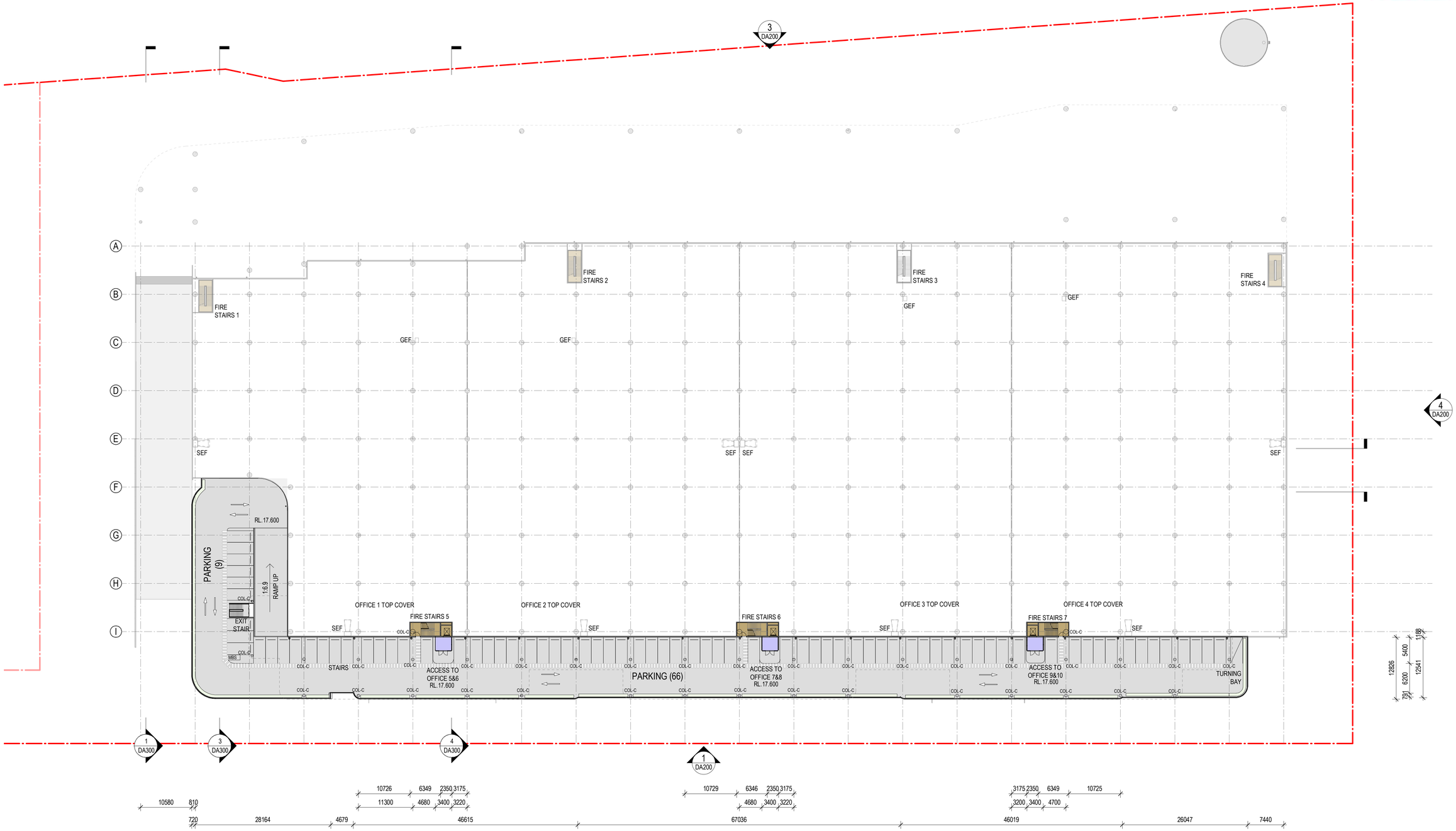
Hale



1 LEVEL 1 OFFICE ACCESS(1) 1 : 400

GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
FNC-1 - FENCE TYPE 1
EF - EXISTING FENCE
DP - DOWNPIPES
RW - RETAINING WALL
GEF - GROUND EXHAUST FAN-tbc
SEF - SMOKE EXHAUST FAN-tbc
TG1 - TELESCOPIC GATE-tbc
SG1 - SLIDING GATE
SG2 - SWING GATE
EX - EXIT

SITE BOUNDARY
TO BE DEMOLISHED
EF - EXISTING CHAINLINK FENCE
OFFICE AREA
WAREHOUSE AREA
FIRE SERVICES
LANDSCAPE AREA
LOBBY AREA

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A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
LEVEL 1 OFFICE ACCESS

DATE 21.04.2022 | SCALE As indicated @ A1 | JOB NO. 21165 | DWG NO DA102 | REVISION E

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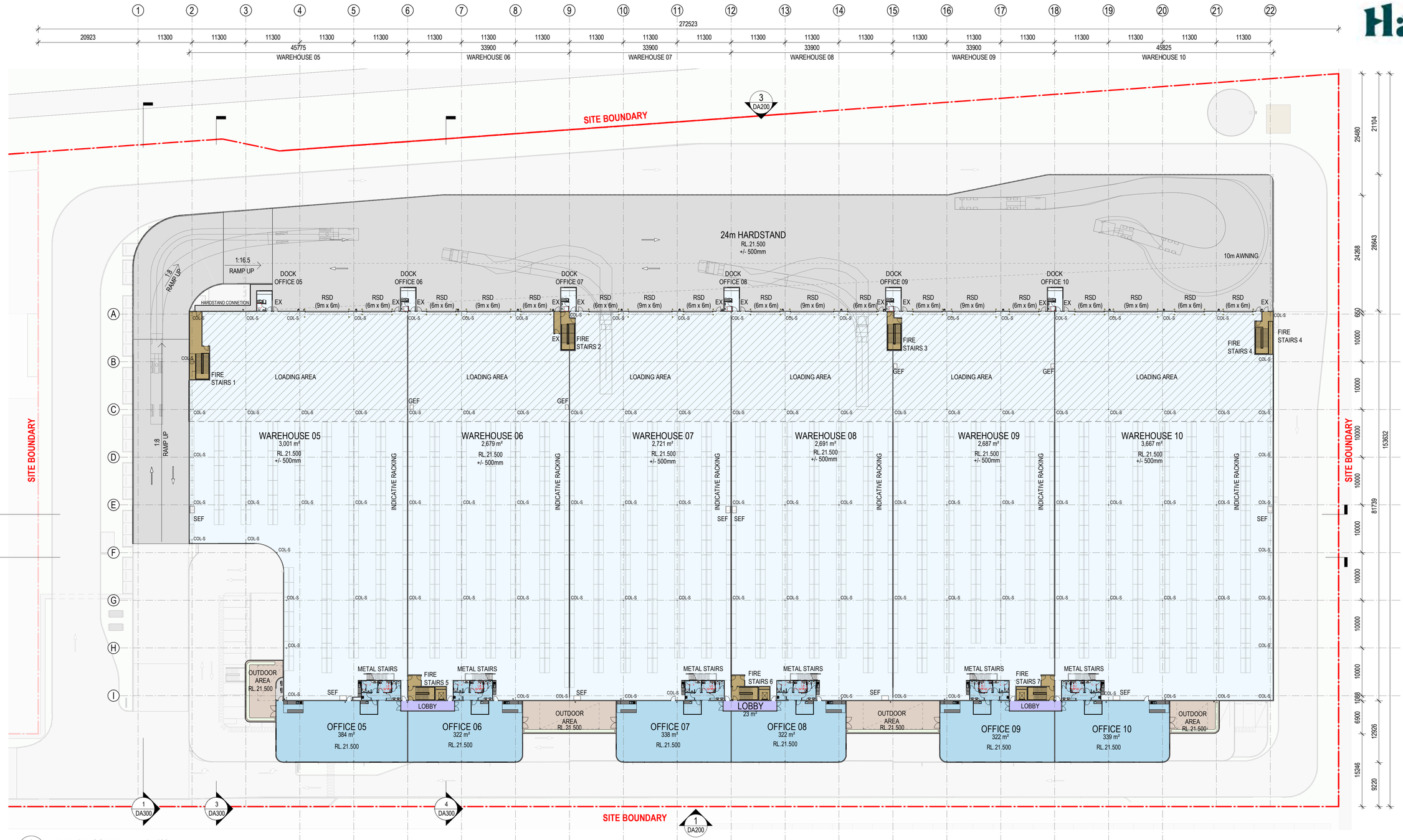
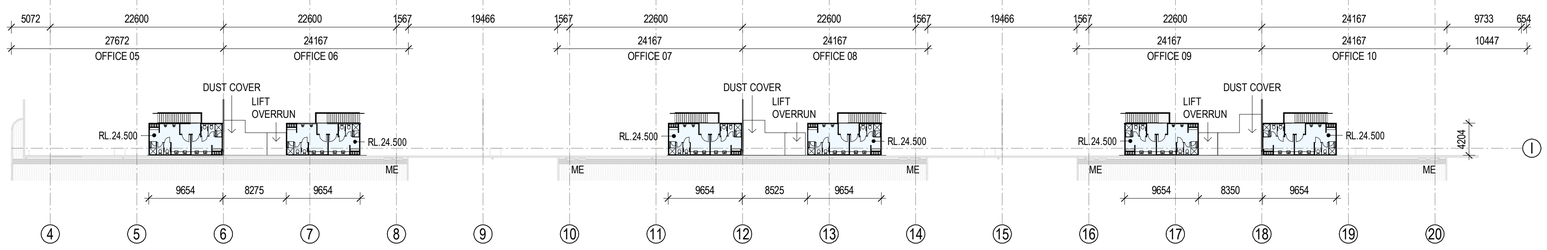


3 LEVEL 1 FLOOR PLAN 1 : 400



1 LEVEL 1 WH AMENITIES 1 : 400

GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
FNC-1 - FENCE TYPE 1
DP - DOWNPIPES
RW - RETAINING WALL
GEF - GROUND EXHAUST FAN-tbc
SEF - SMOKE EXHAUST FAN-tbc
TG1 - TELESCOPIC GATE-tbc
SG1 - SLIDING GATE
SG2 - SWING GATE - PEDESTRIAN
EX - EXIT

SITE BOUNDARY
TO BE DEMOLISHED
EF - EXISTING CHAINLINK FENCE
OFFICE AREA
WAREHOUSE AREA
FIRE SERVICES
LANDSCAPE AREA
LOBBY AREA

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CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: LEVEL 1

DATE: 21.04.2022 SCALE: As indicated @ A1 JOB NO: 21165 DWG NO: DA103 REVISION: I

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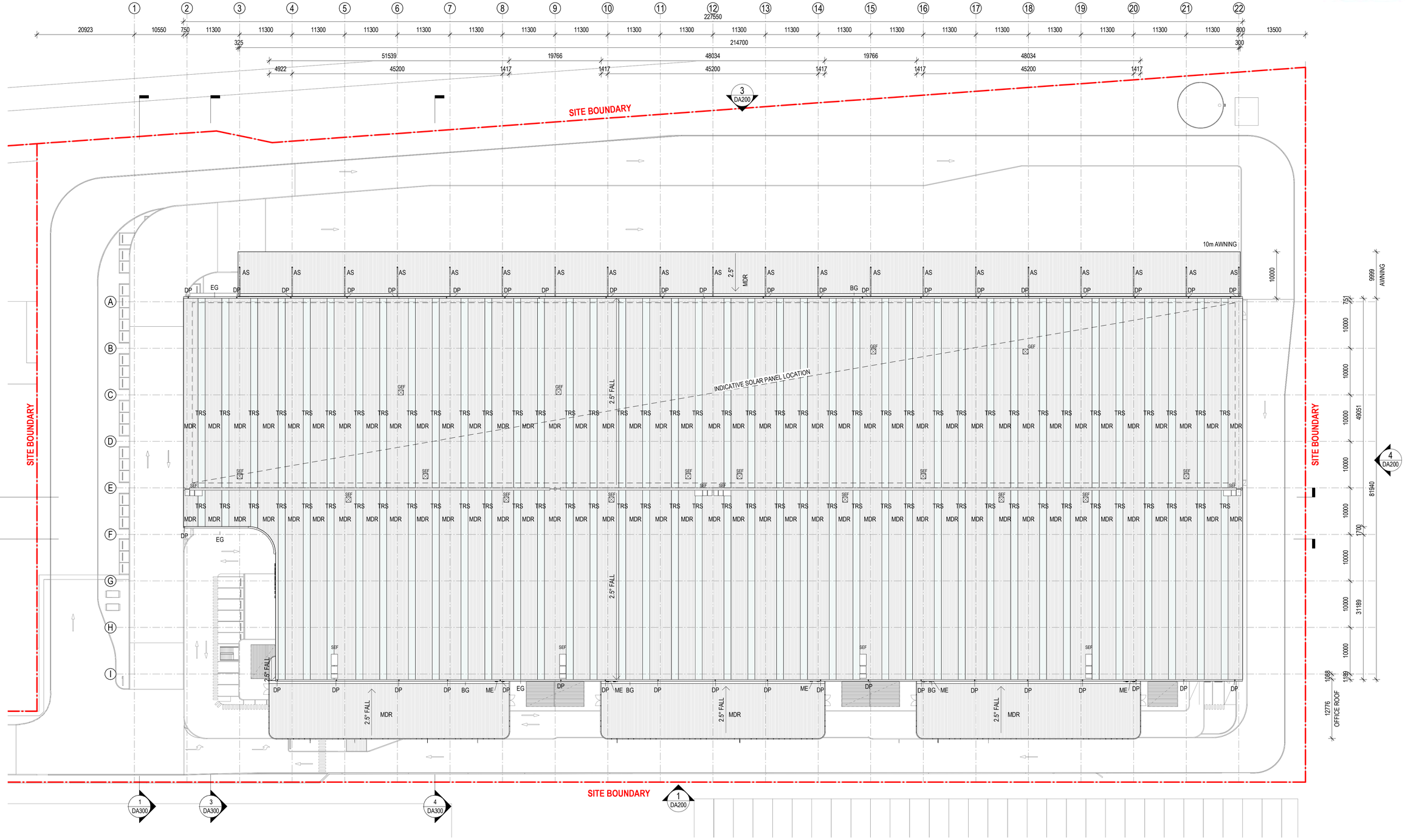

ROOF LEGEND

MDR - METAL ROOF SHEET
TRS - TRANSLUCENT ROOF SHEET
BG - BOX GUTTER
EG - EAVES GUTTER
DP - DOWN PIPE
SEF - SMOKE EXHAUST FAN

1 ROOF PLAN 1 : 400

ISSUE	DESCRIPTION	DATE
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C	FOR CLIENT REVIEW	30.03.2022
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A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

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PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: ROOF PLAN

DATE: 21.04.2022 SCALE: As indicated @ A1 JOB NO.: 21165 DWG NO.: DA104 REVISION: E

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Hale

BOOREA STREET

SITE BOUNDARY

SITE BOUNDARY

SITE BOUNDARY

SITE BOUNDARY

SITE BOUNDARY

B
DP 415100

1
DP 740385

DP 107942

DP 415100 B

DP 740385 1

DP 228253 2

DP 228253 2

DP 349554 2

DP 740385 2

DP 740385 2

208°56'20" 388.13

1 GROUND EXISTING 1 : 500

LEGEND

- SITE BOUNDARY
- EASEMENT
- EXISTING BUILDINGS
- TO BE DEMOLISHED
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE DEMOLISHED

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CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
SERVICES/CONSTRAINS PLAN

DATE	SCALE	JOB NO.	DWG NO.	REVISION
21.04.2022	As indicated @ A1	21165	DA105	H

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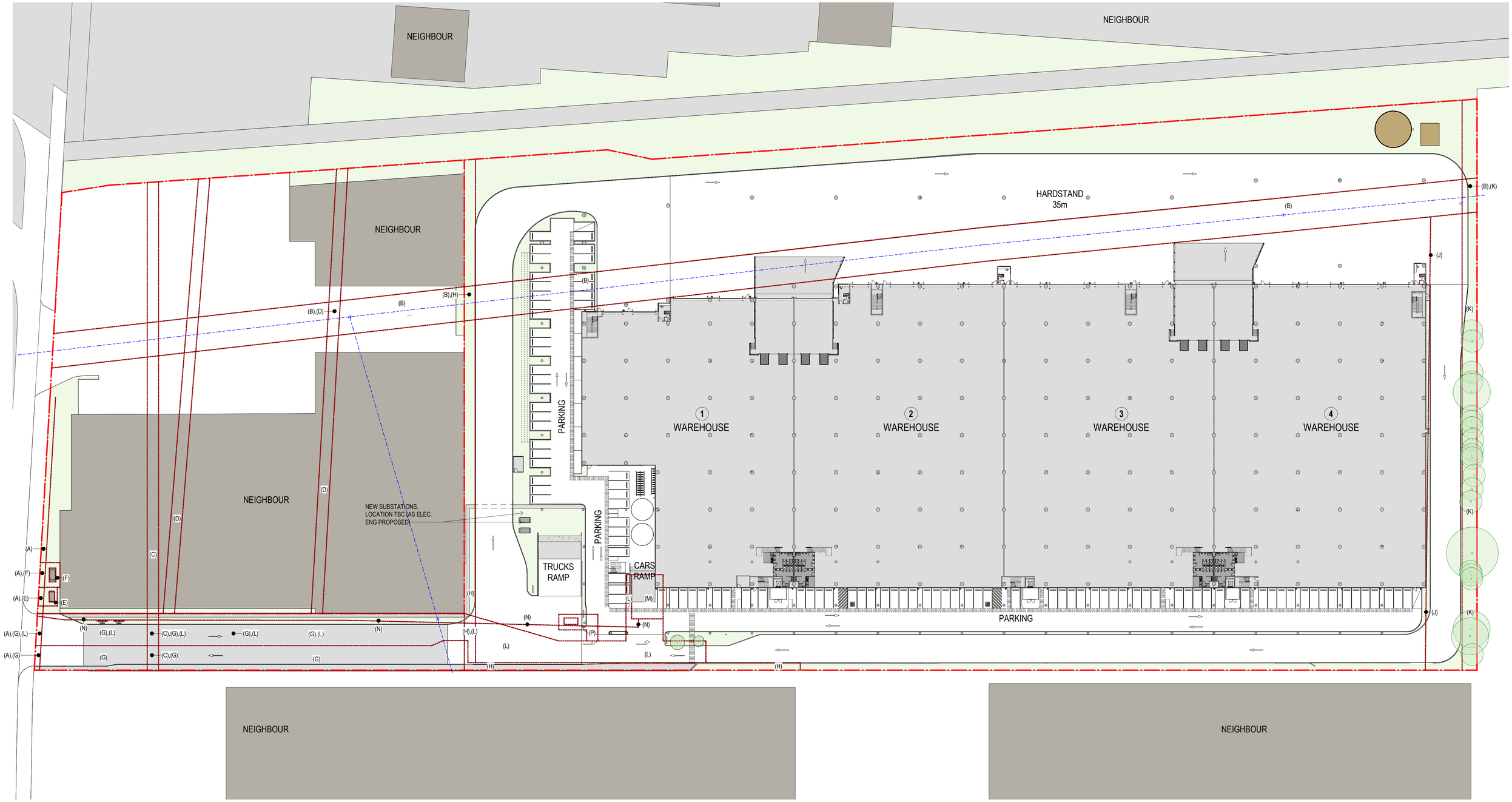

EASEMENTS
(A) EASEMENT TO DRAIN WATER 1.5 WIDE (W915607 & W915610)
(B) EASEMENT FOR SEWERAGE PURPOSES (K672824 & L35467)
(C) DRAINAGE EASEMENT (B578226)
(D) DRAINAGE EASEMENT (H492281)
(E) RIGHTS OF WAY & EASEMENTS FOR ELECTRICITY PURPOSES 1.165, 1.26 & VAR. WIDTH (U170756)
(F) EASEMENT FOR ELECTRICITY & OTHER PURPOSES VAR. WIDTH (DP1203954)
(G) 'RIGHT OF WAY 15.24 WIDE (H492281) - TO BE REMOVED, CANCELLATION REQUEST IN PROGRESS WITH LRS'
(H) EASEMENT TO DRAIN WATER 2 WIDE & 3 WIDE (DP740385)
(J) EASEMENT FOR SEWERAGE OVER EXISTING LINE OF PIPES (APPROX. POSTITION SHOWN) (DP740385)
(K) EASEMENT TO DRAIN WATER 4 WIDE (DP740385)
(L) RIGHT OF WAY (Y254807)
(M) SUBSTATION PREMISES No6459 (Y254807)
(N) EASEMENT FOR ELECTRICITY PURPOSES OVER EXISTING PITS & EXISTING LINE OF CONCRETE (Y254807)
(P) RIGHT OF WAY 3 & 4.2 WIDE (7218159)

LEGEND

- SEWER
- EASEMENT LINES
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED
- NEW TREES TBC

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D	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
SERVICES/CONSTRAINS PLAN

DATE 27.04.2022 | SCALE As indicated @ A1 | JOB NO. 21165 | DWG NO. DA106 | REVISION I

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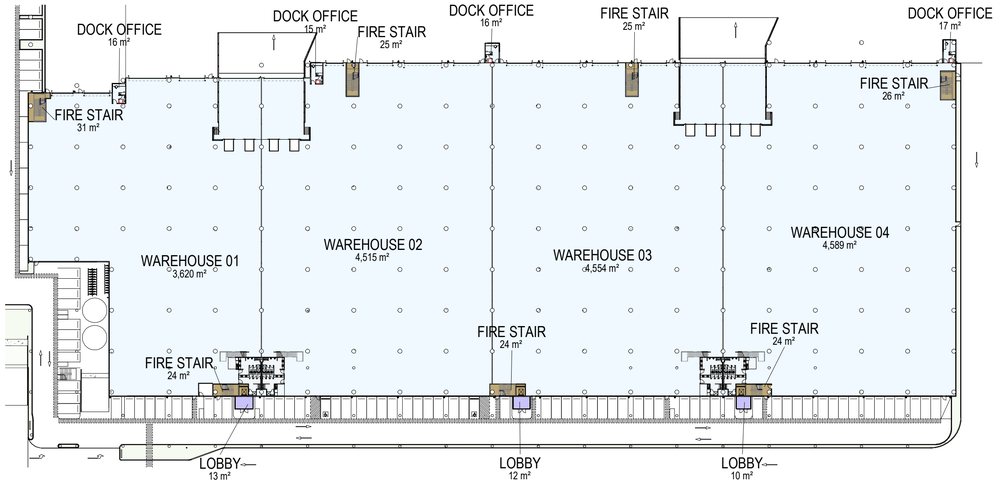
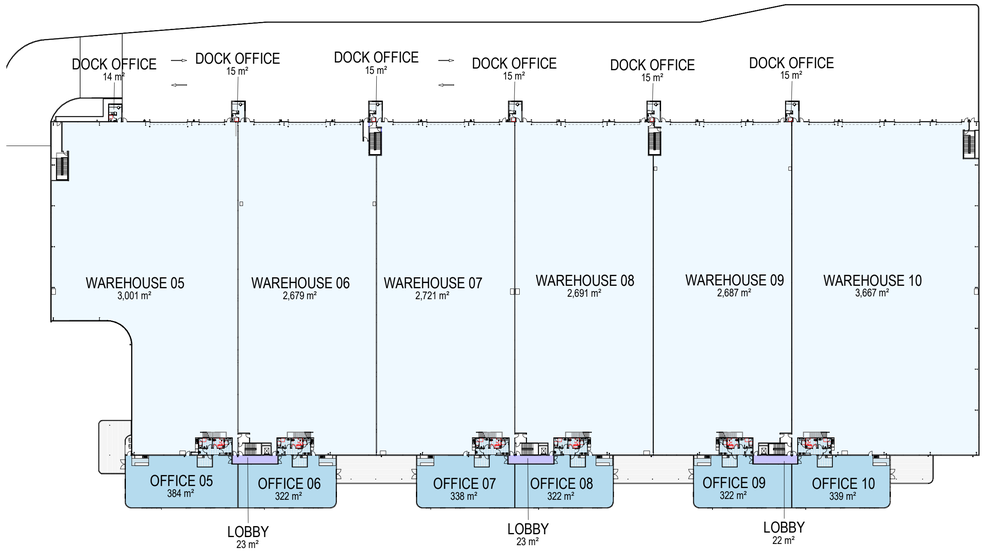
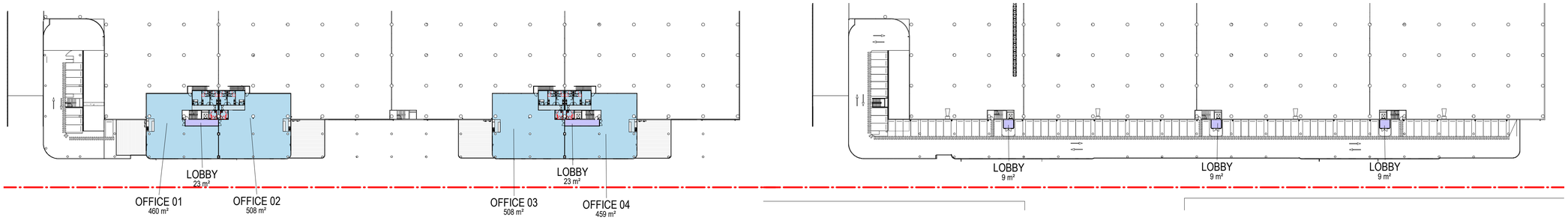


1 GROUND 1 : 750



3 LEVEL 01 1 : 750

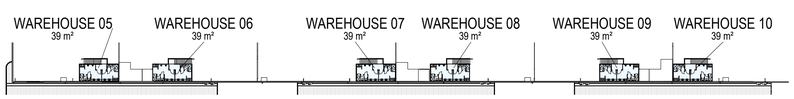


2 GROUND MEZZ OFFICE LEVEL 1 : 750

4 LEVEL 1 OFFICE ACCESS 1 : 750

GFA AREA SCHEDULE

UNIT NAME	WH AREA	OFFICE AREA	TOTAL
TENANCY 01	3620 m²	460 m²	4080 m²
TENANCY 02	4515 m²	508 m²	5023 m²
TENANCY 03	4554 m²	508 m²	5062 m²
TENANCY 04	4589 m²	459 m²	5048 m²
TENANCY 05	3040 m²	384 m²	3424 m²
TENANCY 06	2718 m²	322 m²	3040 m²
TENANCY 07	2760 m²	338 m²	3098 m²
TENANCY 08	2730 m²	322 m²	3052 m²
TENANCY 09	2726 m²	322 m²	3048 m²
TENANCY 10	3706 m²	339 m²	4045 m²
LOBBY	0 m²	176 m²	176 m²
GROUND DOCK OFFICE	64 m²	0 m²	64 m²
L1 DOCK OFFICE	89 m²	0 m²	89 m²
TOTAL:	35111 m²	4138 m²	39249 m²



5 LEVEL 1 WH AMENITIES GFA 1 : 750

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ISSUE	DESCRIPTION	DATE
F	ISSUE FOR COORDINATION	21.04.2022
E	FOR CLIENT REVIEW AND COORDINATION	07.04.2022
D	FOR CLIENT REVIEW	30.03.2022
C	FOR CLIENT REVIEW	25.03.2022
B	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
GFA PLANS

DATE 21.04.2022 | SCALE As indicated @ A1 | JOB NO. 21165 | DWG NO. DA107 | REVISION F

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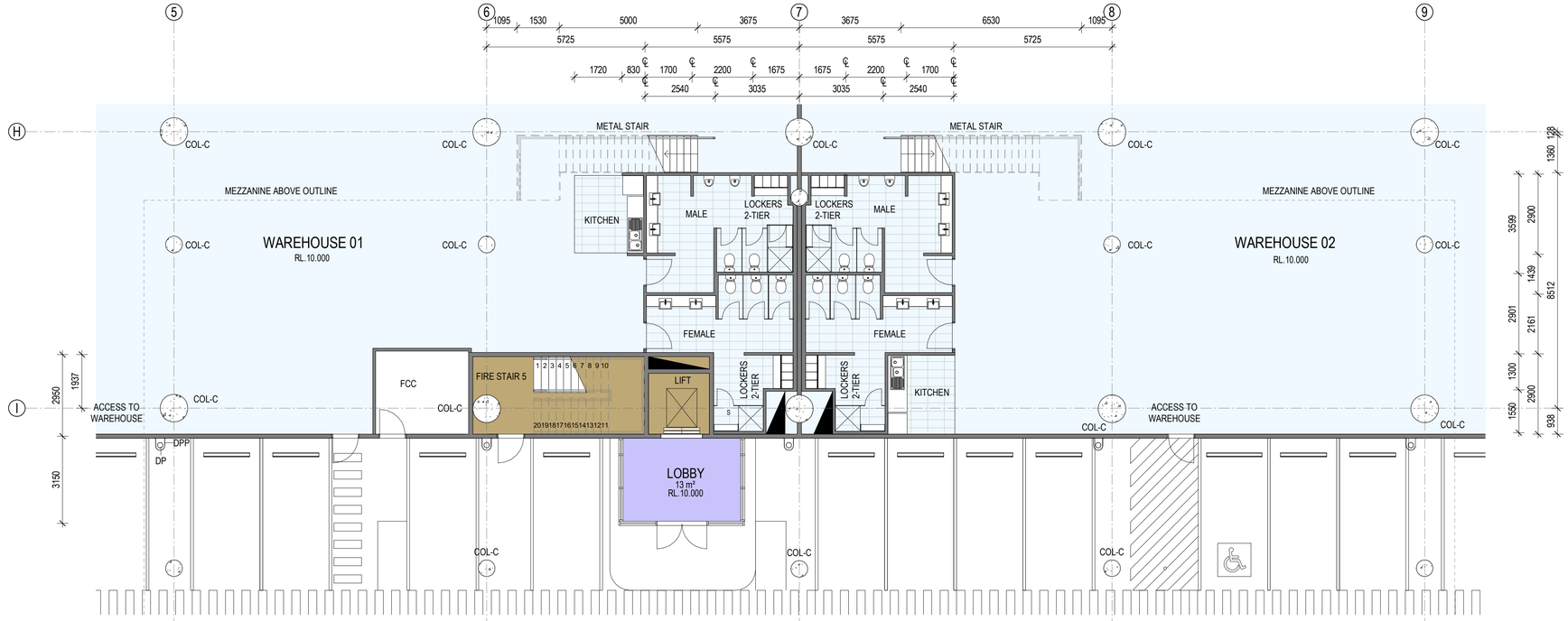
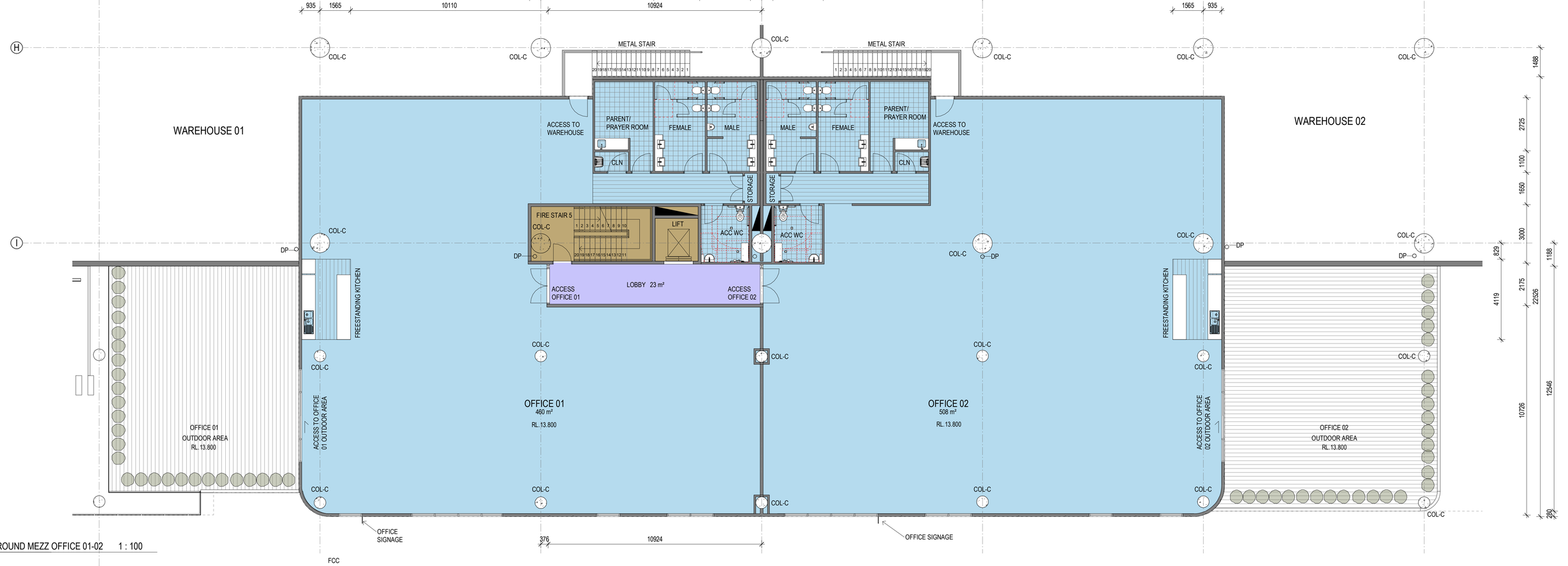
Hale



1 GROUND AMENITIES 01 - 02 1 : 100



2 GROUND MEZZ OFFICE 01-02 1 : 100

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A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: OFFICES - GROUND 01 - 02

DATE: 21.04.2022 | SCALE: 1 : 100 @ A1 | JOB NO.: 21165 | DWG NO.: DA120 | REVISION: E

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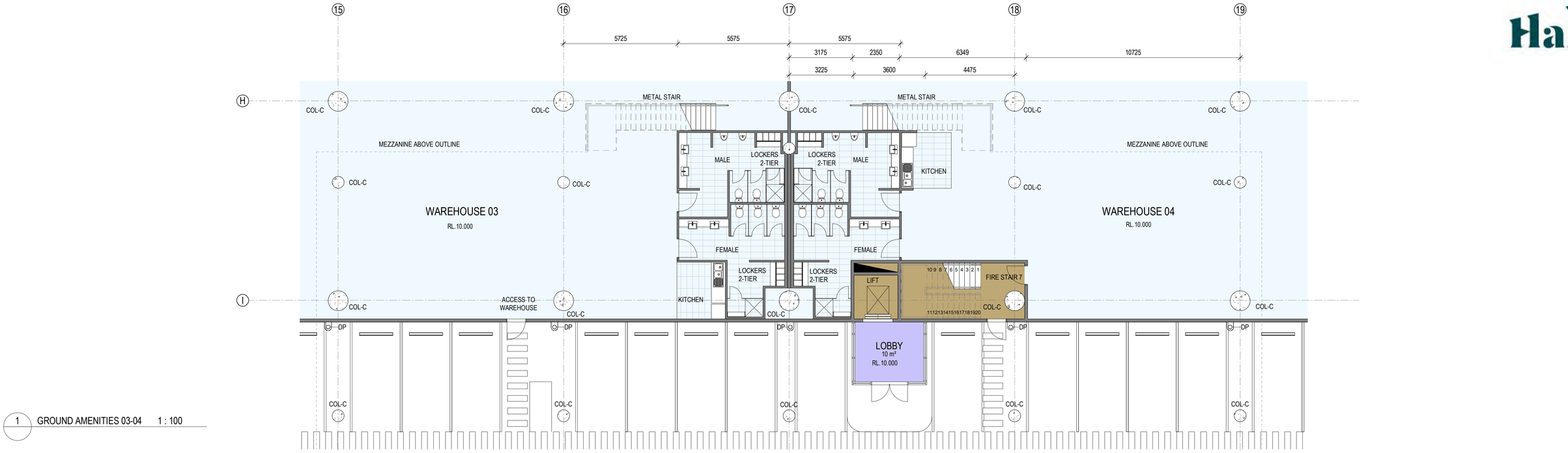
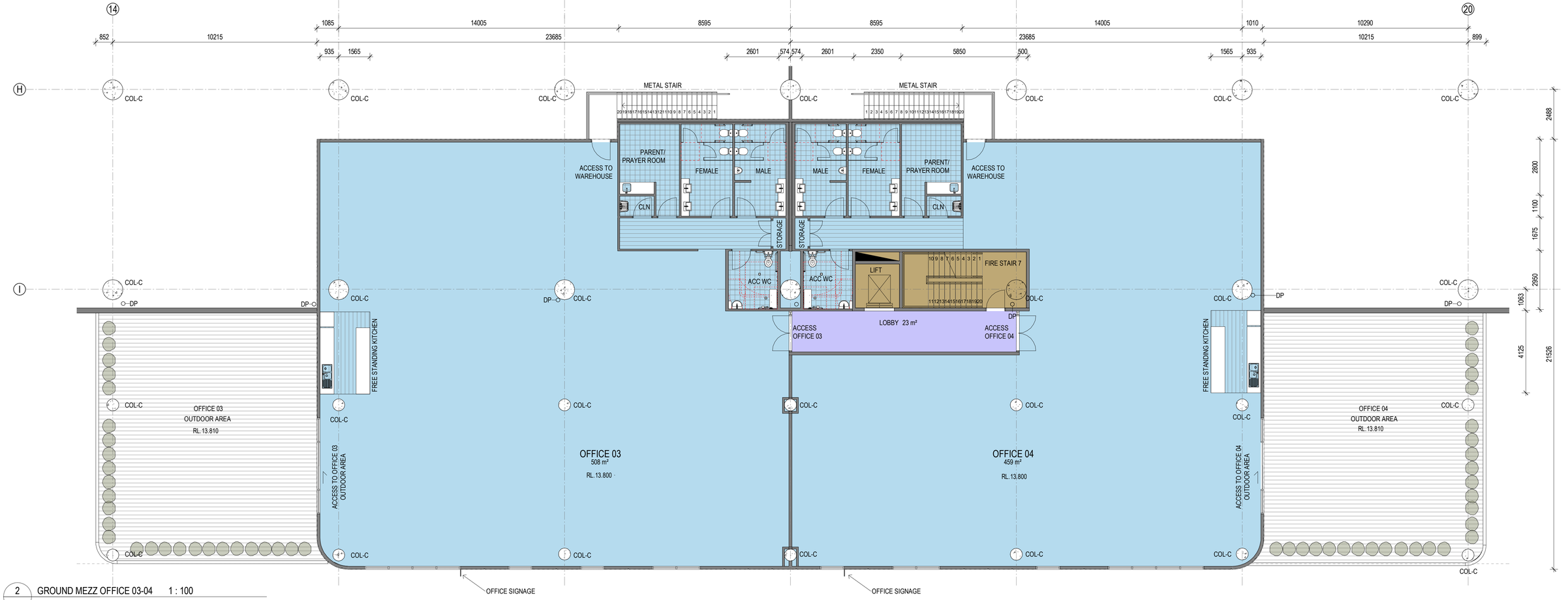


1 GROUND AMENITIES 03-04 1 : 100



2 GROUND MEZZ OFFICE 03-04 1 : 100

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D	ISSUE FOR COORDINATION	21.04.2022
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A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
OFFICES - GROUND 03 - 04

DATE 21.04.2022 | SCALE 1 : 100 @ A1 | JOB NO 21165 | DWG NO DA121 | REVISION D

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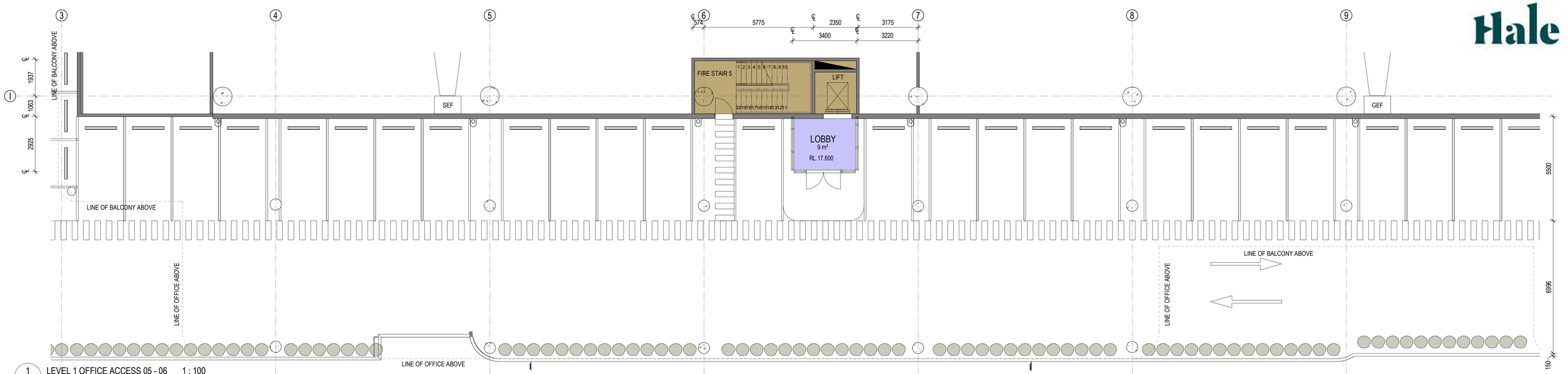
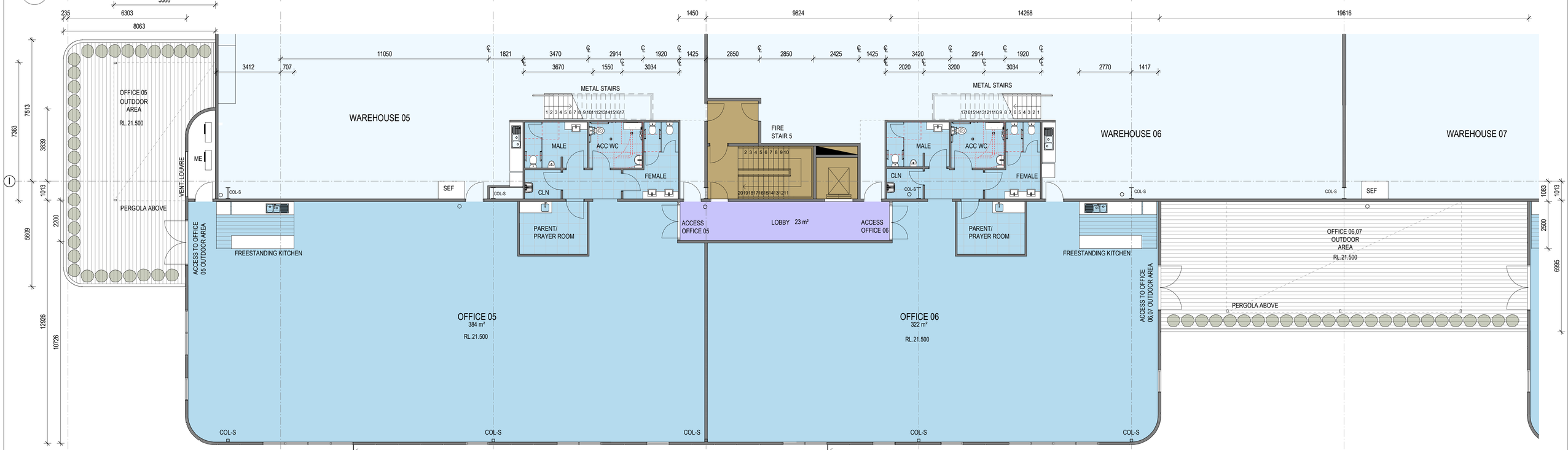


1 LEVEL 1 OFFICE ACCESS 05 - 06 1 : 100



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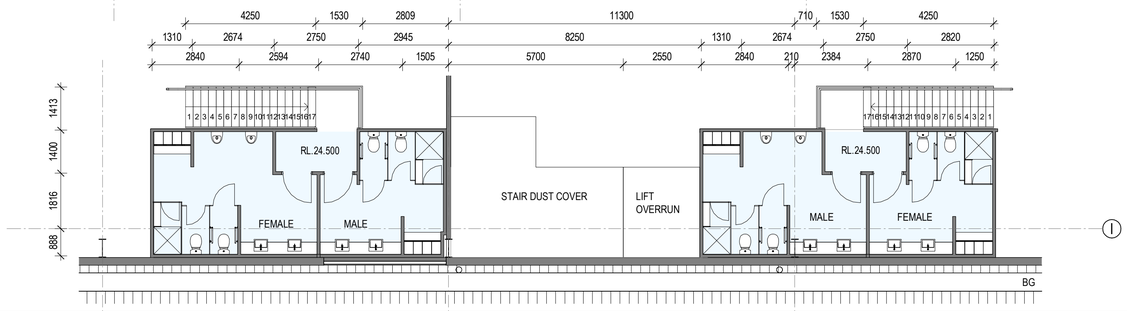

3 LEVEL 1 WH AMENITIES 05 - 06 1 : 100

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A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
OFFICE - LEVEL 1 - 05 - 06

DATE	SCALE	JOB NO.	DWG NO.	REVISION
21.04.2022	1 : 100 @ A1	21165	DA125	D

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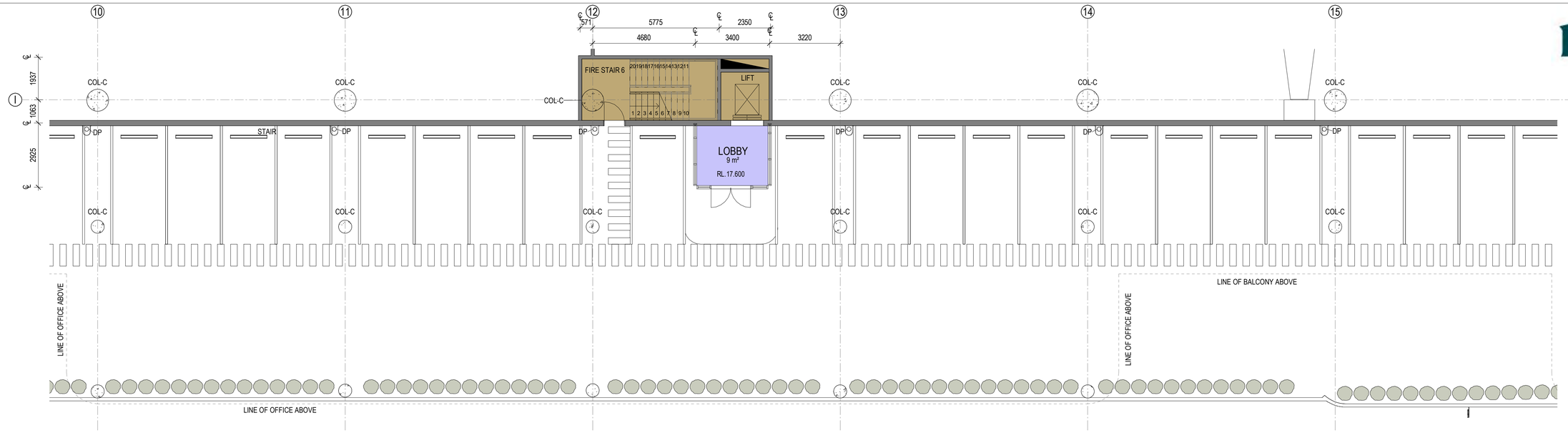

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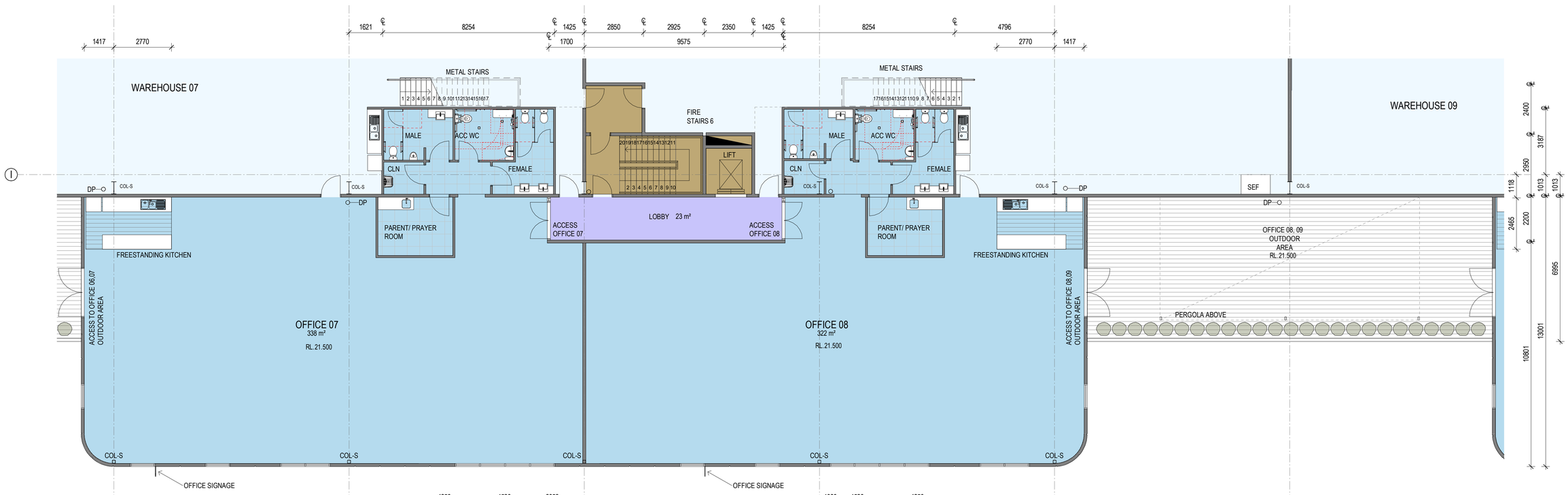

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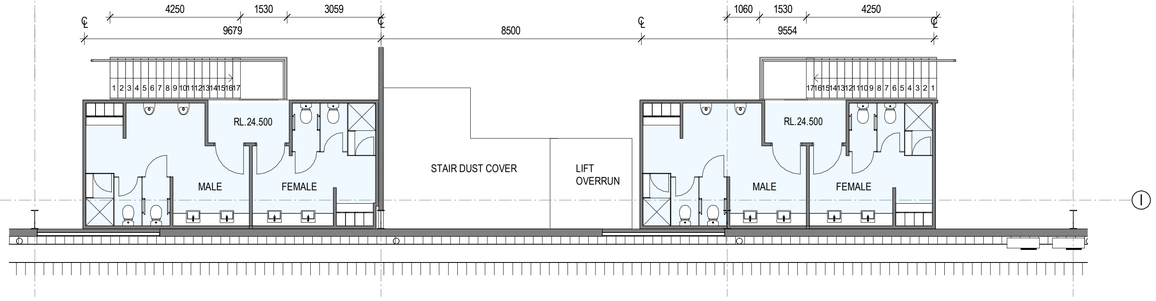

3 LEVEL 1 WH AMENITIES 07 - 08 1 : 100

D	ISSUE FOR COORDINATION	21.04.2022
C	FOR CLIENT REVIEW	30.03.2022
B	FOR CLIENT REVIEW	25.03.2022
A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

ISSUE DESCRIPTION DATE

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PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: OFFICE - LEVEL 1 - 07 - 08

DATE: 21.04.2022 SCALE: 1 : 100 @ A1 JOB NO: 21165 DWG NO: DA126 REVISION: D

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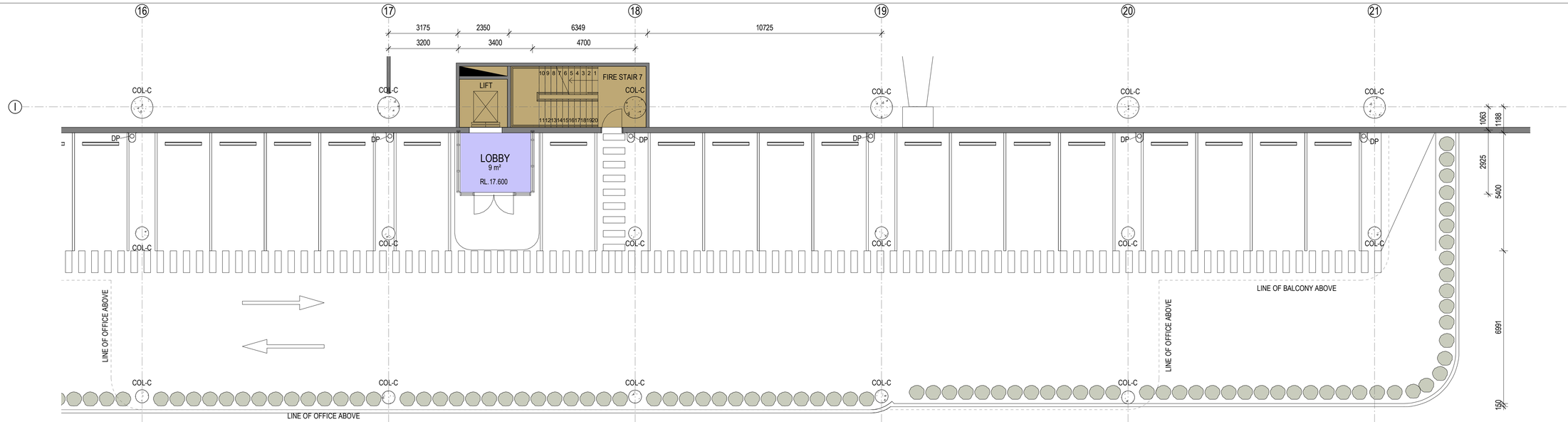
Hale



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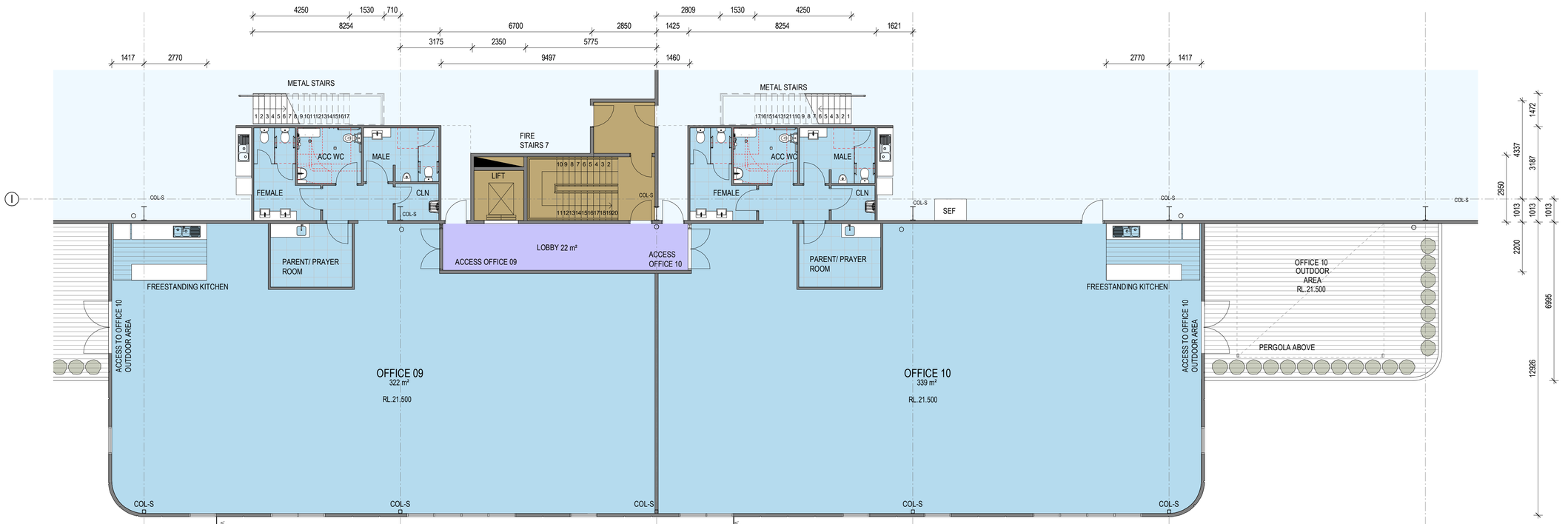

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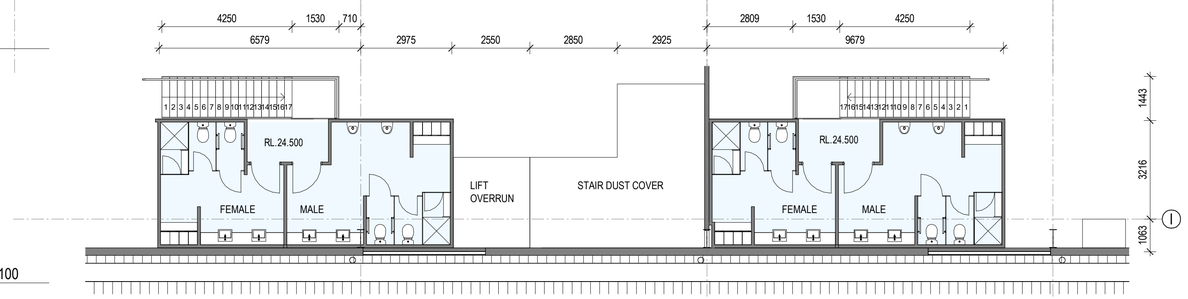

3 LEVEL 1 WH AMENITIES 09 - 10 1 : 100

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CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
OFFICE - LEVEL 1 - 09 - 10

DATE 21.04.2022 | SCALE 1 : 100 @ A1 | JOB NO. 21165 | DWG NO. DA127 | REVISION D

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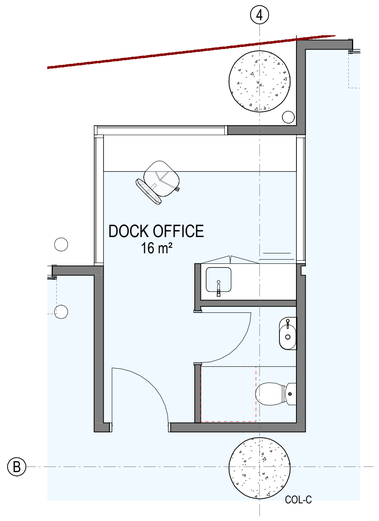
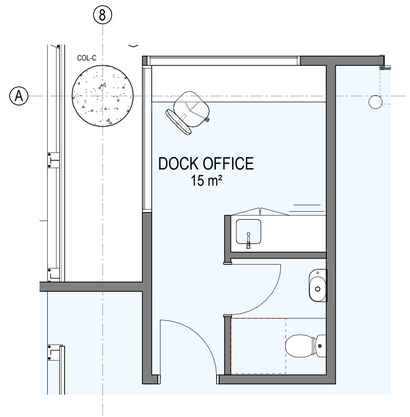
Hale

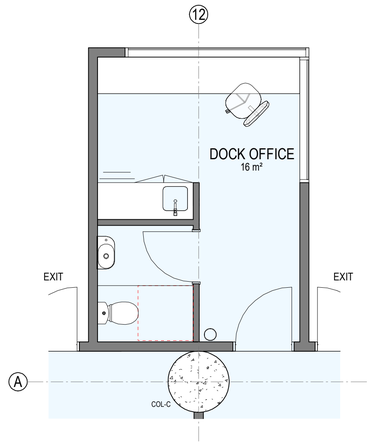
DOCK OFFICES GROUND FLOOR



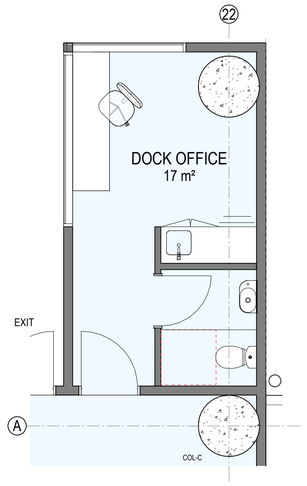
7 DOCK OFFICE 01 1 : 50



8 DOCK OFFICE 02 1 : 50

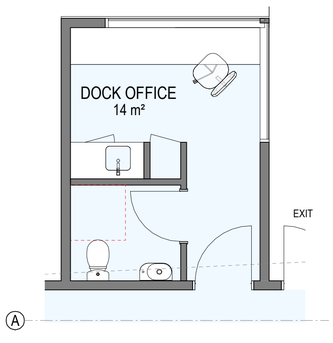


9 DOCK OFFICE 03 1 : 50



10 DOCK OFFICE 04 1 : 50

DOCK OFFICES GROUND FLOOR



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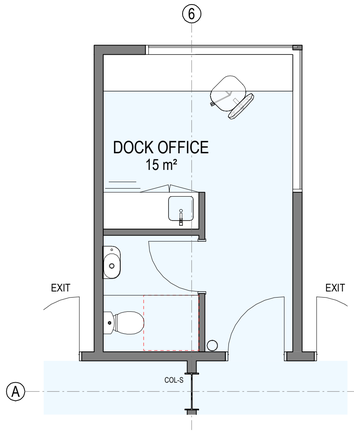
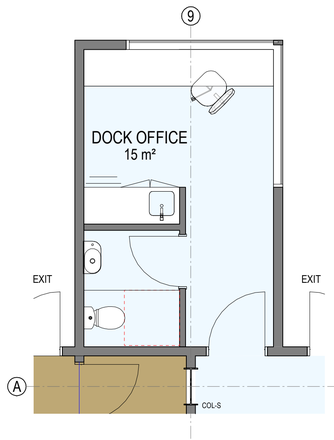
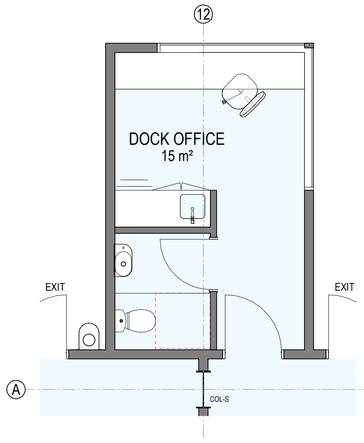


2 DOCK OFFICE 06 1 : 50



3 DOCK OFFICE 07 1 : 50



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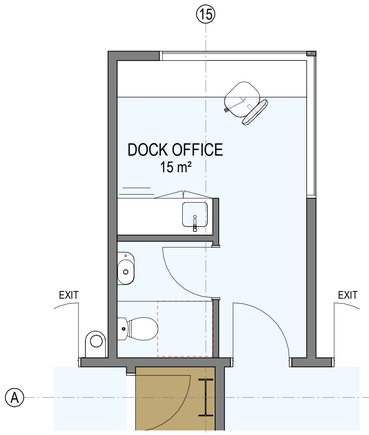
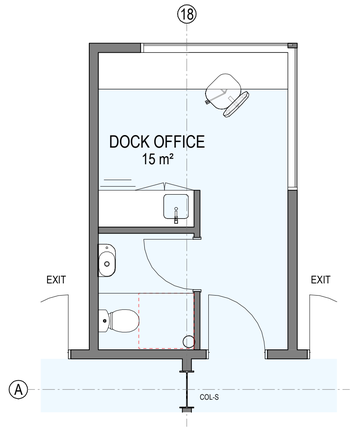


5 DOCK OFFICE 09 1 : 50



6 DOCK OFFICE 10 1 : 50

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ISSUE	DESCRIPTION	DATE
B	ISSUE FOR COORDINATION	21.04.2022
A	FOR CLIENT REVIEW AND COORDINATION	07.04.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
DOCK OFFICES

DATE 21.04.2022 | SCALE 1 : 50 @ A1 | JOB NO. 21165 | DWG NO. DA130 | REVISION B

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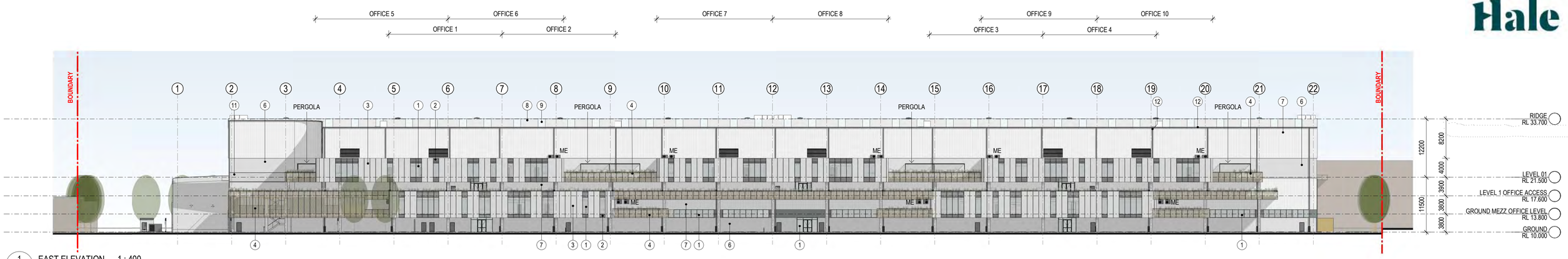
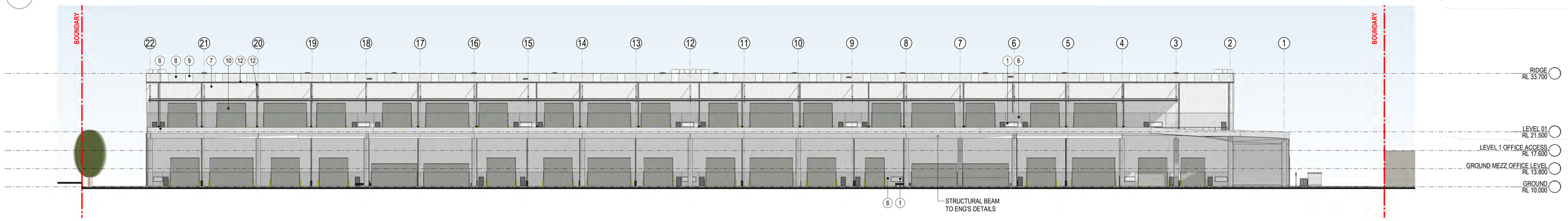
Hale



1 EAST ELEVATION 1 : 400



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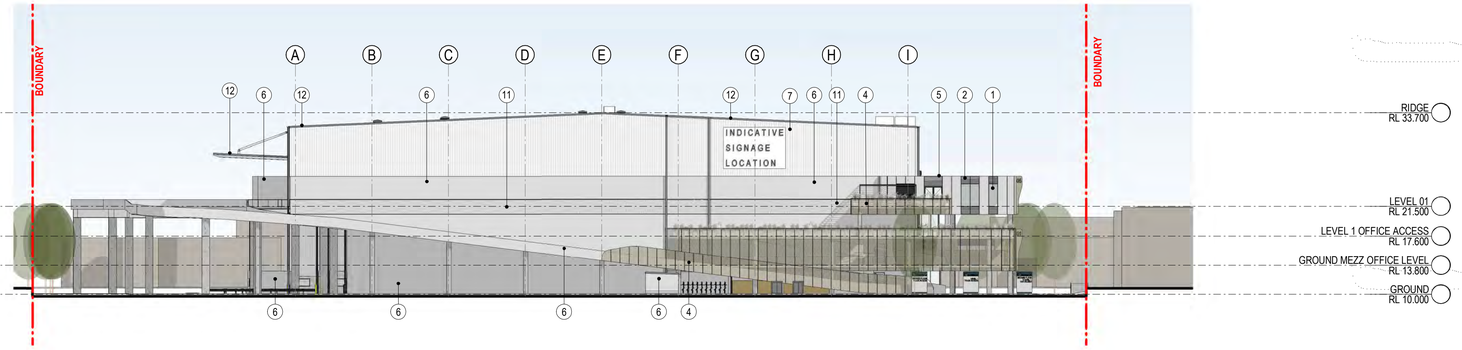
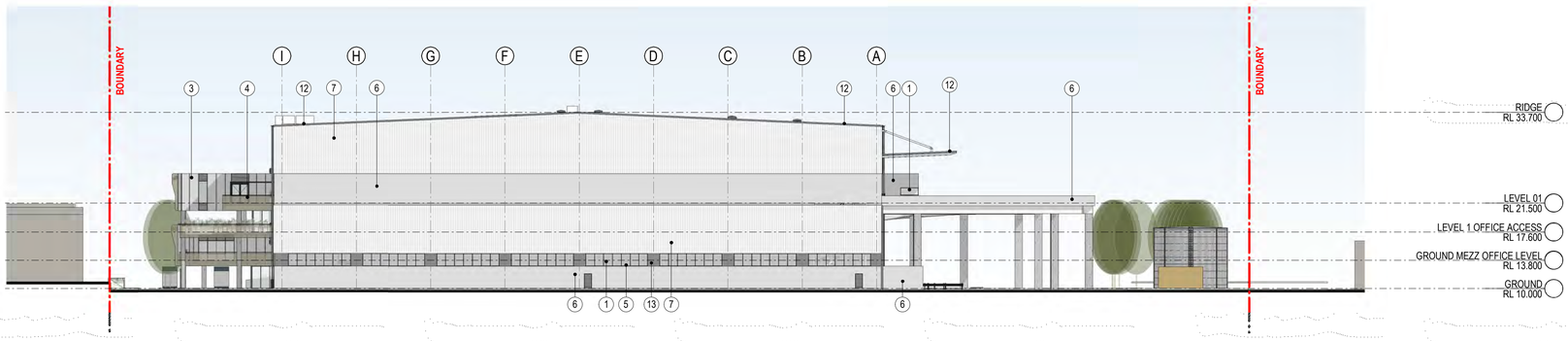


2 SOUTH ELEVATION 1 : 400



4 NORTH ELEVATION 1 : 400

INDICATIVE EXTERNAL FINISHES LEGEND

GLAZING - LIGHT GREY TINT	1
SPANDREL PANEL	2
SOLID ALUMINIUM PANEL - LIGHT GREY METALLIC	3
STEEL PERFORATED MESH WITH HANDRAIL	4
ALUMINIUM FRAME - POWDER COAT FINISH DARK GREY	5
PRECAST CONCRETE PANEL - NATURAL OFF FORM FINISH	6
TRIMDEK PROFILE METAL CLADDING - COLORBOND SURFMIST	7
TRIMDEK METAL ROOF SHEETING - COLORBOND SURFMIST	8
TRANSLUCENT ROOF SHEETING	9
METAL ROLLER SHUTTER DOOR - COLORBOND SHALE GREY	10
SANDBLASTED CONCRETE	11
DOWNPIPES, BARGE CAPPING & GUTTER - COLORBOND WINDSPRAY	12
PRECAST CONCRETE PANEL - WINDSPRAY PAINT FINISH	13

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CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
ELEVATIONS

DATE	SCALE	JOB NO.	DWG NO.	REVISION
21.04.2022	As indicated @ A1	21165	DA200	F

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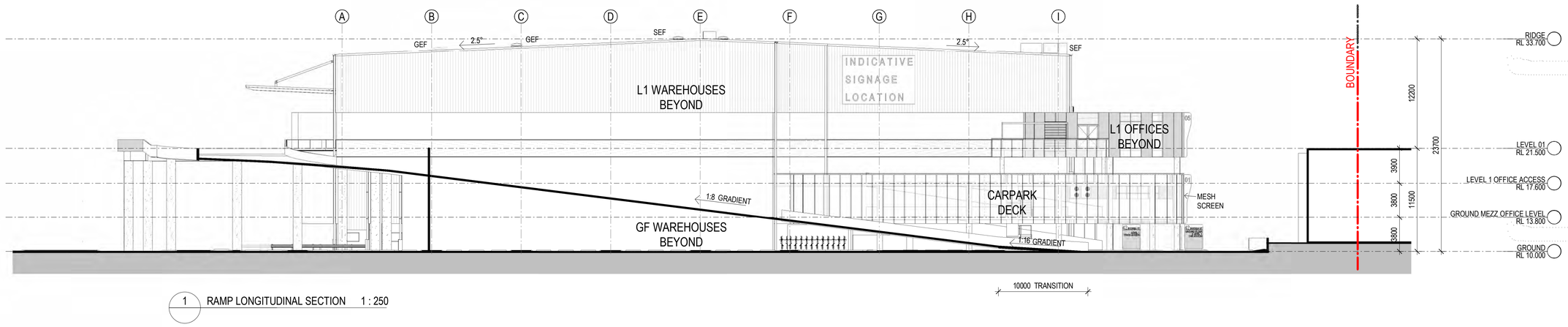

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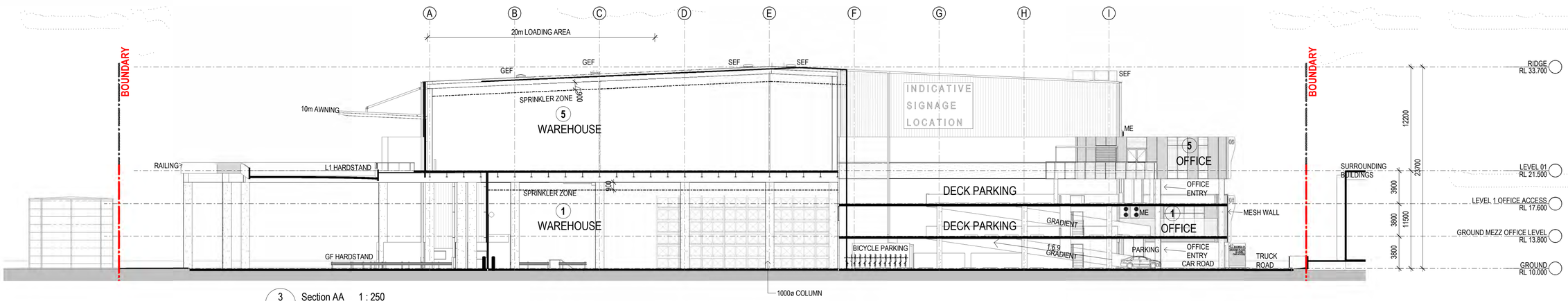
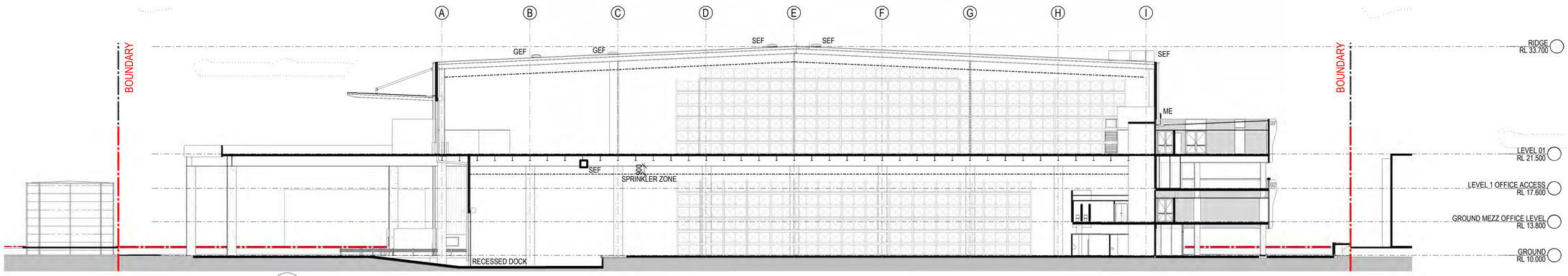


3 Section AA 1 : 250



4 Section AA2 1 : 250

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ISSUE	DESCRIPTION	DATE
H	ISSUE FOR COORDINATION	21.04.2022
G	FOR CLIENT REVIEW AND COORDINATION	07.04.2022
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CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
SECTIONS

DATE	SCALE	JOB NO	DWG NO	REVISION
21.04.2022	1 : 250 @ A1	21165	DA300	H

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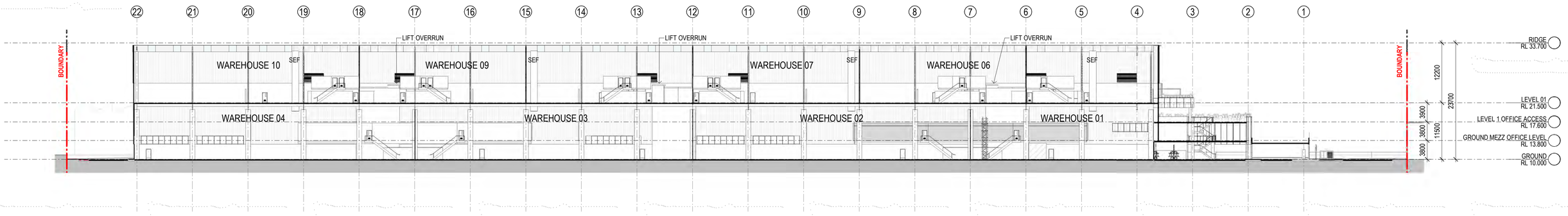

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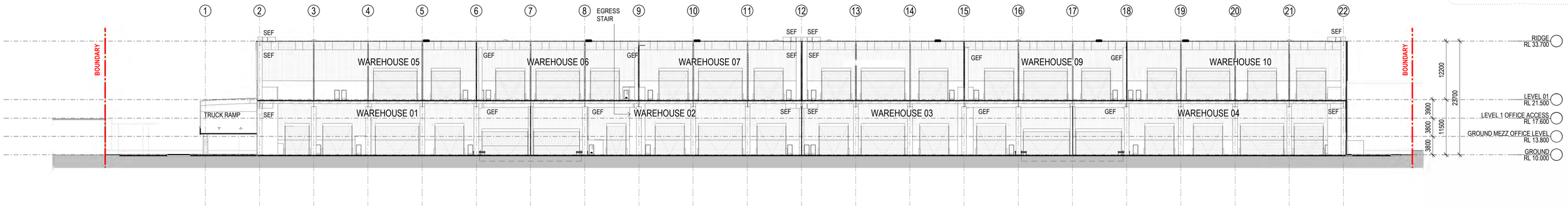

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42-44 BOOREA STREET, LIDCOMBE

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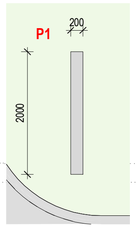

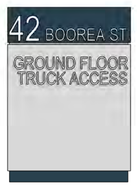

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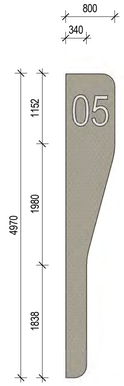

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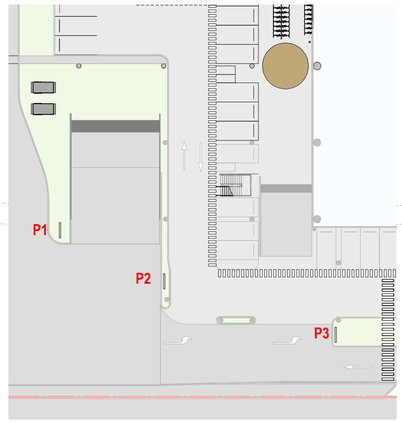
WITH WHITE OFFICE NUMBER

11 L1 OFFICE IDENTIFICATION 1 : 50



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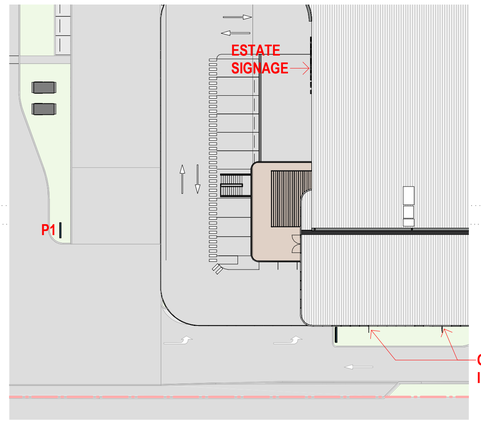

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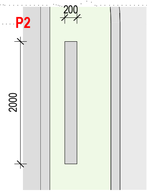

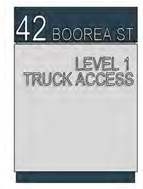

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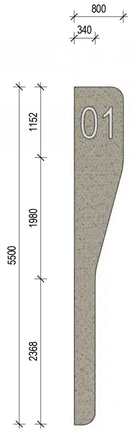

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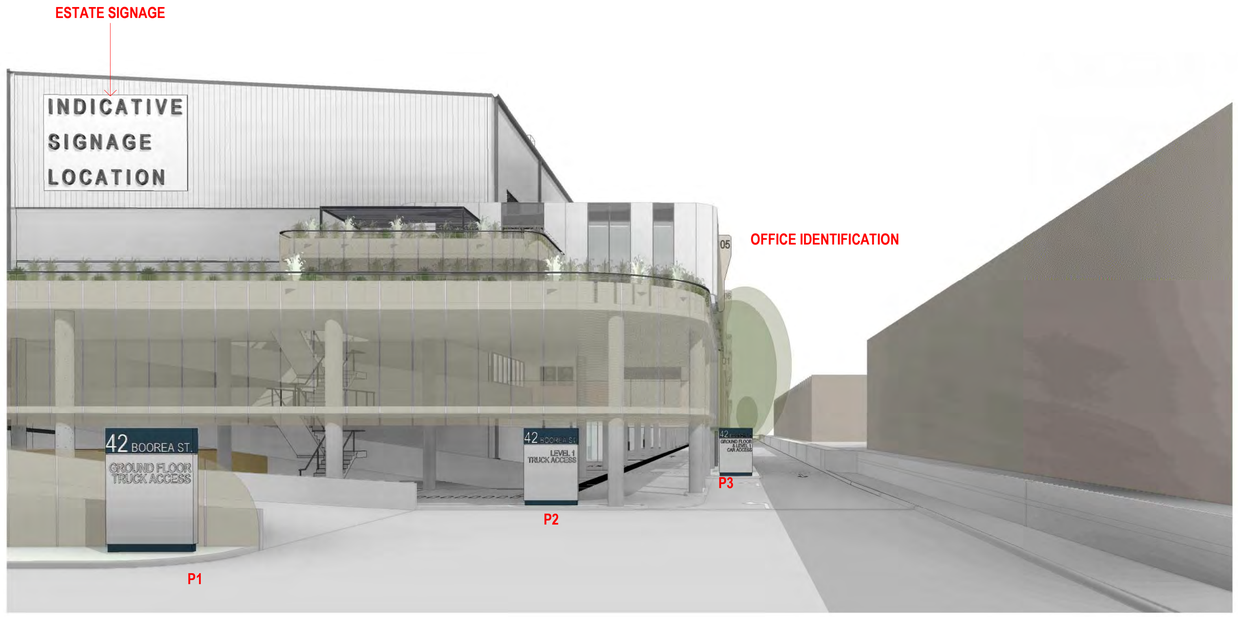

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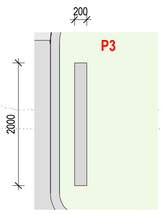

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42-44 BOOREA STREET, LIDCOMBE

TITLE
SIGNAGE DETAILS

DATE	SCALE	JOB NO.	DWG NO.	REVISION
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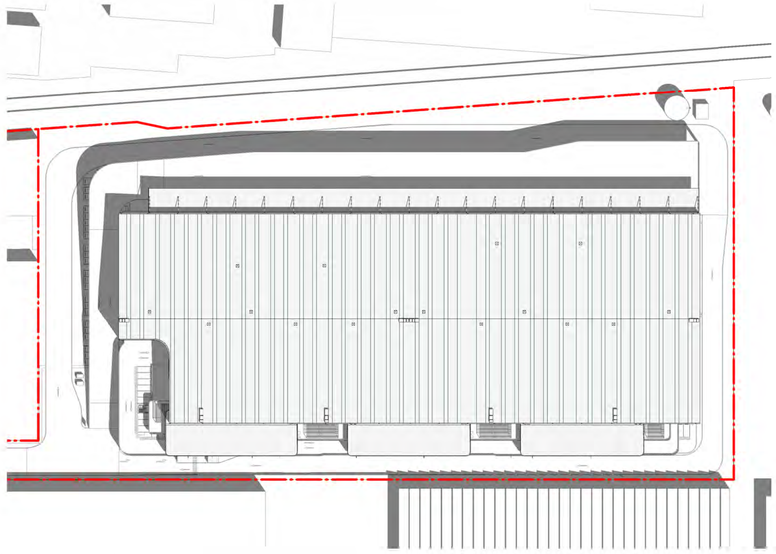

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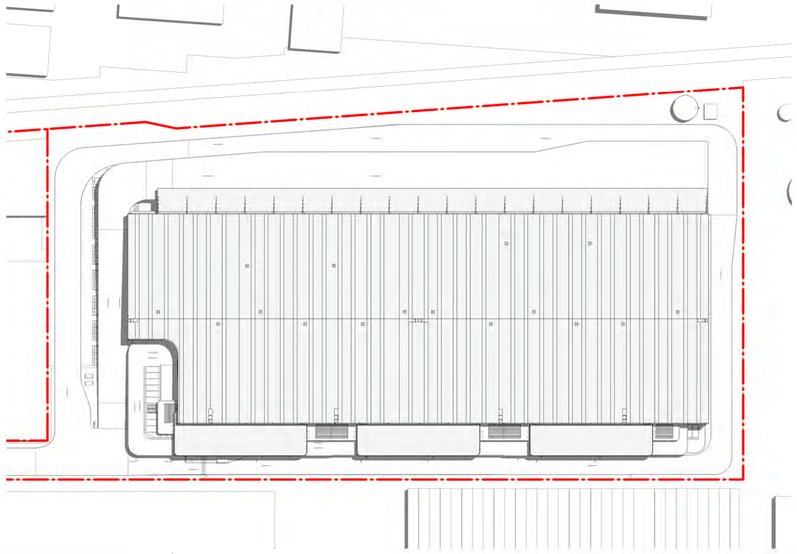

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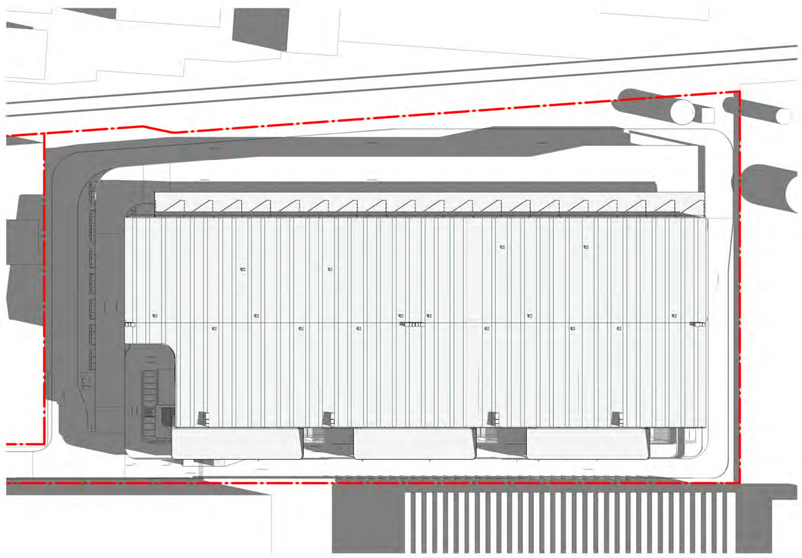

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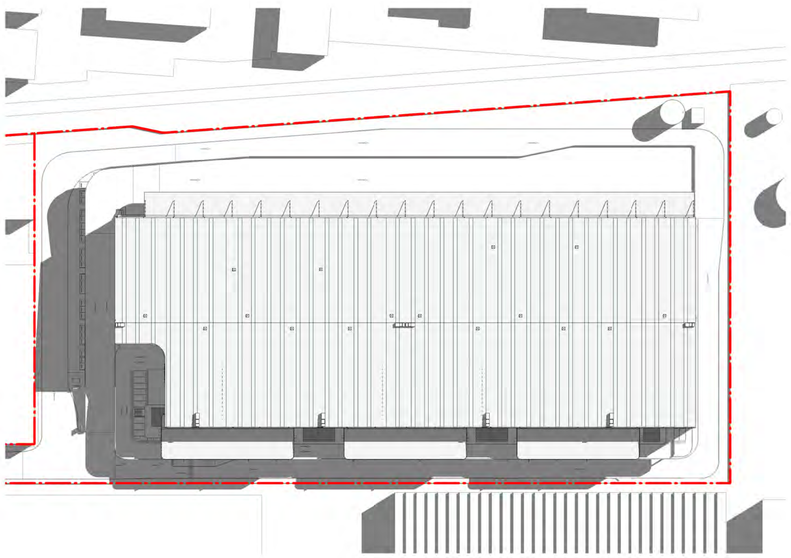

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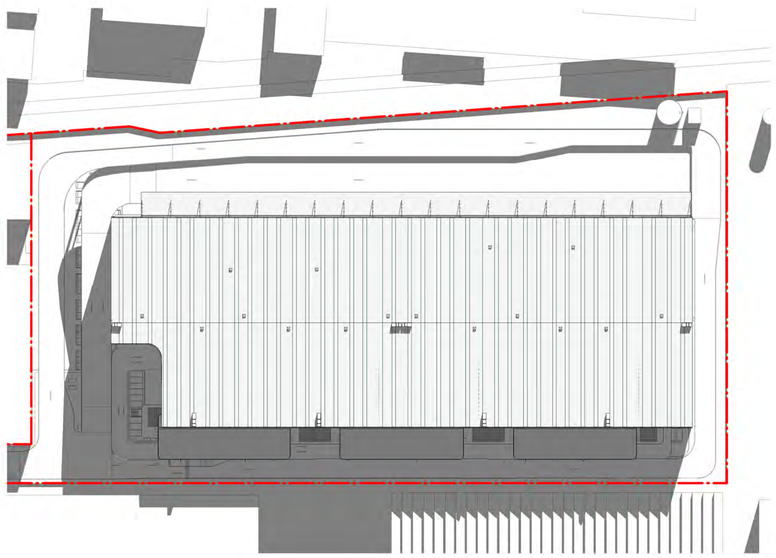

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42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
SHADOW DIAGRAMS

DATE 21.04.2022 SCALE 1 : 1200 @ A1 JOB NO. 21165 DWG NO. DA350 REVISION D

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Appendix I Well Survey Data

2nd February 2022

RE: Monitoring Well Locations Lidcombe

Hi Chris,

Please find below table of values for the monitoring wells at 42 Boorea St Lidcombe.

Measurements are in AHD and MGA94,

NAME	EASTING	NORTHING	RL	DESC
MW01	318979.48	6252593.253	9.552	LID
MW01	318979.481	6252593.283	9.473	PIPE
MW02	318924.618	6252715.399	9.008	LID
MW02	318924.571	6252715.398	8.918	PIPE
MW03	318787.364	6252513.296	7.693	LID
MW03	318787.404	6252513.278	7.512	PIPE
MW05	318849.721	6252604.049	8.266	LID
MW05	318849.73	6252604.017	8.15	PIPE
MW06	318767.812	6252444.344	8.022	LID
MW06	318767.841	6252444.339	7.903	PIPE
MW07	318852.931	6252640.25	8.784	LID
MW07	318852.931	6252640.25	8.613	PIPE
MW08	318907.689	6252629.01	9.744	LID
MW08	318907.712	6252628.973	9.661	PIPE
MW09	318941.434	6252626.054	9.758	LID
MW09	318941.434	6252626.054	9.682	PIPE
MW10	318851.247	6252573.412	8.473	LID
MW10	318851.241	6252573.415	8.361	PIPE
MW11	318863.98	6252552.438	9.775	LID
MW11	318863.948	6252552.437	9.679	PIPE
MW12	318794.79	6252505.172	7.832	LID
MW12	318794.784	6252505.171	7.72	PIPE
MW13	318883.759	6252475.343	9.768	LID
MW13	318883.752	6252475.347	9.644	PIPE

Best regards
Glen Watson
Director
Onsite Surveying Pty Ltd

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A-20 Acid Sulfate Soils Management Plan

JBS&G (Contamination Consultant)

Hale Property Services Pty Ltd

Acid Sulfate Soil Management Plan

42 Boorea Street,
Lidcombe, NSW

30 April 2022

62184/145057(Rev 0)

JBS&G Australia Pty Ltd

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Hale Property Services Pty Ltd

Acid Sulfate Soil Management Plan

42 Boorea Street,
Lidcombe, NSW

30 April 2022
62184/145057(Rev 0)
JBS&G Australia Pty Ltd

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Appendix A Development Plans

1. Introduction

1.1 Introduction and Development Details

JBS&G Australia Pty Ltd (JBS&G) was engaged by Hale Property Services Pty Ltd (the client) to prepare an Acid Sulfate Soil Management Plan (ASSMP) for the property located at 42 Boorea Street, Lidcombe NSW (the site). The site is legally identified as Lot 1 in DP 740385 and covers an area of approximately 4.1 hectares (ha). The site location and layout are shown in **Figures 1** and **2**.

It is understood that the client proposes to redevelop the site for commercial purposes that will comprise the demolition of existing structures and subsequent construction of a large multi-level commercial / industrial building. All structures are constructed at grade (i.e. no basements or underground levels) and there are minimal landscaped areas as part of the proposed development. Indicative development plans are provided in **Appendix A.** As such, the disturbance of in-situ materials during future construction works is expected to mainly occur during future piling works as well as excavations for the installation of underground services rather than any largescale excavation activities.

Review of the Acid Sulfate Soil Risk Map[1] indicates that the site exists on disturbed terrain which may include filled areas, which often occur during reclamation of low-lying swamps for urban development. Other disturbed terrain includes areas which have been mined or dredged or have undergone heavy ground disturbance through general urban development or construction of dams or levees. Soil investigations are required to assess these areas for acid sulfate potential. Investigations completed at the site (**Section 4**) have identified the presence of potential acid sulfate soils (PASS) at the site.

As such an ASSMP is required to document procedures to be implemented to manage the potential environmental risk associated with disturbance of these materials should they be encountered during construction works. This ASSMP has been prepared in accordance with the general requirements of the Acid Sulfate Soil Manual (ASSMAC 1998[2]) and with consideration to the National Acid Sulfate Soils Guidance (DAWR 2018[3]).

1.2 Aims and Objectives

The aim of this ASSMP is to outline management techniques that may be employed to mitigate the potential environmental impacts associated with the risk of disturbance of Acid Sulfate Soils (ASS)/Potential Acid Sulfate Soils (PASS) during the proposed site construction works. Specifically, the objectives of this ASSMP are to document:

- The known and anticipated site sub-surface characteristics expected to be encountered during future excavation works for consideration in development of future investigative and management activities;
- A monitoring and sampling strategy to be implemented prior to and during the proposed ground disturbance activities such that ASS/PASS may be appropriately identified and managed during the excavation works;
- Evaluation of potential ASS/PASS management opportunities and constraints resulting in the identification of a preferred management strategy(ies); and

[1] Prospect/Parramatta River Acid Sulfate Risk Map – Edition Two (9130N3), Department of Land and Conservation of Water. Printed December 1997

[2] *Acid Sulfate Soil Manual*, NSW Acid Sulfate Soil Management Advisory Committee, August 1998 (ASSMAC 1998)

[3] *National Acid Sulfate Soil Guidance*. Australian Government Department of Agriculture and Water Resources (DAWR), June 2018 (AGDAW, 2018)

- Procedures for the management and validation of ASS during future site excavation works so as to minimise the potential for adverse environmental impacts as a result of the ASS/PASS disturbance activities.

1.3 Proposed Development

As noted in **Section 1.1**, it is proposed to redevelop the site for commercial / industrial land use comprising of multi-level commercial/industrial buildings. The proposed development plans are provided in **Appendix A**.

2. Acid Sulfate Soil General Information

2.1 Acid Sulfate Soils Background

ASS is a common name given to naturally occurring sediments and soils containing iron sulfides (generally as iron sulfide or iron disulfide). These soil profiles are typically located in coastal, low-lying alluvial or estuarine areas such as mangroves, salt marshes, coastal rivers and creeks, estuaries, tidal lakes and coastal floodplains where historical iron rich sediment deposition in the presence of a sulfate source (commonly salt water), organic matter and microbial action over time has resulted in the formation of particular environmental conditions. ASSs are predominantly encountered in areas where the soil profile has an elevation of less than 5 m Australian Height Datum (AHD) and may be found close to the ground level or at depth in the soil profile where continued deposition actions have resulted in raising of the ground levels.

Changes in environmental conditions which result in the exposure of these materials to air, via excavation or drainage of subsurface soils, can lead to the reaction of iron sulfides with oxygen, causing the generation of sulfuric acid. This may result in significant environmental and infrastructure damage if the produced acid is spread by groundwater or surface water.

ASS consist of two major categories:

- ASS are soils that have been exposed to air which has caused the oxidation of iron sulfides to form sulfuric acid. Some of this acid is commonly neutralised by other soil particles in a process known as buffering, however, the excess acid is spread by water movement through the soil; and
- PASS are soils which contain iron sulfides that have not been exposed to air and oxidised. These soils are generally kept from contact with air by permanent waterlogging or the density of the soil profile and so are relatively stable, or in equilibrium. In this state the soils are generally non-acidic and are considered harmless to the environment. However, oxidation of such soils through disturbance has the potential to generate acidic conditions.

Commonly, an ASS profile will consist of a combination of both ASS and PASS material as a result of ongoing chemical reactions in response to environmental changes including groundwater fluctuations and seasonal soil moisture changes.

The following types of site activities are likely to result in disturbance of ASS (both ASS and PASS) during urban development activities:

- Bulk excavation works which encounter subsurface ASS which may be completed to achieve basement levels, installation of drainage infrastructure, alteration of existing site levels to achieve modified ground levels, dredging or otherwise mobilisation such that the sediment may become oxidised, etc.;
- Dewatering activities associated with construction works proposed at elevations below the standing water table, for example, installation of drainage infrastructure, etc. which may result in ASS beyond the excavation extent becoming exposed to oxygen due to a lowering of groundwater levels, thereby generating acidic conditions; and
- Generation of spoil which may return ASS to the ground surface associated with foundation construction works, including piling spoil or bored pile installation activities, directional drilling works for infrastructure services installation, etc.

2.2 Laboratory Assessment Criteria

The assessment of site soil conditions with respect to ASS occurrence is completed in accordance with the guidance provided in ASSMAC (1998). The requirement to manage soils for ASS is evaluated by comparison of laboratory analysis results with Site Action Criteria (SAC) developed based on three

broad soil texture categories. The SAC are based on the percentage of oxidisable sulfur or equivalent acid trail (i.e. titratable actual acidity-TAA or titratable potential acidity-TPA) results. There are two categories based on the scale of the proposed disturbance, with the SAC for small scale (i.e. less than 1000 tonnes) works based upon the texture of the soil material and the SAC for large scale works adopting the most sensitive SAC being the SAC for coarse textured soils in small scale works.

Table 2.1: ASSMAC Site Action Criteria based on General Soil Texture Categories

Type of material		Action Criteria 1-1000 tonnes disturbed		Action Criteria if more than 1000 tonnes disturbed	
Texture Range. McDonald at al. (1990)	Approx. clay content (%<0.002 mm)	Sulfur trail % S oxidisable (oven-dry basis) e.g. S_{Cr} or S_{pos}	Acid trail Mol H^+/tonne (oven-dry basis) e.g., TPA or TSA	Sulfur Trail % S oxidisable (oven-dry basis) e.g. S_{Cr} or S_{pos}	Acid trail Mol H^+/tonne (oven-dry basis) e.g., TPA or TSA
Coarse Texture Sands to loamy sands	≤5	0.03	18	0.03	18
Medium texture Sandy loams to light clay	5-40	0.06	36	0.03	18
Fine texture Medium to Heavy clays and silty clays	≥40	0.1	62	0.03	18

Exceedance of the SAC attributable to ASS material generally triggers the need to prepare a management plan and is based on the percentage of oxidisable sulfur (or equivalent TPA, TAA) for broad categories of soil. However, it is noted that other soil properties and constituents may cause acidic conditions in soils that are not related to acid sulfate soil conditions. This may include sources of organic acidity where the soils have a pH of less than 5 and positive titratable actual acidity (TAA) or titratable potential acidity (TPA) but have no detectable sulfur source (i.e. no S%). In this case, exceedance of the Acid Trail SAC does not trigger treatment of these soils (DWAR 2018e[4]).

2.3 Other Regulatory Guidance

Section 105 of the *Contaminated Land Management Act 1997* (CLM Act) allows the Environment Protection Authority (EPA) to "make or approve" guidelines for any purpose related to the objects of the Act. In addition to ASSMAC (1998), this management plan has been prepared with reference to the following:

- *Waste Classification Guidelines Part 1: Classifying Waste* (EPA 2014a);
- *Waste Classification Guidelines Part 4: Acid Sulfate Soils* (EPA 2014b);
- *Contaminated Sites: Guidelines for NSW Site Auditor Scheme*, 3rd Edition, EPA (2017); and
- *Protection of the Environment Operations Act* 1997 (POEO Act) and associated regulations.

Note is also made of the National Acid Sulfate Soil Guidance issued in June 2018 by the Australian Government Department of Agriculture and Water Resources (DAWR), including:

- *National Acid Sulfate Soil Guidance: A Synthesis* (DAWR 2018a);
- *National Strategy for the Management of Coastal Acid Sulfate Soils* (DAWR 2018b);
- *National Acid Sulfate Soils Sampling and Identification Methods Manual (DAWR 2018c);*
- *National Acid Sulfate Soils Sampling and Laboratory Methods Manual (DAWR 2018c);*

[4] *Guideline for the Dredging of Acid Sulfate Soil Sediments and Associated Dredge Spoil Management, Australian Government Department of Agriculture and Water Resources, June 2018 (DAWR 2018e)*

- *Guidance for the Dewatering of Acid Sulfate Soils in Shallow Groundwater Environments* (DAWR 2018d); and
- *Guideline for the Dredging of Acid Sulfate Soil Sediments and Associated Dredge Spoil Management (DAWR 2018e).*

3. Site Condition

3.1 Site Identification

The location and current layout of the site is shown in **Figures 1** and **2** respectively. The site details are summarised in **Table 3.1.**

Table 3.1: Summary of Site Details

Site Legal Identifier (as shown on **Figure 2**)	Lot 1 in DP 740385
Site Address	42 Boorea Street, Lidcombe NSW 2141
Site Area	Approximately 4.1 Ha
Local Government Authority	Cumberland City Council
Approximate Coordinates (GDA 94 Map Grid of Australia (MGA) 56)	Easting: 318880 Northing: 6252528
Current Zoning (Cumberland Local Environmental Plan (LEP) 2021)	Zone IN1 – General Industrial
Current Land Uses	Commercial/Industrial
Proposed Land Uses	Commercial / Industrial (various) consistent with NEPC (2013) commercial land use scenarios.

3.2 Site Description

A detailed site inspection was carried out by one of JBS&G's suitably trained and experienced field scientists on 18 January 2022. The following presents a summary of observationsmade during the site inspection:

- The site comprised an irregular shaped property used for commercial/industrial purposes. A large warehouse (AU Express international cargo and STS Logistics) was situated to the east, with driveway access from Boorea street leading to a security gate. The warehouse operates as a freight/logistics terminal for the distribution of goods arriving from overseas. Several vans and trucks were observed collecting and distributing packages from the warehouse.
- The carpark pavement surface was in generally good condition, with some repaired patches observed near the warehouse in the western portion of the site , possibly relating to former maintenance works. The concrete surface inside the warehouse was in good condition with no obvious cracks or areas of maintenance, however, some areas of staining were evident. Concrete along the eastern laneway was also in good order, with some repaired patches observed.
- Stormwater drains extend along all four sides of the site. JBS&G installed several groundwater monitoring wells during previous works on the site.
- No visual staining or odours were observed across the carpark surface during the site inspection.

3.3 Surrounding Land Use

The current land uses of adjacent properties or properties across adjacent roadways are summarised below.

- North – the site is bound to the north by an operational brewery (Tooheys Pty Ltd), with additional commercial/industrial type buildings further north.
- East – the site is bound to the east by commercial/industrial type buildings, followed by Nyrang Street and low density residential properties to the east.
- South – the site is bound to the east by a commercial/industrial type building, followed by Boorea Street, low density residential properties and recreational parks/sporting fields further south.

- West – the site is bound to the west by Haslam Creek, with commercial/industrial buildings further west.

3.4 Topography

A review of the topographic data accessed from Google Earth[5] indicated that the site has an approximate elevation of around 8 m to 12 m above Australian Height Datum (AHD). The site is relatively flat, with the general site and surrounding land sloping to the northwest towards Haslam Creek.

3.5 Geology and Soils

Review of the 1:100 000 Geology map indicated that the site is underlain by silty to peaty quartz sand, silt and clay with ferruginous and humic cementation in places and common shell layers. Review of the eSPADE[6] database indicated that the site is underlain by gently undulating rises on Wianamatta Group shales and Hawkesbury shale.

3.6 Acid Sulfate Soils

Review of the Acid Sulfate Soil Risk Map[7] indicates that the site exists on disturbed terrain which may include filled areas, which often occur during reclamation of low-lying swamps for urban development. Other disturbed terrain includes areas which have been mined or dredged or have undergone heavy ground disturbance through general urban development or construction of dams or levees.

3.7 Hydrology

The site is predominantly covered by concrete and bitumen, with some vegetated areas along the western and northern boundaries. Precipitation is anticipated to discharge directly to local stormwater infrastructure via numerous stormwater drains located on the site. Rainfall may also infiltrate directly into the soils of landscaped areas. During times of heavy rainfall off site migration may occur as surface run-off. It is anticipated that surface water will discharge via the local stormwater system into the Haslam Creek, located along the northwest boundary of the site, and ultimately into the Parramatta River.

3.8 Hydrogeology

Registered groundwater bore information obtained from Water NSW online search tool (Water NSW 2021[8]) indicated that there were no bores within a 500 radius of the Site. JBS&G installed several groundwater monitoring bores onsite during previous investigations.

Based on the reported geology and topography, groundwater is anticipated to be encountered at relative shallow depths (2-6 m bgs) within residual clay soils overlying bedrock. The direction of groundwater flow is expected to be to the northwest, consistent with the topography sloping downwards in westerly direction, towards Haslam Creek. Deep aquifers are also likely to be present within the underlying fractured sedimentary rock.

[5] Google Earth, earth.google.com/web/ accessed 22 Feb 2022.
[6] eSPADE v2, https://www.environment.nsw.gov.au/eSpade2Webapp accessed 22 Feb 2022.
[7] Prospect/Parramatta River Acid Sulfate Risk Map – Edition Two (9130N3), Department of Land and Conservation of Water. Printed December 1997
[8] Water NSW search tool https://realtimedata.waternsw.com.au/. Accessed 22 Feb 2022.

4. Extent of Acid Sulfate Soils

JBS&G (20229) reported that silty clay fill materials as encountered at depths ranging from 0.3 to 1.3 m bgs comprise non-PASS. As such, these materials will not require management in situations where construction activities result in the disturbance of these materials.

Natural brown/grey/red clay and weathered shale materials are present underlying the fill and comprise a mixture of non-PASS and PASS. Visual and olfactory indicators of PASS within site materials include grey/brown silty clay with and sulfidic odours within the materials. However, based on the current data, the distribution of PASS appears to be randomly distributed within the natural soils at the site. As such, it should be assumed that any construction works that result in the disturbance of natural silty clay materials during site redevelopment will require management, until additional testing (**Section 5.2**) proves otherwise.

[9] *Detailed Site Investigation, 42 Boorea Street, Lidcombe, NSW, 2141*, JBS&G Australia Pty Ltd, 25 February 2022 (JBS&G 2022)

5. Management Procedures

The aim of the following management procedures is to identify ASS/PASS material and implement appropriate mitigation measures such that the potential environmental impacts associated with disturbance of ASS/PASS during the proposed site construction works may be appropriately managed. Specifically, the objectives are to provide:

- A methodology for the identification of materials requiring management;
- Protocols for the on-site treatment and management of ASS/PASS materials and associated leachate water (as required) during the proposed works;
- Excavation inspection and validation assessment protocols to be implemented during the proposed works such that the extent of ASS/PASS material may be delineated from non-ASS material (overlying non-ASS material, residual soils, etc) to provide for off-site disposal of the balance of excavated material without the need for lime stabilisation);
- Water and soil quality targets for the excavation, treatment and removal of ASS material encountered during the proposed works; and
- A contingency framework in the event that: additional ASS conditions are encountered during the site works; monitoring indicates disturbance of off-site ASS materials; or the proposed treatment strategy fails.

5.1 Scope of Soil Disturbance Activities

The proposed development works are anticipated to include the removal of existing site infrastructure, excavation/installation of footings, fixtures, foundations and underground services, all of which may require the excavation of fill material and natural soils that may comprise non-PASS or PASS. It is noted that the final scope of ASS/PASS disturbance activities will be evaluated as per **Section 5.2** and also upon finalisation of the construction requirements/methodologies to be implemented during the works.

5.2 Investigation of Occurrence of ASS and/or PASS Material

Fill materials encountered at depths ranging from 0.3-1.3 m bgs comprise non-PASS and do not require further assessment and/or management during construction works that result in their disturbance.

Should construction works result in the disturbance of underlying natural silty clay materials, then further investigation should be undertaken either prior to the commencement of ground disturbance activities and/or sequentially as areas of disturbance extend across the site so that material requiring management may be identified and treatment requirements established as separate to non-PASS materials.

To evaluate the potential presence and extent of ASS/PASS material within natural soils at the site,the following assessment activities should be undertaken by an appropriately qualified environmental consultant in accordance with the general philosophies outlined in ASSMP (1998)/ DAWR (2018) with regard to the identification of ASS/PASS material:

- In transitional zones between areas of likely disturbance and those of no disturbance, sufficient sampling should be completed to ensure management requirements may be suitably understood prior to commencement of works. Each sampling location should be extended to the depth of disturbance;
- Visual inspection and sampling of representative soil profiles of damp to saturated soil at a frequency of no less than one sample per 1 m per metre depth interval, or discrete strata, ateach sampling location. Each sample should be the subject of field pHf and pHfox

tests;

- Based on the inspection and field testing results, no less than one sample per 1 metre permaterial type per area/material type should subsequently be selected for sPOCAS or chromium reducible sulfur (SCr) laboratory analysis to confirm the presence/absence of ASS/PASS material requiring management;
- Based upon the results of the field and laboratory analysis program, an inferred plan of the lateral and vertical extent of ASS/PASS requiring management will be provided to the Principal Contractor. In addition, the laboratory data will be used to identify anticipated liming requirements for ASS/PASS material types at the site (where appropriate); and
- The results of the assessment will provide a line of evidence for the validation of materialbeyond the ASS/PASS zone (if identified) for characterisation of the balance of surrounding/overlying soils as non-ASS material.

5.3 Evaluation of Potential Management Strategies

Where the presence of ASS/PASS has been identified, evaluation of options to minimise the level of disturbance and to mitigate the potential impact of disturbance (if necessary) of the materials is required. As per ASSMP (1998)/DAWR (2018), potential mitigation approaches have been identified:

- Avoid ASS materials being encountered during works by not undertaking the proposed development works or by altering the proposed development plans, i.e. removing excavation and/or dewatering requirements, use of non-intrusive/less intrusive trenching, pile installation, etc methods;
- Where encountering ASS/PASS during works cannot be avoided, manage the potential for acid generation by neutralising disturbed materials, preventing movement of acid impacted water, and the use of suitable construction materials;
- If ASS/PASS materials have previously been disturbed, undertake works to mitigate the existing conditions, minimise the production of further acid during the proposed works and rehabilitate impacted areas;
- Treat soil by allowing full oxidation of the sulfide component under controlled conditions followed by flushing the acid from the soil with water and neutralisation of the subsequent leachate; and/or
- Reburial of ASS/PASS materials beneath the permanent water table or beneath a dense soil profile which excludes oxygen exposure such as an engineered clay cap. This may be undertaken on-site if there are low lying areas where reburial and consequential flooding of the soil profile or construction of a suitable capping layer can be undertaken as part of development works.

The potential suitability of the various options is further discussed in the following sections.

5.3.1 Avoidance Strategies

Avoidance of ASS/PASS disturbance is generally considered to be the preferred means of ASS/PASS risk management where such actions can be achieved. However, given the anticipated extent of the development footprint associated with foundations, fixtures, footings and in ground service installation requirements, the use of avoidance as a large scale risk management strategy may not be a suitable option at the site in lieu of environmental sampling/analysis to identify the presence or extent of non-PASS and potential PASS materials.

5.3.2 Management by Neutralisation

Neutralisation techniques can be used to treat ASS by the addition of chemicals that react with the produced acid to ensure that acid is not released from the treated material. The neutralisation activities should result in the pH of the disturbed materials (water, sediment and/or soil) being between 5.5 to 7.5 and requires that ASS material disturbed during site activities be treated with the preferred neutralising agent.

Laboratory analysis is used to assess the levels of existing and/or actual acidity and indicates the level of neutralising capacity required to react with all potential acidity that may be generated during/following disturbance of the ASS material.

The potential uncertainty associated with the quantity of neutralising capacity to be added is commonly managed by the use of a factor of safety of 1.2 or 2 depending upon the level of uncertainty.

Sufficient capacity in terms of a suitable treatment area, machinery, budget to purchase the neutralising agent and time is necessary to successfully implement ASS neutralisation. Implementation of environmental controls is also necessary to ensure that all potentially acidic leachate produced during the treatment process is captured and adequately treated and that heavy metals which may be released during oxidation of ASS material are also appropriately managed.

An evaluation of potential neutralisation chemicals should be undertaken during the planning process and appropriate quantities of the preferred chemicals sourced for the duration of the site activities.

For the purposes of this plan, the neutralising chemical is assumed to be high quality agricultural lime (aglime). The aglime should be fine ground (<1mm) calcium carbonate ($CaCO_3$) or calcite (limestone or marble powder).

During works, a sufficient supply of agricultural lime (aglime) will be required to be kept on site at all times. The quantity is based on requirements for the treatment of ASS to be neutralised within the treatment area; for application on exposed excavation faces where ASS is expected or suspected; and for wet weather events where existing applications will require replacement and/or treatment of acidic water is necessary. Receipts, dockets and other field records showing the storage locations of all chemicals and location of all applications of neutralising agents must be kept.

ASS management by neutralisation is considered a suitable option for the proposed works as:

- Via staging of the minor excavation/piling etc. works, a contractor will be able to ensure sufficient space can be made available within the site to set aside a treatment area(s) close to the identified ASS disturbance which can be hydraulically isolated from the remainder of the site;
- The proposed works are able to be staged in a manner which will allow treatment of ASS material in a timely manner;
- Appropriate machinery to mix the soil and neutralisation chemicals can be supplied by the civil works/earthworks contractors completing works on site; and
- Following successful completion of the neutralisation process, the treated soils are no longer considered to be ASS materials and so may be removed off-site as waste or alternatively re-used on site.

5.3.3 Full Oxidation and Leachate Collection

In the event that the acid production potential is relatively low, or there is a relatively low quantity of material to be treated, consideration may be given to the excavation and exposure of the soils to promote full oxidation. This option requires the implementation of environmental controls to

ensure that all acid produced is flushed from the soil as leachate. Similar to management by neutralisation, a suitable treatment area is necessary where material can be spread and reworked to allow oxygen to react with the sulfides in the soil and where all leachate produced can be captured and treated by neutralisation.

This method is considered not to be a viable option for the proposed works as the process of soil oxidation may take extended periods (weeks to months) to reach completion. There is also a significant level of uncertainty in the volumes of leachate that would require neutralisation and disposal due to climatic variation, including rainfall events. Given the volume of material that may require treatment, the requirement to maintain environmental controls for this period and the potential for such works to extend the civil works program, this option is considered undesirable when compared to the relatively low cost of neutralisation chemicals as discussed in **Section 5.3.2** above.

5.3.4 Reburial of ASS Material

Strategic reburial or interment techniques can be used to manage PASS material by prevention of oxidation through permanent storage in an anoxic environment. These techniques are often adopted where areas are available for reburial and cost savings can be achieved by avoiding soil handling labour and neutralisation chemical costs. An alternative method of achieving reburial is over excavation of non-acid sulfate soil materials followed by reinstatement of the excavation with potential ASS material. Potential reburial sites must have a permanent groundwater table level above the proposed top of the reburial cell or alternatively measures to minimise oxygen exposure to ensure that the material is returned to an anoxic environment.

Reburial may occur within the site or alternatively, where appropriate licences are obtained, at a site lawfully able to accept this material in accordance with the requirements of EPA (2014).

Excavation of ASS and creation of re-interment voids must be staged to ensure that adequate space is available for all ASS materials to be adequately reburied below a permanent water table and that the ASS will not be buried in conditions that may cause the formation of acidic conditions. A maximum period of time between the commencement of disturbance and completion of interment works of approximately 48 hours should be adopted in all instances. If the material is to remain exposed for longer the 24 hours, the pH levels should be monitored every 12 hours to ensure acid conditions are not developing.

On this site, given the anticipated limited number of excavations to accommodate foundations, footings and fixtures including piling works, strategic reburial of PASS material sourced from within the site, without neutralisation is not considered a viable/recommended option.

5.3.5 Separation Techniques

Separation techniques are increasingly being implemented to reduce the quantity of PASS material requiring treatment in areas where works include the disturbance of large quantities of PASS. These activities include the removal of fine ASS particles including pyrite and monosulfides from coarser grained soil particles. This results in two material streams, concentrated ‘ASS fines’ and non-ASS material which can be removed from the management process. Management of ASS fines would then involve implementation of other ASS management techniques such as reburial, neutralisation, etc.

Separation is typically implemented by creating a soil slurry where fine particles can be suspended in solution away from heavier soil particles using methods such as sluicing or cycloning. Typically, such methods require suitably grained soils such as sand or non-consolidated sediments and a significant water source to implement the separation.

Environmental controls are required during the separation processes to ensure that the PASS fines do not undergo oxidation prior to the implementation of other management measures and

validation of the non-ASS stream would then be necessary to confirm that the ASS fines have been adequately removed.

On this site, separation techniques are considered not to be a viable management option as it is anticipated that the majority of the material that may require management is fine-grained clays, thereby limiting the efficacy of the technique.

5.3.6 Selection of Preferred Management Strategies

Evaluation of potential management strategies has identified the use of neutralisation techniques, where disturbance cannot be avoided (as discussed in **Section 5.4** following), as the most appropriate technique for management of disturbed soil across the majority of this site.

Management measures for excavated ASS/PASS material will include the application of neutralisation chemicals, neutralisation of exposed excavation faces during staged treatment works and neutralisation of groundwater seepage and drainage leachate produced during the excavation and treatment works. Following validation to confirm the acid generation potential of the material has been appropriately neutralised, the material will either be set aside for use as engineered fill material within the site, or alternatively, will require off-site disposal in accordance with the requirements of EPA (2014).

5.4 General Site Management Strategy

The site management strategy to be implemented during works which may disturb ASS/PASS materials as identified via works described in **Section 5.2** will ensure the following:

- Adequate treatment of ASS/PASS material such that there is sufficient acid neutralizing capacity and no net acidity following stabilization (as measured through appropriate field testing and laboratory validation);
- Water discharged from the excavation and treatment areas (including run-off, water from dewatering and leachate) is neutral and discharged to stormwater once it has been shown to meet with the criteria specified in this plan, shall be reused on site, or alternatively reused on site for dust suppression;
- Surface/groundwater quality indicators and levels are not significantly changed beyond the construction footprint from the existing levels/quality during excavation activities and are re-established after the completion of construction works; and
- Implementation of additional assessment procedures during earthworks operations for the effective treatment and management of any drained, disturbed or excavated acid sulfate soils.

5.4.1 Pre-disturbance Works

Subsequent to the additional investigation activities as identified in **Section 5.2**, and prior to the commencement of any ground disturbance works which may disturb ASS/PASS materials at the site, including demolition and piling activities with the potential to disturb soils and/or generate spoil, the following preparations should be implemented:

- The sequencing of proposed piling, excavation, services installation and other activities should be planned in detail, taking into account the time and space necessary to complete the ASS/PASS management activities outlined in this document. The planning should provide a contingency for treatment of additional quantities of materials in the event that requirements for the disturbance of additional ASS/PASS material is identified following the commencement of site works, or heavy rainfall/storm events result in significant additional quantities of collected impacted water; and

- The actual areas of ASS/PASS occurrence where disturbance/excavation will occur during each stage of works (piling, excavation, services installation, etc.) as part of the site activities should be identified and suitable location(s) for treatment areas close to the areas of disturbance identified. Based on the proposed works, the available space for treatment and the approximate volume anticipated to be disturbed, staging of the disturbance activities should then be planned such that sufficient drying and mixing time can be achieved for all materials needing treatment. The staging should also allow for adequate time to obtain the results of verification testing before the material is placed at the final location or removed from the site.

5.4.2 Neutralisation Chemicals

An evaluation of potential neutralisation chemicals should be undertaken during the planning process and appropriate quantities of the preferred chemicals sourced for the duration of the site activities. For the purposes of this plan, the neutralising chemical is assumed to be high quality agricultural lime (aglime). The aglime should be fine ground (<1 mm) calcium carbonate ($CaCO_3$) or calcite (limestone or marble powder). In the event that neutralising products other than high quality aglime are selected for use in this project, there are several issues that should be considered:

- Is there any potential environmental risk associated with use of the compounds (i.e. other components that may contaminate water, result in a much higher pH value (i.e. hydrated lime), stain treatment areas, etc); and
- Will the neutralising agent be of comparable effectiveness or will properties including: neutralising value, effective neutralising capacity, solubility, pH, chemical components, moisture content, impurities and particle size; require the quantity of agent addition to be varied by a consistent factor.

It is recommended that a small scale treatment trial be implemented at the commencement of site works prior to broad scale implementation of alternative neutralising compounds. The small scale trials should document the effectiveness of the revised approach in terms of the time, cost, availability, suitability, etc. Consideration as to the feasibility of dewatering material and associated management of separated water and solids will also be required. Alternatively, consideration may be given to disposal of all material as liquid waste (as per EPA 2014 requirements).

5.4.3 Treatment Area Design

As noted above, the treatment area should be situated in an appropriate location(s) with respect to site disturbance activities. In addition, consideration should also be given to the ease with which environmental controls can be implemented and potential requirement for off-site disposal of the material once stabilised and validated.

Small Quantities

For small scale disturbance activities, it is anticipated that a large lined skip bin or suitable structure could be used as a 'treatment cell' to minimise the potential for release of acidic leachate or partially treated soil. This may be appropriate for the treatment of piling spoil or minor trenching activities.

Significant Excavation Quantities

Should quantities of material disturbed in a staged manner exceed that able to be managed in a large skip bin, a treatment area should be established with consideration of the following:

- The treatment area should be established separate to the area of disturbance but able to be accessed from the area of disturbance by plant/vehicles transporting the material to be treated and material to be removed from the treatment area at the completion of stabilisation activities;

- The treatment areas should be sufficiently large to facilitate a pre-treatment stockpile area, a treatment pad, water/sediment collection and treatment measures, post treatment stockpile storage area and lime storage area;
- The treatment area should be isolated from major external surface water catchments, including overland surface water flow and potential flood water, excavation flooding by rainfall events, by ground surface contouring, installation of perimeter drains or bunds covered with an impervious layer (concrete, geomembrane, compacted non-ASS clay, etc.);
- Infiltration of surface water (rain or drainage) through the ASS to groundwater or nearby surface waters from the treatment area should also be prevented to the extent possible. A layer of lime stabilised soil should be prepared on the ground surface within the treatment area that will act to neutralise any acidic water that my infiltrate the ground surface during treatment activities. The minimum application should be no less than 5 kg lime/m^2 of treatment area. This application should not be taken into account when material to be treated is placed within the treatment area as the neutralisation capacity of these added chemicals will decrease with time as a result of insoluble iron coating generation and it is difficult to ensure that there has been adequate mixing of the neutralising agent within the soil added to the site;
- Pre-treatment and post-treatment stockpile areas should be separately bunded or drained to minimise the potential for re-acidification of treated material;
- The treatment pad should be of a size that would allow treatment of material by a single machine over a reasonable timeframe to minimise the oxidation of material during spreading and treatment. Assuming the material subject of treatment is spread to a depth of approximately 0.3 m, a single treatment area 10 m by 20 m could treat 60 m^3 of material per treatment cycle. Should capacity to treat more material be required, two or three treatment pads could be established, separated by a suitable width to allow for excavator movement between the bunds of each pad;
- The bund surrounding each treatment pad may be constructed of concrete, compacted non-ASS clay, sand and lime filled sandbags or other suitable materials that are relatively impervious and can be coated with a guard layer of lime to neutralise acidic leachate that may contact the bund;
- The base of the treatment pad should be surfaced with concrete, asphaltic concrete, or soil mixed with lime as discussed above. This base should be graded where possible at a minimum fall of 1° to facilitate drainage of leachate such that it can be collected and/or pumped to a treatment/holding tank;
- Once well mixed with a suitable quantity of neutralisation agent, the material should be transferred to the post treatment stockpile area, where the validation testing will be completed and the material will remain until receipt of the validation results. The material will then be cleared for beneficial reuse within the site, or alternatively for off-site disposal to landfill;
- Surface water flows will be diverted around the treatment area where possible. Water falling within the various portions of the treatment area will be collected at appropriate locations and transferred either to a holding tank or artificial detention basin. The water quality will be monitored to ensure only water of suitable quality is discharged from the treatment area of the site. Dilution of water collected within the treatment area is not an acceptable method of treatment at this site. Contaminants resulting from oxidation of ASS should be collected, treated and/or managed on-site. Water discharges from the site must not have a significant impact on pH, buffering capacity, turbidity, colour or ionic

composition of the receiving water body (stormwater, groundwater, sewer, etc) as per the requirements of the POEO Act (1997);

- A sufficient supply of aglime should be kept on site at all times for the treatment of ASS to be neutralised within the treatment area, for application on exposed excavation faces where ASS is expected or suspected; and for wet weather events where existing applications will require replacement and/or treatment of acidic water is necessary. Receipts, dockets and other field records showing the storage locations of all chemicals and location of all applications of neutralising agents must be kept; and
- The supply shall be stored in a covered and bunded area to prevent accidental exposure to water and deterioration of the inherent neutralizing capacity. ASS treatment materials should be stored in a manner that minimise the exposure of the materials to wet or humid conditions. Such conditions may result in the clumping or surface crusting of particulate lime which can reduce the level of effectiveness in neutralising water or soil.

5.4.4 General Site Management

All soils must be treated as ASS material until such a time as the material is demonstrated to be non-ASS material or treatment effectively reduces the risk associated with the material and validation results meet the relevant specifications.

ASS/PASS materials that have been excavated (or otherwise brought to the ground/water surface) should be immediately transferred to the treatment area or treated in-situ as soon as practicable to minimise the quantity of soil, sediment and/or water requiring treatment and the risk of environmental harm to the site and/or down-gradient receptors.

Bunding, diversion drains, contaminated water treatment/containment etc. may be used to contain surface water run-off from ASS storage and treatment areas. However, ASS materials must not be used in the construction of bunds and other diversion devices.

Equipment used in the treatment of ASS shall be washed with an alkaline solution at the completion of each work period to minimize corrosion of equipment.

5.4.5 Excavation Works

Excavation works (other than the re-profiling activities) should be undertaken in the following manner:

- Any material identified as non-ASS (as determined through investigations as detailed in **Section 5.2**) is to be removed from within the ASS zone footprint and treatment area;
- Materials identified as ASS, or suspected to comprise physical properties indicative of ASS should be assumed to be ASS unless demonstrated otherwise;
- Works including disturbance of
- ASS materials will be subject to field testing upon initial exposure of each soil horizon. Field testing will include pH_f and post peroxide pH_{fox}, with both required to meet the validation criteria of pH 6 to be considered non-ASS soil. Alternatively, dependent upon the scheduling of the excavation works, laboratory pre-testing of soils from this zone may be undertaken using sPOCAS or S_{Cr} methods. If either the field criteria or laboratory analysis results indicate the material is considered to be ASS, then the material will require treatment as discussed in the following section;
- At the completion of the day's activities, where excavation works result in the exposure of known or suspected ASS, a guard layer of fine aglime will be applied to the base of the excavation at a rate of 5 kg lime/m^2 of exposed soil. If the base of the excavation is to remain exposed for an extended period (i.e. more than three days) the lime coating

should be checked and re-limed as necessary. Alternatively, the lime may be covered with a layer of compacted non-ASS material at least 0.3 m in thickness;

- All cut batters/exposed faces potentially including ASS, (i.e. faces at the edge of excavation faces, etc), shall be coated with fine aglime at a rate of 5 kg/m^2 and the lime coating should be checked and re-limed as necessary on a daily basis during periods of dewatering, if required, whilst the faces are temporarily exposed and/or following wet weather events.

5.4.6 Treatment of Excavated PASS Material

Treatment of ASS soils will comprise the addition of sufficient quantities of finely ground neutralising agent to treat all oxidisable S% and actual acidity and provide a factor of safety to compensate for potential impurities in the neutralising agent, non-homogenous mixing and limitations to the solubility of the neutralising agent. This will need to be determined on the basis of analysis data collected as per **Section 5.2**.

The excavated ASS material will be immediately transferred to the treatment area and placed either in a stockpile within the pre-treatment stockpile area or immediately on the treatment pad. Treatment of excavated material should occur within one day of excavation of the material.

If stockpiled, the material should be formed into a conical stockpile to minimise the exposure of the material to air. In the event of significant wet weather periods, the stockpiles should be covered with builder's plastic or similar to limit the infiltration of rainfall into the stockpiles.

If site conditions require the stockpiling of material for longer than 24 hours, the stockpiles should be treated with a guard layer of aglime of 5 kg lime/ m^2 per vertical metre of soil in the stockpile. This would result in a two metre high stockpile requiring an application of 10 kg lime/m^2 surface area. The stockpile should then be covered with an impervious surface (i.e. builder's plastic) that covers the top and sides of the stockpile to minimise drying by wind and sun and to prevent rainfall entering the stockpile.

Following placement within the treatment pad, the material should be spread to a depth that will allow the material to be properly treated by thoroughly mixing neutralising agent through the soil. The actual depth of spreading will be somewhat dependent upon the soil type, the machinery used to mix the material and the form of the neutralising agent. However, the nominal spread depth should initially be no more than 0.3 m. Mixing of the lime and soil mixture may be undertaken by harrowing, rotary hoeing, using an excavator shaker bucket to blend the material, the use of a pug mill or similar equipment.

Care shall be taken to ensure that mixing occurs throughout the depth of the layer. The soil must be managed to achieve a consistency that will allow for thorough mixing of the soil and neutralising agent to ensure that the effective neutralisation occurs. This may require drying of the disturbed material (with associated management of any acidic leachate and other resulting contaminants), mechanical turning and breaking up of soil. Drying should not be undertaken during foreseeable wet weather events due to the increased risk of runoff flushing acid from the material and into uncontrolled areas.

Following mixing, aglime shall be spread at a rate of approximately 5 kg lime/m^2 around the toe of the treated soil, around a 1 m perimeter between the toe of the material and across the exposed face of the bund to neutralise any leachate released from the soil. Once the soil has sufficiently dried that no more leachate is being released, the material should be turned to ensure that all leachate is released from the treatment area.

If there is a likelihood that neutralisation treatment of particular soils encountered during works (i.e. heavy clays) will not be effective for the soil type/s, a small scale trial to demonstrate that the proposal is practical should be performed before larger scale disturbance of this soil type.

5.4.7 Water Management During Treatment

Surface drainage and groundwater that comes into contact with ASS materials has the potential to become acidic and contaminated with heavy metals leached from the acidified soil. Sources of water may include ground surface drainage associated with rainfall, dewatering product produced during the excavation works, leachate produced during treatment of excavated soils, and groundwater inflow into open excavations.

In general, soil and water at the site is required to be managed under a Construction Environmental Management Plan (CEMP) or similar document, that will be prepared for the site prior to the commencement of site works. However, in addition to these requirements, water from within the treatment area will be required to be collected, assessed and if necessary treated prior to discharge from the site. Once pH, suspended sediment and contaminant concentrations are considered suitable for discharge from the site, the water may be used for dust suppression at the site and/or released to the site stormwater system.

Additional water holding tanks may be necessary in the vicinity of the treatment works zones to store collected water prior to treatment. The water holding capacity directly related to the acid sulfate soil excavation and treatment areas should be maintained at a minimum quantity associated with a 1 in 10 year rainfall event to ensure that sufficient capacity is available to store all potentially acidic water that may be generated during site works.

Water will be neutralised, where required by the addition of lime (or equivalent alkaline product) within a dedicated treatment tank or lined detention basin. Lime shall be added incrementally and thoroughly mixed within the treatment vessel. Approximate lime application rates based on initial pH are provided in **Table 5.1** below.

Table 5.1: Treatment of Acidic Dewater

Water pH	Agricultural Lime / 1000L Water
0.5	11.7kg
1.0	3.7kg
1.5	1.2kg
2.0	0.37kg
2.5	0.12kg
3.0	37g
3.5	12g
4.0	4g
4.5	1.2g
5.0	0.37g
5.5	0.12g

Lime addition and mixing shall continue until the pH of the water is within the range of 6.5 – 8.5.

In the event water volumes greater than the capacity of the water treatment holding capacity are produced during the acid sulfate soil management activities, consideration should be given to off-site disposal of water via a licensed contractor or treatment of water using neutralisation chemical dosing within holding tanks prior to re-irrigation of open excavations once the pH of the water has been demonstrated to be suitable.

5.4.8 Validation of Treated PASS Material

Following the application and mixing of lime to the ASS at the treatment pad the material should be allowed to stand for a minimum of 48 hours prior to validation assessment. The spread soil should then be assessed to establish whether the following performance criteria have been achieved:

- The neutralising capacity of the treated soil must exceed the sum of the TAA and TPA of the soil, i.e. there is no net acidity in the soil as measured by sPOCAS / SCr < 0.03%S;
- Post neutralisation, the soil pH is greater than pH 5.5 (and preferably less than 9); and

- Excess neutralising potential should remain in the soil as all acid generation reactions may not be complete and so the soil may still have further capacity to generate acidity.

Validation testing using field tests to measure the soil/water pH shall be undertaken at a rate of ten samples per treatment batch (to a maximum quantity of 100 m^3, or a rate of 1 sample per 20 m^3). Field testing will include pH_f and post treatment peroxide pH_{fox}, with both required to meet the post neutralisation criteria noted above for all samples per treatment batch.

Confirmatory laboratory analysis (pH and sPOCAS / SCr) will be undertaken at a rate of one sample per treatment batch (to a maximum quantity of 100 m^3, or a rate of 1 sample per 100 m^3 for larger quantities). The samples obtained for laboratory analysis may be obtained by compositing three subsamples obtained from the treatment material to provide a broader indication of net acidity levels. All samples will be obtained from no less than 0.1 m below the stockpile surface at the time of sampling to ensure representative samples are obtained for field testing/laboratory analysis.

Samples should be obtained immediately following movement of the material from the treatment pad area to the post-treatment stockpile area of the treatment zone. Each stockpile should be identified with a unique identifier and its location logged with the laboratory validation sample identification so that laboratory results can then be matched to each stockpile within the post-treatment area. Following additional applications of neutralisation chemicals, a greater density of validation sampling is necessary to confirm the successful neutralisation.

In the presence of positive field validation tests, laboratory analysis of validation samples may be employed to determine the level of net acidity and confirm that the treatment has been successful, or provide an indication of the quantity of further aglime application necessary to neutralise the soil.

If negative field tests occur but the confirmatory laboratory analysis results indicate that there is still net acidity, a further application of aglime will be mixed with material to ensure additional neutralisation capacity, prior to further confirmatory analysis.

Following receipt and logging of the successful laboratory validation results, the stockpile may then be released for beneficial reuse of material at the site, or alternatively, for off-site disposal. In the event that laboratory results indicate that the stockpile requires further treatment, the material should be returned to the treatment pad as a unique treatment batch and treated as required prior to re-sampling.

5.4.9 Site Condition Monitoring

It is anticipated that monitoring of conditions will be undertaken by both the site contractors and an independent appropriately qualified consultant to ensure that the appropriate environmental controls are in place and the treatment strategy is minimising the environmental risk associated with the ASS materials.

The following inspection/monitoring regime will be implemented during the site works period and documented as appropriate to demonstrate compliance with this ASSMP:

- Stockpiles of material within the treatment area and of treated material will be inspected daily by the site contractors with pH measurements of any retained leachate taken and recorded. In the event that leachate is significantly acidic (pH < 5.0), the stockpiled material will be returned to the pre-treatment area until the laboratory results are available and the quantity of required additional lime application is known;
- In the event that an on-site sump/detention basin is used to manage water ingress, surface water monitoring points will be sampled and field tested and the pH recorded every day by site contractors during active site activities and weekly during periods where no active ground works are being undertaken within the ASS area; and

- All treated excavation faces to be retained for more than three days will be inspected on the third morning and lime reapplied as necessary each following morning.

Regular inspection of all excavation and treatment areas will be undertaken to identify potential indications of PASS oxidation. These inspections should note:

- Unexplained scalding, corrosion or degradation of onsite steel equipment and concrete paved surfaces;
- Formation of the mineral jarosite or other acidic salts in exposed or excavated soils;
- Areas of surface water blue-green, blue-white in colour or extremely clarified indicating high concentrations of aluminium;
- Rust coloured deposits on excavation faces, in drainage paths, on bunds, channels, etc indicating iron precipitates; and
- Such inspections should also identify the presence of unusual odours, including strong organic or sulfurous smells (i.e. rotten egg gas).

5.4.10 Removal of Neutralised ASS Material from the Site

Only material confirmed to be below the criteria listed in **Section 5.4.8** will be considered as stabilised ASS material for potential reuse within or removal from the site. Once stabilised, the material will be provided a final waste classification as per the requirements of EPA (2014) for off-site disposal to a lawful facility. A final round of field pH testing should be undertaken prior to loading of the trucks to ensure that pH levels remain above 6. Should material continue to have a high moisture content, consideration may be given to off-site removal as liquid waste as per EPA (2014).

6. Responsibilities

The selection of samples for environmental analysis as per **Section 5.2** shall be undertaken by a suitably qualified and experienced environmental consultant. Results of analysis shall be assessed and evaluated by a suitably qualified and experienced consultant.

Implementation of the physical treatment, material management and environmental controls portions of this ASSMP will be the responsibility of the site contractor engaged to complete construction earthworks within the site. The monitoring of conditions, unless otherwise specified in the monitoring sections will be the responsibility of a suitable qualified environmental consultant who will regularly inspect the site, the treatment area and treatment activities and implement the validation assessments to document compliance with this ASSMP.

The contractor should appoint a foreman or other responsible employee to undertake the appropriate monitoring activities as designated in this ASSMP. This person should be appropriately trained by the environmental consultant in all actions to be completed by the contractor. Where doubt arises concerning the results of the inspections or of field test validity, the environmental consultant should be contacted for verification of appropriate actions.

The contractor is not authorised to make any changes to this ASSMP or implement unapproved variations to the treatment and/or monitoring protocols outlined in this document unless explicit written approval is obtained from the environmental consultant prior to implementation of the changes.

Where ambiguity or conflicts in procedures arise, it is the contractor's responsibility to seek clarification on appropriate actions from the environmental consultant.

ASS mitigation measures should be documented as they apply to all individual works activities to be undertaken at the site. All persons responsible for the works activities should be made aware of their responsibilities in writing and suitable ASS management training should be provided to those persons to ensure that the responsibilities can be achieved.

Where contingency actions are necessary, or in the event that non-compliance with the ASSMP is identified by the contractor, the environmental consultant should be immediately informed in writing. The environmental consultant will then be obliged to provide a timely response documenting the necessary corrective actions.

7. Contingencies

In the event of unexpected events, including the failure of management measures as described in this ASSMP, the associated environmental risk will be managed by the evaluation and implementation of the contingency procedures and mitigation strategies.

7.1 General Site Management Activities

7.1.1 Failure of Initial Acid Neutralisation Treatment

As described in **Section 5.4.8** following the treatment of materials within the treatment pad area, validation sampling will be completed to assess the success of the neutralisation process prior to removal of the material from the holding area. In the event that the validation testing indicates that neutralisation of the material is incomplete (i.e. pH<6 or S>0.03 %), a further application of lime and repeat of the treatment procedure will be undertaken prior to further validation assessment. If the proposed techniques fail, further consideration may be given to alternative management strategies as outlined in **Section 5.3**.

7.1.2 Significant Acidification of Surface Water

Monitoring of contained water conditions within the site will be undertaken prior to the commencement of site disturbance activities and during the period of disturbance as ASS conditions are identified as outlined in **Section 5.4.9**. Should the works identify the acidification of contained water not directly related to the treatment area, all works associated with the potential disturbance of ASS at the site shall cease.

Active exposure areas will require to be limed with a guard layer of at least 5 kg lime/m^2 exposed soil and all treatment areas will be checked to ensure that leachate and water migration is not occurring onto exposed soils or into surface water drainage channels at the site. If these activities identify a source of the increased acidity, remedial actions will be implemented to prevent the further occurrence of acidification at the site.

If these activities do not identify the source of the added acidity, or alternatively, if conditions are not corrected by the addition of lime, consideration may be required to the construction of a subsurface limestone treatment trench along the site boundary to neutralise groundwater prior to movement off-site. The design of such a barrier will be highly dependent upon the stage of the disturbance works at the site and extent of the acidic plume identified in this section of the site. Disturbance works within the ASS area should not recommence until the barrier has been installed to limit the generation of additional acidic groundwater.

8. Conclusions

Site characterisation assessment data available for subsurface conditions across the site has identified the occurrence of PASS material, primarily consisting of natural soils at a depth of greaterthan 1.3 m bgs.

Where existing and future assessment data identifies the presence of ASS/PASS materials that may be disturbed during construction activities, the measures identified in this acid sulfate soil management plan (ASSMP) provide appropriate procedures to manage the risks associated with the proposed activities. If successfully implemented, these measures will minimise the environmental risks associated with disturbance of the PASS materials.

9. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

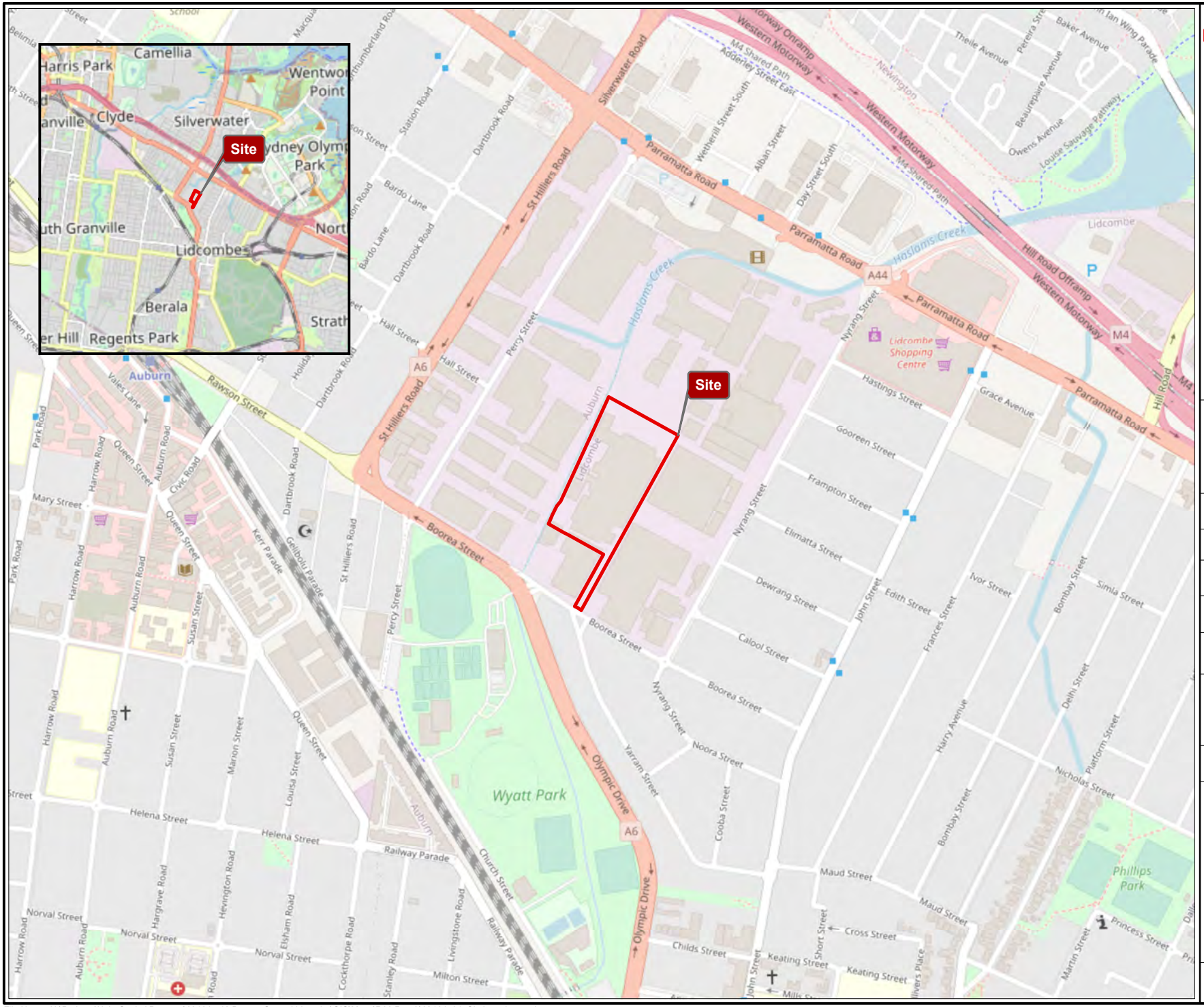
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures



Legend

Approximate Site Boundary

JBS&G

Job No: 62184	
Client: Hale Property Services Pty Ltd	
Version: R03 Rev A	Date 23/02/2022
Drawn By: JA	Checked By: MD

Scale 1:10,000

0 200 400

metres

Coord. Sys. GDA 1994 MGA Zone 56

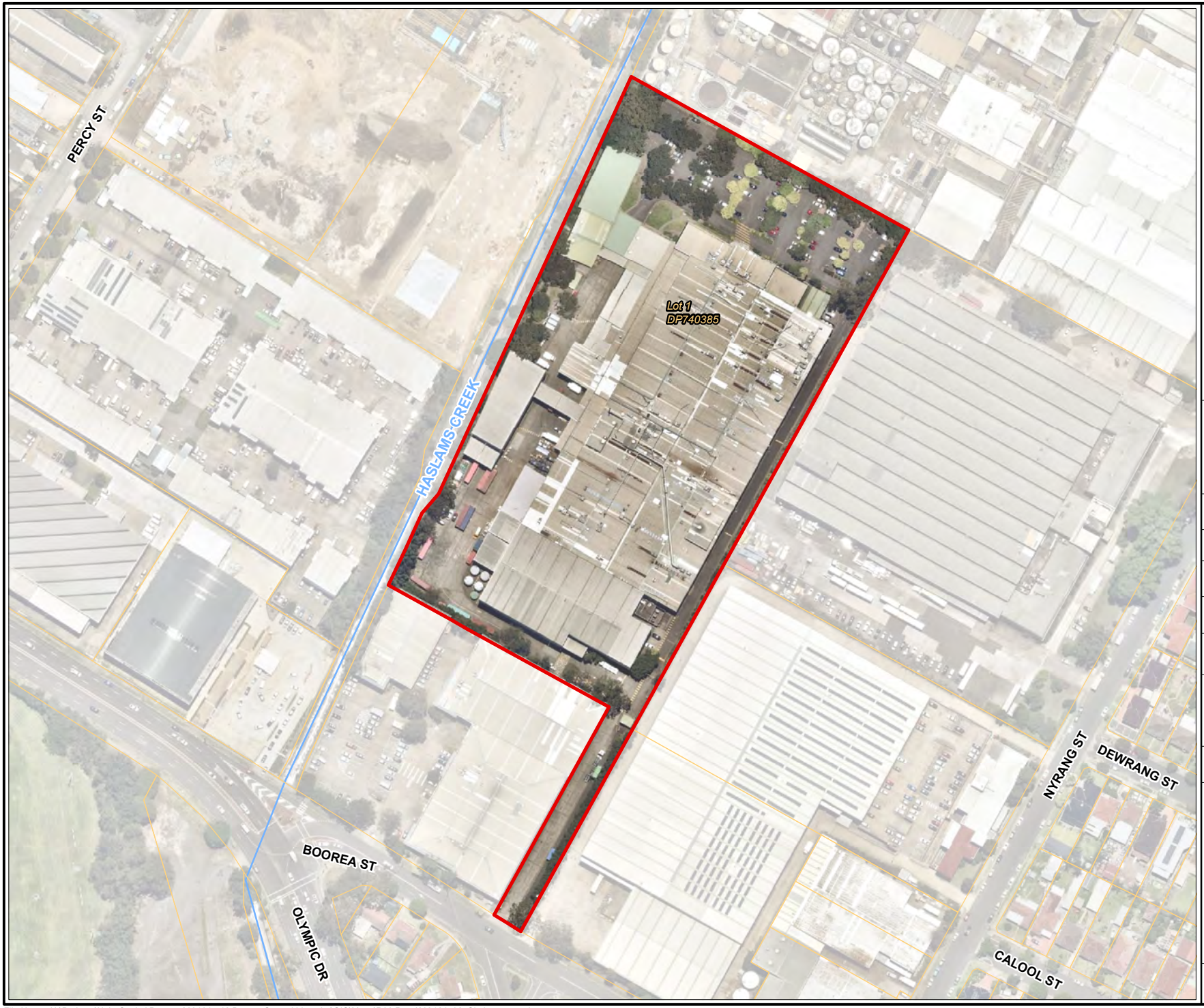
42-44 Boorea Street, Lidcombe, NSW

SITE LOCATION

FIGURE 1

File Name: N:\Projects\Hale Capital Partners\62184 - 42 Boorea Street Lidcombe\GIS\Maps\R03 Rev A\62184_01_SiteLocation.mxd

Reference: © OpenStreetMap (and) contributors, CC-BY-SA



Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)

JBS&G

Job No: 62184

Client: Hale Property Services Pty Ltd

Version: R03 Rev A	Date 23/02/2022
Drawn By: JA	Checked By: MD

Scale 1:2,500

0 50 100

metres

Coord. Sys. GDA 1994 MGA Zone 56

42-44 Boorea Street, Lidcombe, NSW

SITE LAYOUT

FIGURE 2

File Name: N:\Projects\Hale Capital Partners\62184 - 42 Boorea Street Lidcombe\GIS\Maps\R03 Rev A\62184_02_SiteLayout.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 21/12/2021)

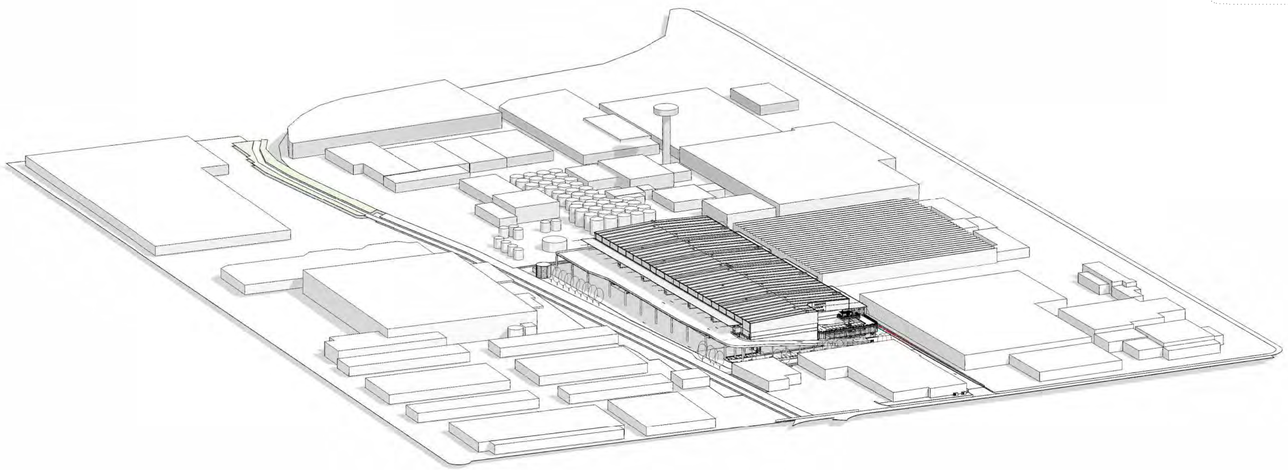
Appendix A Development Plans

HALE

42-44 BOOREA STREET, LIDCOMBE
PROPOSED INDUSTRIAL DEVELOPMENT

DRAWING LIST

Sheet Number	Sheet Name	Current Revision
DA000	COVERPAGE	H
DA010	3D - 1	H
DA011	3D - 2	H
DA012	3D - 3	H
DA013	3D - 4	H
DA050	SITE ANALYSIS PLAN & SUMMARY	F
DA100	GROUND FLOOR	J
DA101	GROUND FLOOR MEZZ PLAN	E
DA102	LEVEL 1 OFFICE ACCESS	E
DA103	LEVEL 1	I
DA104	ROOF PLAN	E
DA105	SERVICES/CONSTRAINS PLAN	H
DA106	SERVICES/CONSTRAINS PLAN	H
DA107	GFA PLANS	F
DA120	OFFICES - GROUND 01 - 02	E
DA121	OFFICES - GROUND 03 - 04	D
DA125	OFFICE - LEVEL 1 - 05 - 06	D
DA126	OFFICE - LEVEL 1 - 07 - 08	D
DA127	OFFICE - LEVEL 1 - 09 - 10	D
DA130	DOCK OFFICES	B
DA200	ELEVATIONS	F
DA300	SECTIONS	H
DA301	SECTIONS	D
DA350	SHADOW DIAGRAMS	D



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ISSUE	DESCRIPTION	DATE
H	ISSUE FOR COORDINATION	21.04.2022
G	FOR CLIENT REVIEW AND COORDINATION	07.04.2022
F	FOR CLIENT REVIEW	30.03.2022
E	FOR CLIENT REVIEW	25.03.2022
D	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
COVERPAGE

DATE 21.04.2022 | SCALE 1 : 1 @ A1 | JOB NO. 21165 | DWG NO. DA000 | REVISION H

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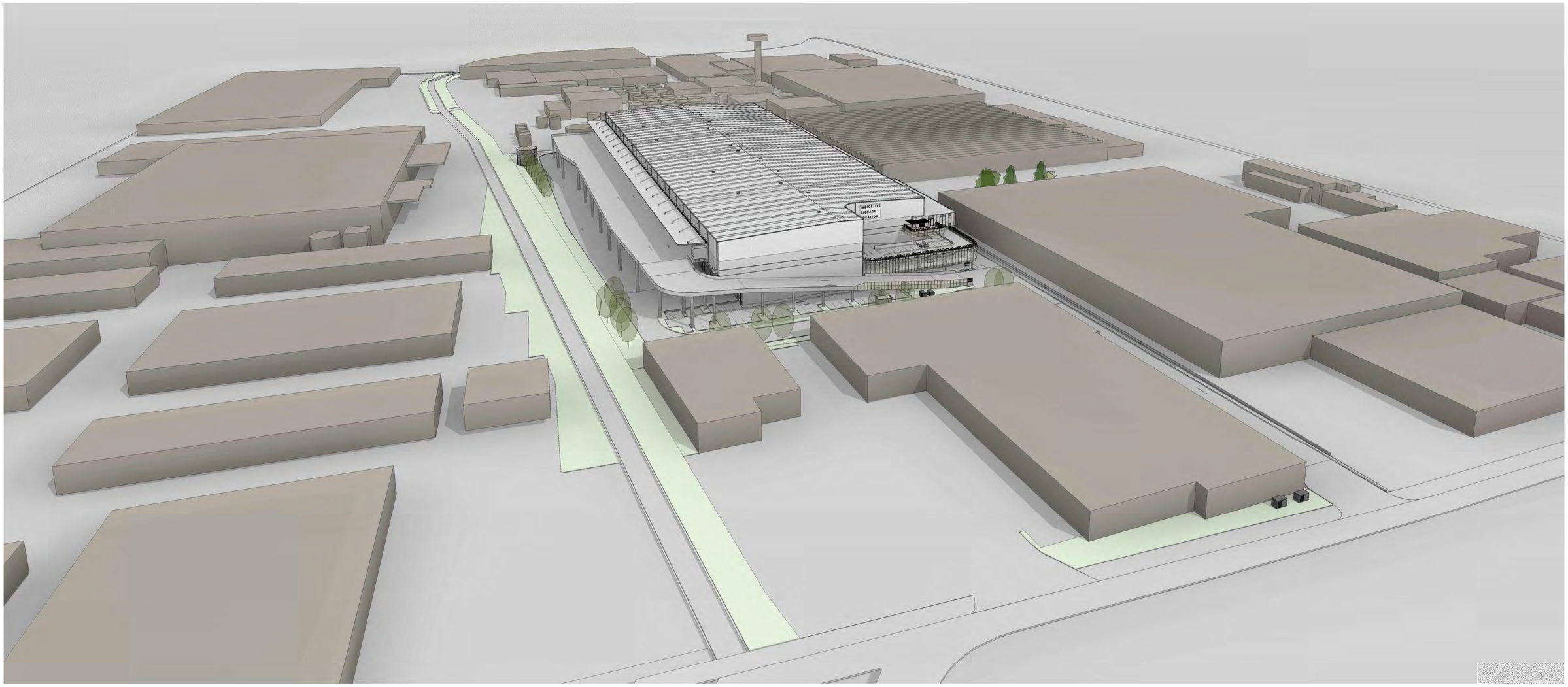

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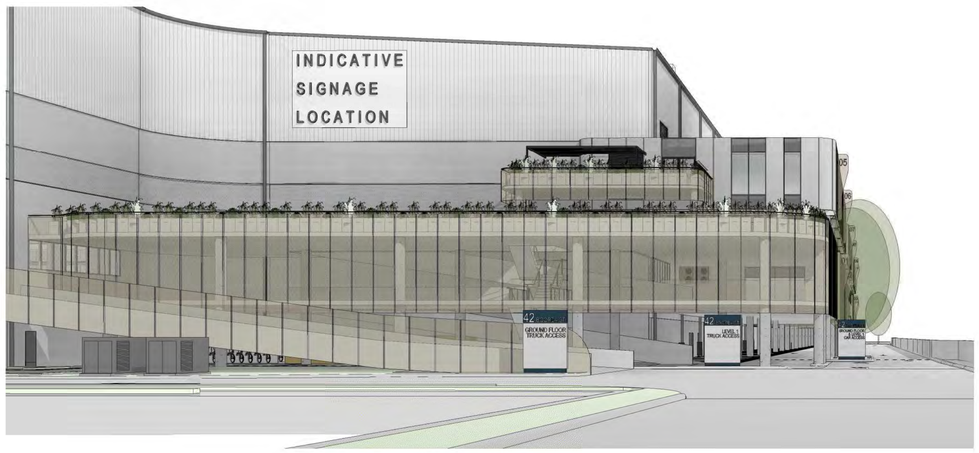
3 3D Boorea St View 2



2 3D Boorea St View

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PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
3D - 1

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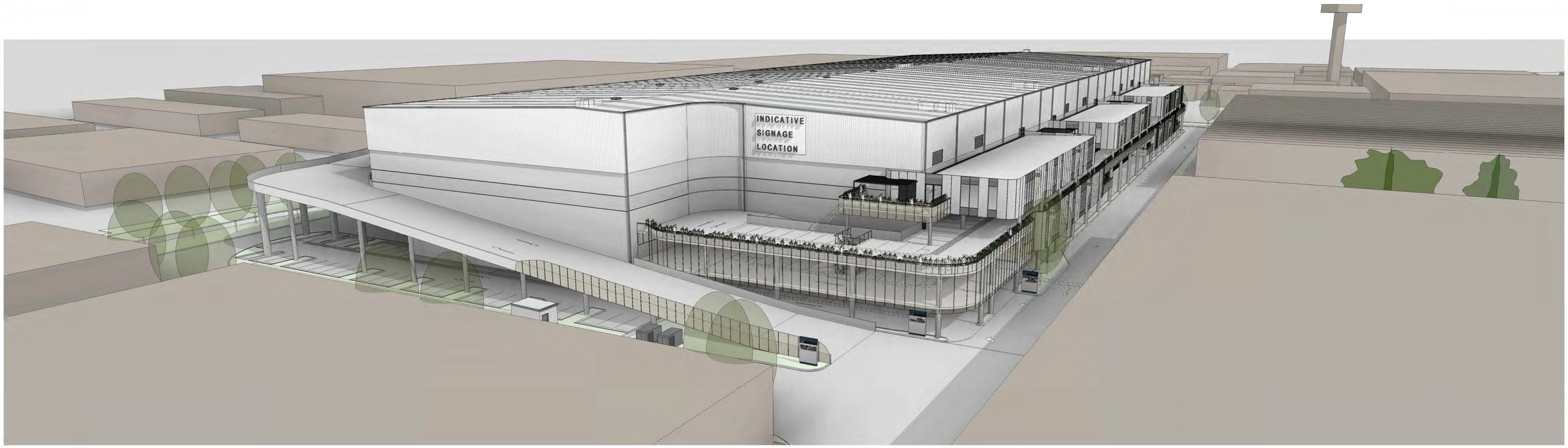

1 AERIAL VIEW 02

3 3D Boorea St View Copy 3

2 3D View 2

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PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
3D - 2

DATE 21.04.2022 SCALE @ A1 JOB NO. 21165 DWG NO. DA011 REVISION H

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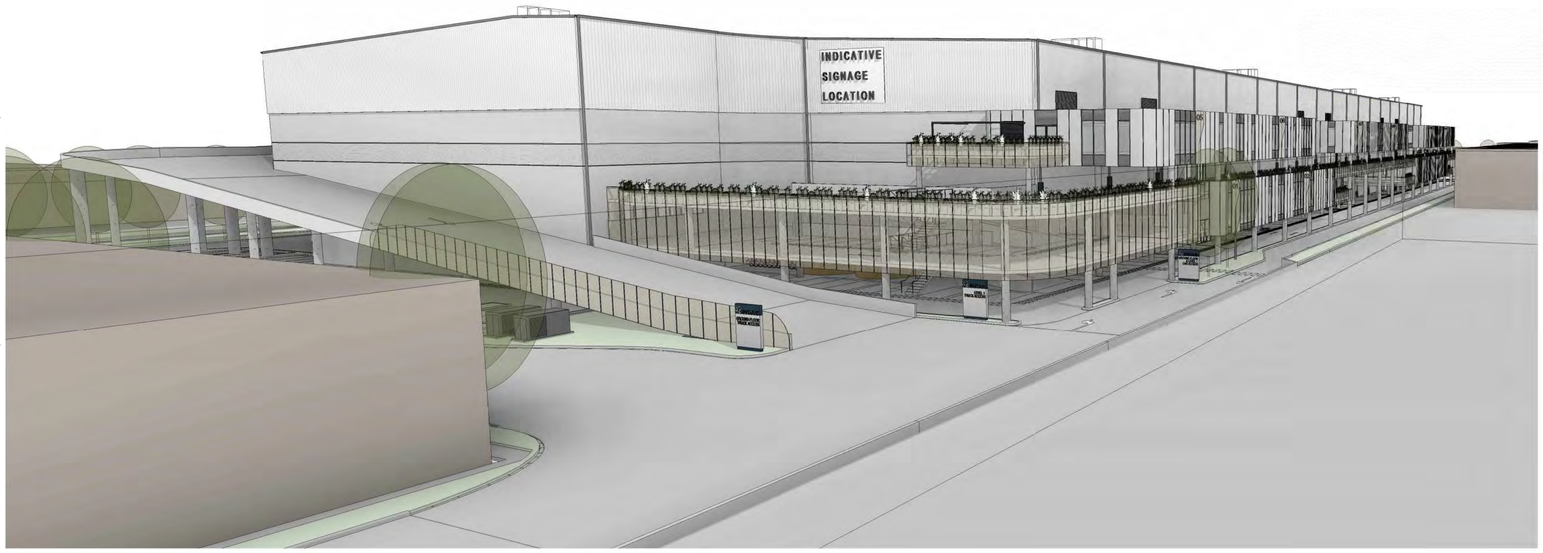
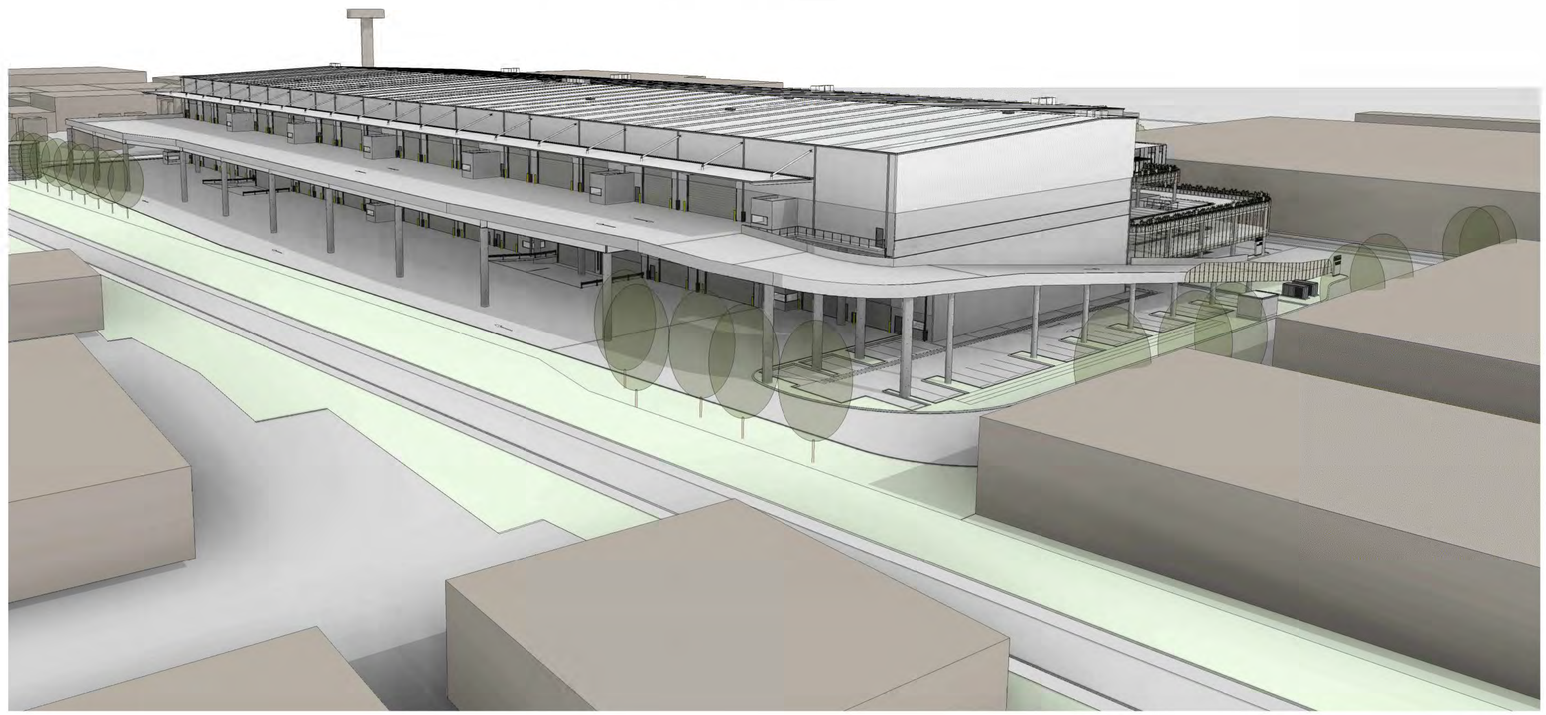


1 3D PERSPECTIVE 01



2 3D PERSPECTIVE 02

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PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
3D - 3

DATE 21.04.2022 | SCALE @ A1 | JOB NO. 21165 | DWG NO. DA012 | REVISION H

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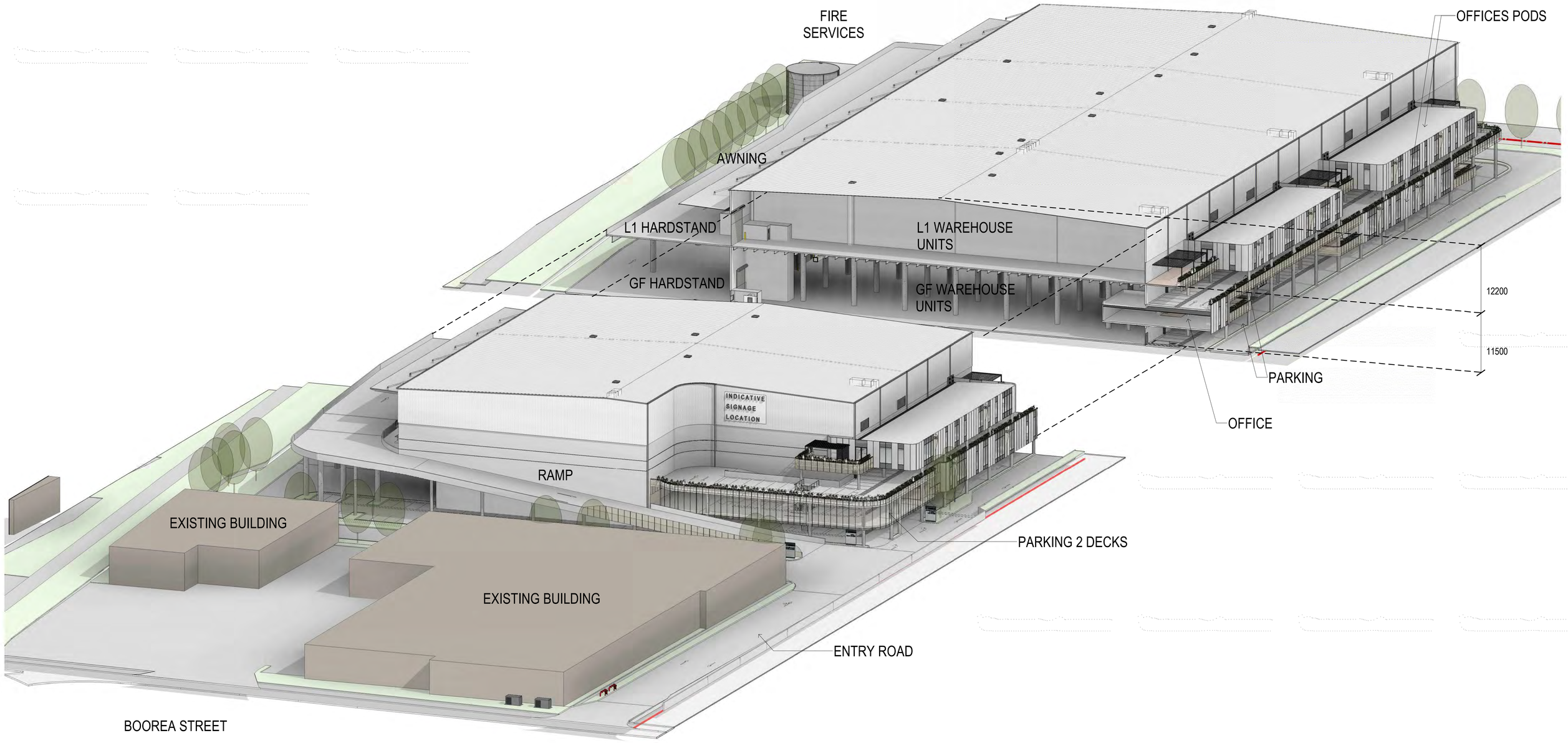

2 3D SECTION

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PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE 3D - 4

DATE 21.04.2022 SCALE @ A1 JOB NO 21165 DWG NO DA013 REVISION H

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DEVELOPMENT SUMMARY

GFA CALCULATIONS:

SITE AREA:	41,069 sqm
OFFICE AREA:	4,138 sqm
WAREHOUSE & DOCK OFFICE AREA	35,111 sqm
TOTAL GFA	**39,249 sqm**

PROPOSED FSR:	0.96:1
LOADING (TO BE CONSIDERED ON PARKING CALC.)	10,218 sqm
LANDSCAPE AREA 11.6%	4,579 sqm
PARKING REQUIRED:	187
CARPARKING PROVIDED:	191
MOTORCYCLES PARKING	10
BICYCLES PARKING	34

GFA AREA SCHEDULE

UNIT NAME	WH AREA	OFFICE AREA	TOTAL
TENANCY 01	3620 m²	460 m²	4080 m²
TENANCY 02	4515 m²	508 m²	5023 m²
TENANCY 03	4554 m²	508 m²	5062 m²
TENANCY 04	4589 m²	459 m²	5048 m²
TENANCY 05	3040 m²	384 m²	3424 m²
TENANCY 06	2718 m²	322 m²	3040 m²
TENANCY 07	2760 m²	338 m²	3098 m²
TENANCY 08	2730 m²	322 m²	3052 m²
TENANCY 09	2726 m²	322 m²	3048 m²
TENANCY 10	3706 m²	339 m²	4045 m²
LOBBY	0 m²	176 m²	176 m²
GROUND DOCK OFFICE	64 m²	0 m²	64 m²
L1 DOCK OFFICE	89 m²	0 m²	89 m²
TOTAL:	35111 m²	4138 m²	39249 m²

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ISSUE	DESCRIPTION	DATE
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D	FOR CLIENT REVIEW	30.03.2022
C	FOR CLIENT REVIEW	25.03.2022
B	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

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PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
SITE ANALYSIS PLAN & SUMMARY

DATE 27.04.2022 | SCALE As indicated @ A1 | JOB NO. 21165 | DWG NO. DA050 | REVISION G

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Hale

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

272523

20923 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 11300 | 14300

12981 | 4792 | 13875 | 57075 | 56500 | 56500 | 57100 | 1200 | 12500

WAREHOUSE 1 | WAREHOUSE 2 | WAREHOUSE 3 | WAREHOUSE 4

SITE BOUNDARY

10m LANDSCAPE SETBACK

BIO RETENTION BASIN 1 - APROX LOCATION

APROX. LOCATION OSD TANK

SPRINKLER TANK

FIRE SERVICES

PUMP ROOM

1 DP 740385

LEVEL 1 OUTLINE

EASEMENT

NEIGHBOUR

TURNING BAY

DOCK OFFICE 16 m²

DOCK OFFICE 15 m²

DOCK OFFICE 16 m²

DOCK OFFICE 17 m²

RECESSED DOCK

35m HARDSTAND RL.10.000 +/- 500mm

FIRE STAIRS 1

FIRE STAIRS 2

FIRE STAIRS 3

FIRE STAIRS 4

LOADING AREA

GEF

SEF

EXIT

RW

INDICATIVE RACKING

WAREHOUSE 01 3,620 m² RL.10.000 +/- 500mm

WAREHOUSE 02 4,515 m² RL.10.000 +/- 500mm

WAREHOUSE 03 4,554 m² RL.10.000 +/- 500mm

WAREHOUSE 04 4,589 m² RL.10.000 +/- 500mm

BIO RETENTION BASIN 2 - APROX LOCATION

PARKING (37)

PARKING (11)

PARKING (61)

BIKE PARKING (34)

FCC

NEW SUBSTATIONS. LOCATION TBC (AS ELEC. ENG PROPOSED)

RWT UNDER RAMP (2x 50,000 L)

CARS RAMP 16.9

TRUCKS RAMP 1:6

RAMP UP 1:8

RAMP UP 1:16

EXIT STAIR

FIRE STAIRS 5

FIRE STAIRS 6

FIRE STAIRS 7

WH ENTRY/ EXIT

LOBBY

OFFICE 1 & 2 / 5 & 6 ACCESS

OFFICE 7 & 8 ACCESS

OFFICE 3 & 4 / 8 & 9 ACCESS

MEZZANINE OFFICE OUTLINE

MEZZANINE OFFICE

CAR ENTRY / EXIT

CAR EXIT

PEDESTRIAN CROSSING

EXISTING RETAINING WALL

BICYCLE PATH (1m)

TURNING BAY

SG-1

SG-2

P1

P2

P3

P4

MBS

SITE BOUNDARY

NEIGHBOUR

3 DA200

2 DA200

1 DA301

2 DA301

1 DA300

3 DA300

4 DA300

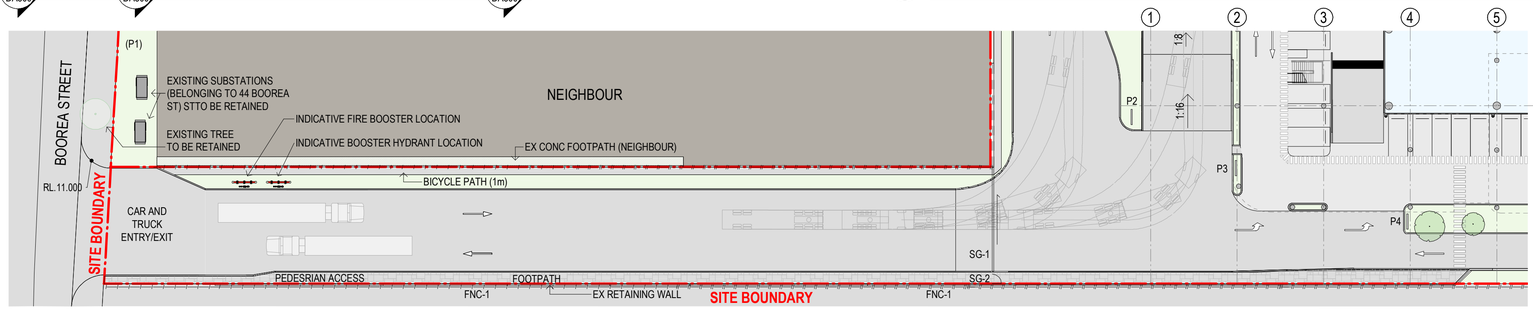
1 DA200

4 DA200

650 | 3687 | 3687 | 15000 | 80000 | 1088

7139 | 49898 | 27861 | 15000 | 10000 | 15000 | 10000 | 10000 | 10000 | 10000 | 10000 | 1088 | 5500 | 1088 | 6200 | 965 | 9500 | 22146 | 153632

1 GROUND FLOOR PLAN 1 : 400



2 GF PLAN - SITE ACCESS 1 : 400

GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
EF - EXISTING FENCE
DP - DOWNPIPES
RW - RETAINING WALL
GEF - GROUND EXHAUST FAN
SEF - SMOKE EXHAUST FAN
ME - MECHANICAL EQUIPMENT
SG1 - SLIDING GATE - PEDESTRIAN
SG2 - SWING GATE
EX - EXIT
MBS- MOTORBIKE PARKING SPACE
P1 - PYLON SIGN 1
P2 - PYLON SIGN 2
P3 - PYLON SIGN 3
P4 - PYLON SIGN 4

- SITE BOUNDARY
- TO BE DEMOLISHED
- EF - EXISTING CHAINLINK FENCE
- FNC-1 - FENCE TYPE 1-PALISADE
- OFFICE AREA
- WAREHOUSE AREA
- FIRE SERVICES
- LANDSCAPE AREA
- LOBBY AREA
- EXISTING TREES TO BE RETAINED
- NEW TREES TBC

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G	FOR CLIENT REVIEW	25.03.2022
F	FOR LANDSCAPE ARCHITECT	18.03.2022
E	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: GROUND FLOOR

DATE: 21.04.2022 | SCALE: As indicated @ A1 | JOB NO.: 21165 | DWG NO.: DA100 | REVISION: J

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Hale

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

SITE BOUNDARY

3 DA200

2 DA200

2 DA301

1 DA301

4 DA200

A B C D E F G H I

FIRE STAIRS 1

FIRE STAIRS 2

FIRE STAIRS 3

FIRE STAIRS 4

GEF

SEF

RL. 13.800

COL-C

MBS

16.9

EXIT STAIR

RAMP UP

PARKING (8)

OUTDOOR AREA RL. 13.810

OFFICE 01
460 m²
RL. 13.800

OFFICE 02
508 m²
RL. 13.800

OUTDOOR AREA RL. 13.800

OFFICE 03
508 m²
RL. 13.800

OFFICE 04
459 m²
RL. 13.800

METAL STAIRS

LOBBY
23 m²

8485

1188

11593

2488

598

12896

21525

9220

1 DA300 3 DA300 4 DA300 1 DA200 SITE BOUNDARY

700 27799 5016 23685 23685 10215 806 832 10215 23685 23685 10215 879

OFFICE 01 OFFICE 02 OFFICE 03 OFFICE 04

11564 TRUCK RAMP 33515 47369 11021 43563 11047 47369 11095

1 GROUND MEZZ OFFICE LEVEL(1) 1 : 400

GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
FNC-1 - FENCE TYPE 1
EF - EXISTING FENCE
DP - DOWNPIPES
RW - RETAINING WALL
GEF - GROUND EXHAUST FAN-tbc
SEF - SMOKE EXHAUST FAN-tbc
TG1 - TELESCOPIC GATE-tbc
SG1 - SLIDING GATE
SG2 - SWING GATE
EX - EXIT

SITE BOUNDARY
TO BE DEMOLISHED
EF - EXISTING CHAINLINK FENCE
OFFICE AREA
WAREHOUSE AREA
FIRE SERVICES
LANDSCAPE AREA
LOBBY AREA

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A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: GROUND FLOOR MEZZ PLAN

DATE: 21.04.2022 SCALE: As indicated @ A1 JOB NO.: 21165 DWG NO.: DA101 REVISION: E

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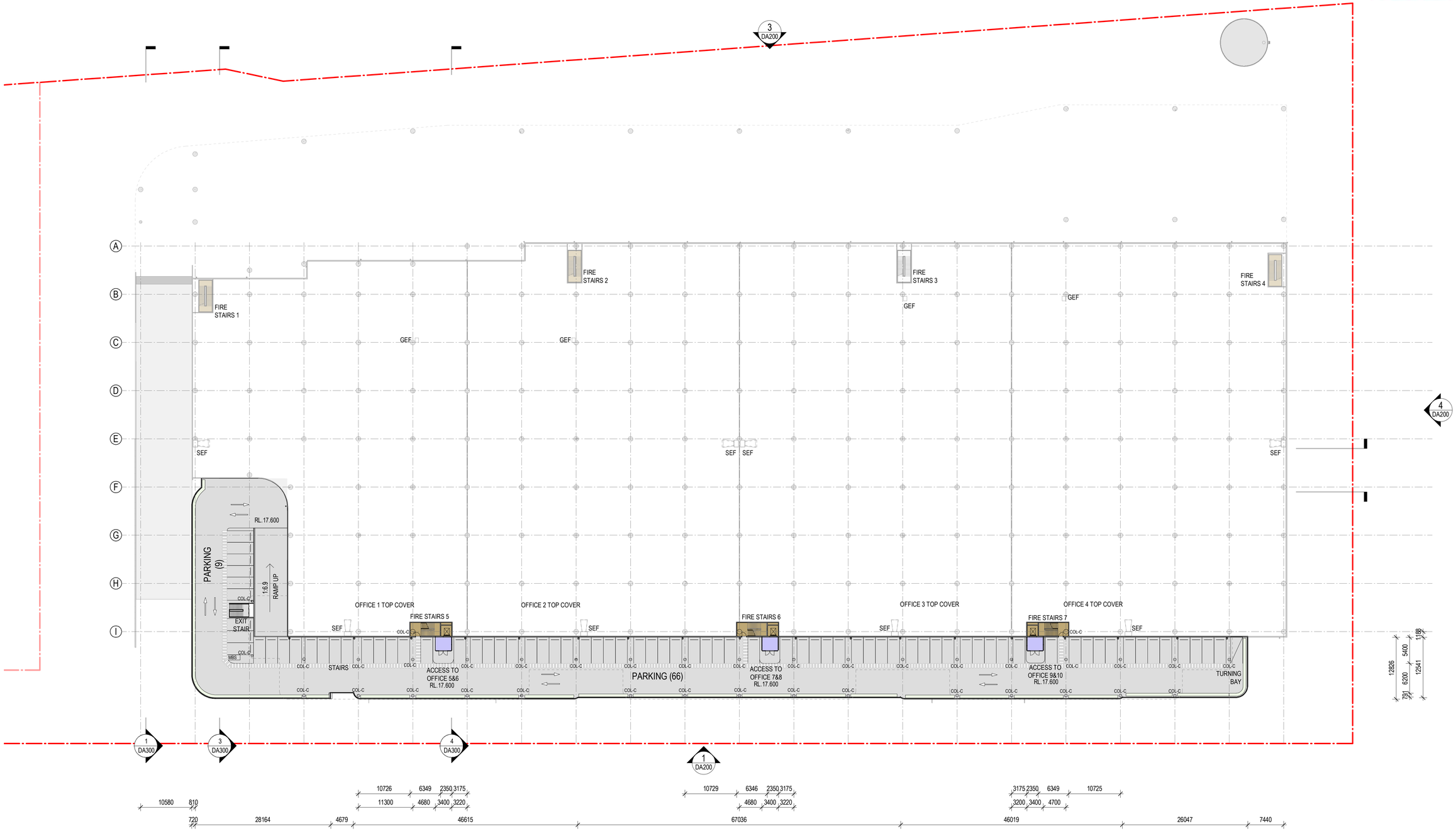

1 LEVEL 1 OFFICE ACCESS(1) 1 : 400

GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
FNC-1 - FENCE TYPE 1
EF - EXISTING FENCE
DP - DOWNPIPES
RW - RETAINING WALL
GEF - GROUND EXHAUST FAN-tbc
SEF - SMOKE EXHAUST FAN-tbc
TG1 - TELESCOPIC GATE-tbc
SG1 - SLIDING GATE
SG2 - SWING GATE
EX - EXIT

SITE BOUNDARY
TO BE DEMOLISHED
EF - EXISTING CHAINLINK FENCE
OFFICE AREA
WAREHOUSE AREA
FIRE SERVICES
LANDSCAPE AREA
LOBBY AREA

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B	FOR CLIENT REVIEW	25.03.2022
A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
LEVEL 1 OFFICE ACCESS

DATE 21.04.2022 | SCALE As indicated @ A1 | JOB NO. 21165 | DWG NO DA102 | REVISION E

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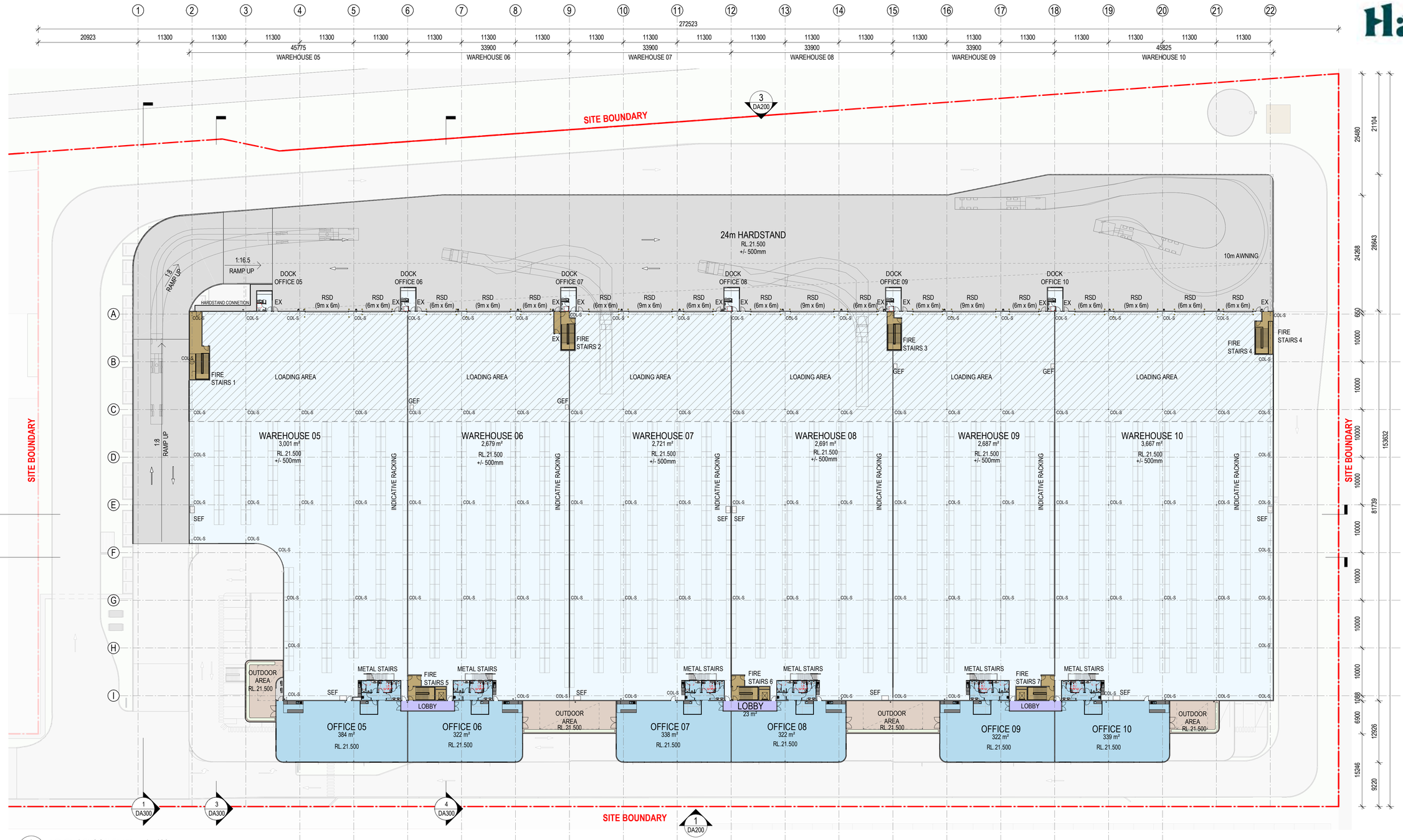
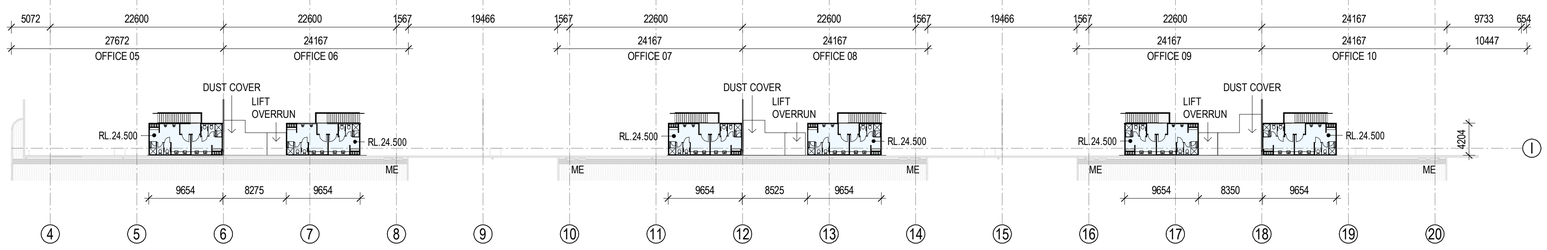


3 LEVEL 1 FLOOR PLAN 1 : 400



1 LEVEL 1 WH AMENITIES 1 : 400

GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
FNC-1 - FENCE TYPE 1
DP - DOWNPIPES
RW - RETAINING WALL
GEF - GROUND EXHAUST FAN-tbc
SEF - SMOKE EXHAUST FAN-tbc
TG1 - TELESCOPIC GATE-tbc
SG1 - SLIDING GATE
SG2 - SWING GATE - PEDESTRIAN
EX - EXIT

SITE BOUNDARY
TO BE DEMOLISHED
EF - EXISTING CHAINLINK FENCE
OFFICE AREA
WAREHOUSE AREA
FIRE SERVICES
LANDSCAPE AREA
LOBBY AREA

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F	FOR CLIENT REVIEW	25.03.2022
E	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: LEVEL 1

DATE: 21.04.2022 SCALE: As indicated @ A1 JOB NO: 21165 DWG NO: DA103 REVISION: I

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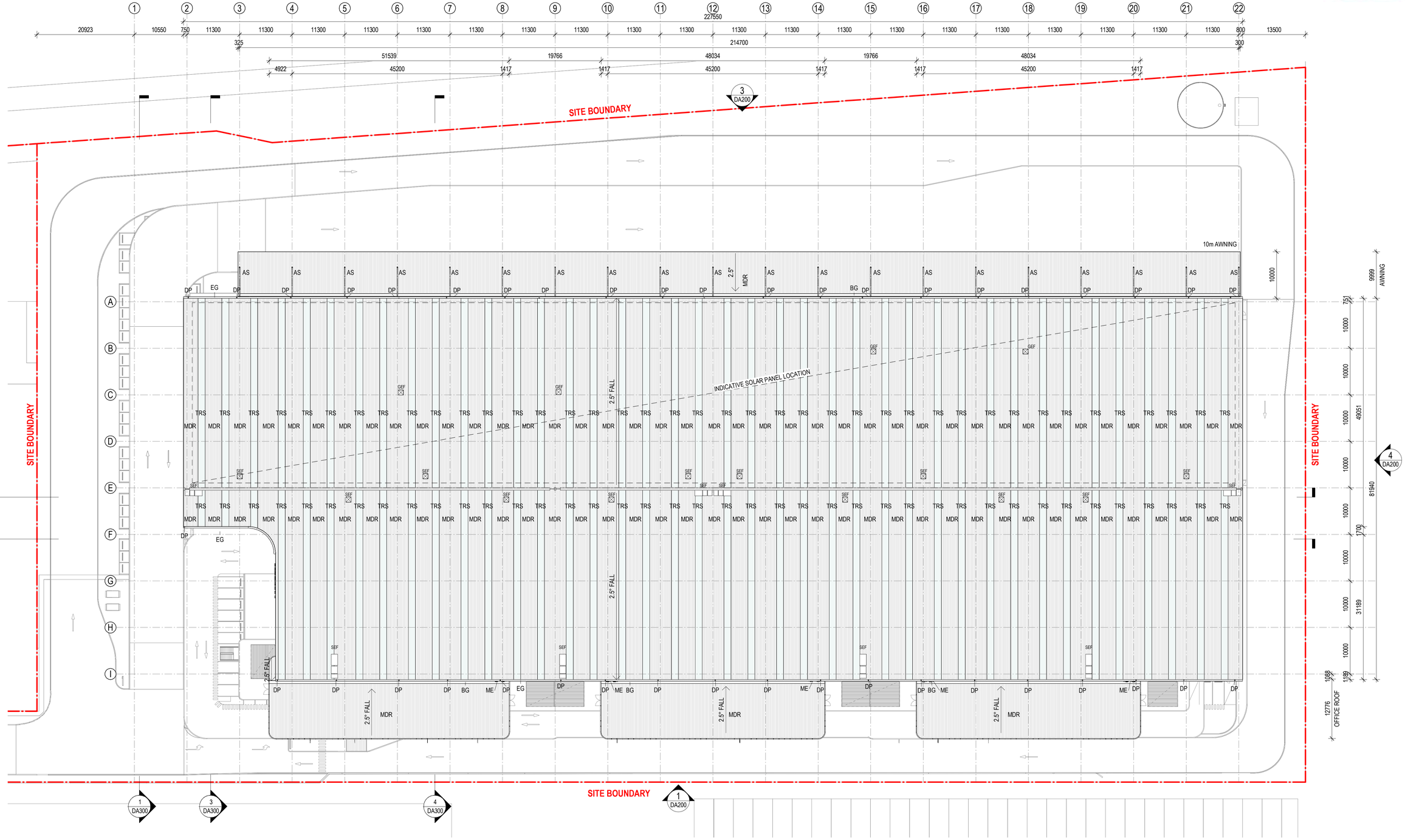
Hale



ROOF LEGEND

MDR - METAL ROOF SHEET
TRS - TRANSLUCENT ROOF SHEET
BG - BOX GUTTER
EG - EAVES GUTTER
DP - DOWN PIPE
SEF - SMOKE EXHAUST FAN

1 ROOF PLAN 1 : 400

ISSUE	DESCRIPTION	DATE
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PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: ROOF PLAN

DATE: 21.04.2022 SCALE: As indicated @ A1 JOB NO.: 21165 DWG NO.: DA104 REVISION: E

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Hale

BOOREA STREET

SITE BOUNDARY

SITE BOUNDARY

SITE BOUNDARY

SITE BOUNDARY

SITE BOUNDARY

B
DP 415100

1
DP 740385

DP 107942

DP 415100 B

DP 740385 1

DP 228253 2

DP 228253 2

DP 349554 2

DP 740385 2

DP 740385 2

208°56'20" 388.13

1 GROUND EXISTING 1 : 500

LEGEND

- SITE BOUNDARY
- EASEMENT
- EXISTING BUILDINGS
- TO BE DEMOLISHED
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE DEMOLISHED

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D	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
SERVICES/CONSTRAINS PLAN

DATE	SCALE	JOB NO.	DWG NO.	REVISION
21.04.2022	As indicated @ A1	21165	DA105	H

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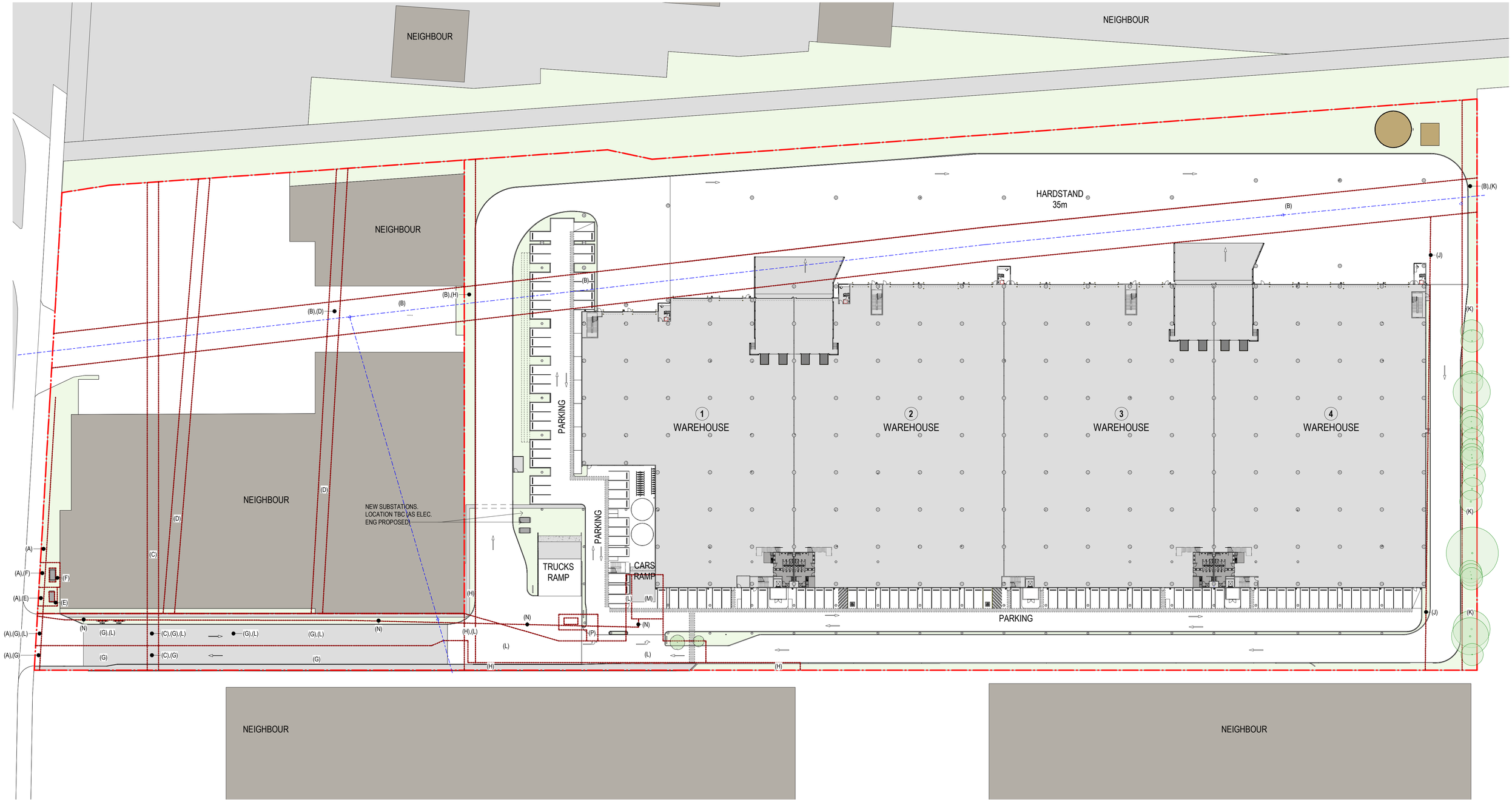
Hale



EASEMENTS
(A) EASEMENT TO DRAIN WATER 1.5 WIDE (W915607 & W915610)
(B) EASEMENT FOR SEWERAGE PURPOSES (K672824 & L35467)
(C) DRAINAGE EASEMENT (B578226)
(D) DRAINAGE EASEMENT (H492281)
(E) RIGHTS OF WAY & EASEMENTS FOR ELECTRICITY PURPOSES 1.165, 1.26 & VAR. WIDTH (U170756)
(F) EASEMENT FOR ELECTRICITY & OTHER PURPOSES VAR. WIDTH (DP1203954)
(G) 'RIGHT OF WAY 15.24 WIDE (H492281) - TO BE REMOVED, CANCELLATION REQUEST IN PROGRESS WITH LRS'
(H) EASEMENT TO DRAIN WATER 2 WIDE & 3 WIDE (DP740385)
(J) EASEMENT FOR SEWERAGE OVER EXISTING LINE OF PIPES (APPROX. POSTITION SHOWN) (DP740385)
(K) EASEMENT TO DRAIN WATER 4 WIDE (DP740385)
(L) RIGHT OF WAY (Y254807)
(M) SUBSTATION PREMISES No6459 (Y254807)
(N) EASEMENT FOR ELECTRICITY PURPOSES OVER EXISTING PITS & EXISTING LINE OF CONCRETE (Y254807)
(P) RIGHT OF WAY 3 & 4.2 WIDE (7218159)

LEGEND

- SEWER
- EASEMENT LINES
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED
- NEW TREES TBC

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ISSUE	DESCRIPTION	DATE
I	ISSUED FOR COORDINATION	27.04.2022
H	ISSUE FOR COORDINATION	21.04.2022
G	FOR CLIENT REVIEW AND COORDINATION	07.04.2022
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D	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
SERVICES/CONSTRAINS PLAN

DATE 27.04.2022 | SCALE As indicated @ A1 | JOB NO. 21165 | DWG NO. DA106 | REVISION I

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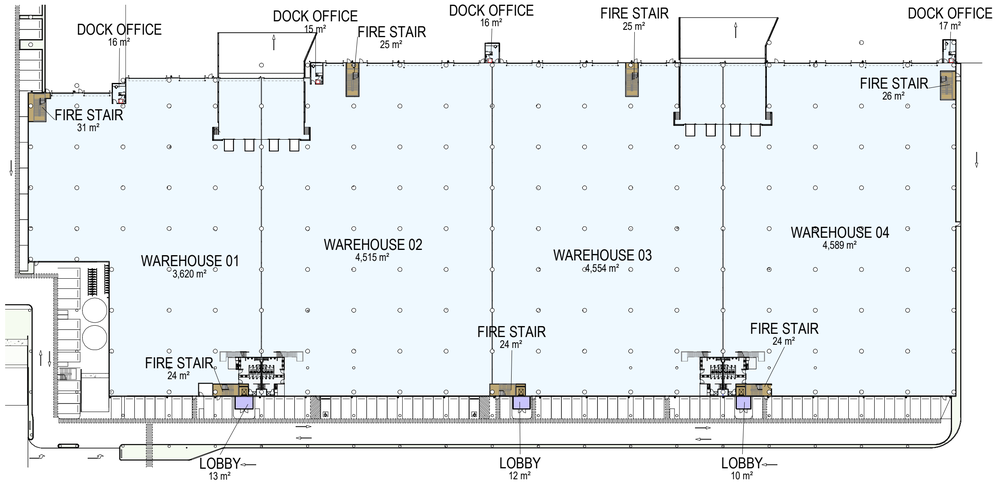
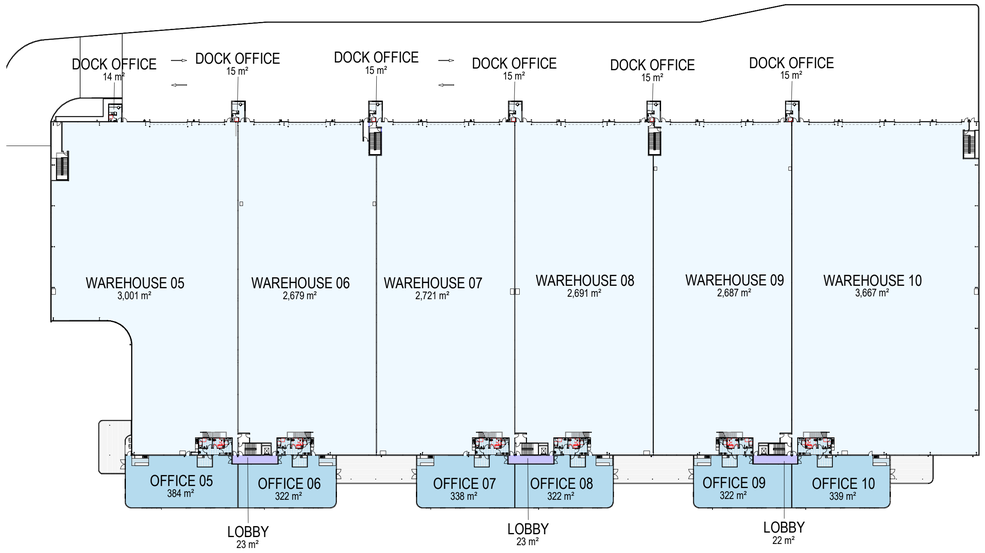
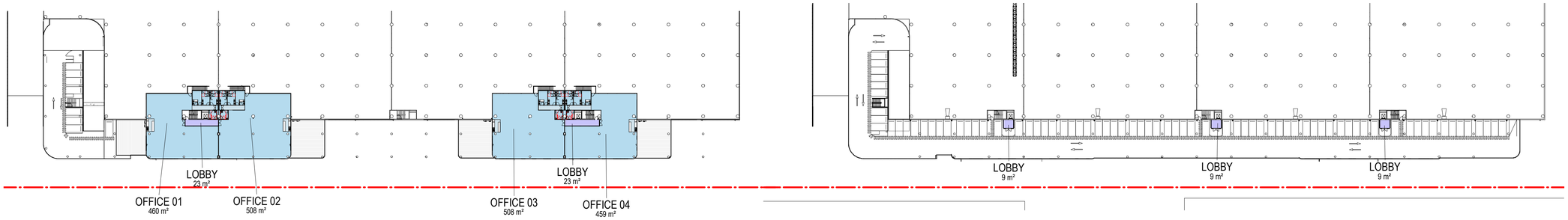


1 GROUND 1 : 750



3 LEVEL 01 1 : 750

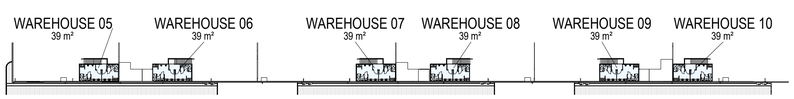


2 GROUND MEZZ OFFICE LEVEL 1 : 750

4 LEVEL 1 OFFICE ACCESS 1 : 750

GFA AREA SCHEDULE

UNIT NAME	WH AREA	OFFICE AREA	TOTAL
TENANCY 01	3620 m²	460 m²	4080 m²
TENANCY 02	4515 m²	508 m²	5023 m²
TENANCY 03	4554 m²	508 m²	5062 m²
TENANCY 04	4589 m²	459 m²	5048 m²
TENANCY 05	3040 m²	384 m²	3424 m²
TENANCY 06	2718 m²	322 m²	3040 m²
TENANCY 07	2760 m²	338 m²	3098 m²
TENANCY 08	2730 m²	322 m²	3052 m²
TENANCY 09	2726 m²	322 m²	3048 m²
TENANCY 10	3706 m²	339 m²	4045 m²
LOBBY	0 m²	176 m²	176 m²
GROUND DOCK OFFICE	64 m²	0 m²	64 m²
L1 DOCK OFFICE	89 m²	0 m²	89 m²
TOTAL:	35111 m²	4138 m²	39249 m²



5 LEVEL 1 WH AMENITIES GFA 1 : 750

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B	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
GFA PLANS

DATE 21.04.2022 | SCALE As indicated @ A1 | JOB NO. 21165 | DWG NO. DA107 | REVISION F

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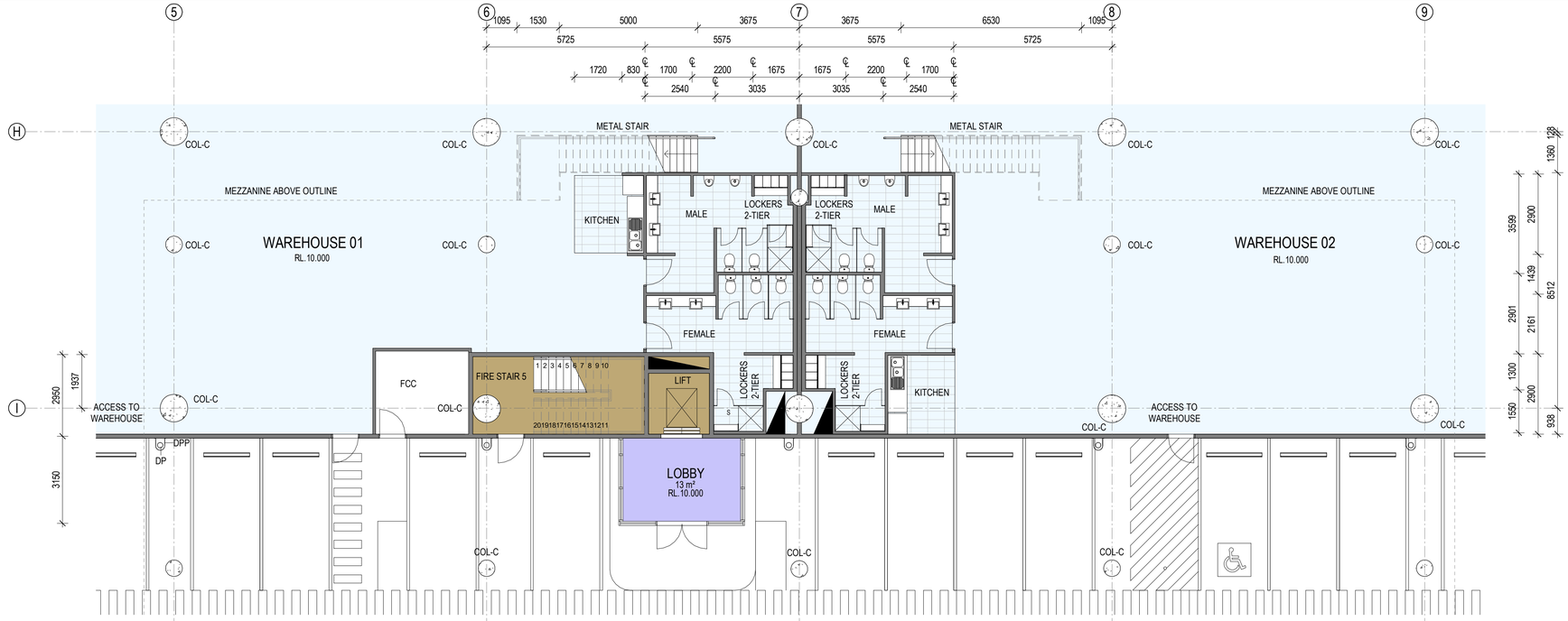
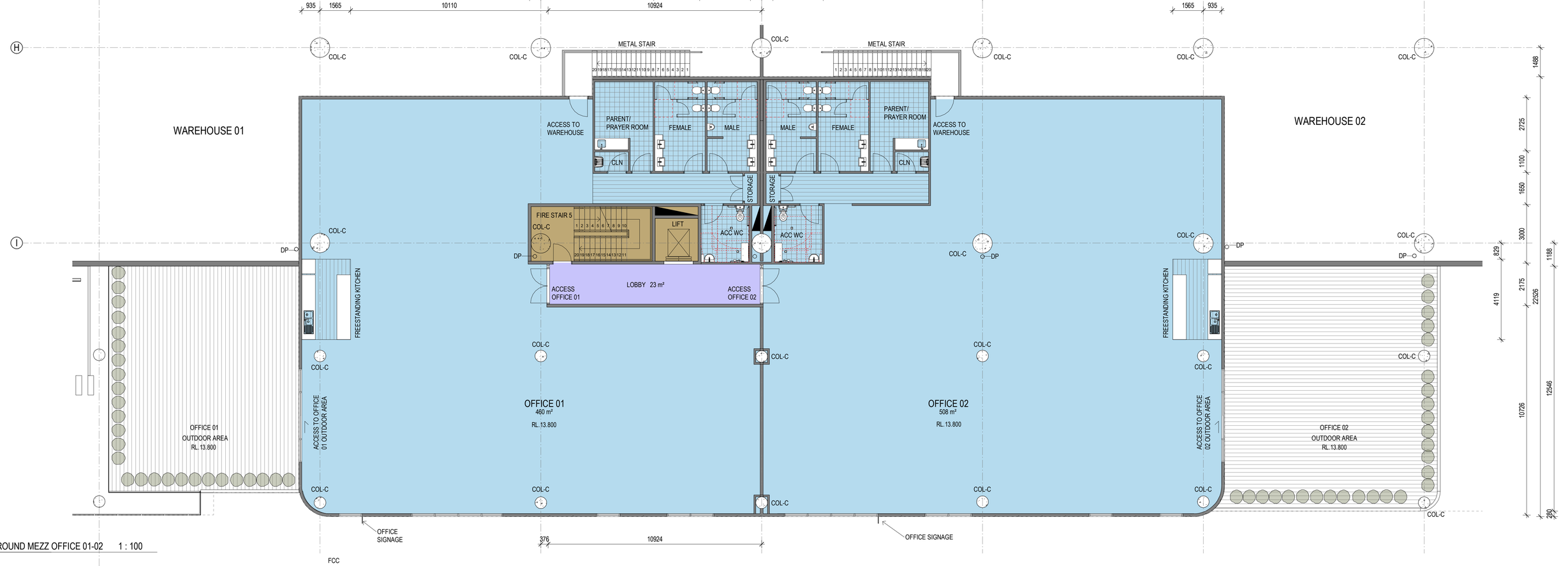


1 GROUND AMENITIES 01 - 02 1 : 100



2 GROUND MEZZ OFFICE 01-02 1 : 100

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PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: OFFICES - GROUND 01 - 02

DATE: 21.04.2022 | SCALE: 1 : 100 @ A1 | JOB NO.: 21165 | DWG NO.: DA120 | REVISION: E

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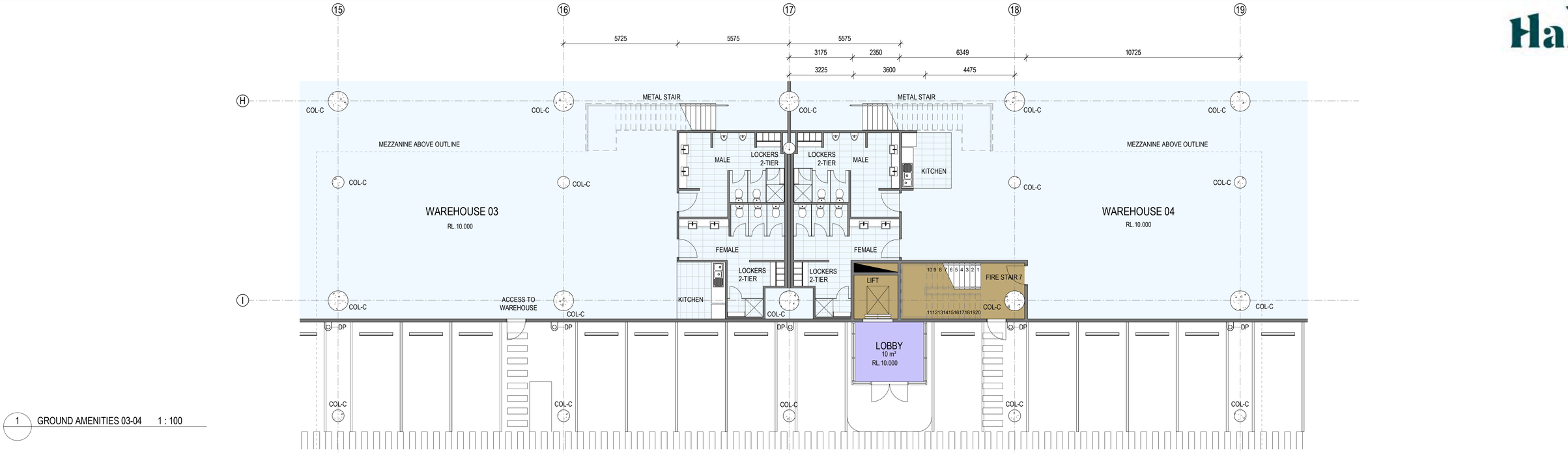
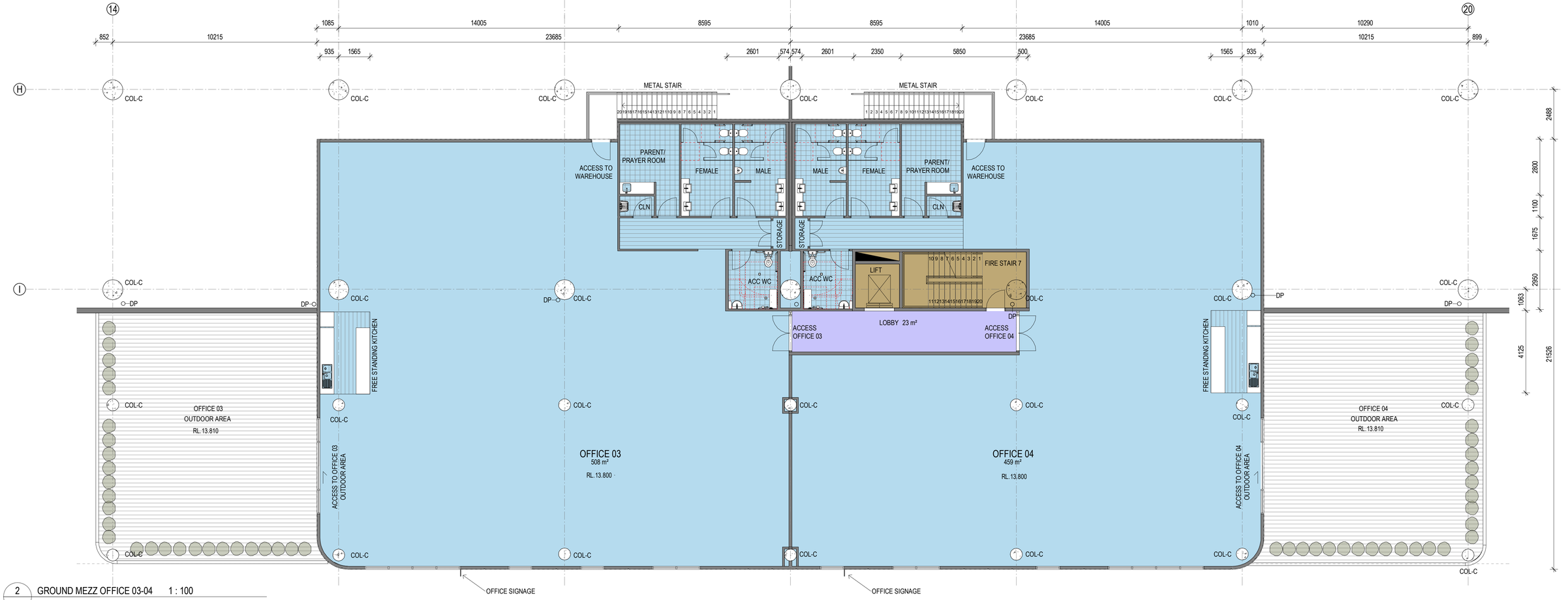


1 GROUND AMENITIES 03-04 1 : 100



2 GROUND MEZZ OFFICE 03-04 1 : 100

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PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
OFFICES - GROUND 03 - 04

DATE 21.04.2022 | SCALE 1 : 100 @ A1 | JOB NO 21165 | DWG NO DA121 | REVISION D

22/04/2022 11:12 PM C:\Users\Luke\Documents\21165 - HALE - BOOREA ST_BASE_4 - R19_luke@RE.rvt

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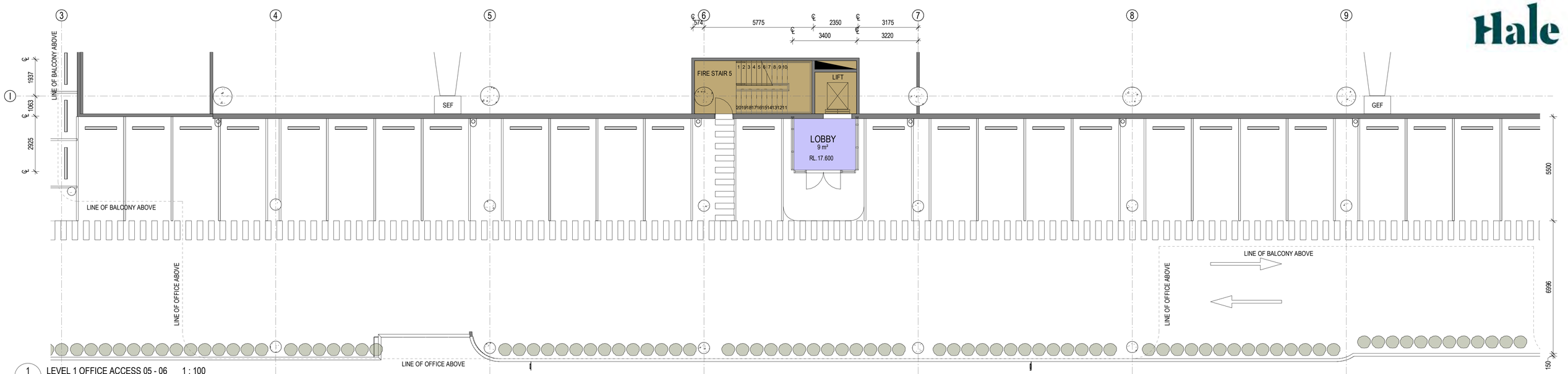
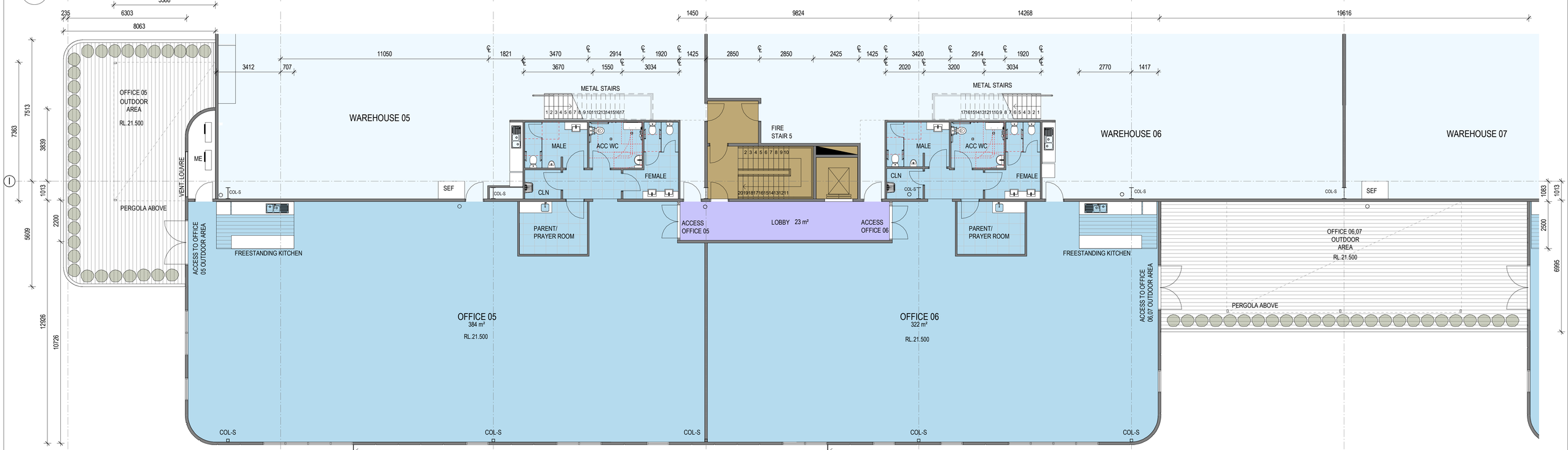
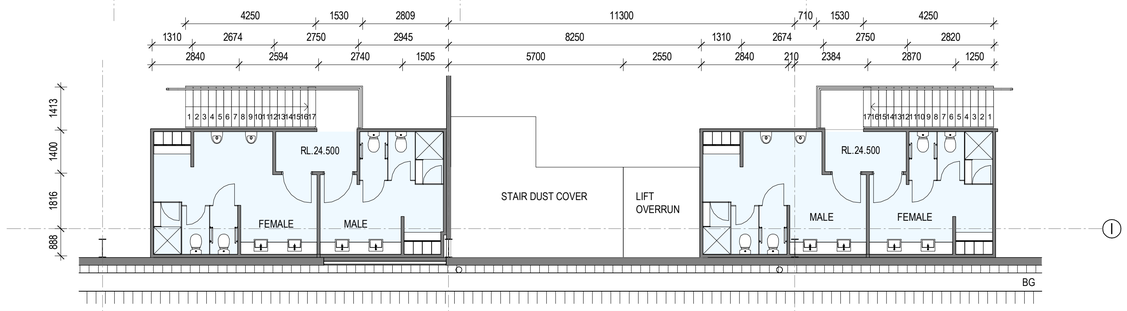


1 LEVEL 1 OFFICE ACCESS 05 - 06 1 : 100



2 LEVEL 1 FLOOR PLAN 1 : 100



3 LEVEL 1 WH AMENITIES 05 - 06 1 : 100

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ISSUE	DESCRIPTION	DATE
D	ISSUE FOR COORDINATION	21.04.2022
C	FOR CLIENT REVIEW	30.03.2022
B	FOR CLIENT REVIEW	25.03.2022
A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
OFFICE - LEVEL 1 - 05 - 06

DATE	SCALE	JOB NO.	DWG NO.	REVISION
21.04.2022	1 : 100 @ A1	21165	DA125	D

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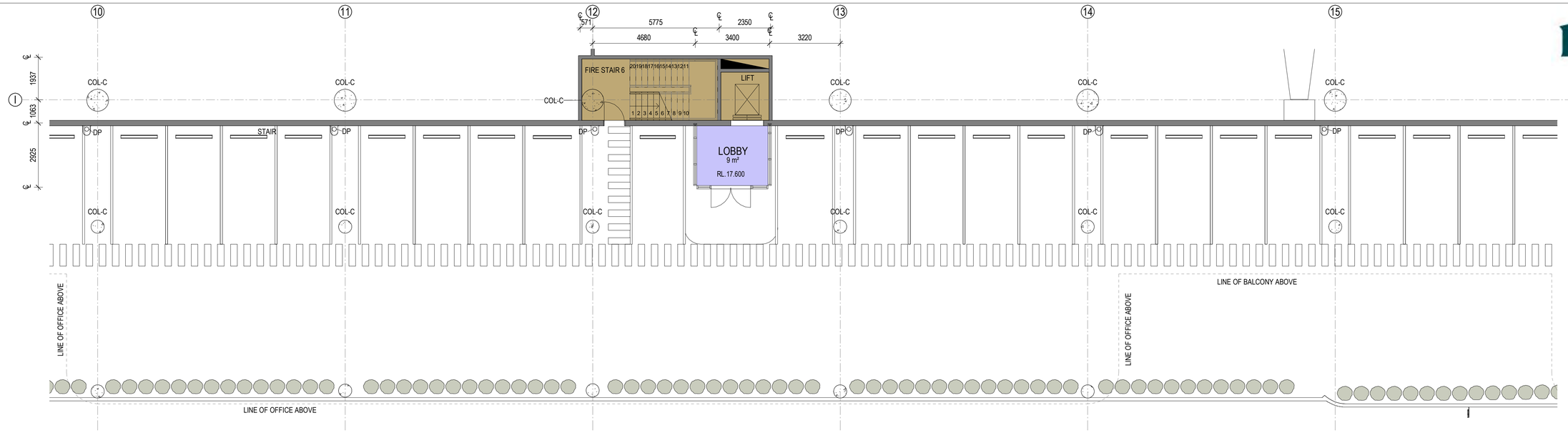
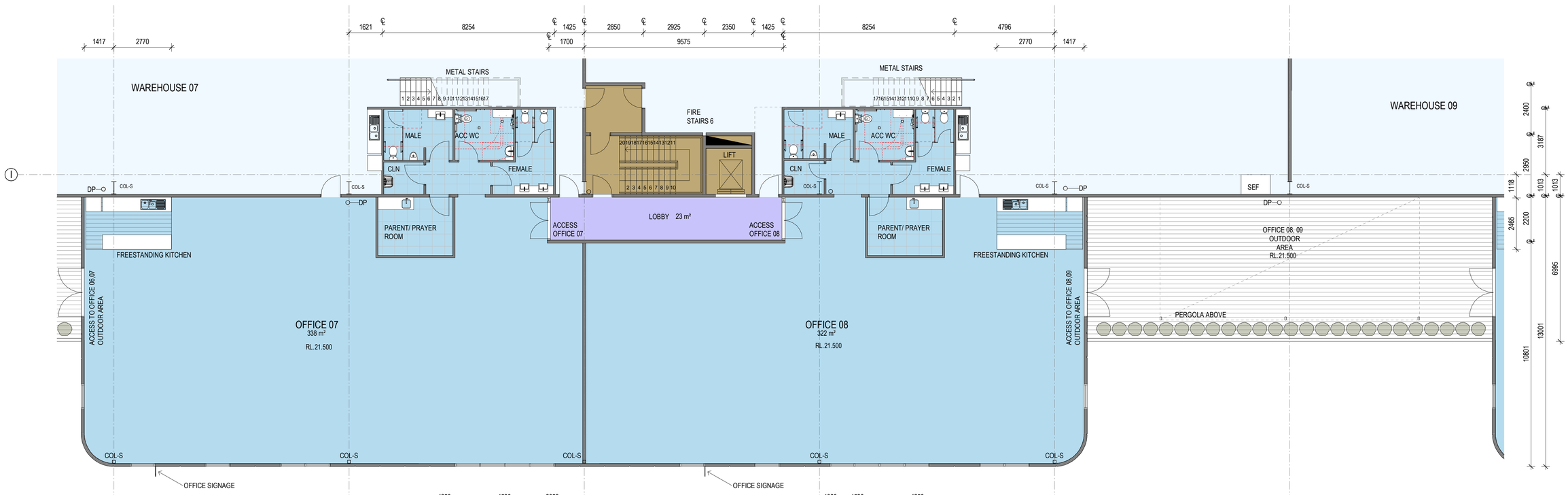


1 LEVEL 1 OFFICE ACCESS 07 - 08 1 : 100



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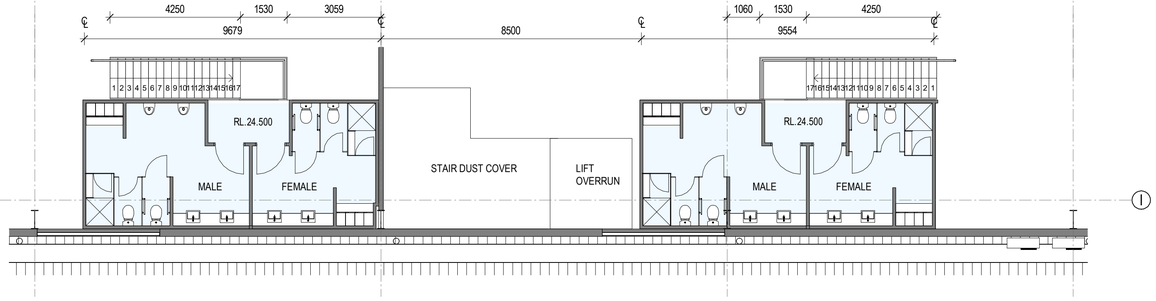

3 LEVEL 1 WH AMENITIES 07 - 08 1 : 100

D	ISSUE FOR COORDINATION	21.04.2022
C	FOR CLIENT REVIEW	30.03.2022
B	FOR CLIENT REVIEW	25.03.2022
A	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

ISSUE DESCRIPTION DATE

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CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE: OFFICE - LEVEL 1 - 07 - 08

DATE: 21.04.2022 SCALE: 1 : 100 @ A1 JOB NO: 21165 DWG NO: DA126 REVISION: D

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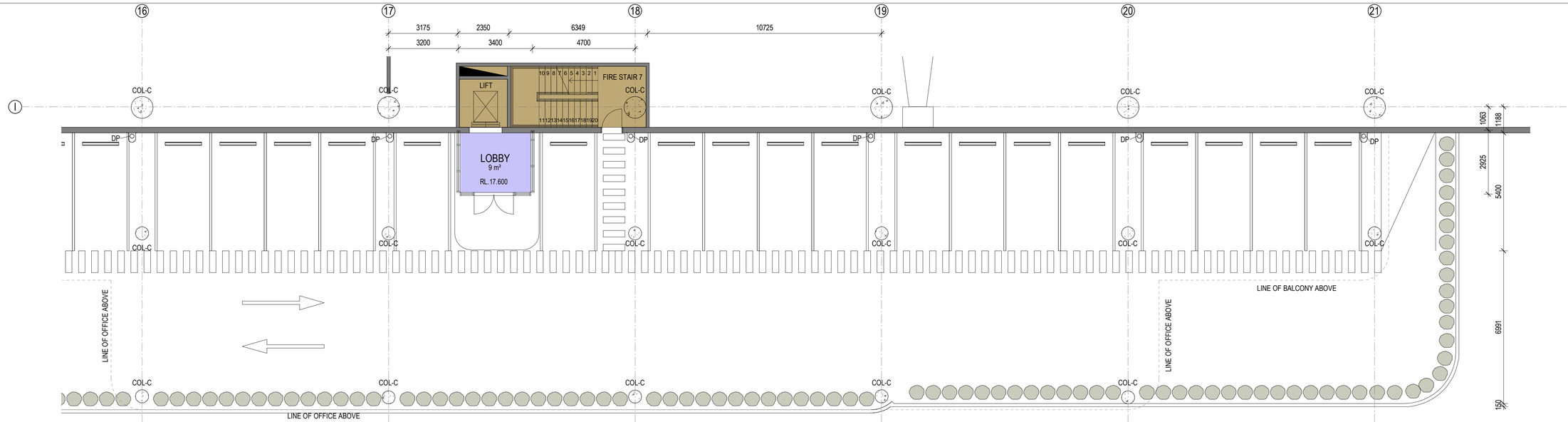
Hale



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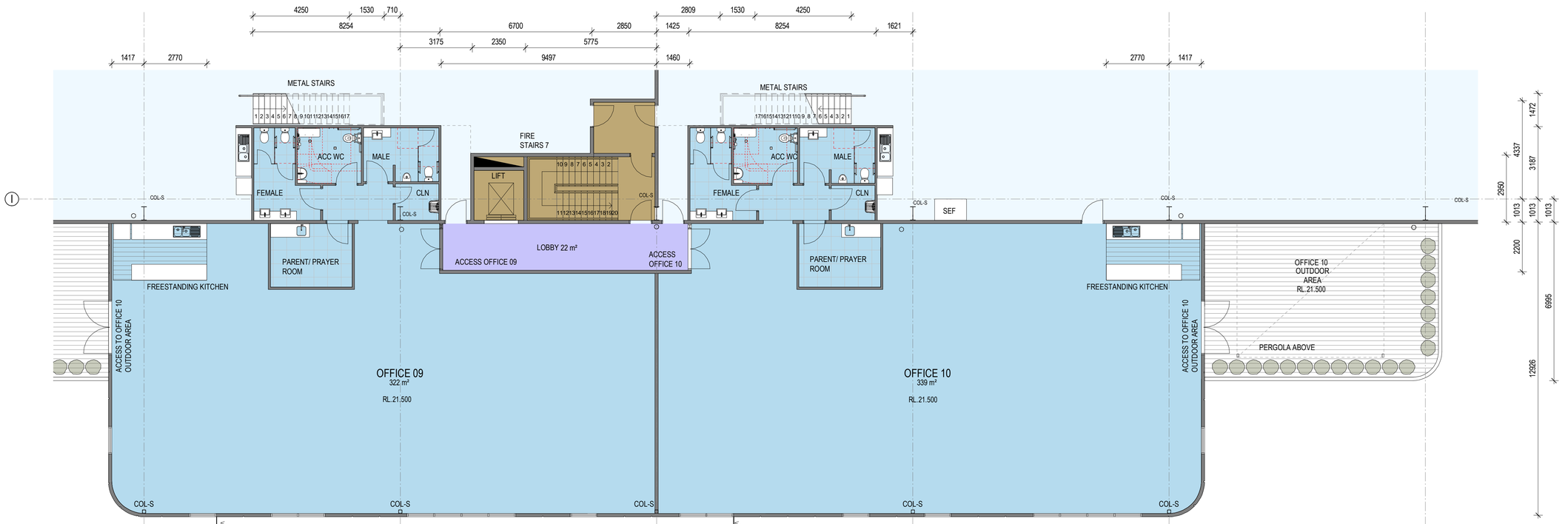

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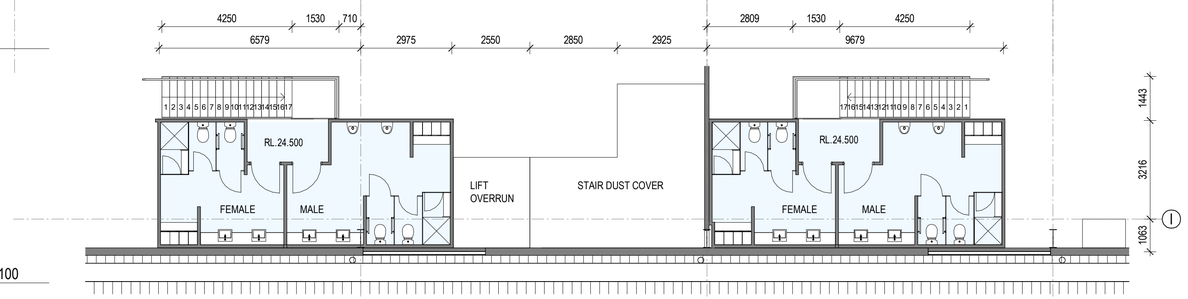

3 LEVEL 1 WH AMENITIES 09 - 10 1 : 100

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CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
OFFICE - LEVEL 1 - 09 - 10

DATE 21.04.2022 | SCALE 1 : 100 @ A1 | JOB NO. 21165 | DWG NO. DA127 | REVISION D

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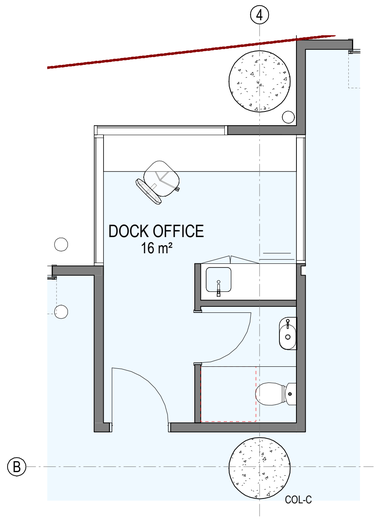
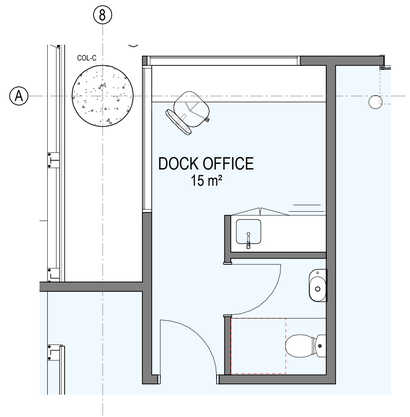
Hale

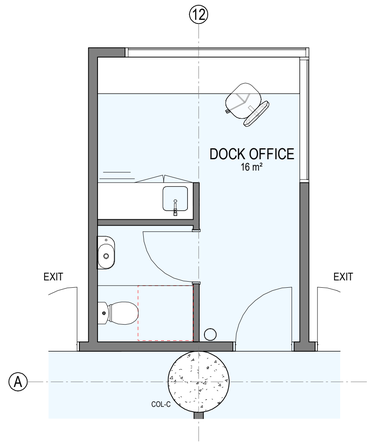
DOCK OFFICES GROUND FLOOR



7 DOCK OFFICE 01 1 : 50



8 DOCK OFFICE 02 1 : 50



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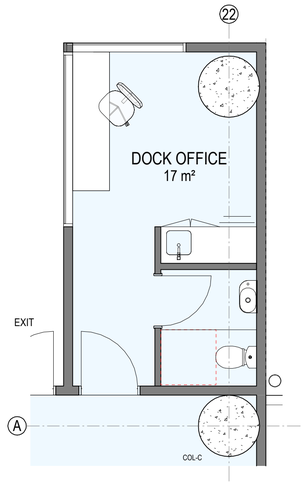
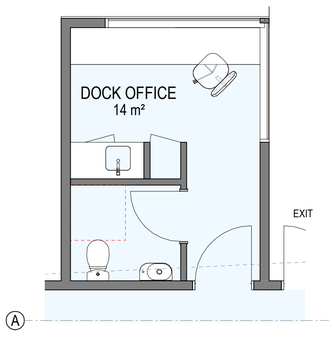


10 DOCK OFFICE 04 1 : 50

DOCK OFFICES GROUND FLOOR



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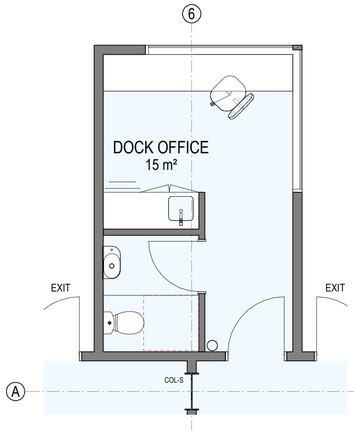
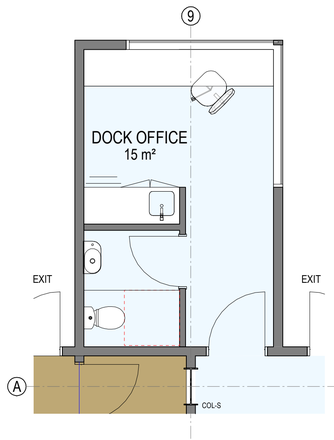


2 DOCK OFFICE 06 1 : 50



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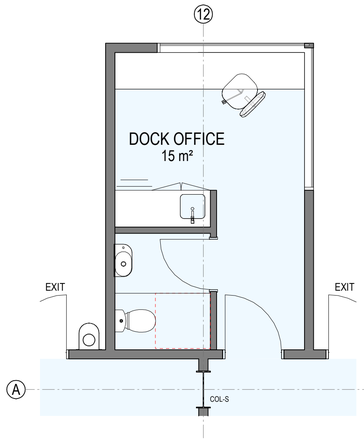

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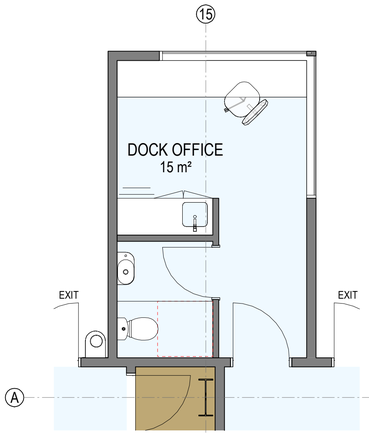

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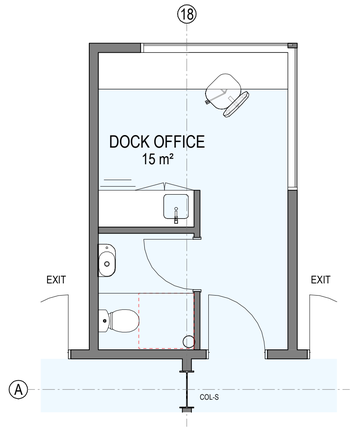

6 DOCK OFFICE 10 1 : 50

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ISSUE	DESCRIPTION	DATE
B	ISSUE FOR COORDINATION	21.04.2022
A	FOR CLIENT REVIEW AND COORDINATION	07.04.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
DOCK OFFICES

DATE 21.04.2022 | SCALE 1 : 50 @ A1 | JOB NO. 21165 | DWG NO. DA130 | REVISION B

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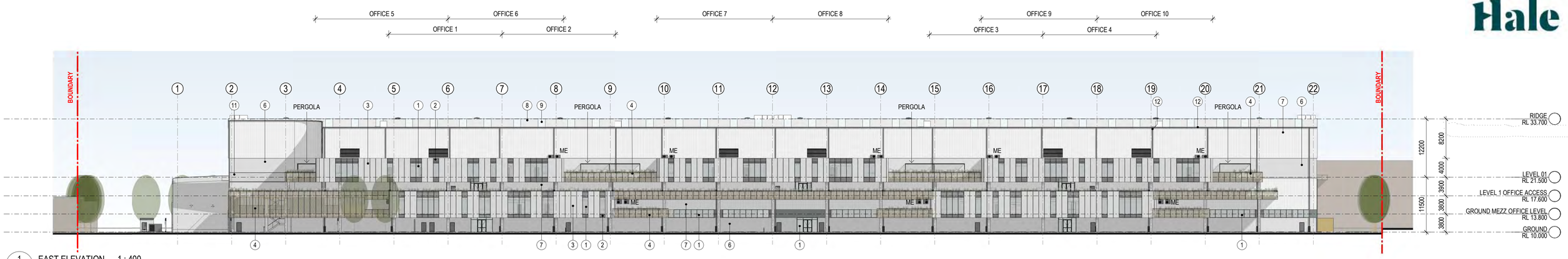
Hale



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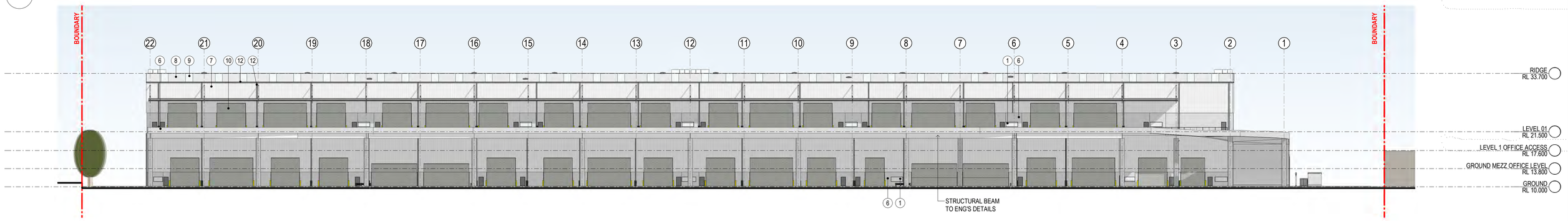

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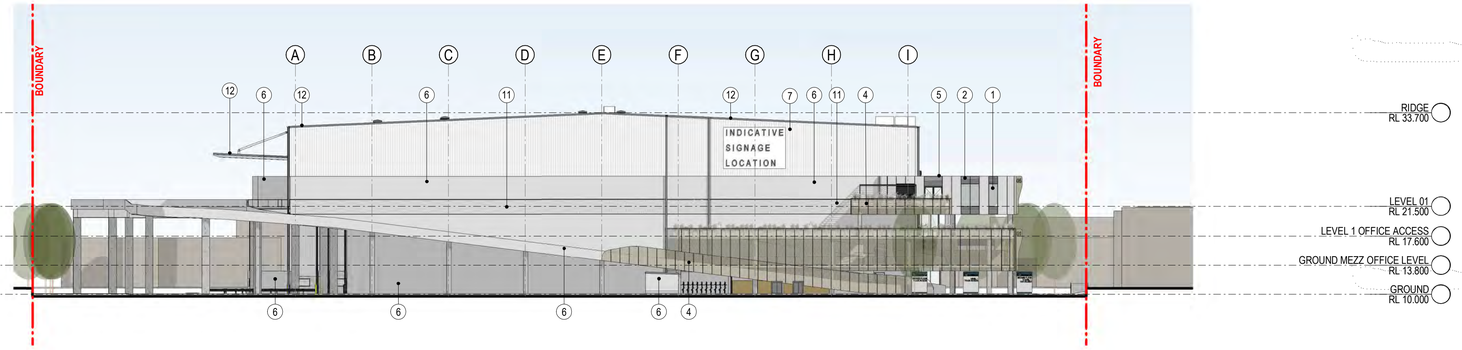

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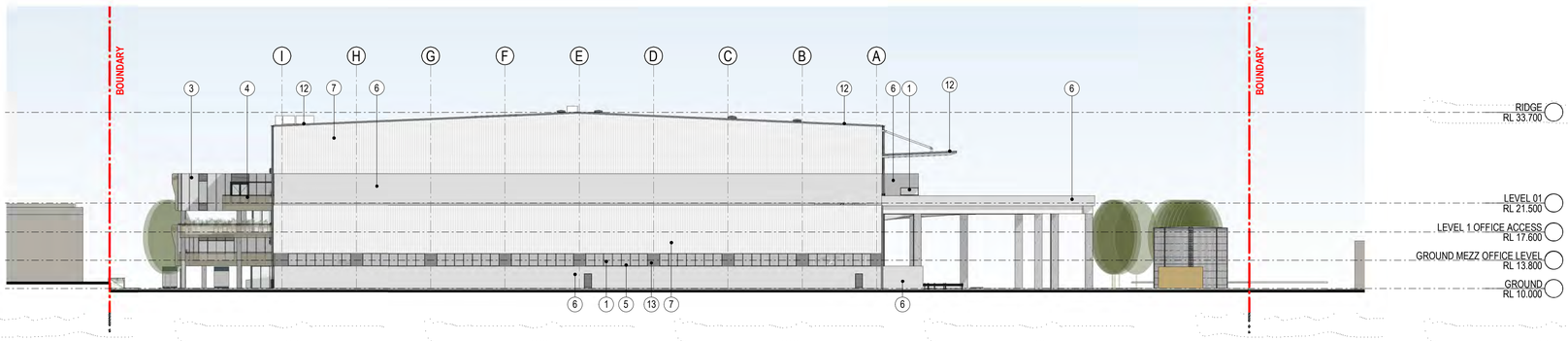

4 NORTH ELEVATION 1 : 400

INDICATIVE EXTERNAL FINISHES LEGEND

GLAZING - LIGHT GREY TINT	1
SPANDREL PANEL	2
SOLID ALUMINIUM PANEL - LIGHT GREY METALLIC	3
STEEL PERFORATED MESH WITH HANDRAIL	4
ALUMINIUM FRAME - POWDER COAT FINISH DARK GREY	5
PRECAST CONCRETE PANEL - NATURAL OFF FORM FINISH	6
TRIMDEK PROFILE METAL CLADDING - COLORBOND SURFMIST	7
TRIMDEK METAL ROOF SHEETING - COLORBOND SURFMIST	8
TRANSLUCENT ROOF SHEETING	9
METAL ROLLER SHUTTER DOOR - COLORBOND SHALE GREY	10
SANDBLASTED CONCRETE	11
DOWNPIPES, BARGE CAPPING & GUTTER - COLORBOND WINDSPRAY	12
PRECAST CONCRETE PANEL - WINDSPRAY PAINT FINISH	13

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ISSUE	DESCRIPTION	DATE
F	ISSUE FOR COORDINATION	21.04.2022
E	FOR CLIENT REVIEW AND COORDINATION	07.04.2022
D	FOR CLIENT REVIEW	30.03.2022
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CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
ELEVATIONS

DATE	SCALE	JOB NO.	DWG NO.	REVISION
21.04.2022	As indicated @ A1	21165	DA200	F

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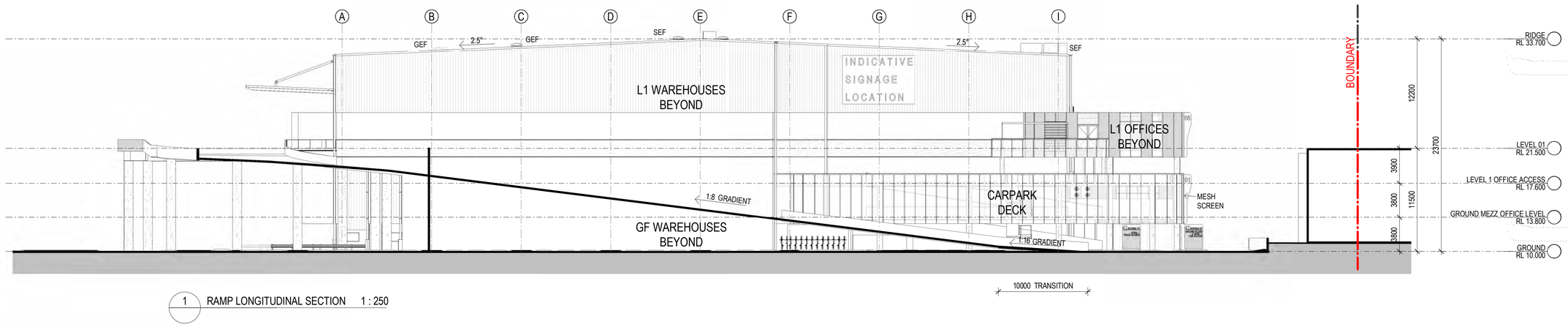

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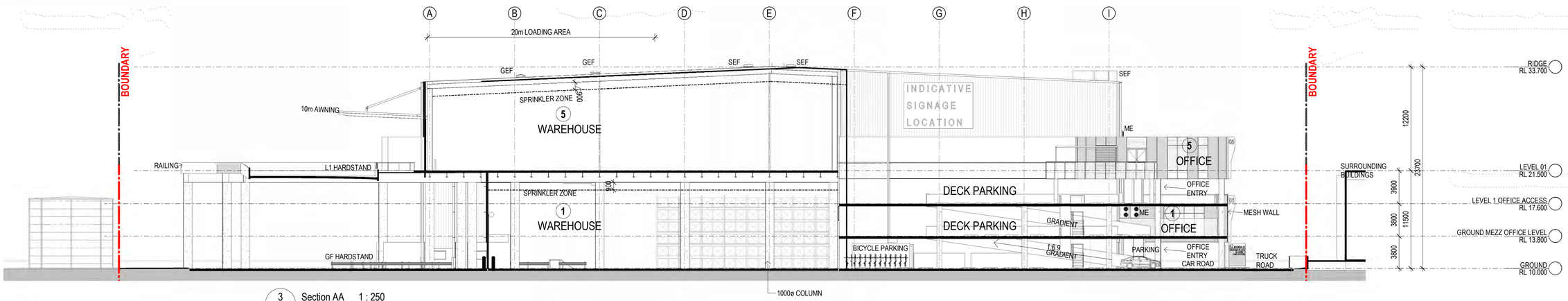

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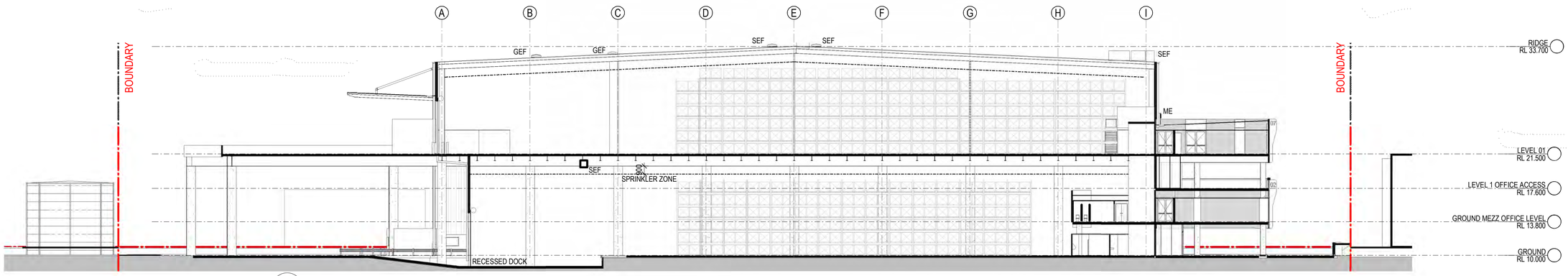

4 Section AA2 1 : 250

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ISSUE	DESCRIPTION	DATE
H	ISSUE FOR COORDINATION	21.04.2022
G	FOR CLIENT REVIEW AND COORDINATION	07.04.2022
F	FOR CLIENT REVIEW	30.03.2022
E	FOR CLIENT REVIEW	25.03.2022
D	FOR CLIENT REVIEW AND COORDINATION	11.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
SECTIONS

DATE	SCALE	JOB NO	DWG NO	REVISION
21.04.2022	1 : 250 @ A1	21165	DA300	H

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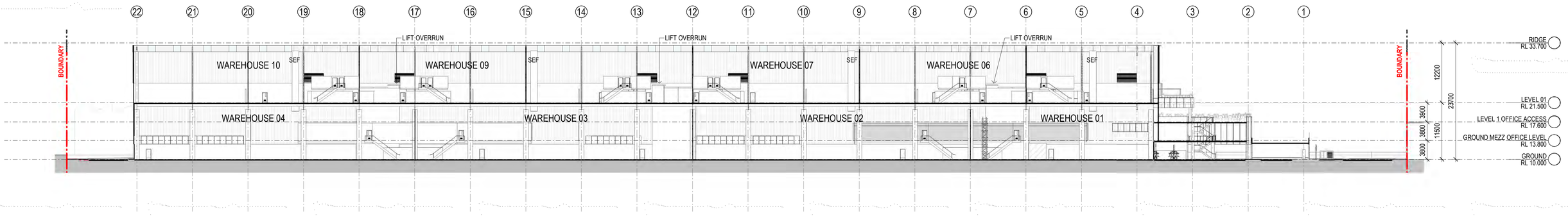

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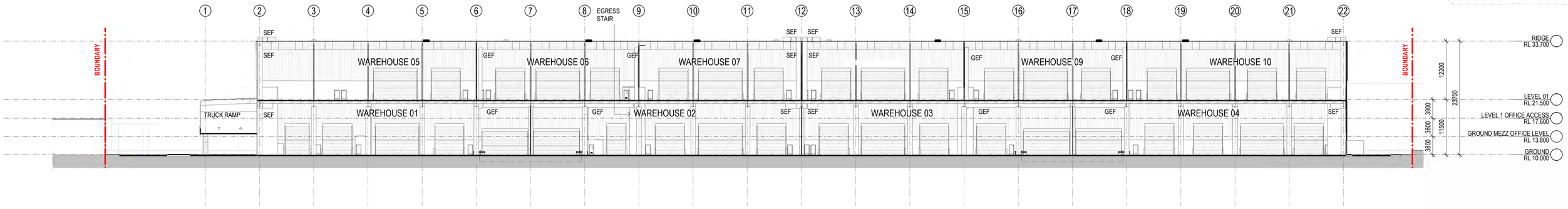

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ISSUE	DESCRIPTION	DATE
D	ISSUE FOR COORDINATION	21.04.2022
C	FOR CLIENT REVIEW AND COORDINATION	07.04.2022
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A	FOR CLIENT REVIEW	25.03.2022

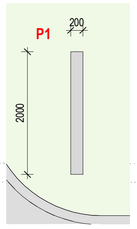
CLIENT

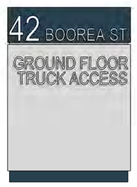
PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
SECTIONS

DATE 21.04.2022 | SCALE 1 : 400 @ A1 | JOB NO. 21165 | DWG NO. DA301 | REVISION D



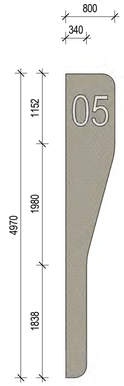


BACK LIT ADDRESS AND SPOT LIGHTS ON
GROUND TO ILLUMINATE TENANT NAMES

1 P1 PLAN 1 : 50

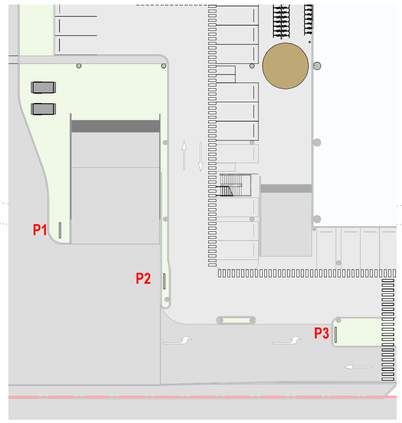
2 P1 1 : 50

3 P1 1 : 50



STEEL PERFORMATED MESH (4)
WITH WHITE OFFICE NUMBER

11 L1 OFFICE IDENTIFICATION 1 : 50



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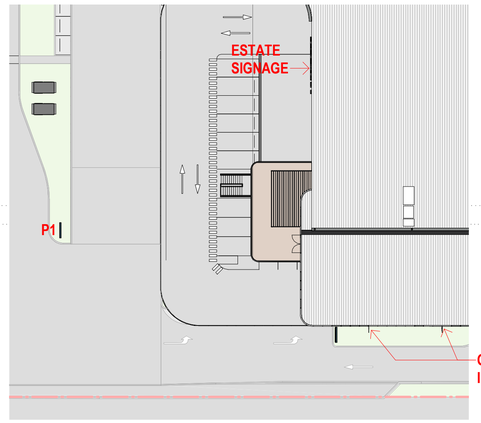
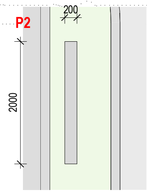
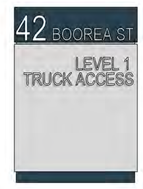


15 SIGNAGE KEY PLAN 1 : 400



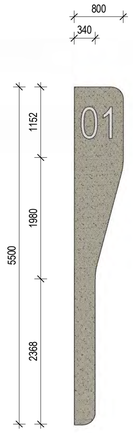


BACK LIT ADDRESS AND SPOT LIGHTS ON
GROUND TO ILLUMINATE TENANT NAMES

4 P2 PLAN 1 : 50

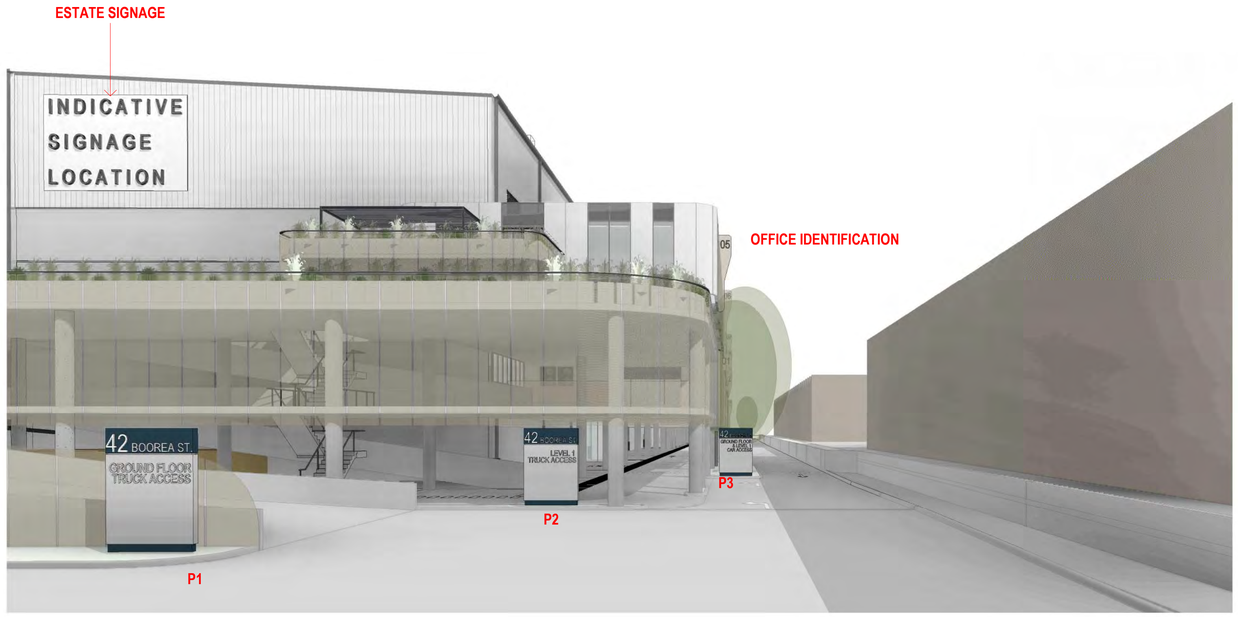
5 P2 1 : 50

6 P2 1 : 50

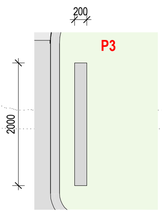


STEEL PERFORMATED MESH (4)
WITH WHITE OFFICE NUMBER

12 GROUND MEZZ OFFICE IDENTIFICATION 1 : 50



14 SIGNAGE PERSPECTIVE



BACK LIT ADDRESS AND SPOT LIGHTS ON
GROUND TO ILLUMINATE TENANT NAMES

7 P3 PLAN 1 : 50

8 P3 1 : 50

9 P3 1 : 50

10 ESTATE SIGNAGE 1 : 100

Hale

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ISSUE	DESCRIPTION	DATE
B	ISSUE FOR COORDINATION	21.04.2022
A	FOR CLIENT REVIEW	30.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

TITLE
SIGNAGE DETAILS

DATE	SCALE	JOB NO.	DWG NO.	REVISION
21.04.2022	As indicated @ A1	21165	DA310	B

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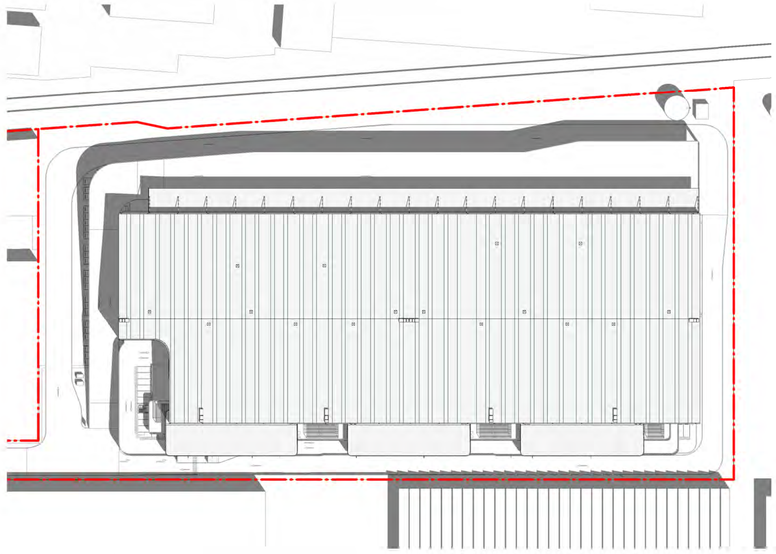
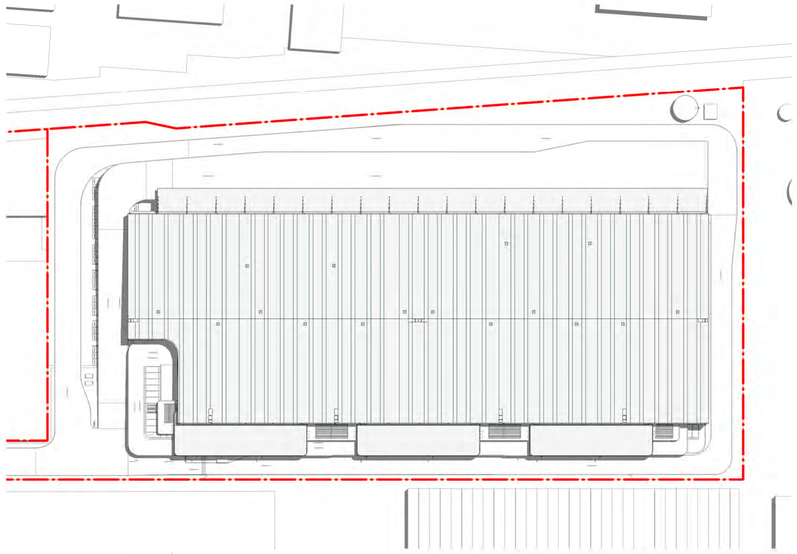
Hale



1 SUMMER SOLSTICE (21-12) SHADOWS 9AM 1 : 1200



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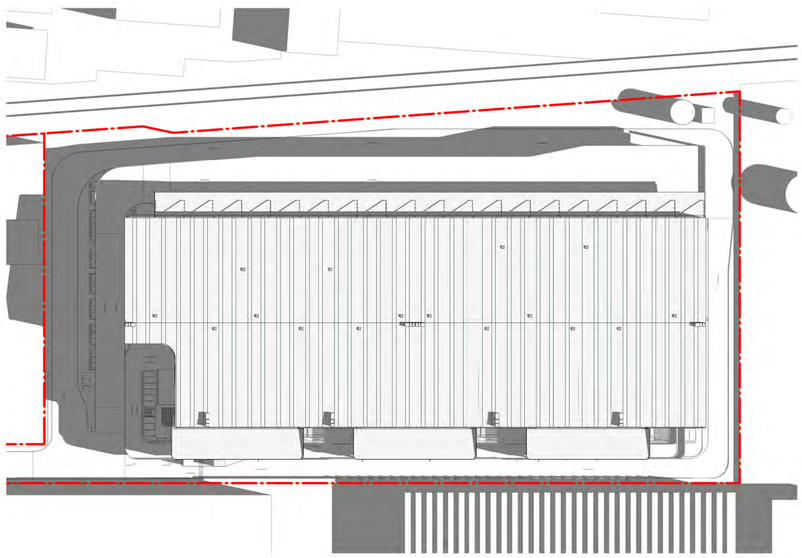
3 SUMMER SOLSTICE (21-12) SHADOWS 3PM 1 : 1200



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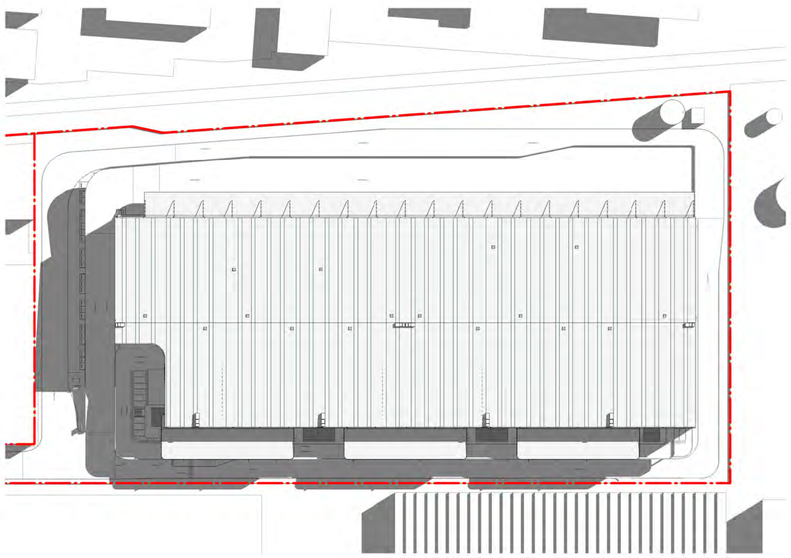

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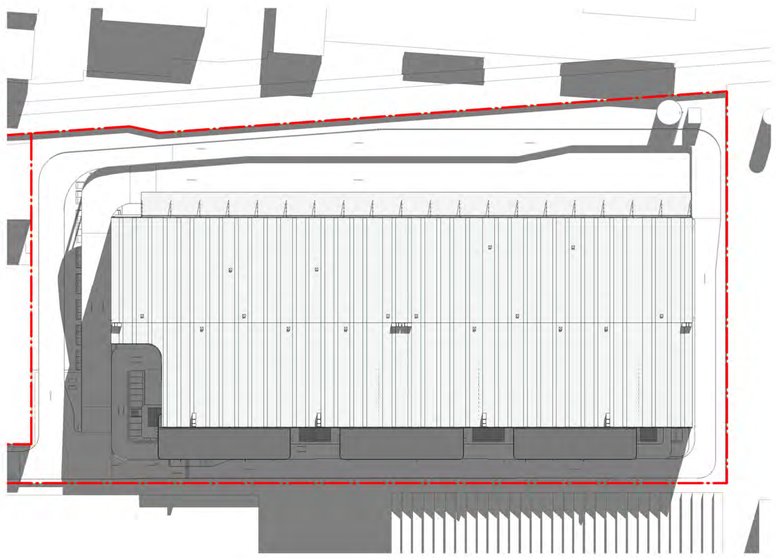

6 WINTER SOLSTICE (21-06) SHADOWS 3PM 1 : 1200

SBA ARCHITECTS
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ISSUE	DESCRIPTION	DATE
D	ISSUE FOR COORDINATION	21.04.2022
C	FOR CLIENT REVIEW AND COORDINATION	07.04.2022
B	FOR CLIENT REVIEW	30.03.2022
A	FOR CLIENT REVIEW	25.03.2022

CLIENT

PROPOSED INDUSTRIAL DEVELOPMENT

42-44 BOOREA STREET, LIDCOMBE

NORTH

TITLE
SHADOW DIAGRAMS

DATE 21.04.2022 SCALE 1 : 1200 @ A1 JOB NO. 21165 DWG NO. DA350 REVISION D

21/04/2022 2:38:59 PM C:\Users\Luke\Documents\21165-HALE- BOOREA ST_BASE_4_R19_Luke5RFE.rvt

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0	Miljan Ruzic	Greg Dasey	Greg Dasey		30 April 2022

www.jbsg.com.au

A-21 Community Consultation and Complaints Handling Procedure

ADCO Constructions (Head Contractor)

ADCO Constructions Pty Ltd
ABN 46 001 044 391
Level 2, 7-9 West Street,
North Sydney NSW 2060
02 8437 5000
adcoconstruct.com.au

Community Consultation & Complaints Handling

The following provides essential information in relation to environmental communication on projects.

Internal Communications

Essential information relating to project environmental management will be communicated through toolbox talks and inductions. Environmental alerts will be periodically prepared and sent to sites for posting on notice boards. Key changes to environmental legislation will be sent by email to all Project Managers and Site Managers.

External Communications – Community Consultation and Complaints Handling

ADCO will consult with nearby sensitive receivers to schedule high noise generating works, vibration intensive activities and management of any potential traffic disruptions. This includes ensuring the community is informed of disruptive works in advance (5 days).

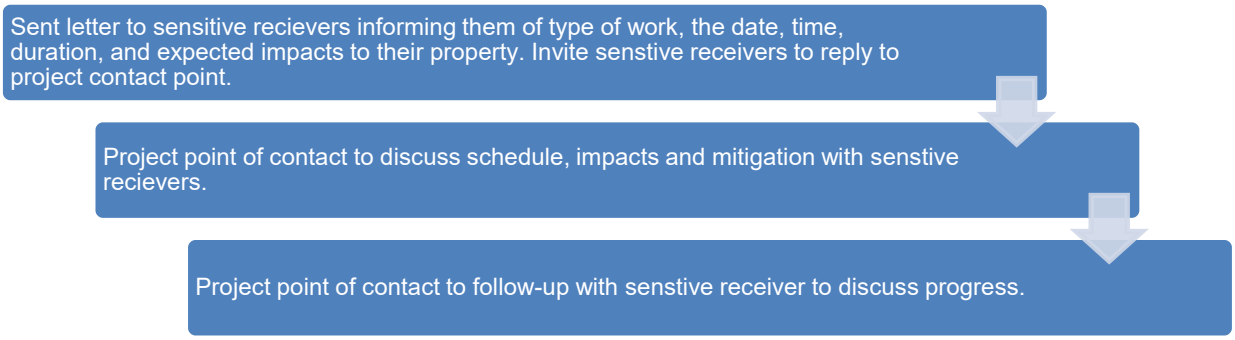
The ADCO point of contact will be Nicholas Napoli (Project Manager – 0428 535 423). All feedback and enquiries from the greater community will be endeavoured to be answered within:

a) Email Correspondence – Within two business days

b) On-Site Inquiry or Mail – Within five business days

c) Phone – One hour (during business hours)

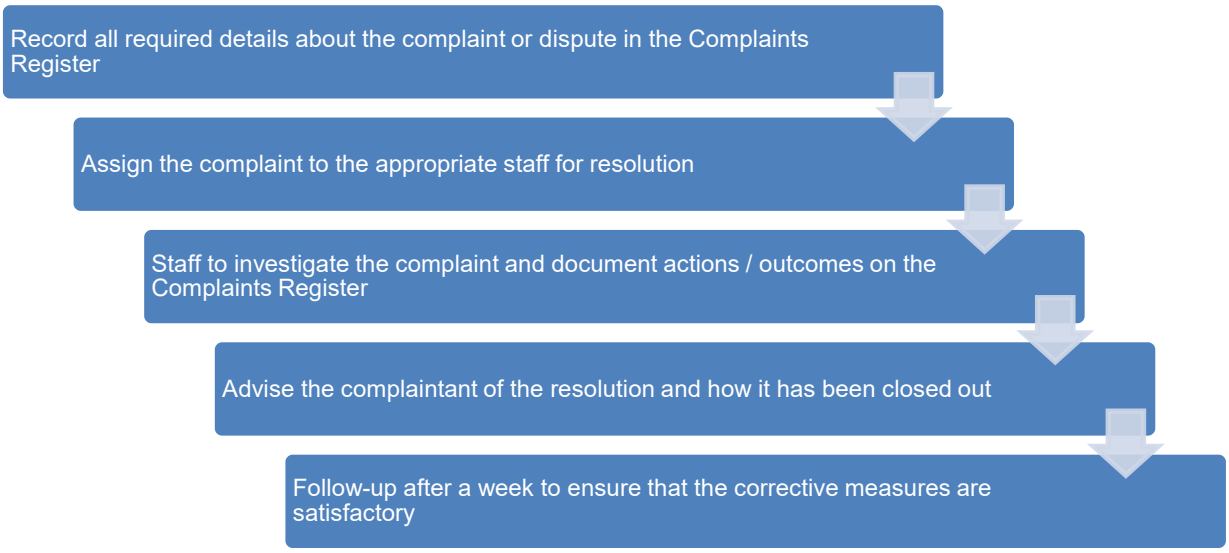
<u>See below for the sensitive receiver's consultation procedure:</u>



Community complaints must be reported as environmental incidents and all correspondence relating to the complaint must be retained and filed on site (minimum 5 years), including information on how the complaint was resolved.

ADCO Constructions Pty Ltd
ABN 46 001 044 391
Level 2, 7-9 West Street,
North Sydney NSW 2060
02 8437 5000
adcoconstruct.com.au

See below for the complaints and disputes resolution procedure:



Regulator Site Visits and Written Communications

If an authorised officer *(*Council or DECCW representative*)* visits site, ADCO are to contact the HSE Manager or Construction Manager for assistance and advice. While you can request that a higher level of management assists you, you cannot refuse to answer questions. An authorised officer must show their identification on request (ensure you ask for it) and has the right to ask any person on site questions relating to environmental issues. When being enquired, always be polite, discuss only the facts and do not elaborate or provide opinions.

Any Penalty Infringement Notices or official warnings from regulators are to be treated as ‘incidents’ and reported in the Incident Report Form, investigated and corrective actions assigned and completed to address the root cause of the infringement. Any communication from a regulator must be notified to the HSE manager. Records of all communications must be retained and appropriately filed.

A-22 Approved SSDA Consent Conditions

Department of Planning, Housing & Infrastructure

Development Consent

Section 4.38 of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning and Public Spaces under delegation executed on 9 March 2022, I approve the Development Application referred to in Schedule 1, subject to the conditions specified in Schedule 2.

These conditions are required to:

- prevent, minimise, or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development

Chris Ritchie
Director
Industry Assessments

Sydney 12 December 2023 File: EF22/1314

SCHEDULE 1

Application Number:	SSD-36464788
Applicant:	Hale Property Services Pty Ltd
Consent Authority:	Minister for Planning and Public Spaces
Site:	42 and 44 Boorea Street, Lidcombe (Lot 1 in DP 740385 and Lot B in DP 415100)
Development:	Construction, fit-out and operation of a two-storey warehouse and distribution centre

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DEFINITIONS

Additional Information	Correspondence provided by the Applicant in response to the Department's requests for information, including correspondence dated 15 May 2023 and 9 June 2023 from Urbis to the Department and correspondence dated 10 November 2023 from Costin Roe Consulting to Tactical Group (Pty) Ltd
Applicant	Hale Property Services Pty Ltd, or any person carrying out any development to which this consent applies
BCA	Building Code of Australia
BC Act	*Biodiversity Conservation Act 2016*
Calendar year	A period of 12 months commencing on 1 January
Carrier	Operator of a telecommunication network and/ or associated infrastructure, as defined in section 7 of the *Telecommunications Act 1997* (Cth)
Certifier	A council or an accredited certifier (including principal certifiers) who is authorised under section 6.5 of the EP&A Act to issue Part 6 certificates
CEMP	Construction Environmental Management Plan
Conditions of this consent	Conditions contained in Schedule 2 of this document
Construction	The demolition and removal of buildings or works, the carrying out of works for the purpose of the development, including bulk earthworks, and erection of buildings and other infrastructure permitted by this consent
Council	Cumberland City Council
Day	The period from 7 am to 6 pm on Monday to Saturday, and 8 am to 6 pm on Sundays and Public Holidays
Department	NSW Department of Planning and Environment
Development	The development described in Schedule 1, the EIS, RTS, SSR and Additional Information, including the works and activities comprising the construction and operation of a two-storey warehouse and distribution centre, including all ancillary works, as modified by the conditions of this consent
Development layout	The plans at Appendix 1 of this consent
DPE	Department of Planning and Environment
Earthworks	Bulk earthworks, site levelling, import and compaction of fill material, excavation for installation of drainage and services, to prepare the site for construction
EHG	Environment and Heritage Group of the Department
EIS	The Environmental Impact Statement titled *'42 Boorea Street Lidcombe Environmental Impact Statement'*, prepared by Urbis Pty Ltd dated 31 May 2022, submitted with the application for consent for the development
ENM	Excavated Natural Material
Environment	As defined in section 1.4 of the EP&A Act
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
EPL	Environment Protection Licence under the POEO Act
Evening	The period from 6 pm to 10 pm
Fibre-ready facility	As defined in section 372W of the *Telecommunications Act 1997* (Cth)
Heritage	Encompasses both Aboriginal and historic heritage including sites that predate European settlement, and a shared history since European settlement
Heritage item	An item as defined under the *Heritage Act 1977,* and assessed as being of local, State and/ or National heritage significance, and/or an Aboriginal Object or Aboriginal Place as defined under the *National Parks and Wildlife Act 1974'*, the World Heritage List, or the National Heritage List or Commonwealth Heritage List under the

	Environment Protection and Biodiversity Conservation Act 1999 (Cth), or anything identified as a heritage item under the conditions of this consent
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance Note: "material harm" is defined in this consent
Land	Has the same meaning as the definition of the term in section 1.4 of the EP&A Act
Material harm	Is harm that: a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)
Minister	NSW Minister for Planning and Public Spaces (or delegate)
Mitigation	Activities associated with reducing the impacts of the development prior to or during those impacts occurring
Night	The period from 10 pm to 7 am on Monday to Saturday, and 10 pm to 8 am on Sundays and Public Holidays
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
Operation	The use of the warehouse and distribution centre as described in the EIS, RTS and SSR
PA	Means a planning agreement within the meaning of the term in section 7.4 of the EP&A Act
Principal Certifier	The certifier appointed as the principal certifier for the building work under section 6.6(1) of the EP&A Act
Planning Secretary	Secretary of the Department, or delegate
POEO Act	*Protection of the Environment Operations Act 1997*
Reasonable	Means applying judgement in arriving at a decision, taking into account: mitigation benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements
Registered Aboriginal Parties	Means the Aboriginal persons identified in accordance with the document entitled "*Aboriginal cultural heritage consultation requirements for proponents 2010*" (DECCW)
Response to Submissions (RTS)	The Applicant's response to issues raised in submissions received in relation to the application for consent for the development under the EP&A Act and includes the document titled *'42-44 Boorea Street, Lidcombe SSD-36464788 Submissions Report'*, prepared by Urbis Pty Ltd and dated 8 December 2022
Sensitive receivers	A location where people are likely to work, occupy or reside, including a dwelling, school, hospital, office or public recreational area
Site	The land defined in Schedule 1
Supplementary Submissions Report (SSR)	The Applicant's response to additional issues raised by government authorities entitled '42-44 Boorea Street, Lidcombe SSD-36464788, Supplementary Submissions Report' prepard by Urbis Pty Ltd and dated 8 March 2023
TfNSW	Transport for New South Wales
VENM	Virgin Excavated Natural Material
Waste	Has the same meaning as the definition of the term in the Dictionary to the POEO Act
Year	A period of 12 consecutive months

SCHEDULE 2

PART A ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

A1. In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.

TERMS OF CONSENT

A2. The development may only be carried out:

(a) in compliance with the conditions of this consent;

(b) in accordance with all written directions of the Planning Secretary;

(c) in accordance with the EIS, RtS and SSR;

(d) in accordance with the Development Layout in Appendix 1; and

(e) in accordance with the management and mitigation measures in Appendix 2.

A3. Consistent with the requirements in this consent, the Planning Secretary may make written directions to the Applicant in relation to:

(a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and

(b) the implementation of any actions or measures contained in any such document referred to in condition A3(a).

A4. The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in condition A2(c) or A2(e). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition A2(c) or A2(e), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

LIMITS OF CONSENT

Lapsing

A5. This consent lapses five years after the date from which it operates, unless the development has physically commenced on the land to which the consent applies before that date.

NOTIFICATION OF COMMENCEMENT

A6. The date of commencement of each of the following phases of the development must be notified to the Planning Secretary in writing, at least one month before that date, or as otherwise agreed with the Planning Secretary:

(a) construction;

(b) operation; and

(c) cessation of operations.

A7. If the construction or operation of the development is to be staged, the Planning Secretary must be notified in writing, at least one month before the commencement of each stage (or other timeframe agreed with the Planning Secretary), of the date of commencement and the development to be carried out in that stage.

EVIDENCE OF CONSULTATION

A8. Where conditions of this consent require consultation with an identified party, the Applicant must:

(a) consult with the relevant party prior to submitting the subject document to the Planning Secretary for approval; and

(b) provide details of the consultation undertaken including:

(i) the outcome of that consultation, matters resolved and unresolved; and

(ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

STAGING, COMBINING AND UPDATING STRATEGIES, PLANS OR PROGRAMS

A9. With the approval of the Planning Secretary, the Applicant may:

(a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);

(b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and

(c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).

A10. If the Planning Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.

A11. If approved by the Planning Secretary, updated strategies, plans or programs supersede the previous versions of them and must be implemented in accordance with the condition that requires the strategy, plan or program.

UTILITIES, SERVICES AND PUBLIC INFRASTRUCTURE

General Requirements

A12. Prior to the commencement of construction of the development, the Applicant must consult with the relevant owner and provider of services or public infrastructure that are likely to be affected by the development or that need to be installed as part of the development, to make suitable arrangements for relevant approvals, access to, diversion, protection and support of the affected services or infrastructure.

A13. Unless the Applicant and the applicable authority agree otherwise, the Applicant must:

(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the development; and

(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

Sydney Water

A14. Prior to the commencement of operation of the development, the Applicant must obtain a Compliance Certificate for water and sewerage infrastructure servicing of the site under section 73 of the *Sydney Water Act 1994*.

Fibre-Ready Facilities

A15. Prior to the issue of a Construction Certificate for any stage of the development, the Applicant (whether or not a constitutional corporation) is to provide evidence, satisfactory to the Certifier, that arrangements have been made for:

(a) the installation of fibre-ready facilities to all individual lots and/or premises in the development to enable fibre to be readily connected to any premises that is being or may be constructed on those lots; and

(b) the provision of fixed-line telecommunications infrastructure in the fibre-ready facilities to all individual lots and/or premises in the development demonstrated through an agreement with a carrier.

A16. Prior to the issue of the Occupation Certificate for the development the Applicant must demonstrate that the carrier has confirmed in writing it is satisfied that the fibre-ready facilities are fit-for-purpose.

DEMOLITION

A17. All demolition must be carried out in accordance with *Australian Standard AS 2601-2001 The Demolition of Structures* (Standards Australia, 2001).

STRUCTURAL ADEQUACY

A18. All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with the relevant requirements of the BCA.

Note:

- *Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.*
- *The EP&A (Development Certification and Fire Safety) Regulation 2021 sets out the requirements for the certification of the development.*

EXTERNAL WALLS AND CLADDING

A19. The external walls of all buildings including additions to existing buildings must comply with the relevant requirements of the BCA.

A20. Prior to the issue of:

(a) any Construction Certificate relating to the construction of external walls (including the installation of finishes and claddings such as synthetic or aluminium composite panels); and

(b) an Occupation Certificate,

the Applicant must provide the Certifier with documented evidence that the products and systems proposed for use or used in the construction of external walls (including finishes and claddings such as synthetic or aluminium composite panels) comply with the requirements of the BCA.

A21. The Applicant must provide a copy of the documentation given to the Certifier to the Planning Secretary within seven days after the Certifier accepts it.

COMPLIANCE

A22. The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

CONTRIBUTIONS TO COUNCIL

A23. Under Section 7.12 of the EP&A Act and in accordance with the *Cumberland Local Infrastructure Contributions Plan 2020*, the Applicant must pay of a levy of 1% of the proposed cost of carrying out the development to Council.

A24. The monetary contribution required by condition A23 must be paid prior to the issue of a construction certificate in respect of any building to which this consent relates. The amount to be paid is to be adjusted at the time of the actual payment, in accordance with the *Cumberland Local Infrastructure Contributions Plan 2020.*

OPERATION OF PLANT AND EQUIPMENT

A25. All plant and equipment used on site, or to monitor the performance of the development, must be:

(a) maintained in a proper and efficient condition; and

(b) operated in a proper and efficient manner.

EASEMENTS

A26. Prior to the commencement of operation of the development and pursuant to section 88B of the *Conveyancing Act 1919*, the Applicant must carry out a lot boundary adjustment or create an appropriate easement over Part of Lot B DP 415100 (44 Boorea Street, Lidcombe) benefitting the site to permit the use of part of this lot for the access driveway to the development, as illustrated in Drawing No.C014411.01-DA41 dated 24 February 2023 prepared by Costin Roe Consulting Pty Ltd.

WORK AS EXECUTED PLANS

A27. Prior to the issue of the Occupation Certificate for the development, work-as-executed drawings signed by a registered surveyor demonstrating that the stormwater drainage and finished ground levels have been constructed as approved, must be submitted to the Principal Certifier.

APPLICABILITY OF GUIDELINES

A28. References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.

A29. However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.

ADVISORY NOTES

AN1. All licences, permits, approvals and consents as required by law must be obtained and maintained as required for the development. No condition of this consent removes any obligation to obtain, renew or comply with such licences, permits, approvals and consents.

PART B SPECIFIC ENVIRONMENTAL CONDITIONS

TRAFFIC AND ACCESS

Construction Traffic Management Plan

B1. Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition C2 and must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be prepared in consultation with Council;

(c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction;

(d) include details of:

(i) heavy vehicle types, routes, access and parking arrangements;

(ii) the strategies that would be implemented to minimise the number of construction workers who will drive to the site; and

(iii) any potential impacts to general traffic, cyclists and pedestrians within the vicinity of the site from construction vehicles during the construction of the development;

(e) include a Driver Code of Conduct and Induction Program to:

(i) minimise the impacts of earthworks and construction on the local and regional road network;

(ii) minimise conflicts with other road users;

(iii) minimise road traffic noise; and

(iv) ensure truck drivers use specified routes;

(f) include a program to monitor the effectiveness of these measures; and

(g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.

B2. The Applicant must:

(a) not commence construction until the Construction Traffic Management Plan required by condition B1 is approved by the Planning Secretary; and

(b) implement the most recent version of the Construction Traffic Management Plan approved by the Planning Secretary for the duration of construction.

Access and Parking

B3. Prior to the commencement of construction of the development, the Applicant must submit design plans to the satisfaction of the relevant roads authority that demonstrate:

(a) the access driveway to the development is designed to accommodate the turning path of a 26-metre B-Double heavy vehicle; and

(b) the design is consistent with the most recent version of the AUSTROADS Guide to Road Design.

B4. Prior to the commencement of operation of the development, the Applicant must complete the access driveway to Boorea Street to the satisfaction of the relevant roads authority. The Applicant must obtain approval for the works under section 138 of the *Roads Act 1993.*

B5. The Applicant must provide sufficient parking facilities on-site, including for heavy vehicles and for site personnel, to ensure that traffic associated with the development does not utilise public and residential streets or public parking facilities.

On-Site Traffic Control

B6. Prior to the commencement of construction of the development, the Applicant must prepare an On-Site Traffic Control Plan for the development to the satisfaction of the Planning Secretary. The On-Site Traffic Control Plan must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be prepared in consultation with Council;

(c) include details of all safety and efficiency measures to be implemented on-site to manage and mitigate the potential for on-site pedestrian and vehicle conflict during operation of the development for all internal roads, parking areas, loading/unloading areas and access ramps and the site access driveway; and

(d) include detailed architectural plans illustrating the location of all line marking, signage (including speed limit signage), and convex mirrors required for operation of the development.

B7. The Applicant must:

(a) not commence construction of the development until the On-Site Traffic Control Plan required by condition B6 has been approved by the Planning Secretary; and

(b) implement the most recent version of the On-Site Traffic Control Plan approved by the Planning Secretary for the duration of the development.

Operational Traffic Management Plan

B8. Prior to the commencement of operation of the development, the Applicant must prepare an Operational Traffic Management Plan (OTMP) for the development to the satisfaction of the Planning Secretary. The OTMP must:

(a) be prepared by a suitably qualified and experienced person(s), whose appointment has been endorsed by the Planning Secretary;

(b) be prepared in consultation with Council;

(c) detail the measures that are to be implemented to ensure road safety and network efficiency;

(d) detail heavy vehicle routes, access, and parking arrangements;

(e) include an Operational Driver Code of Conduct to:

(i) minimise the impacts on the local and regional road network;

(ii) minimise conflicts with other road users;

(iii) minimise road traffic noise;

(iv) inform truck drivers of the site access arrangements and use of specified haul routes;

(v) include a program to monitor the effectiveness of these measures;

(f) include a Loading Dock Management Plan:

(i) consistent with the '42 Boorea Street Framework Loading Dock Management Plan' prepared by Ason Group dated September 2022, Attachment 4 of Appendix F of the RTS;

(ii) that restricts any vehicle larger than a 20-metre articulated vehicle from accessing the ramp and Level 1 warehouse tenancies and Warehouse 1 on the Ground Floor;

(iii) that restricts any vehicle larger than a 12.5-metre articulated vehicle from accessing the eastern dock of Warehouse 4 on the Ground Floor and the two eastern docks of Warehouse 10 on Level 1;

(g) include the approved On-Site Traffic Control Plan required by condition B6; and

(h) include a Green Travel Plan:

(i) outlining facilities and measures to promote public transport usage, such as car share schemes and employee incentives;

(ii) describing pedestrian and bicycle linkages and end of trip facilities available on-site; and

(iii) including a Travel Access Guide.

B9. The Applicant must:

(a) not commence operation until the OTMP required by condition B8 is approved by the Planning Secretary; and

(b) implement the most recent version of the OTMP approved by the Planning Secretary for the duration of the development.

Operating Conditions

B10. The Applicant must ensure:

(a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest version of *AS 2890.1:2004 Parking facilities Off-street car parking* (Standards Australia, 2004), *AS 2890.2:2018 Parking facilities Off-street Commercial Vehicle Facilities* (Standards Australia, 2018) and *AS 2890.6.2009 Parking facilities Off-street parking for people with disabilities* (Standards Australia, 2009)

(b) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant AUSTROADS guidelines;

(c) the development does not result in any vehicles queuing on the public road network;

(d) heavy vehicles and bins associated with the development are not parked on local roads or footpaths in the vicinity of the site;

(e) all vehicles are wholly contained on site before being required to stop;

(f) all vehicles enter and leave the site in a forward direction;

(g) all loading and unloading of materials is carried out on-site; and

(h) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.

SOILS, WATER QUALITY AND HYDROLOGY

Imported Soil

B11. The Applicant must:

(a) ensure that only VENM, ENM, or other material approved in writing by EPA is brought onto the site;

(b) keep accurate records of the volume and type of fill to be used; and

(c) make these records available to the Planning Secretary upon request.

Erosion and Sediment Control

B12. Prior to the commencement of any construction or other surface disturbance for the development, the Applicant must install suitable erosion and sediment control measures on-site, in accordance with the relevant requirements of the *Managing Urban Stormwater: Soils and Construction - Volume 1: Blue Book* (Landcom, 2004) guideline and the Erosion and Sediment Control Plan included in the CEMP required by condition C2.

B13. The Applicant must maintain the erosion and sediment control measures installed on-site in accordance with condition B12 for the duration of construction of the development.

Discharge Limits

B14. The development must comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL.

Stormwater Management System

B15. Prior to the commencement of construction of the development, the Applicant must demonstrate to the satisfaction of the Planning Secretary, that the stormwater management system for the development has been designed:

(a) by a suitably qualified and experienced person(s)

(b) been prepared in consultation with Council;

(c) generally in accordance with the conceptual design in the *Civil Engineering Report Incorporating Water Cycle Management Strategy* prepared by Costin Roe Consulting dated 10 November 2023, Revision I submitted with the Additional Information; and

(d) in accordance with:

(i) Council's requirements relating to stormwater drainage and water sensitive urban design measures, including those set out in Council's letter to the Department dated 27 June 2023;

(ii) applicable Australian Standards; and

(iii) the system capacity requirements of *Australian Rainfall and Runoff* (Engineers Australia, 2016) and *Managing Urban Stormwater: Council Handbook* (EPA, 1997) guidelines.

B16. Prior to the commencement of operation, the Applicant must install the stormwater management system in accordance with the finalised detailed design (as required by condition B15) and ensure the system is operational.

B17. The Applicant must maintain the stormwater management system installed on the site under condition B16 for the duration of the development, and in accordance with the maintenance schedule in the *Civil Engineering Report Incorporating Water Cycle Management Strategy* prepared by Costin Roe Consulting dated 10 November 2023, Revision I submitted with the Additional Information.

Flood Management

B18. Prior to the commencement of construction of the development, the Applicant must prepare a Construction Flood Emergency Response Plan (CFERP) to the satisfaction of the Planning Secretary. The CFERP must form part of the CEMP required by condition C2 and must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be prepared in consultation with the NSW State Emergency Service;

(c) address the provisions of the *Floodplain Development Manual (2023)* and associated guidance in the Department's '*Flood risk management toolkit'*; and

(d) include details of:

(i) the flood emergency responses for construction of the development;

(ii) predicted flood levels;

(iii) flood warning time, flood notification, signs and depth indicators;

(iv) assembly points and evacuation routes;

(v) evacuation and refuge protocols; and

(vi) awareness training for employees and contractors.

B19. The Applicant must:

(a) not commence construction until the CFERP required by condition B18 is approved by the Planning Secretary; and

(b) implement the most recent version of the CFERP approved by the Planning Secretary for the duration of construction.

B20. Prior to the commencement of operation of the development, the Applicant must update the CFERP for the purposes of operation of the development in an Operational Flood Emergency Response Plan (OFERP) to the satisfaction of the Planning Secretary. The OFERP must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be prepared in consultation with the NSW State Emergency Services;

(c) address the provisions of the *Floodplain Development Manual (2023)* and associated guidance in the Department's '*Flood risk management toolkit*'; and

(d) include details of:

(i) the flood emergency responses for operation of the development;

(ii) predicted flood levels;

(iii) flood warning time, flood notification, signs and depth indicators;

(iv) assembly points and evacuation routes;

(v) evacuation and refuge protocols; and

(vi) awareness training for employees and contractors.

B21. The Applicant must:

(a) not commence operation of the development until the OFERP required by condition B20 is approved by the Planning Secretary; and

(b) implement the most recent version of the OFERP approved by the Planning Secretary for the duration of the development.

B22. All floor levels must be no lower than the 1% Annual Exceedance Probability flood plus 500 mm of freeboard.

B23. Any structures below the 1% Annual Exceedance Probability plus 500 mm of freeboard must be constructed from flood compatible building components and to withstand flood velocities.

NOISE

Hours of Work

B24. The Applicant must comply with the hours detailed in Table 1.

Table 1 *Hours of Work*

Activity	Day	Time
Construction	Monday – Friday Saturday	7 am to 6 pm 8 am to 1 pm
Operation	Monday – Sunday	24 hours

B25. Works outside of the hours identified in condition B24 may be undertaken in the following circumstances:

(a) works that are inaudible at the nearest sensitive receivers;

(b) works agreed to in writing by the Planning Secretary;

(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or

(d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

Construction Noise Limits

B26. The development must be constructed to achieve the construction noise management levels detailed in *the Interim Construction Noise Guideline* (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures in the Appendix 2.

Construction Noise and Vibration Management Plan

B27. The Applicant must prepare a Construction Noise and Vibration Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must:

(a) be prepared by a suitably qualified and experienced noise expert;

(b) describe procedures for achieving the noise management levels in the *Interim Construction Noise Guideline* (DECC, 2009) (as may be updated or replaced from time to time);

(c) describe the measures to be implemented to manage high noise or vibration generating works such as piling, in close proximity to sensitive receivers;

(d) include mitigation measures identified in the 'Noise and Vibration Impact Assessment' prepared for the development by RWDI Australia Pty Ltd dated 6 February 2023, Version B, Final; and

(e) include a complaints management system that would be implemented for the duration of the development.

B28. The Applicant must:

(a) not commence construction of any relevant stage of the development until the Construction Noise and Vibration Management Plan required by condition B27 is approved by the Planning Secretary; and

(b) implement the most recent version of the Construction Noise and Vibration Management Plan approved by the Planning Secretary for the duration of construction.

Operational Noise Limits

B29. The Applicant must ensure that noise generated by operation of the development does not exceed the noise limits in Table 2.

Table 2 *Noise Limits (dB(A))*

Location[a]	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$	Night $L_{Aeq(15\ minute)}$
R03	38	37	36
R08	49	46	37
R16	37	34	34
Industrial	55	55	55

a. Refer to the plan in Appendix 1 for the location of sensitive receivers

Note *Noise generated by the development is to be measured in accordance with the relevant monitoring performance procedures and exemptions (including certain meteorological conditions) of the NSW Noise Policy for Industry (EPA, 2017) (as may be updated or replaced from time to time).*

Operational Noise Verification Report

B30. Within three months of the completion of commencement of operation of the development, the Applicant must prepare and submit a noise verification report for the development to the satisfaction of the Planning Secretary. The noise verification report must:

(a) be prepared by a suitably qualified and experienced consultant;

(b) demonstrate that noise verification has been carried out by a suitably qualified and experienced acoustic consultant in accordance with:

(i) the Australian Standard AS 1055:2018 Acoustics – Description and measurement of environmental noise (Standards Australia, 2018); and

(ii) the EPA Approved Methods for the Measurement and Analysis of Environmental Noise in NSW (EPA, 2022); and

(iii) the monitoring and reporting requirements detailed in Section 7 of the Noise Policy for Industry (EPA, 2017);

(c) include:

(i) a comparison of the actual noise impacts with the noise predictions made in the EIS;

(ii) an analysis of compliance with noise limits specified in condition B29;

(iii) an outline of management actions to be taken to address any exceedances of the limits specified in condition B29; and

(iv) a description of contingency measures in the event management actions are not effective in reducing noise levels to an acceptable level.

VIBRATION

Vibration Criteria

B31. Vibration caused by construction at any residence or structure outside the site must be limited to:

(a) for structural damage, the latest version of *DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures* (German Institute for Standardisation, 1999); and

(b) for human exposure, the acceptable vibration values set out in the *Environmental Noise Management Assessing Vibration: a technical guideline* (DEC, 2006) (as may be updated or replaced from time to time).

B32. Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition B31.

B33. The limits in conditions B31 and B32 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition C2 of this consent.

BIODIVERSITY

Biodiversity Offsets

B34. Prior to any clearing or construction works for the development, the Applicant must purchase and retire one ecosystem credit to offset the removal/disturbance of Plant Community Type 1234 at the site. The ecosystem credits must be retired in accordance with the requirements of EHG's Biodiversity Offsets Scheme and the *Biodiversity Conservation Act 2016*.

B35. The requirement to retire one ecosystem credits (see condition B34) may be satisfied by payment to the Biodiversity Conservation Fund of an amount equivalent to the number and classes of ecosystem credits, as calculated by EHG's Biodiversity Offsets Payment Calculator.

B36. The Applicant must provide the Planning Secretary with evidence that:

(a) the retirement of ecosystem credits has been completed (see condition B34); or

(b) a payment has been made to the Biodiversity Conservation Fund (see condition B35),

prior to undertaking any clearing or construction works for the development.

Pre-Clearance Survey

B37. Prior to clearing for construction of the development, the Applicant must carry out a pre-clearance survey and assessment of all vegetation to be cleared in accordance with the mitigation measures identified in the 'Biodiversity Development Assessment Report' prepared for the development by Ecologique dated 31 May 2022 Revision No.03. The pre-clearance survey must:

(a) delineate the extent of clearing permitted;

(b) identify, mark and map any habitat features present in trees and shrubs that will require a two staged clearance process;

(c) locate nearby habitat suitable for the release of fauna that may be encountered during the clearing stage;

(d) identify and map any areas of weed infestations that must be cleared separately and not be chipped for reuse on site; and

(e) identify and map any areas where large woody debris generated from clearing of native vegetation can be feasibly reused on site.

B38. Where fauna residing in vegetation to be cleared is identified in the pre-clearing survey carried out under condition B37, an experienced ecologist must be present to supervise the process, act as fauna spotter and relocate any fauna captured.

B39. Clearing of trees and shrubs on the site must be avoided in late winter/spring during the breeding and nesting period for birds, unless the preclearance surveys carried out in accordance with condition B37 find no breeding or nesting activity present.

B40. Prior to the commencement of operation of the development, the Applicant must provide written confirmation to the Planning Secretary that preclearance surveys and clearance supervision (if required) required under conditions B37 and condition B38 have been completed.

Tree Protection

B41. All tree protection mitigation and management measures identified within the 'Arboricultural Impact Assessment Report' prepared for the development by Canopy Consulting dated 8 November 2022, Version 3 – Final (Appendix

J of the RTS), must be implemented prior to the commencement of construction of the development and maintained for the duration of construction.

B42. All trees identified for retention within the site are to be retained and protected in accordance with the recommendations of the 'Arboricultural Impact Assessment Report' prepared for the development by Canopy Consulting, dated 8 November 2022, Version 3 - Final (see Appendix J of the RTS) and with the latest version of *Australian Standard 4970:2009 – Protection of Trees on Development* for the duration of the development.

VISUAL

B43. Prior to the commencement of operation of the development, the Applicant must prepare a Landscape Management Plan to manage the revegetation and landscaping works on-site to the satisfaction of the Planning Secretary. The plan must:

(a) be consistent with the Landscape Plans prepared by Geoscapes (Appendix D of the RTS) dated 27 October 2022, the 'Arboricultural Impact Assessment Report' prepared for the development by Canopy Consulting, dated 8 November 2022, Version 3 - Final (see Appendix J of the RTS) and correspondence dated 3 March 2023 from Geoscapes and 8 March 2023 from Canopy Consulting;

(b) detail the species, size, quantity and location of all trees, shrubs and groundcover species to be planted on-site incorporating local native species;

(c) detail the number of trees and location to be removed, the tree replacement ratio and number and location of trees to be planted;

(d) include a tree maintenance schedule that demonstrates:

(i) all replacement trees will be maintained for a minimum period of two years following planting;

(ii) any replacement trees that do not survive are to be replaced by the same plant species;

(iii) replacement plantings are of the same growth form (i.e. tree for a tree, shrub for a shrub) and must not decrease species diversity;

(iv) newly planted vegetation is to be maintained for a minimum of 12 months following planting

(e) where practicable, reuse native trees removed from the site, including tree trunks, root balls and logs on the ground, to enhance habitat within the site, or provide details of the potential for removed native trees to be used in habitat enhancement and rehabilitation works off-site;

(f) describe the monitoring and maintenance measures to manage revegetation and landscaping works; and

(g) include details of fencing along Haslams Creek in accordance with Sydney Water requirements, as required under condition B49.

B44. The Applicant must:

(a) not commence operation until the Landscape Management Plan is approved by the Planning Secretary;

(b) must implement the most recent version of the Landscape Management Plan approved by the Planning Secretary; and

(c) maintain the landscaping and vegetation on the site in accordance with the approved Landscape Management Plan required by condition B43 for the duration of the development.

B45. The Applicant must ensure all landscaping and revegetation works in the approved Landscape Management Plan required under condition B43 are established prior to the commencement of operation of the development.

Haslams Creek Riparian Corridor

B46. Prior to the commencement of operation of the development, the Applicant must establish a 10-metre wide vegetated riparian corridor along the eastern bank of Haslams Creek. Landscaping of the riparian corridor must:

(a) be carried out in accordance with the approved Landscape Management Plan required under condition B43;

(b) minimise removal of local native trees, including *Casuarina glauca*; and

(c) be maintained for the life of the development.

Lighting

B47. The Applicant must ensure the lighting associated with the development:

(a) complies with the latest version of AS 4282-2019 - *Control of the obtrusive effects of outdoor lighting* (Standards Australia, 2019); and

(b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

Signage and Fencing

B48. All signage and fencing must be erected in accordance with the development plans included in the EIS, RTS and SSR and the approved Traffic Control Plan (required by condition B6).

Note: *This condition does not apply to temporary construction and safety related signage and fencing*

B49. Fencing along Haslams Creek must be designed and constructed to ensure flood water and stormwater overland flow can flow across the fence and in accordance with Sydney Water requirements.

HAZARDS AND RISK

Emergency Response

B50. Prior to the commencement of operation of the development the Applicant must prepare the following documents:

(a) a comprehensive Emergency Response Plan for the site in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'*; and

(b) an Emergency Services Information Package, developed in accordance with the FRNSW *Fire Safety Guideline – Emergency Services Information Package and Tactical Fire Plans.*

B51. The Applicant must implement the Emergency Response Plan and Emergency Services Information Package required under condition B50 for the duration of the development.

B52. The Applicant must ensure that adequate emergency vehicle access is incorporated into the development site design in line with FRNSW *Fire Safety Guideline - Access for Fire Brigade Vehicles and Firefighters.*

Dangerous Goods

B53. The quantities of dangerous goods stored and handled at the site must be below the threshold quantities listed in the Department's *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* at all times.

Bunding

B54. The Applicant must store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling of Liquids: Environmental Protection – Participants Manual* (Department of Environment and Climate Change, 2007).

AIR QUALITY

Dust Minimisation

B55. The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.

B56. During construction of the development, the Applicant must ensure that:

(a) exposed surfaces and stockpiles are suppressed by regular watering or other alternative suppression method;

(b) all trucks entering or leaving the site with loads have their loads covered;

(c) trucks associated with the development do not track dirt onto the public road network;

(d) public roads used by these trucks are kept clean; and

(e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.

Air Quality Discharges

B57. The Applicant must install and operate equipment in line with best practice to ensure that the development complies with all load limits, air quality criteria/air emission limits and air quality monitoring requirements as specified in the Protection of the Environment Operations (Clean Air) Regulation 2021.

ABORIGINAL HERITAGE

Unexpected Finds Protocol

B58. If any item or object of Aboriginal heritage significance is identified on site:

(a) all work in the immediate vicinity of the suspected Aboriginal item or object must cease immediately;

(b) a 10 m wide buffer area around the suspected item or object must be cordoned off; and

(c) Heritage NSW must be contacted immediately.

B59. Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the *National Parks and Wildlife Act 1974*.

HISTORIC HERITAGE

Unexpected Finds Protocol

B60. If any non-Aboriginal archaeological relics are uncovered during any works being carried out for the development:

(a) all work in the immediate vicinity of the suspected relic(s) must cease immediately;

(b) Heritage NSW must be contacted immediately; and

(c) the suspected relic(s) must be evaluated, recorded and, if necessary, excavated by a suitably qualified and experienced expert in accordance with the requirements of Heritage NSW.

B61. Work in the immediate vicinity of any suspected non-Aboriginal archaeological relic(s) must not recommence until this has been authorised by Heritage NSW.

WASTE MANAGEMENT

Construction and Demolition Waste Management

B62. Prior to the commencement of construction of the development, the Applicant must prepare a Construction and Demolition Waste Management Plan for the development. The Plan must form part of a CEMP in accordance with condition C2 and must:

(a) detail the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations; and

(b) be implemented for the duration of construction works.

Waste Management

B63. The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the latest version of EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014).

B64. All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.

B65. Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal.

B66. Waste must be secured and maintained within designated waste storage areas at all times and must not leave the site onto neighbouring public or private properties.

Pests, Vermin and Priority Weed Management

B67. The Applicant must:

(a) implement suitable measures to manage pests, vermin and declared priority weeds on the site; and

(b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or priority weeds are not present on site in sufficient numbers to pose an environmental hazard or cause the loss of amenity in the surrounding area.

Note: *For the purposes of this condition, priority weed has the same definition of the term in the* Biosecurity Act 2015*.*

CONTAMINATION

Underground Storage Tank

B68. Prior to the commencement of construction, the Applicant must decommission, remove and dispose of the underground storage tank identified as part of the Detailed Site Investigation prepared by JBS&G Australia Pty Ltd dated 10 May 2022 (Appendix W of the EIS), in accordance with the relevant requirements of the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019.

Unexpected Finds

B69. Prior to the commencement of construction, the Applicant must prepare an unexpected contamination finds procedure to ensure that potentially contaminated material is appropriately managed. The procedure must form part of the of the CEMP in accordance with condition C2 and must ensure any material identified as contaminated is disposed of in accordance with the POEO Act and its associated regulations. Details of the final disposal location and the results of any associated testing must be submitted to the Planning Secretary prior to removal of the contaminated material from the site.

Asbestos

B70. The Applicant must ensure that any asbestos encountered during the demolition and construction works for the development is monitored, handled, transported and disposed of by appropriately qualified and licensed contractors in accordance with the requirements of SafeWork NSW and relevant guidelines, including:

(a) *Work Health and Safety Regulation 2017*;

(b) SafeWork NSW Code of Practice – How to Manage and Control Asbestos in the Workplace December 2022;

(c) SafeWork NSW Code of Practice – How to Safely Remove Asbestos December 2022; and

(d) *Protection of the Environment Operations (Waste) Regulation 2014*.

PART C ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Management Plan Requirements

C1. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:

(a) details of:

(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);

(ii) any relevant limits or performance measures and criteria; and

(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;

(b) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;

(c) a program to monitor and report on the:

(i) impacts and environmental performance of the development; and

(ii) effectiveness of the management measures set out pursuant to paragraph (c) above;

(d) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;

(e) a program to investigate and implement ways to improve the environmental performance of the development over time;

(f) a protocol for managing and reporting any:

(i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria);

(ii) complaint;

(iii) failure to comply with statutory requirements; and

(g) a protocol for periodic review of the plan.

Note: *The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans*

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

C2. The Applicant must prepare a Construction Environmental Management Plan (CEMP) for the development in accordance with the requirements of condition C1 and to the satisfaction of the Planning Secretary.

C3. As part of the CEMP required under condition C2 of this consent, the Applicant must include the following:

(a) Construction Traffic Management Plan (see condition B1);

(b) Erosion and Sediment Control Plan (see condition B12);

(c) Flood Emergency Response Plan (see condition B18);

(d) Construction Noise and Vibration Management Plan (see condition B27);

(e) Construction and Demolition Waste Management Plan (see condition B62);

(f) An Unexpected Contamination Finds Procedure (see condition B69);

(g) the approved Acid Sulfate Soils Management Plan submitted as Appendix Y of the EIS; and

(h) Community Consultation and Complaints Handling.

C4. The Applicant must:

(a) not commence construction of the development until the CEMP is approved by the Planning Secretary; and

(b) carry out the construction of the development in accordance with the CEMP approved by the Planning Secretary and as revised and approved by the Planning Secretary from time to time.

OPERATIONAL COMPLAINTS HANDLING PROTOCOL

C5. Prior to the commencement of operation, the Applicant must prepare an Operational Complaints Handling Protocol (OCHP) for the development. The OCHP must:

(a) detail how complaints would be received by the Applicant;

(b) detail how the contact details for receiving complaints would be communicated to surrounding businesses and/or residential receivers;

(c) include a complaints register to record the date, time and nature of the complaint, details of the complainant and any actions taken to address the complaint; and

(d) be submitted to the Planning Secretary upon request.

Note: *Methods for receiving complaints could include, but are not limited to, email, a toll-free telephone number and/or a postal address. Methods for communicating contact details could include, but are not limited to, on-site signage and/or an advertisement published in a local paper.*

C6. The Applicant must:

(a) not commence operation until the OCHP under condition C5 is submitted to the Planning Secretary; and

(b) implement the most recent version of the OCHP submitted to the Planning Secretary for the duration of the development.

REVISION OF STRATEGIES, PLANS AND PROGRAMS

C7. Within three months of:

(a) the submission of an incident report under condition C9;

(b) the approval of any modification of the conditions of this consent; or

(c) the issue of a direction of the Planning Secretary under condition A2(b) which requires a review,

the strategies, plans and programs required under this consent must be reviewed.

C8. If necessary to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review required under condition C7 or such other timing as agreed by the Planning Secretary.

Note: *This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.*

REPORTING AND AUDITING

Incident Notification, Reporting and Response

C9. The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 3.

Non-Compliance Notification

C10. The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance.

C11. A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

C12. A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

Monitoring and Environmental Audits

C13. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance reporting and independent auditing.

Note: *For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.*

ACCESS TO INFORMATION

C14. At least 48 hours before the commencement of construction of the development and for the life of the development, the Applicant must:

(a) make the following information and documents (as they are obtained or approved) publicly available on its website:

(i) the documents referred to in condition A2 of this consent;

(ii) all current statutory approvals for the development;

(iii) all approved strategies, plans and programs required under the conditions of this consent (for the avoidance of doubt, this does not include the documents described under condition B50);

(iv) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent;

(v) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;

(vi) a summary of the current stage and progress of the development;

(vii) contact details to enquire about the development or to make a complaint;

(viii) a complaints register, updated quarterly;

(ix) any other matter required by the Planning Secretary; and

(b) keep such information up to date, to the satisfaction of the Planning Secretary.

APPENDIX 1 DEVELOPMENT LAYOUT PLANS

Architectural Plans – Endorsed with Department Stamp			
Drawing Number	**Issue Number**	**Dated**	**Prepared By**
DA010	H	21.04.22	SBA Architects
DA011	H	21.04.22	SBA Architects
DA012	H	21.04.22	SBA Architects
DA013	H	21.04.22	SBA Architects
DA050	J	29.09.22	SBA Architects
DA100	P	1.03.23	SBA Architects
DA101	G	29.09.22	SBA Architects
DA102	G	29.09.22	SBA Architects
DA103	K	29.09.22	SBA Architects
DA104	G	29.09.22	SBA Architects
DA105	H	21.04.22	SBA Architects
DA106	H	21.04.22	SBA Architects
DA107	H	29.09.22	SBA Architects
DA120	E	21.04.22	SBA Architects
DA121	D	21.04.22	SBA Architects
DA125	D	21.04.22	SBA Architects
DA126	D	21.04.22	SBA Architects
DA127	D	21.04.22	SBA Architects
DA130	B	21.04.22	SBA Architects
DA200	G	09.09.22	SBA Architects
DA300	J	29.09.22	SBA Architects
DA301	F	29.09.22	SBA Architects
DA310	C	09.09.22	SBA Architects
DA350	E	09.09.22	SBA Architects
Civil Engineering Plans			
C014411.01-DA15	B	21.10.22	Costin Roe Consulting
C014411.01-DA20	B	21.10.22	Costin Roe Consulting
C014411.01-DA25	B	21.10.22	Costin Roe Consulting
C014411.01-DA30	C	21.10.22	Costin Roe Consulting
C014411.01-DA40	F	24.02.23	Costin Roe Consulting
C014411.01-DA41	F	24.02.23	Costin Roe Consulting
C014411.01-DA42	F	24.02.23	Costin Roe Consulting
C014411.01-DA43	E	21.10.22	Costin Roe Consulting
C014411.01-DA44	E	21.10.22	Costin Roe Consulting
C014411.01-DA45	E	21.10.22	Costin Roe Consulting
C014411.01-DA46	B	21.10.22	Costin Roe Consulting
C014411.01-DA47	D	02.06.23	Costin Roe Consulting
C014411.01-DA48	C	24.06.23	Costin Roe Consulting
C014411.01-DA49	B	02.06.23	Costin Roe Consulting
C014411.01-DA51	E	21.10.23	Costin Roe Consulting
C014411.01-DA52	F	24.02.23	Costin Roe Consulting
C014411.01-DA53	E	21.10.22	Costin Roe Consulting
C014411.01-DA54	E	21.10.22	Costin Roe Consulting
C014411.01-DA55	E	21.10.22	Costin Roe Consulting
C014411.01-DA56	B	21.10.22	Costin Roe Consulting
C014411.01-DA57	B	21.10.22	Costin Roe Consulting
C014411.01-DA58	C	21.10.22	Costin Roe Consulting
C014411.01-DA59	C	21.10.22	Costin Roe Consulting

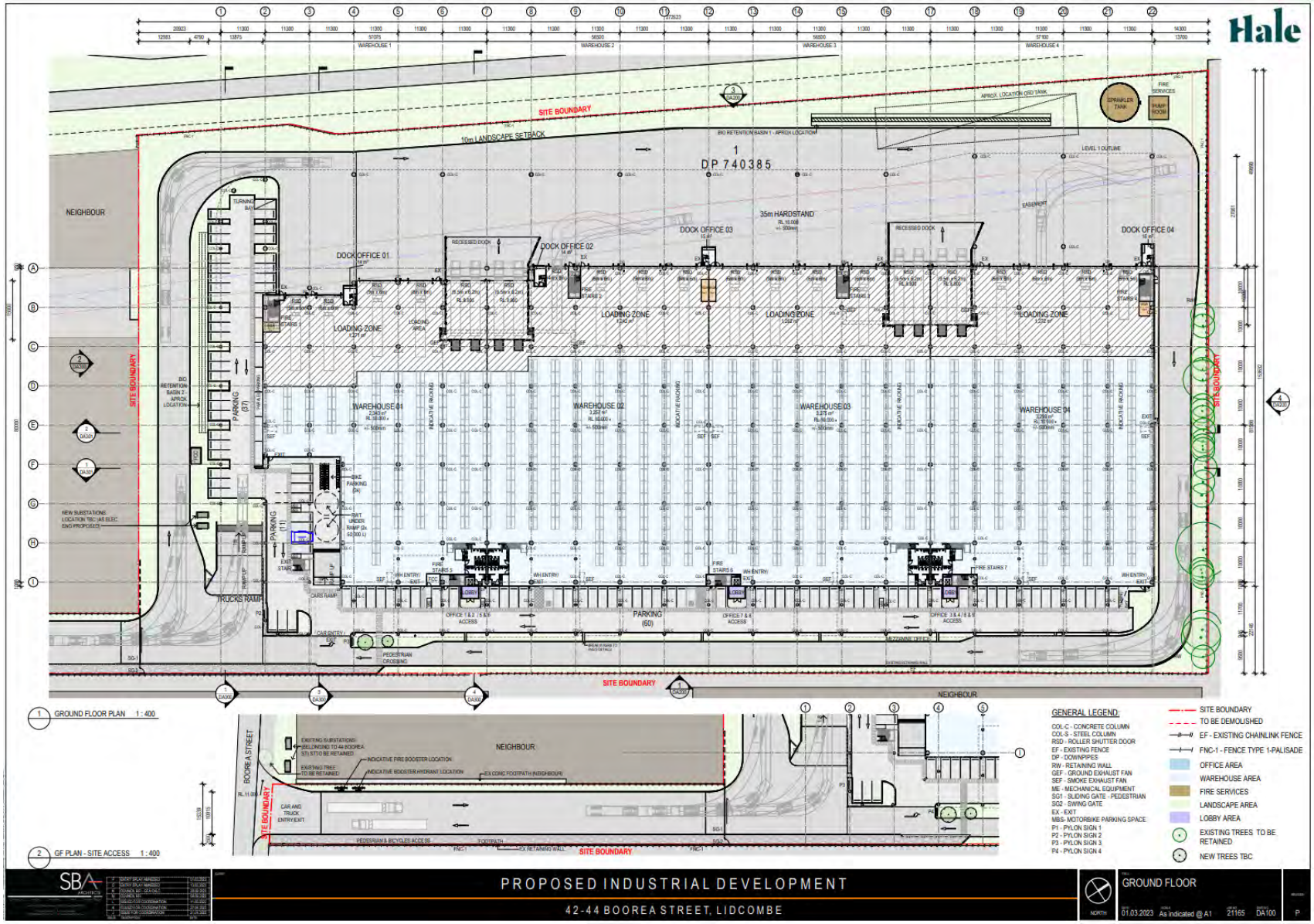

Figure 1: Site Plan

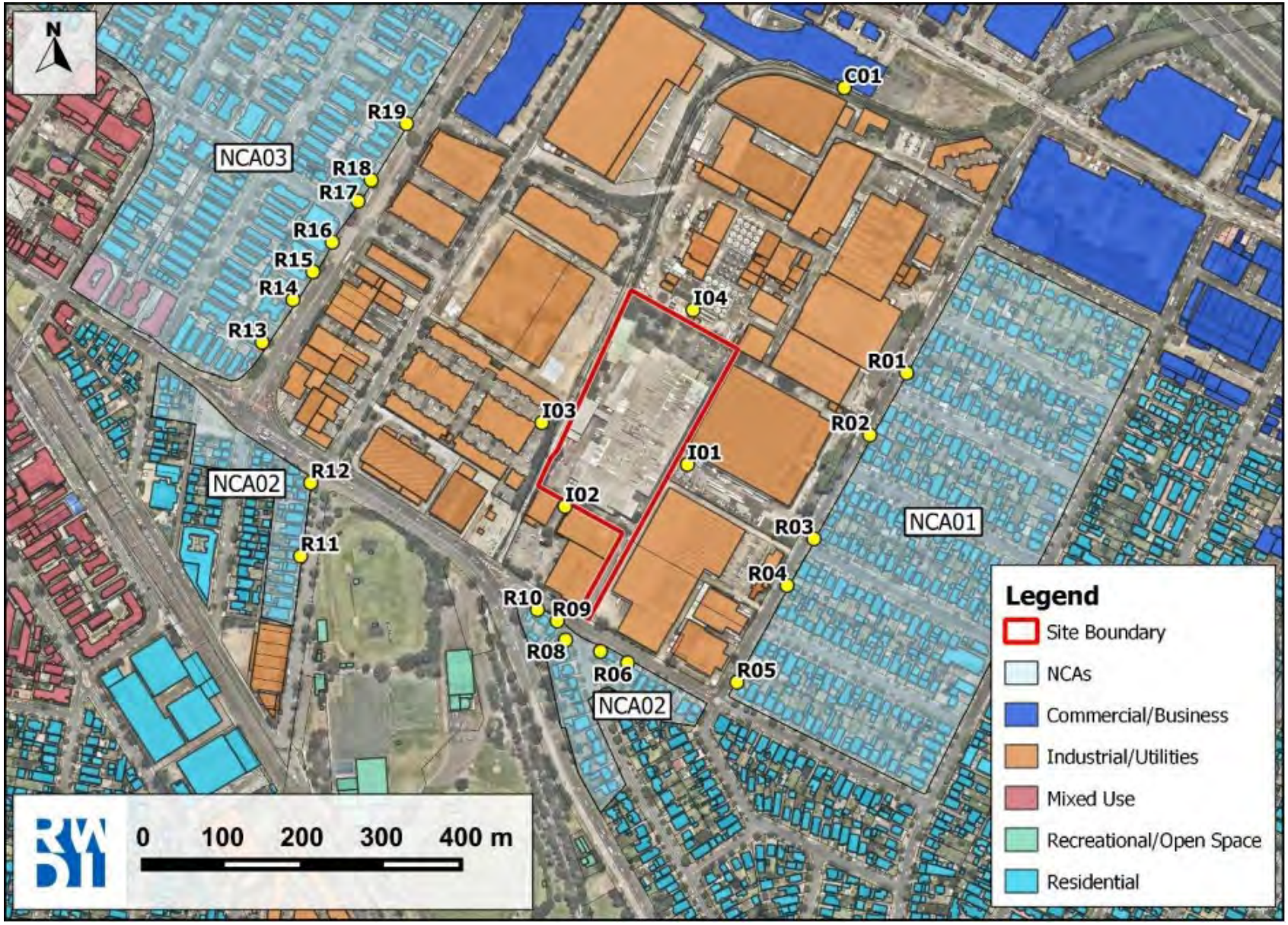

Figure 2: Representative Noise Receivers

APPENDIX 2 APPLICANT'S MANAGEMENT AND MITIGATION MEASURES

APPENDIX 3 INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

WRITTEN INCIDENT NOTIFICATION REQUIREMENTS

1. A written incident notification addressing the requirements set out below must be submitted to the Planning Secretary via the Major Projects website within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under condition C9 or, having given such notification, subsequently forms the view that an incident has not occurred.

2. Written notification of an incident must:
   (a) identify the development and application number;
   (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
   (c) identify how the incident was detected;
   (d) identify when the applicant became aware of the incident;
   (e) identify any actual or potential non-compliance with conditions of consent;
   (f) describe what immediate steps were taken in relation to the incident;
   (g) identify further action(s) that will be taken in relation to the incident; and
   (h) identify a project contact for further communication regarding the incident.

INCIDENT REPORT REQUIREMENTS

3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.

4. The Incident Report must include:
   (a) a summary of the incident;
   (b) outcomes of an incident investigation, including identification of the cause of the incident;
   (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
   (d) details of any communication with other stakeholders regarding the incident.

A-23 Statement of Repairs

ADCO Constructions (Head Contractor)

ADCO Constructions Pty Ltd
ABN 46 001 044 391
Level 2, 7-9 West Street,
North Sydney NSW 2060
02 8437 5000
adcoconstruct.com.au

Monday 26 February 2024

Mr Elie Ishac
Suite 8.03, Level 8
117 York Street,
SYDNEY NSW 2000

Dear Elie,

As per **Condition A13** of **SSD-36464788**, unless the Applicant and the applicable authority agree otherwise, the Applicant must:

(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the development; and

(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

Please note that the above statement only pertains to the construction phase (carried out by ADCO Constructions) of the development and not any subsequent phases (i.e., after occupational certificate is issued, during operation of the development, etc.).

Yours faithfully
ADCO Constructions Pty Ltd

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

SYDNEY
MELBOURNE
BRISBANE
GOLD COAST
PERTH
PEOPLE WHO BUILD

A-24 Statement of Heritage Impact Report

Austral Archaeology (Heritage Consultant)

AUSTRAL ARCHAEOLOGY PTY LTD
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AUSTRAL ARCHAEOLOGY

42 BOOREA STREET LIDCOMBE NEW SOUTH WALES

STATEMENT OF HERITAGE IMPACT

FINAL REPORT

HALE PROPERTY SERVICES PTY LTD

2 May 2022

DOCUMENT INFORMATION

Project:	42 Boorea Street
Services required:	Statement of Heritage Impact
Client:	Hale Property Services Pty Ltd
Prepared by:	Nicole Secomb
Project number:	21160

DOCUMENT HISTORY AND APPROVAL STATUS

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DISTRIBUTION OF COPIES

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In the preparation of this report historical sources and other reference materials are acknowledged in text citations and in a separate section at the end of the report. Reasonable effort has been made to acknowledge and obtain permission from the relevant copyright owners.

EXECUTIVE SUMMARY

Austral Archaeology (Austral) has been commissioned by Tactical Group on behalf of Hale Poperty Services Pty Ltd (the Proponent) to undertake a Statement of Heritage Impact (SoHI) for the proposed development at 42 Boorea Street, Lidcombe, New South Wales (NSW). The proposed development consists of construction of a two-storey warehouse and distribution centre comprising 39,249 m2 gross floor area (GFA) including ancillary office space, landscaping, bicycle and car parking. This report will form part of an Environmental Impact Statement (EIS) being prepared by the Proponent, to support a State Significanct Development Application (SSDA) under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The study area consists of Lot 1, DP740385, known as 42 Boorea Street, Lidcombe. It is located within the Cumberland City Council Local Government Area (LGA). No part of the study area is included on any statutory or non statutory heritage lists. It is in the vicinity of three locally heritage items, as identified below.

The purpose of this SoHI is to assess the potential impact from the development on the significance of any heritage values that may be present within or in the vicinity of the study area. The report will provide suitable management recommendations should impacts to archaeological values be anticipated.

IDENTIFIED HERITAGE VALUES

It is concluded that:

- There are no heritage values within the study area.
- The following locally listed heritage items are within the vicinity of the study area;
    - Clive R Evatt Memorial Commemorative Plaque (Item ID: I191)
    - Wyatt Park, Haslams Creek, Lidcombe Pool, Lidcombe Oval, Stormwater Drain (Item ID: I175)
    - Canalisation of Haslams Creek south of Parramatta Road (Item ID: A7)

RECOMMENDATIONS

It is recommended that:

1) No further historical heritage assessment is required within the study area;
2) If historical archaeological relics not assessed or anticipated by this report are found during the works, all works in the immediate vicinity are to cease immediately and the Heritage Division be notified in accordance with the conditions of the Section 60 permit. A qualified archaeologist is to be contacted to assess the situation and consult with the Heritage Division of the Office of Environment and Heritage regarding the most appropriate course of action;
3) Should the actual development be altered significantly from the proposed concept design, then a reassessment of the heritage impact may be required. This includes any impacts not explicitly stated in Section 7; and,
4) A copy of this assessment should be lodged by the proponent in the local history section of the local library.

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1 INTRODUCTION

Austral Archaeology (Austral) has been commissioned by Tactical Group on behalf of Hale Property Services Pty Ltd (the Proponent) to undertake a Statement of Heritage Impact (SoHI) for the proposed development at 42 Boorea Street, Lidcombe, New South Wales (NSW). The proposed development consists of construction of a two-storey warehouse and distribution centre comprising 39,249 m2 gross floor area (GFA) including ancillary office space, landscaping, bicycle and car parking. This report will form part of an Environmental Impact Statement (EIS) being prepared by the Proponent, to support a State Significanct Development Application (SSDA) under Part 5 of the *Environmental Planning and Assessment Act 1979* (EPA Act).

The study area consists of Lot 1, DP 740385. The study area is located within the Cumberland City Council Local Government Area (LGA).

The location of the study area is shown in Figure 1.1, Figure 1.2 and Figure 1.3.

1.1 METHODOLOGY

The methodology supporting this report involved a period of research to locate background material and to prepare a synthesis of the historical research to reflect better and understand the historical context of the study area.

The report is underpinned by the philosophy of the International Council on Monuments and Sites (ICOMOS) and the *Burra Charter: Australia ICOMOS Charter for Places of Cultural Significance, 2013* (Burra Charter), the practices and guidelines of the NSW Heritage Division and the requirements of the *Cumberland Local Environmental Plan 2021* (Cumberland LEP) and part G2 of the *Cumberland Development Control Plan 2021* (Cumberland DCP).

1.2 ASSESSMENT OBJECTIVES

The purpose of this historical heritage assessment is to assess the potential impact from the development on the significance of any heritage values that may be present within or in the vicinity of the study area. The report will provide suitable management recommendations should impacts to heritage values be anticipated.

The objectives of this report are to:

- Identify any potential historical heritage values within or in the vicinity of the study area;
- Make a statement of significance regarding any historical heritage values that may be impacted by the proposed development;
- Assess the impact of the proposed works on any identified heritage values; and
- Make appropriate management and mitigation recommendations.

1.3 PROJECT TEAM AND ACKNOWLEDGEMENTS

The project team has been led by Stephanie Moore (Senior Archaeologist, Austral) who has managed the project and provided input into the assessment approach and management recommendations. The assessment was authored by Nicole Secomb (Principle Consultant – Historic Heritage, Austral). Stephanie Moore reviewed the draft report for quality assurance and technical adequacy.

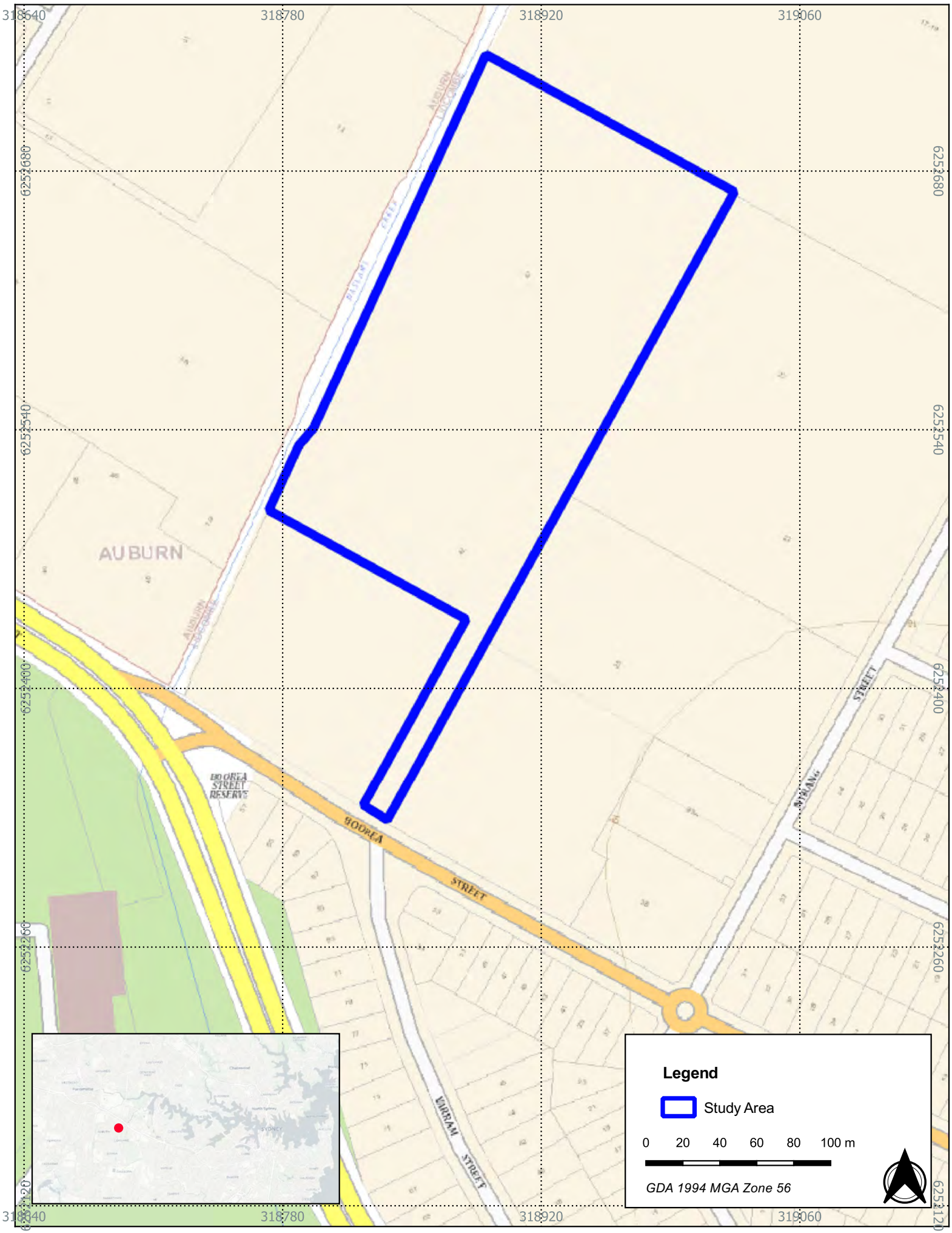

Figure 1.1- Location of the Study Area

21160 - 42 Boorea Street, Lidcombe

Source: NSW LPI Basemap, CartdoBD Positron *Drawn by: ARH Date: 2022-04-04*

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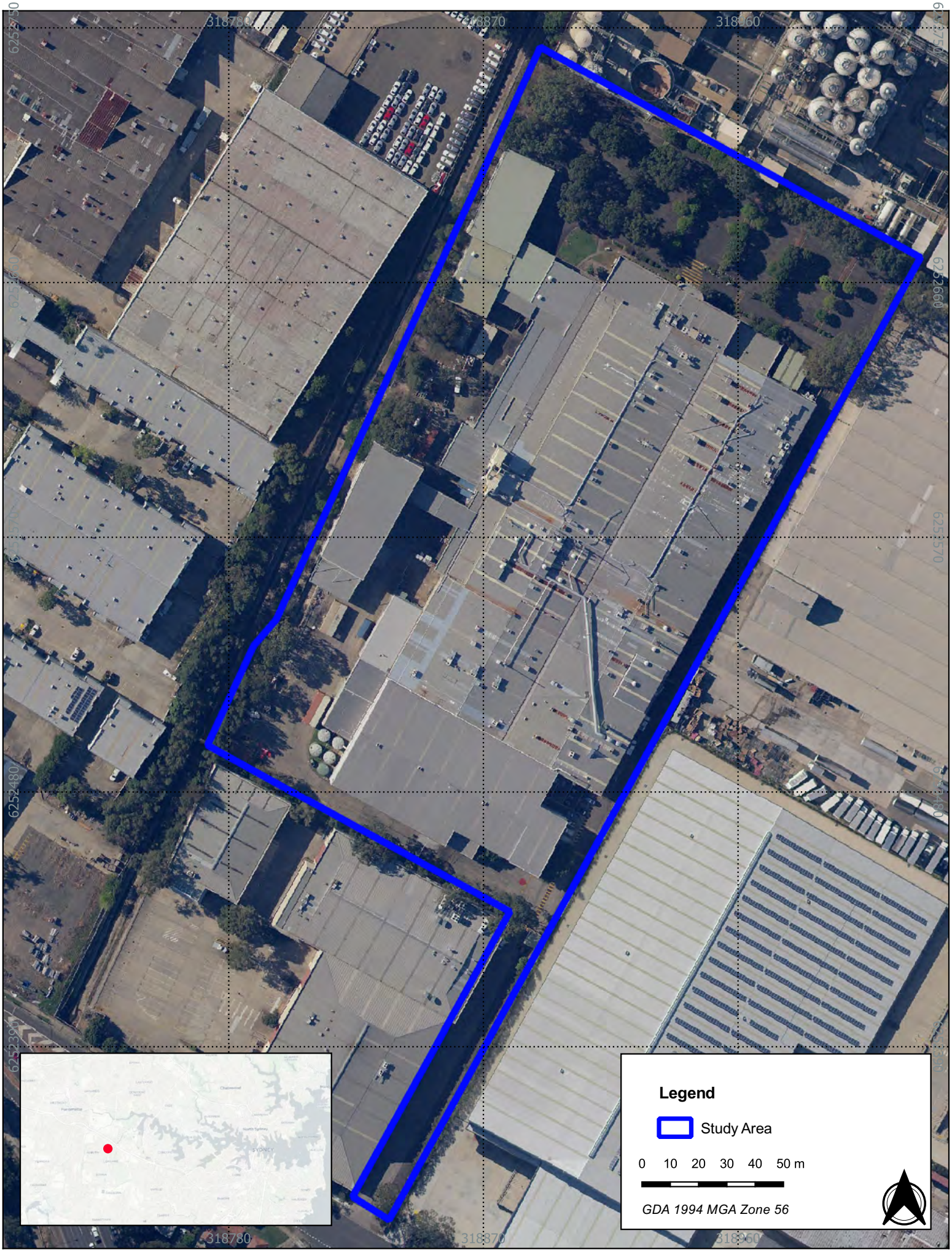

Figure 1.2 - Detailed aerial of the study area

21160 - 42 Boorea Street, Lidcombe

Source: NSW LPI Aerial, CartoDB Positron

Drawn by: ARH Date: 2022-04-04

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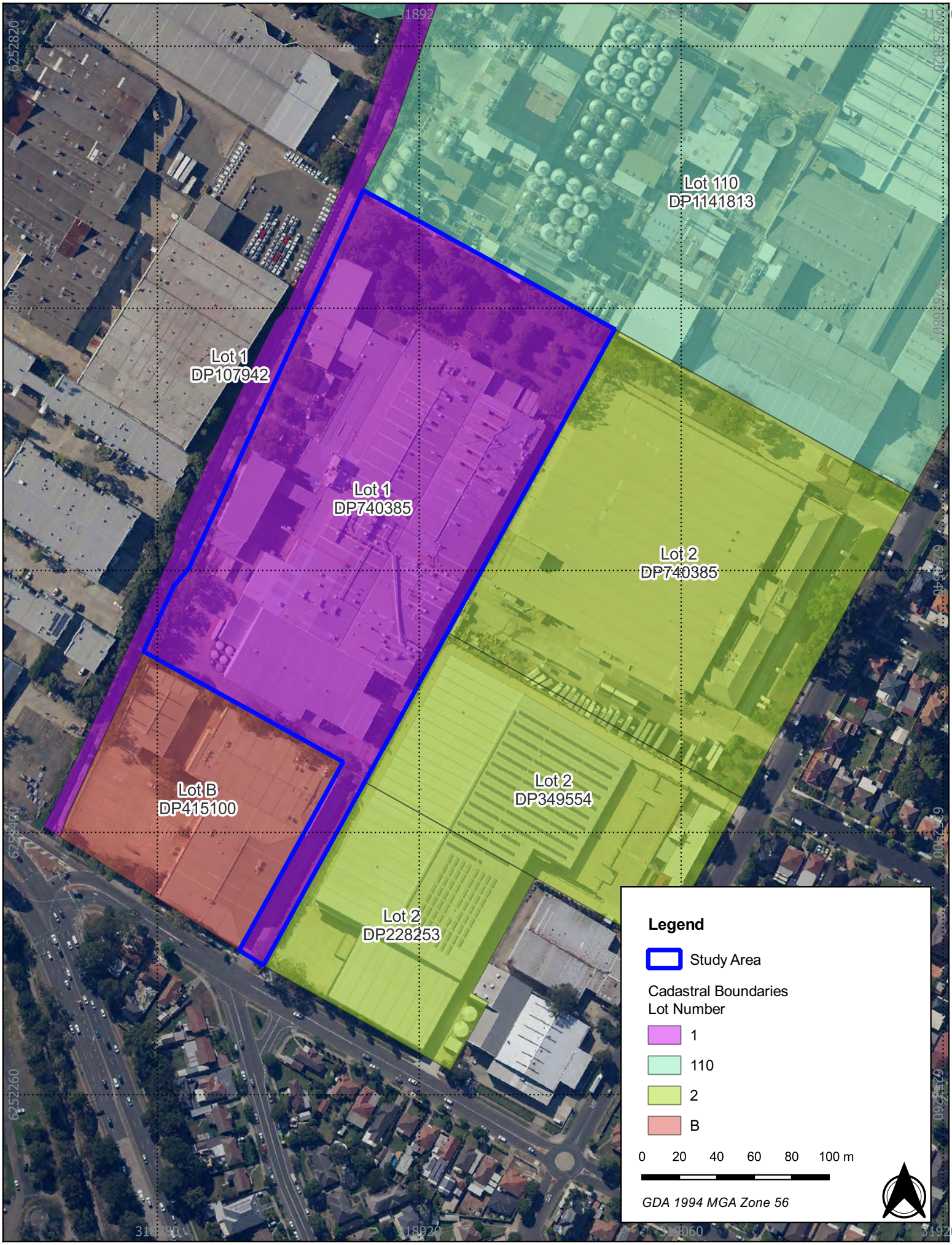

Figure 1.3 - Cadastral boundaries of the study area

21160 - 42 Boorea Street, Lidcombe

Source: NSW LPI Aerial

Drawn by: ARH Date: 2022-04-05

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1.4 LIMITATIONS OF THE REPORT

This assessment includes an assessment of historic heritage values to support an SSDA (SSD-36464788) being made under by the proponent. SSD-36464788 is being assessed under Secretary's Environmental Assessment Requirements (SEARs) for 'Warehousing and Distribution'. The report must be read in conjunction with SSD application nd accompanying EIS as it refers to supporting documentation not included within this report. It does not include an assessment of Aboriginal cultural heritage that may be present within the study area. This work is included as part of the Aboriginal Cultural Heritage Assessment (ACHA) also prepared by Austral (2022).

1.5 ABBREVIATIONS

The following are common abbreviations that are used within this report:

ACHA	Aboriginal Cultural Heritage Assessment
Austral	Austral Archaeology Pty Ltd
Burra Charter	Burra Charter: Australia ICOMOS Charter for Places of Cultural Significance 2013
CHL	Commonwealth Heritage List
DCP	Development Control Plan
DPC	Department of Premier and Cabinet
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPBC Act	Environmental Protection and Biodiversity Act 1999
EPI	Environmental Planning Instrument
GFA	Gross Floor Area
Heritage Act	NSW Heritage Act 1977
ICOMOS	International Council on Monuments and Sites
IHO	Interim Heritage Order
LEP	Local Environmental Plan
LGA	Local Government Area
NHL	National Heritage List
NPW Act	National Parks and Wildlife Act 1974
NSW	New South Wales
The Proponent	Hale Poperty Services Pty Ltd
RNE	Register of the National Estate
SEARs	Secretary's Environmental Assessment Requirements
SHI	State Heritage Inventory
SHR	State Heritage Register
SoHI	Statement of Heritage Impact
Study Area	Lot 1 DP 740385
SSDA	State Significant Development Application
Cumberland DCP	Cumberland Development Control Plan 2021
Cumberland LEP	Cumberland City Council Local Environmental Plan 2021

Refer also to the document Heritage Terms and Abbreviations, published by the Heritage Office and available on the website: http://www.environment.nsw.gov.au/heritage/index.htm.

2 STATUTORY CONTEXT

The following section summarises the relevant statutory context, including heritage listings, acts, and environmental planning instruments which are relevant to the study area and its cultural heritage.

2.1 ENVIRONMENTAL PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) established the Australian Heritage Council (formerly the Australian Heritage Commission) and provides for the protection of cultural heritage at a national level and items owned or managed by the Commonwealth. The EPBC Act has established two heritage registers:

- Commonwealth Heritage List (CHL): for significant items owned or managed by Commonwealth Government agencies;
- National Heritage List (NHL): for items assessed as being of national cultural significance.

A referral under the EPBC Act that is approved by the Australian Heritage Council is required for works to an item registered on either of these lists to ensure that the item's significance is not impacted upon.

No part of the study area appears on either the CHL or the NHL.

The Australian Heritage Council is also responsible for keeping the Register of the National Estate (RNE). In 2007 the RNE was frozen and no further sites were added to it. For Commonwealth properties, the RNE was superseded by the CHL and NHL lists. The RNE is now retained as an archive of information about more than 13,000 places throughout Australia.

No part of the study area appears on the RNE.

2.2 NSW HERITAGE ACT 1977

The Heritage Council is the approval authority under the Heritage Act for works to an item on the State Heritage Register (SHR). Section 57(1) of the Heritage Act identifies the need for Heritage Council approval if the work involves the following tasks:

- Demolishing the building or work;
- Damaging or despoiling the place, precinct or land, or any part of the place, precinct or land;
- Moving, damaging or destroying the relic or moveable object;
- Excavating any land for the purpose of exposing or moving the relic;
- Carrying out any development in relation to the land on which the building, work or relic is situated, the land that comprises the place, or land within the precinct;
- Altering the building, work, relic or moveable object;
- Displaying any notice or advertisement on the place, building, work, relic, moveable object or land, or in the precinct; and
- Damaging or destroy any tree or other vegetation on or remove any tree or other vegetation from the place, precinct or land.

Demolition of an SHR item (in whole) is prohibited under the Heritage Act, unless the item constitutes a danger to its occupants or the public. A component of an SHR item may only be demolished if it does not contribute to the significance of the item.

No part of the study area appears on the SHR.

HERITAGE AND CONSERVATION REGISTER (SECTION 170 REGISTER)

Under Section 170 of the Heritage Act, government instrumentalities must keep a Heritage and Conservation Register (a Section 170 Register) which contains items under the control or ownership of the agency, and which are, or could, be listed as heritage items (of State or local significance). Road reserves within the study area are owned by the Department of Roads and Maritime Services.

No part of the study area appears on any Section 170 Heritage and Conservation registers.

2.3 ENVIRONMENTAL PLANNING INSTRUMENTS

An Environmental Planning Instrument (EPI) is made under the EPA Act. An EPI can be a Development Control Plan (DCP), Local Environmental Plan (LEP) or a State Environmental Planning Policy.

CUMBERLAND CITY COUNCIL LOCAL ENVIRONMENTAL PLAN 2021

The current LEP for the study area is the Cumberland Local Environmental Plan 2021 (Cumberland LEP). Part 5.10 of the Cumberland LEP deals with heritage conservation, and subsections (2) and (3) determine whether development consent needs to be granted by Cumberland City Council before any activities occurring which may impact cultural heritage. Heritage items are listed under Schedule 5, Part 1 of the Cumberland LEP.

No part of the study area is listed on Schedule 5 of the Cumberland LEP. The study area is in the vicinity of the following locally listed heritage items (Figure 2.1):

- Clive E Evatt Commemorative Plaque (Item ID: I191)
- Wyatt Park, Haslams Creek, Lidcombe Pool, Lidcombe Oval, Stormwater Drain (Item ID: I175)
- Canalisation of Haslams Creek south of Parramatta Road (Item ID: A7)

CUMBERLAND DEVELOPMENT CONTROL PLAN 2021

The applicable DCP for the study area is the Cumberland DCP 2021 (Cumberland DCP). Part G2 of the Cumberland DCP outlines design controls to be implemented when dealing with heritage items in general. Section G2 includes the following development controls:

- 2.1 Development requirements for environmental heritage G16
- 2.2 Conservation and development works on heritage items G18
- 2.3 Specific development controls for Heritage Conservation Areas G22
- 2.4 Specific controls for development in the vicinity of a heritage item G24
- 2.5 Specific conservation area controls G26
- 2.6 Conservation Incentives

Part 2.4 has particular relevance for the subject site and will be addressed in section 6 of this report, Heritage Impacts.

2.4 SUMMARY OF HERITAGE LISTINGS

Table 2.1 lists the relevant statutory and non-statutory registers, listings and orders, and identifies those in which any part of the site is listed. The location of heritage items in relation to the study area are outlined in Figure 2.1.

Table 2.1 Summary of heritage register listings for the subject study area

Register/Listing	Inclusion	Statutory implications
NHL	No	Nil
CHL	No	Nil
RNE	No	Nil
SHR	No	Nil
Cumberland LEP 2021	No	Nil
Cumberland DCP 2021	No	Nil

Figure 2.1 - Heritage item within the vicinity of the study area 21160 - 42 Boorea Street, Lidcombe

Source: NSW LPI Aerial, EPI Heritage

Drawn by: ARH Date: 2022-04-05

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3 HISTORICAL CONTEXT

The following historical background is designed to contextualise a site-specific history which will aid in the understanding of the heritage values of the study area. This work will provide a useful and concise summary of the history of the study area.

3.1 HISTORY OF THE LIDCOMBE AREA

3.1.1 PRE 1788 – ABORIGINAL HISTORY

It is generally accepted that Aboriginal people have inhabited Australia for at least 50,000 years (Allen & O'Connell 2003). The range of environments and landscapes within the Cumberland Plain had a profound influence on the lives of the traditional Aboriginal communities who lived there. As hunters and gatherers, Aboriginal people were reliant on their surroundings to provide food. Their transitory lifestyle affected population size, social interactions and degree of mobility, which can be confirmed in the archaeological record.

Population estimates at the time of contact are notoriously problematic as Aboriginal groups avoided early European settlers and were highly mobile. Another factor that complicates an accurate estimation is the effect of European diseases such as influenza and smallpox, which decimated Aboriginal populations soon after contact. Governor Philip estimated the number of Aboriginal people in coastal Sydney to be in the order of 1,000 individuals before 1792. However, it is unlikely that the early European explorers were able to successfully grasp the traditional population size. More recent estimates of the contact period population of the greater Sydney region place the number between five and eight thousand, although other estimates are much lower (Turbet 2001). For the western Cumberland Plain, Kohen has estimated a pre-contact population of 500 to 1,000 people, or a minimum overall density of about 0.5 persons per kilometre2 (Attenbrow 2003).

Early writers recorded several named Aboriginal groups as occupying the Sydney region after the First Fleet arrived in 1788. Many of the colonists' reports included the names of groups that were associated with certain areas of land (Attenbrow 2003).

At the time of European contact, the land surrounding the study area was inhabited by a clan of the Darug-speaking people. Judge-advocate David Collins noted in his records in 1798 that the Gahbrogal lived "away from the coast, but near saltwater/brackish conditions since they ate estuarine teredo worms called cah-bro" (Attenbrow 2003). It was only after the 1870s that names such as the Darug came into use to describe Aboriginal language groups (Attenbrow 2003, p.31).

3.1.2 EARLY SETTLEMENT – 18TH AND 19TH CENTURY

Lidcombe and the surrounding district was initially known as Liberty Plains. The earliest use of the name is found in the description of local land grants in the area from 1793. The name also appeared in in 1797 in reference to land grants on the Homebush Bay peninsula. By the early 1800s descriptions of land grants in the Liberty Plains area included suburbs now known as Lidcombe, Auburn, Newington and Homebush Bay. The name Liberty Plains slowly passed out of common use, as it came to be adopted as a name for a parish in the systemisation of land descriptions in New South Wales. The boundaries of the parish are Parramatta, Woodville and Liverpool roads and the boundary between Lidcombe and Flemington. Haslam's Creek emerged as the new common name for the eastern half of Liberty Plains. The creek associated with the locality formed one boundary of the grant to William and James Haslam. (*Liberty Plains* | *The Dictionary of Sydney* n.d.).

Some of the earliest European exploration came close to Lidcombe, with an exploring party rowing up the river and reaching Homebush Bay on 4 February 1788. The river remained the main means of transport, but a track from Sydney to Parramatta developed early in the 1790s, running about 1.6 kilometres south of the current Parramatta Road. It crossed 'Duck River' roughly where Mona Street crosses today. Parramatta Road was laid out c1797 and was popular with private coaches. https://dictionaryofsydney.org/entry/lidcombe - footnote-2A regular coach service along the road began in 1823 and Inns were established along Parramatta Road to service the travellers. The railway line arrived at Haslams Creek (Lidcombe) in the 1850s and construction of the Haslams

Creek railway station commenced in 1859. The station was constructed on land owned by Father John Joseph Therry, with funding from nearby landholders, Potts and Blaxland. (*The Sun-Herald*, 1953). It would later provide access to the soon to be established Haslams Creek Cemetery, now Rookwood General Cemetery. The railway line brought with it a decline in the use of coach services as the popularity of the train grew.

By the 1828 census, the area that became Lidcombe lay within the District of Parramatta and partially within Concord. Land was granted to free settlers and to ex-convicts. Most grants were small, often only 30 to 100 acres (12 to 40 hectares), and were awarded to people such as the government official Edward Gould, the merchants Henry Marr and John O'Donnell. Larger grants went to prominent merchants and officials, such as Joseph Hyde Potts, who was given 410 acres (166 hectares) (*Lidcombe | The Dictionary of Sydney* n.d.).

There was a thin spread of settlers over the area including Ann Curtiss (the grant on which Wyatt Park is located) with a daughter and single servant, and Samuel Haslam, with his wife, son and two assigned servants (*Lidcombe | The Dictionary of Sydney* n.d.). The 1851 census reported a total of 270 residents, and 49 houses in the district of Liberty Plains (Cultural Resources Management 1994).

The original vegetation of the area was open forest of grey box, ironbark and stringy bark, with woollybutt red gums dominating. Many settlers were slow to clear their land. James and William Haslam had cleared a mere 8 per cent, and Samuel Haslam only 50 per cent, in 1828. Many other grants were unoccupied, so that large areas were still covered with their original vegetation.

Over time, fires reduced the tree cover. During a huge fire about 1856, Mrs Greatrex and her family sheltered under the railway bridge. She was the daughter of Edmund Keating and spent most of her life (1847–1935) in Lidcombe. A huge fire in the 1860s threatened the home (now the corner of Nicholas Street and Bachell Avenue) of James Belcher a government forestry officer, causing him to bury a box of gold sovereigns. It was not found until 18 months later, when a field was being ploughed (*Lidcombe | The Dictionary of Sydney* n.d.).

By the 1840s, Sydney's first burial ground located on the site of what is now the Sydney Town Hall was becoming overcrowded and it was recognized that a new cemetery location was required. In 1860, an advertisement appeared in the Government Gazette seeking land for cemetery purposes between Sydney and Parramatta. In 1862, the government purchased 200 acres of land at Haslam's Creek from Messrs Cohen and Benjamin, for ten pounds per acre. With the passing of the Necropolis Act of 1867, the Necropolis at Haslam's Creek was established. The first burial reportedly took place in 1867, when the body of John Whalan, an 18-year-old pauper, was laid to rest (*Rookwood General Cemetery - History* n.d.).

The establishment and maintenance of the new cemetery brought with it the need for a significant workforce, including construction workers, gravediggers, stone masons and other practitioners related to the funerary industry. Many settled in the area with their families and Haslams Creek was soon officially recognized as a township (*Lidcombe - A Brief History | Parramatta History and Heritage* n.d.). Although the main groups attracted to settle in the railway township were workers, others not tied so closely to their place of employment also built homes there. Among such new residents was Frederick Lidbury, who moved to Rookwood about 1893 and built a large Gothic two-storey stone mansion opposite the cemetery. He had been manager of the decorating department of James Sandy from about 1882. He became active in local government and was Mayor of Rookwood on a number of occasions. With people came more services, including the post office in 1868 and new major roads enabling better access through the district. There were still few stores in the late 1870s, but there were refreshment rooms, Ann Godfrey's store, and Bernard Gormley's and Henry Moore's pubs. In March 1879, the first retail butcher, a man named Onus, started trading, and Cornwell started his butchery later in the year. Bernard Gormley, a cattle dealer at Rookwood, commenced business as a storekeeper about 1881. He also built the Railway Hotel at Rookwood, first licensed in 1876 (*Lidcombe | The Dictionary of Sydney* n.d.).

Soon after the establishment of the cemetery, residents of Haslam's Creek began agitating for a change of name of their suburb to remove its association with the cemetery. Local resident, Mr Slee, suggested naming the suburb, Rookwood, saying, "…Rookwood is a pleasant name, and a very appropriate one in this case, for there are many crows in the neighbourhood." The local railway station and suburb were renamed Rookwood in 1876 and were commonly known by this name by 1878 (*Rookwood General Cemetery - History* n.d.).

An additional 1,300 acres (538 hectares) was purchased for the cemetery by the State Government in 1878 from H.D. Douglas (Cultural Resources Management 1994). By the mid 1880s, the establishment of shops, a post office, and a school within the relative vicinity of the train station marked the beginning of Lidcombe's future development (Cultural Resources Management 1994). With this came further concerns from the local community about the public perception of the area due to its close ties with the cemetery. Agitation for a name change was consistent and on 1 January 1914 the area of Rookwood outside of the cemetery became known as Lidcombe, derived from the combination of the names of previous mayor Henry John Larcombe, and mayor at the time, Fredrick Lidbury. (*The Sun-Herald*, 1953).

The cemetery continued to be known as Rookwood and became a significant part of the Sydney rail network with special funeral trains running from purpose designed "receiving houses" in at Regent Street in the city and to the centre of Rookwood. Twice daily services operated and tickets were one shilling each way, however, corpses travelled free (*Rookwood General Cemetery - History* n.d.).

The soils in the area were mainly too poor for agriculture. The soil was not particularly fertile and the watercourses were often salty for long distances away from the Parramatta River. While agriculture could not survive in these condition, livestock often could. Several large-scale squatters such as James Edrop purchased land in Liberty Plains, which they used to rest cattle driven from the interior. Edrop was also a substantial shareholder in the Sydney Meat Preserving Works, which opened nearby in the 1870s, on the site of Samuel Haslam's and James Wright's grants (*Lidcombe | The Dictionary of Sydney* n.d.).

Livestock slaughter was one of the earliest significant industries in the district. The establishment of the Sydney Meat Preserving Company, where Haslams Creek met Parramatta Road, opened the district up for such industries. The company was established in 1869 to process surplus stock for graziers. The works were situated in one corner of a 400-acre (162-hectare) site in Auburn/Lidcombe, most of which was used for stockyards. Activities on the site included slaughtering, butchering, preserving, trimming and boiling down. Advanced canning technology was used under the supervision of the manager, Alban Gee. The company sold its by-products in Australia and Asia, and won numerous prizes. Its successful application of advanced technology made it a leader in food processing in Australia. Most of the shareholders were pastoralists seeking a stable market price for their stock, rather than speculators (*Lidcombe | The Dictionary of Sydney* n.d.). The company was taken over by F J Walker Limited in 1919, who also owned Hunter River Meat Packing Co, Metropolitan Meat Co, and Australian Natural Gut Manufacturing Co. Business boomed during both World Wars, but canned meats ceased to be productive after World War II. The business ceased operations on 31 July 1964 and the works at Auburn were put up for sale. In 1972, it was formally resolved to dissolve the company and the final meeting of shareholders was held in September 1973 (Extent Heritage Pty Ltd 2019).

Other livestock industries were soon attracted to the area including butchers, tanners, glueworks and a boot factory. Wright's glue works and Bennett's boot factory were both located near the Sydney Meat Preserving works in 1890 (*Lidcombe | The Dictionary of Sydney* n.d.).

By the end of the nineteenth century Licombe was booming with its railway access, access to jobs at the cemetery or in meat processing or engineering works. In 1881, the population was 247. By 1891 there were 2,084 persons, more than doubling to 4,496 by 1901. Buildings increased from 424 in 1891 to 502 in 1901 and then reached 772 in 1911 (*Lidcombe | The Dictionary of Sydney* n.d.).

Initially, the district was unincorporated. A movement to incorporate Rookwood commenced in 1883, but did not achieve success until 10 December 1891, when the municipality of Rookwood was incorporated. Lidcombe Council replaced Rookwood Council in 1913.

3.1.3 TWENTIETH CENTURY LIDCOMBE

The livestock processing industry was boosted in the area with the establishment of the State Abbatoirs at what is now Homebush. The state government officially resumed a site for the abattoirs in March 1907, and work commenced in 1910. The State Abattoirs opened in 1916 with slaughter halls for mutton, pork, veal and beef. By the 1930s, it was claimed the site was the largest slaughtering unit in the world, although it is unlikely to have exceeded the packing yards in Chicago.

The works were surrounded by 1,500 acres (607 hectares) of stockyards, with most stock coming from the nearby Flemington sale yards. The abattoirs closed in June 1988.

Like many other industries, the meat processors left their mark on more than just their sites. Meat workers lived in nearby streets. When the Marne Park Estate in North Lidcombe was offered for sale in 1915, the presence of the abattoirs nearby – with its prospect of ready employment – was a selling point. The number of livestock processing works in the area, along with the abattoirs, meant that there were now also many residents were closely linked to the pastoral industry. Other industry developed in the area and brick and pottery making became prominent around Lidcombe and Berala (*Lidcombe | The Dictionary of Sydney* n.d.).

WORLD WAR II AND POST WAR LIDCOMBE

During the World War II (1939–1945), Lidcombe became a vital link in the network of factories producing military aircraft. For example, aluminium was produced at Alcan in Granville, beaufort fighter planes were assembled at the Chullora railway workshops and their engines were manufactured at Lidcombe. Australian Forge & Engineering Pty Ltd manufactured forgings of high quality steel. In the post war years, mass migration of European families to Australia saw a significant increase in the Lidcombe population, specifically in their Ukranian population. Two schools, two halls, and a church were constructed. Lidcombe remains a cultural center for Ukrainian culture, although from the 1960s to the 1980s there was a shift to Middle Eastern and Vietnamese immigrants, who brought with them new cultural traditions.

In 1949, Lidcombe became part of the jurisdiction of the Auburn Local Government Area and the Cumberland County Plan zoned new areas of land for industry in Sydney's then western suburbs. Established plants in the inner city – unable to obtain land nearby for expansion – had to shift to areas zoned for industry in the west. Industry flooded into the district. Lidcombe, attracted Industrial Sales & Services Pty Ltd, the new farm machinery works of International Harvester Company of Australia Pty Ltd, and the auto assembly works of Hastings Deering Pty Ltd, all to sites on Parramatta Road, so that they could be well served by road transport (*Lidcombe | The Dictionary of Sydney* n.d.).

HOUSING COMMISSION

Sydney was the first city in NSW to establish a system of social housing. Its precursors lay in the Sydney Improvement Act 1879, which identified the unregulated, unstructured developments in Sydney. The Public Housing Act of 1912 set up an enquiry into social housing, and established the Housing Board of NSW. The Board's first large project was to construct a Model Garden Suburb at Daceyville, providing tramway workers with affordable housing. The impacts of World War I (1914-1918) and the Great Depression (1929-1933) meant that Government support via social housing was very limited. During World War II, the need for urgent social housing became clear when a survey showed that tens of thousands of Australian families needed housing support. They were primarily the unemployed, those on low incomes and those affected by the war. Most of these families were located within NSW.

In 1942, the Commonwealth Housing Act was established, which heralded State Housing Commissions in each State by 1943. The NSW Housing Commission was established in 1942. Its aim was to provide a pathway to home ownership for working families and returned services personnel. This was the beginning of the large-scale social housing programs familiar today. Twelve thousand homes were quickly built with a further 10,000 either in development or the planning stages. Housing Commission projects in the Sydney Metropolitan area included the first planned neighbourhood estate at Orphan School Creek, Canley Vale, as well as large developments in Ryde, Villawood, Maroubra, Seven Hills, Ermington, Rydalmere, Dundas Valley, Windale (Newcastle), Unanderra and Berkley (Wollongong). In the 1960s, the Housing Commission started building its largest ever estate, Green Valley, to house 25,000 people in 6,000 new properties. The initial 940 dwellings were based on the American 'Radburn' model, an American social housing project that involved constructing houses with the backyard fronting the street, and the official "front" of residences facing each other over common yards. Mount Druitt soon surpassed Green Valley as the largest Housing Commission suburb, with 32,000 people housed in 8,000 properties in the 1960s. These new estates aimed to reduce the metropolitan sprawl by the use of townhouses rather than cottages. By the 1970s and 1980s, it was becoming clear that the distribution of social housing was changing from being occupied by "blue-collar"

workers and nuclear, working-class families to individuals, sole parents with children, the homeless, elderly and the disabled. The distribution of social housing began to shift towards a more "means-tested" priority plan. (L&HC Heritage Asset Management Strategy 2015)

The Housing Commission was active in Auburn and Lidcombe, constructing a number of group developments throughout the municipality. The Commission's schemes in South Granville andhttps://dictionaryofsydney.org/place/villawood
Villawoodhttps://dictionaryofsydney.org/place/dundas_valley were some of the largest schemes created by the Commisision (*Lidcombe | The Dictionary of Sydney* n.d.)

3.2 HISTORICAL SKETCH OF THE STUDY AREA

The study area is located on part of 50 acres granted to Samuel Haslam on 8 October 1816.

Samuel Haslam was sentenced to 7 years transportation to Australia after being convicted of sheep theft in Derbyshire, England. (*Australian Town and Country Journal*, 1891). He arrived in Sydney aboard the Bardwell on 18 May 1798. He married Maria Davis in 1801 and four children quickly followed. Haslam obtained a lease of one acre on the Parramatta River in August 1804, before obtaining grants of 50 acres in 1806; and 50 acres on 1816 (containing the study area) and a later grant in 1831. The 1816 grant faced the creek now generally known as Haslam's Creek. Samuel was also granted a "Beer Licence" for an Inn on Parramatta Road in 1811 (*Lidcombe - A Brief History | Parramatta History and Heritage* n.d.).

Upon Haslam's death in 1835 the 50 acres transferred to William Makin Haslam and John Henry Hughes. A series of associated transactions saw ownership released to John Terry Hughes in full. Hughes sold the land to Rosettor Hughes in 1844 who retained the property until death in 1858. (LT Vol1134 Fol 45; PA8863) Land transactions relating to the property are unclear until 1894 when the Sydney Meat Preserving Company applied to bring the property under Torrens Title and a certificate of title was issued in their favour.

In addition to Haslam's 50 acres, the Sydney Meat Preserving Company also acquired several neighbouring grants – James Wright's 30 acres (granted 31 August 1819), William Haslam's 60 acres (granted 19 October 1831), part of Ann Curtis' 100 acres (granted 30 June 1823) and part of George Tuckwell's 60 acres (also granted 30 June 1823).

The land chosen for the Sydney Meat Preserving Company was for its access to water, and road and rail transportation. The company's operations were primarily located on Samuel Haslam's land grant at 100 Parramatta Road, Auburn. This site represented a third of the company lands. The works were located in the extreme north-western corner of the site including two dams which were to the south of the main buildings. The rest and majority of the site was vacant, used for paddocks, vegetable gardens and holding pens. The remainder of the land grants were excised from the meat processing works (Extent Heritage Pty Ltd 2019).

In 1918, the Sydney Meat Preserving Company was taken over by F. J. Walker Ltd. It is likely that this change of hands is what triggered the reduction of the company's holdings from the 1920s, when the lands were greatly reduced by subdivision, including the sale of land to create Wyatt Park to the south. The neighbouring site, currently known as 27 Nyrang Street, remained vacant of structures and used for paddocks and pens for the Sydney Meat Preserving Company until the land was purchased by the Egg Marketing Board for the State of New South Wales in 1946 (Extent Heritage Pty Ltd 2019). The study area appears to have been used similarly. A certificate of title for the study area was issue in favour of the Egg Marketing Board in October 1960 (Figure 3.1) The current right of carriageway was created soon after the issuing of the title.

Figure 3.1 **CT1134-45 Area of land acquired by the Sydney Meat preservation Company in July 1894. The Norwest corner is the area shaded in yellow. Approximate location of the study area in red.**

3.3 CLIVE R EVATT COMMEMORATIVE PLAQUE

The commemorative plaque was erected 11 September 1948 and marks the tree that was planted by the Hon. Clive R. Evatt, a prominent barrister and politician for the Labor Party (Figure 3.2). At the time the tree was planted, Clive R Evatt was the Minister for Housing. It is noted that both the plaque and numerous heritage documents refer to Clive E Evatt but his middle name was in fact Raleigh.

The plaque and tree are believed to have been erected to commemorate those who fought in the World Wars and resided in housing commission homes developed in the area. The siting of the plaque and tree was likely associated with it being in the vicinity of a series of housing commission homes built in and around Yarram and Boorea Streets in 1945 .The location is also in the vicinity of the Marne Park Estate, which was subdivided in 1915 and bought by the War Service Homes Commission for a Soldiers Settlement of almost 100 homes to be established (Extent Heritage Pty Ltd 2019).

The original tree was removed at an unknown date and a new tree planted in its place. Seating previous placed below the tree has also been removed (Extent Heritage Pty Ltd 2019).

Clive Raleigh Evatt was a barrister and politician. Born in East Maitland in June 1900, Evatt attended Sydney University before being admitted to the bar in 1926. He was appointed Kings Counsel in 1935, an exceptionally early age for such an appointment. He specialised in workers' compensation and personal injury cases, in which, with other like-minded practitioners, he expanded the concept of negligence in the interest of employees injured in industrial accidents. One of the celebrated cases in which he appeared was the 1935 `Shark arm case' (Ex parte Brady; re Oram).In March 1939, he won a by-election for Hurstville for the Industrial Labor Party as part of a splinter group in opposition to NSW Labor Premier Jack Lang. In September that year (Sir) William McKell defeated Lang to become party leader. When Labor won government in May 1941 Evatt was elected to cabinet and became Minister for Education. Despite his ambitious plans for reform of the inspection and examination systems his ministership was not popular. When McKell won the 1944 election, Evatt was demoted to an assistant-minister in charge of the State government's `Yes' campaign, in the unsuccessful Federal powers referendum of 1944. In May 1946, he was appointed Minister-in-Charge of Tourist Activities and Immigration.

In 1947, Evatt played a crucial role in the election of James McGirr's to the party leadership, and subsequent replacement of McKell as Premier. In recognition of his role Evatt was rewarded with the portfolio of Housing. From May 1947 to 1953, he held the position of Assistant-Treasurer, before being appointed Colonial Secretary (1950-52), Minister for Housing (1952-54) and Minister for Co-operative Societies (1950-54). In March 1954, Evatt was forced to resign from cabinet by Premier Joe Cahill. He was expelled from the Labor Party in July 1956, for voting against party measures in Parliament to increase fares on public transport. This prompted Evatt to stand as an Independent for Hurstville. he was defeated at the election of February 1959.

Returning to the Bar, Evatt developed an enormous practice, appearing usually for impecunious plaintiffs in damages claims for personal injury or for more affluent clients in defamation actions.. Although regarded by some as essentially a trial lawyer, Evatt enjoyed a very substantial practice before appellate courts.

Evatt's style of advocacy before juries in civil litigation resulted in many victories for his clients, although it did not always find favour with members of the judiciary or his professional colleagues.

Evatt died on 15 September 1984 at Darlinghurst and was cremated with Anglican rites. He was survived by his son, Clive, also a barrister, and daughters Elizabeth, foundation chief judge of the Family Court of Australia, and Penelope, an architect and the wife of Harry Seidler (Cunneen & McLaughlin n.d.).

Figure 3.2 Plaque dedicated to Clive R. Evatt

3.4 WYATT PARK

Wyatt Park is located within the 100 acre land grant to Anne Curtis and later owned by the Sydney Meat Preserving Company. The land was reserved for public recreation in 18 November 1927, but had long been unofficially used as a playing area and included a trotting track to the north. When the Sydney Meat Preserving Company subdivided its holdings Council persuaded the company not to include that portion of land in the subdivision. Council worked with the current Premier John Lang (the local member) to ensure the land was reserved for public recreation.

The government purchased the 45 acres for £4,500 and Lang announced the purchase officially on 10 August 1926. The park would be created as part of the NSW unemployment relief works scheme. Lidcombe Council prepared a comprehensive scheme of development for Wyatt Park to gradually be implemented with the assistance of D. L. Davidson of the Town Planning Association. A grant of £3,000 from the Commonwealth Government enabled Lidcombe Council to construct an oval (Lidcombe Oval). The oval grandstand was completed with a loan of £1,000 from the State Government in 1932-3, and from Christmas relief funds for the unemployed. A cycle track was constructed at the oval in 1947. The oval became the home ground for the Western Sydney Magpies rugby league from 1967 to 1986 before the club moved to Campbelltown Stadium in 1987.

The site previously included the Lidcombe Baths established in 1898 from funds donated by the Independent Order of Oddfellows. The baths were called the 'Hampden Baths' and opened in 1899. A dressing shed was constructed in the 1920's and the site remained a popular swimming venue until the 1930's. In 1941, the baths were closed and removed soon after Church Street was realigned and Olympic Drive constructed. The centre underwent further development in the 2010s and reopened in 2017. It is now known as the Auburn Ruth Everuss Aquatic Centre.

Other improvements to the park were made as part of the State government's "work for the dole" scheme, during the economic depression of the 1930s. The scheme operated in Lidcombe from June 1933 until July 1937. Works completed included 14 miles of roads, 4 miles of kerbing and guttering, 3 miles of concrete paving and 3 miles of tarred footpaths.

The park remains in use as a recreational precinct for various sporting activities and the Lidcombe Oval is again the home ground for the Western Sydney Magpies rugby league team (Extent Heritage Pty Ltd 2019).

3.4.1 HASLAM'S CREEK CANAL

The construction of local stormwater canal formed part of unemployment relief works in the 1930s under schemes managed by the Water Board and included the Cooks River drainage area, partly situated in Lidcombe and the Haslam's Creek area in Lidcombe. Over £500,000 was spent on storm water construction, particularly the canal through Wyatt Park (Extent Heritage Pty Ltd 2019).

By the early twentieth century, Haslam's Creek flowed past the State Abattoirs in Homebush, under Parramatta Road (in the vicinity of Haslams Creek Culvert and Bridge), and through land occupied by the Sydney Meat Preserving Company Ltd (1876-1965), on the corner of Parramatta Road and St Hilliers Road. In the 1920s, the local housing boom and concurrent industrial development of these suburbs resulted in a constant stream of motor lorries along the area's main roads, particularly Parramatta Road. Road works were needed to repair the roads that had been neglected since the arrival of the railway in the 1850s. Pressure mounted for the widening of Parramatta Road (Main Roads, January 1930, pp 81-85). The widening of Parramatta Road encouraged further industry to Lidcombe and Auburn. These suburbs were attractive to industry because of the availability of large tracts of land in close proximity to the fresh water supply from Parramatta River.

In January 1930, it was reported that the State Monier Pipe and Reinforced Concrete Works had constructed a 23-foot reinforced concrete culvert 'near Francis Street' in Lidcombe at a total cost of £2,423 in 1927 (this was a culvert over a tributary of Haslams Creek, further east along Parramatta Road). The following year, the same company erected a reinforced concrete bridge over Haslams Creek measuring 41 feet in length at a cost of £4,639. It appears that the 1928 bridge over Haslams Creek was intended as a 'short deviation between John and Day Streets to cut out an unnecessary kink on Parramatta Road. It is not known why the reinforced concrete culvert, upstream from Haslams Creek Bridge, was built a year earlier, although it is possible it was constructed to divert some of the traffic flow while the main bridge was under construction (although the was located on the original alignment of Parramatta Road).

In August 1930, it was reported in the Main Roads journal that:

> *'the approaches to the bridge on the deviation of Parramatta-road at Haslam's (sic) Creek, Lidcombe, have been constructed in cement concrete. The completion of this work ...marks the last stage in the construction of the deviation between John-street and Day-street' (Main Roads Board of New South Wales 1930).*

The deviation measured 1,015 feet in length and was constructed in cement concrete and gravel. The Main Roads Board spent at least £4,188 on the works to straighten Parramatta Road by 1929 (by which time these works were incomplete) (Main Roads Board of New South Wales 1930).

By 1934, the local council was clearly frustrated with the Department of Main Roads about the section of road which had been made redundant by the deviation, although it is unclear as to whether the council wished it to remain open or to be closed to traffic. The section of road on which Haslams Creek Culvert is located remained unused by passing traffic.

When the NSW Department of Public Works oversaw the creation of Wyatt Park as an Unemployment Relief Work during the 1930s, the course of Haslams Creek was diverted to a concrete and brick stormwater canal. In 1934, the mayor of Lidcombe reported that there were delays in the construction of the stormwater canal in the vicinity of the culvert:

> *'At present there is a temporary hold-up of the extension from Booreea Street to the tidal waters of Haslam's* (sic) *Creek (across the former land holdings of the Sydney Meat Preserving Company Ltd), but steps are being taken by this Council to overcome the obstacles that are delaying this extension, and we hope to see the whole length of this stormwater channel* (sic) *completed in the very near future.*' (Municipality of Lidcombe 1934, p.27).

The canalisation of Haslams Creek occurred after both Haslams Creek Culvert and Haslams Creek Bridge were constructed. Both structures were built on an angle over Haslams Creek.The subsequent stormwater canal neatly dovetails into them, suggesting that the different government agencies in charge of works in the area maintained (Extent Heritage Pty Ltd 2019).

3.4.2 STAND OF EUCALYPTUS MICROCORYS

It is likely that the stand of *Eucalyptus microcorys* planted in Wyatt Park in the 1970s reflected a revived interest in the greening of much of Sydney's inner west areas with native vegetation by the Federal Labor Government (Extent Heritage Pty Ltd 2019). The stand of *Eucalyptus microcorys* is not within the study area, or within view of the proposed development.

4 SITE DESCRIPTION

The site inspection was conducted by Nicole Secomb (Principle Consultant – Historic Heritage, Austral) and Stephanie Moore (Senior Archaeologist, Austral) on 24 March 2022.

4.1 SITE DESCRIPTION

The study area (Lot 1 DP 740385) is approximately 4.1 hectares of land located at the rear of 44 Boorea Street Lidcombe and is located with a mix of warehouse/distribution and industrial sites. The surrounding warehouse developments are a mix of mid twentieth century to modern developments which include small business units and larger warehouse sites (Figure 4.1). These are located on allotments lot varying sizes. The stormwater canal running along the full length of the western boundary of the site is known as Haslam's Creek. The natural form of the creek has been lost with concrete lining now evident along the creek line (Figure 4.2).

The site is accessed via concrete handle (driveway) access from Boorea Street and includes a large double height warehouse building with warehouses, loading docks and office spaces within this building. There are two warehouse "wings" adjacent to the western setback which connect to the main warehouse building. Mature trees are located along the eastern side of the access handle, the southern front boundary and the rear northern setback (Figure 4.3). The trees located in the rear northern setback are located within a hard stand at grade level car parking. Water tanks are located adjacent to the south west corner of the warehouse building

There are no viewlines from 42 Boorea Street to Boorea Street other than a distant southern view from the gatehouse located at the northern end of the driveway. The view is obstructed by the double height warehouse building at 44 Boorea Street. The triangle of land containing the Clive R Evatt Memorial tree and plaque are only visible at the southern end of the access handle nearest to Boorea Street. Views of Wyatt Park and its stand of *Eucalyptus microcorys* are obstructed by the surrounding industrial development. The area of Haslams Creek canal skirting the edge of the study area is visible from different parts of the site but is predominantly obstructed from view by the existing buildings, trees and fencing.

Figure 4.1 View of warehouse structures within the study area

Figure 4.2 **View of canalised portion of Haslam's Creek, to the west of the study area**

Figure 4.3 **View south along access driveway, showing mature vegetation at the back of the property**

4.2 ITEMS WITHIN THE VICITY OF THE STUDY AREA

4.2.1 CLIVE R EVATT MEMORIAL PLAQUE

The plaque is located on a small kerbed and guttered triangle of grassy land at the intersection of Boorea and Yarram Streets. The triangular piece of land creates a large, flat intersection making it clearly visible from all approaches. The new tree is smaller than surrounding trees and contributes to the openness of the site. The plaque is a very small item even on this small piece of land and is set low to the ground making it barely visible even across from the road. Its low siting mean that even the slightest growth in the grass impacts the ability to read the plaque. With no base, the entire plaque is susceptible to damage from ground maintenance, such as mowing.

The plaque is mounted on a small brick wall of nine bricks (three rows of three) which are capped with concrete. The plaque is concrete with early moss and lichen coverage. The original tree has been removed and replaced with a much younger Eucalypt planting, and the former seating has been removed.

The inscription on the plaque reads:

"On the 11th September 1948
this commemorative tree was planted by
THE HON. CLIVE R. EVATT
Minister for Housing.
W. R. Ames. Town Clerk, W. J. Carlton. M.L.A. M.T. Guilfoyle, Mayor"

4.2.2 HASLAMS CREEK CANAL

The canal extends from just south of Parramatta Road to just north of Boorea Street, Lidcombe. Haslams Creek has been canalised with the provision of near vertical concrete walls (and presumably a dished concrete base) above Parramatta Road, while below Parramatta Road the creek is aligned by a concrete wall, sloping into the creek bed with a distinct batter (Figure 4.4).

The condition of the canal appears to be fair. A section of the canal wall south of Parramatta Road is propped by structural supports to reduce the structural movement of the wall. Haslams Creek has been realigned in sections over a period of time and it is now difficult to establish the date of each section without further historical research. The integrity of the item is considered to be moderate.

Figure 4.4 **View north along the western edge of the study area to the canalised Haslam's Creek. Image shows vegetation screening between the study area and the heritage item**

4.2.3 WYATT PARK

A large recreational precinct that contains a variety of sporting fields including a swimming centre, two sporting ovals and basketball and netball courts. The precinct is a green space that also contains the Auburn Youth Centre and features a portion of Haslams Creek which is canalised and operates as a stormwater drain. The surrounding landscape is framed with a line of *Eucalyptus microcorys* trees along the road and boundary of the site. A carpark is located at the south of the site between the Church Street and Olympic Drive intersection, and Haslam Creek stormwater drain. The Haslam Creek stormwater drain is constructed of brick and lined with concrete on the canal floor. The brick is also capped in concrete and features concrete semi-circular abutments along the canal wall. The bricks are in a good condition, as is the mortar. A group of fifteen *Eucalyptus microcorys* trees, planted in the 1970s, form a distinctive line to the edge of Olympic Drive. The trees are well maintained.

5 ASSESSMENT OF SIGNIFICANCE

5.1 BASIS FOR ASSESSMENT

The Burra Charter of Australia ICOMOS was formulated in 1979 (revised 1999 and 2013) [Australia ICOMOS 2013], based largely on the Venice Charter (for International Heritage) of 1966. The Burra Charter is the standard adopted by most heritage practitioners in Australia. The Charter divides significance into four categories for the purpose of assessment. They are: Aesthetic, Historical, Scientific/Technical, and Social significance.

The Heritage Council of NSW has established a set of seven criteria to be used in assessing cultural heritage significance in NSW, and specific guidelines have been produced to assist archaeologists in assessing significance for subsurface deposits (Heritage Council of New South Wales 2009; NSW Heritage Office 2001). The Heritage Council's criteria incorporate those of the Burra Charter, but are expanded to include rarity, representative value, and associative value.

In order to determine the significance of a historical site, the Heritage Council have determined that the following seven criteria are to be considered (NSW Heritage Office 2001):

- **Criterion (a):** an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area);
- **Criterion (b):** an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area);
- **Criterion (c):** an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);
- **Criterion (d):** an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the local area);
- **Criterion (e):** an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area);
- **Criterion (f):** an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area); and
- **Criterion (g):** an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area).

These criteria were designed for use on known or built heritage items, where above ground heritage is both tangible and easily identified. Due to the nature of archaeology being that it is invisible until disturbed, the presence and attributes of archaeological material must be assumed based on the recorded levels of disturbance, known site history and the creation of predictive statements. Ultimately, the actual presence of archaeological material can only ever be framed in terms of the potential for it to be present. The following assessment therefore deals with the built and archaeological potential within the study area in a consolidated manner.

5.2 LEVELS OF SIGNIFICANCE

The Heritage Act allows for the protection of heritage items of State or local significance. The levels of significance can be defined as:

- Items of State significance are of special interest in a State context. They form an irreplaceable part of the environmental heritage of NSW and must have some connection of association to the State.
- Items of local significance are of special interest to the LGA. They important to the local community and often form an important part of the local identity. Collectively, such items reflect the cultural or natural history of the given area.

5.3 SIGNIFICANCE ASSESSMENT

The following section addresses the significance of the potential archaeological resource in accordance with the criteria adopted in the Heritage Council's significance guidelines for archaeological deposits (Heritage Council of New South Wales 2009, pp.11–13), using selected questions from the guidelines.

5.3.1 42 BOOREA STREET, LIDCOMBE (STUDY AREA)

Significance Criteria	Significance Assessment
Criterion (a): an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area);	42 Boorea Street does not play a riole in the course or pattern of the local area. Therefore, 42 Boorea Street **does not** have heritage value under this criterion
Criterion (b): an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area);	The site has associations with the early 50 acre grant to Samual Haslam and later the Sydney Meat Preserving Company. However, the lack of activity on the site means the association is not significant or substantial enough for 42 Boorea Street to have heritage value under this criterion. 42 Boorea Street **does not** have significance under this criterion.
Criterion (c): an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);	The site is almost unrecognisable as the clered land it once was and does not demonstrate creatibe or technical achievement. 42 Boorea Street **does not** have heritage value under this criterion
Criterion (d): an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the local area);	42 Boorea Street **does not** have heritage value under this criterion
Criterion (e): an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area);	42 Boorea Street **does not** have heritage value under this criterion
Criterion (f): an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area); and	42 Boorea Street **does not** have heritage value under this criterion
Criterion (g): an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area).	42 Boorea Street **does not** have heritage value under this criterion

5.3.2 CLIVE R EVATT MEMORIAL PLAQUE

Significance Criteria	Significance Assessment
Criterion (a): an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area);	The plaque has the potential to be associated with pattern of development of the local area, appearing to reflect recognition of local housing development. However the details of this connection are relatively unsubstantiated and therefore has **limited local heritage value** under this criterion
Criterion (b): an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area);	The plaque has **local associative significance** as evidence of a tree that was planted by the Hon. Clive R. Evatt, a prominent barrister and politician for the Labor Party, as well as Minister for Housing at the time of the planting.
Criterion (c): an item is important in demonstrating aesthetic characteristics and/or a high degree of	The plaque **does not** have heritage value under this criterion

creative or technical achievement in NSW (or the local area);	
Criterion (d): an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the local area);	The plaque **does not** have heritage value under this criterion
Criterion (e): an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area);	The plaque **does not** have heritage value under this criterion
Criterion (f): an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area); and	The plaque **does not** have heritage value under this criterion
Criterion (g): an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area).	The plaque **does not** have heritage value under this criterion

5.3.3 WYATT PARK – HERITAGE ITEM ID

Significance Criteria	Significance Assessment
Criterion (a): an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area);	The Wyatt Park has **local significance** a large recreational complex in Auburn with considerable historic significance to the local community, in particular the sporting venues constructed at different stages from 1930 onwards charting local development. The *Eucalyptus microcorys* are demonstrative of the interest in Australian native vegetation that was expressed in greening much of Sydney's inner west areas by the Federal Labor Government in the area in the early 1970s.
Criterion (b): an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area);	Wyatt park **does not** have heritage value under this criterion
Criterion (c): an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);	The sporting complex has **local aestethic** significance for its use of modernist architectural forms that date between 1930 and 1950. Of particular aesthetic significance is the Lidcombe Oval and grandstand that opened in 1933 and retains much of its original fabric as does the swimming centre constructed The line of fifteen *Eucalyptus microcorys* trees form a landmark vegetation in the local region.
Criterion (d): an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the local area);	The park has **local social significance** to the local community as a major sporting and recreational venue for both Lidcombe and Auburn, dating from 1951. It has local significanc e for the community of players and fans who have attended Lidcombe Oval as part the Sydney National Ruby League competitions.
Criterion (e): an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area);	Wyatt park **does not** have heritage value under this criterion
Criterion (f): an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area); and	The Wyatt Park recreational precinct has **local significance** as a rare example of a recreational facility constructed in the post war period, of which few examples remain in Western Sydney.

Significance Criteria	Significance Assessment
Criterion (g): an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area).	Wyatt park has **local significance** under this criteria as much of the original fabric and decorative detailing has been retained.

5.3.4 EUCALYPTS (WITHIN WYATT PARK)

Significance Criteria	Significance Assessment
Criterion (a): an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area);	Probably planted in the 1970's the trees are a reflection of the revived interest in Australian native planting which was expressed in the greening much of Sydneys inner west areas in the early 1970's by the Federal Labor Government. The trees have **local heritage significance** under this criterion.
Criterion (b): an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area);	The trees **do not** have heritage value under this criterion
Criterion (c): an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);	The line of trees, (*Eucalyptus microcorys*) have **aesthetic significance** as they from landmark planting in the local region.
Criterion (d): an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the local area);	The trees **do not** have heritage value under this criterion
Criterion (e): an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area);	The trees **do not** have heritage value under this criterion
Criterion (f): an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area); and	The trees **do not** have heritage value under this criterion
Criterion (g): an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area).	The trees are intact.

5.3.5 CANALISATION OF HASLAMS CREEK

Significance Criteria	Significance Assessment
Criterion (a): an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area);	Along with the Haslams Creek Road Bridge on Parramatta Road, further downstream, and the Parramatta Road alignment, this canal represents an episode in the evolution of the major transport conduit of Parramatta Road in the 1930s. The canal is **historically significant** as a development of drainage canal in the area and was a canal created during the 1930s as an unemployment relief project..

Significance Criteria	Significance Assessment
Criterion (b): an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area);	The item **does not** have heritage value under this criterion
Criterion (c): an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);	The item **does not** have heritage value under this criterion
Criterion (d): an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the local area);	The item **does not** have heritage value under this criterion
Criterion (e): an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area);	The item **does not** have heritage value under this criterion
Criterion (f): an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area); and	The item **does not** have heritage value under this criterion
Criterion (g): an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area).	The item **does not** have heritage value under this criterion.

6 STATEMENT OF SIGNIFICANCE

6.1 42 BOOREA STREET, LIDCOMBE

42 Boorea Street Lidcombe is not considered to have heritage significance.

6.2 CLIVE R EVATT MEMORIAL PLAQUE

The item is significant for its ability to demonstrate the importance of local housing commission development in the area and its associations with the Hon. Clive R. Evatt, a prominent barrister Labor politician and NSW Minister for Housing.

6.3 WYATT PARK

Wyatt Park has social significance as a large recreational precinct with a history of providing outdoor sport and recreation activity to residents and visitors to the local area for almost 100 years. The construction of the sporting facilitites is a local example of the long term contribution of unemployment relief works to the wellbeing of local communities. The retention of significant amounts of original and decorative detailing are an increasingly unusual opportunity to understand aesthetic and technical aspects of recreational facility construction ion the mid twentieth century.

The line of fifteen *Eucalyptus microcorys* trees surrounding Wyatt Park along Olympic Drive are locally significant as landmark vegetation in the local region expressing a Federal movement towards greening Sydney's inner west areas with native vegetation

6.4 HASLAMS CREEK CANAL

The Haslams Creek Canal is of local significance. It represents an episode in the evolution of the major transport conduit of Parramatta Road in the 1930s. It is an example of the development of drainage canal in the area and as a canal created and a local unemployment relief project.

7 STATEMENT OF HERITAGE IMPACT

The purpose of this section is to present a comprehensive assessment of the impacts to the identified heritage values associated with the study area and/or heritage items within the vicinity of the proposed works.

7.1 PROPOSED WORKS

The propoed works comprise the demolition of the existing warehouse and related structures and redevelopment of the site. This includes the construction, fit out and operation of a two-storey warehouse and distribution centre comprising approximately 38,959 m2 GFA including:

- - 34,826 m^2 of warehouse and distribution GFA; and
- - 4,133 m^2 GFA ancillary office space.

The works include provision of bicycle parking spaces, 203 external car parking spaces, approximately 4,563 m^2 of hard and soft landscaping and an internal access route and loading docks on ground and first floor. Upgrades will be made to existing on-site infrastructure including building identification signage. The site will be in operation 24 hours per day 7 days per week.

7.2 ASSESSED IMPACTS

This section assesses the potential heritage impacts of the proposed works on heritage items located within the vicinity of the study area in terms of the *Planning Secretary's Environmental Assessment Requirements - Warehouses and distribution centres* and the Cumberland DCP.

7.2.1 PLANNING SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS - WAREHOUSES AND DISTRIBUTION CENTRES

19. Environmental Heritage: Where there is potential for direct or indirect impacts on the heritage significance of items of environmental heritage, provide a Statement of Heritage Impact and Archaeological Assessment (if potential impacts to archaeological resources are identified), prepared in accordance with the relevant guidelines, which assesses any impacts and outlines measures to ensure they are minimised and mitigated.
42 Boorea Street is not and does not have potential as a heritage item. There are 3 heritage listed places in the vicinity of the site. The Haslams Creek Canal archaeological site (Cumberland LEP Item A7), Wyatt Park with *Eucalyptus microcorys* (Cumberland LEP Item 175) and the Clive R Evatt Memorial Plaque. (Cumberland LEP Item 191). **Wyatt Park** does not have site lines directly too and from the site and is unlikely to be impacted by the development as there is substantial industrial and housing development between the two , particularly to where the microcorys eucalypts are located. The **memorial plaque** and tree have direct sight line to the Boorea Street end of the driveway. Further visibility is obstructed by the neighbouring properties, particularly 42 Boorea Street. Any impact on the plaque would be limited only to development on the street end of the driveway, such as a gatehouse. However, such a development is considered unlikely to have an impact as the plaque only three bricks high by three bricks wide and is little more than a dark patch in this distance when standing at the driveway entrance. The plaque is already dominated by the young tree planted beside it and one has to be standing on the land on which it is situated to know that is is a plaque. Given the plaque (and tree) are protected from encroachement by the full width of Boorea and Yarram Streets it is unlikely that any development at 42 Boorea Street is likely to have an impact. Of greater concern would be any future development of the road which may encroach on the island of land the plaque is sitated on. **Haslams Creek Canal** which runs along the border of the site is currently barely visible from the site, due to the current buildings, existing native, planted and invasive vegetation and movable items such as pallets stacked up around the site. Although the proposed design will create less opportunity to view the canal, it is likely to result in cleaning up the area along the study area corridor and long term maintenance of the vegetation will aide access and views. This outweighs the slight increase in height to the new development and creates the possibility that the the canal may benefit from more visibility to the slight increase in height from the occupied spaces of the development. Given that the canal borders a number of other properties, full potential for this will only be realised as other properties improve their sites. It is noted that the canal is listed as an archaeological site so high visibility is not considered to be a necessary requirement of the development. It is therefore considered that the development will create a positive improvement along the canal which may inspire future developments to do the same. Works on the study area will not encroach on the canal itself.

7.2.2 CUMBERLAND DEVELOPMENT CONTROL PLAN 2021

Part G2 – Heritage **2.4 Specific controls for development in the vicinity of a heritage item**
Objectives
O1. Ensure that new development is sympathetic to the identified heritage values.
The new development retains similar scale and form to the surrounding environment. This scale and form does not negatively impact heritage items in the vicinity of the study area
O2. For new development to be designed to maintain the existing streetscape character and is compatible with its particular heritage themes.
The streetscape is not a heritage conservation area. The study area is on the border of a general mid to late twentieth century mixed industrial/residential use. The proposal does not contain characteristics incompatible with the streetscape character
O3. Ensure that new development is carefully sited to avoid causing physical damage to any heritage item or building within a conservation area, as well as ensuring it does not overshadow or affect the curtilage, landscaping, setting, solar access or views associated with any heritage item.
The development at 42 Boorea St does not propose work to heritage item or within a conservation area. Its distance from nearby heritage items mean that proposal will not impact the curtilage item or cause overshadowing beyond that which is already existing. Haslam's Creek Canal is the nearest heritage item. As a primarily archaeological site, views and sight lines have not been identified as significant to the heritage values of the site. It is already surrounded by industrial development and scaling development away from the site has not been identified as a need for the site..
Controls
C1 New dwellings on sites adjoining or in the vicinity of an item of environmental heritage shall be designed and constructed in a manner that does not detract from the historic significance of that item.
The item is a non heritage listed, mixed warehouse development of similar bulk, scale and design as neighbouring developments, albeit slightly modernised. It's similarity to existing development with improvements that will increase the visibility and potentially the accessiubility of the site. Other heritage items are located at a distance that means they are not impacted by the development.
C2 – Context - The development shall be designed having regard to its environmental and built context, to the existing streetscape character and to any heritage items or conservation areas that may be located nearby
The proposed development maintains bulk, scale, form and use similar, and therefore compatible with the xisting and nearby streetscape character
C3 – Streetscape Character - New development should make reference to, and be sympathetic to the predominant: height; scale; roof form, line and pitch; proportion; setbacks; design details (including parapets, verandahs, awnings and string courses); and features of adjoining development and of any adjacent heritage items
The heritage items in the vicinity of the proposal are not traditional built forms. They are a plaque, a canal and a park with leisure facilities. All industrial development has the potential to overwhelm them if built within an unsuitable proximity. This would be difficult to achieve unless there was significant realignment of existing easements and road reserves. A positive of the existing streetscape is that the warehouse redevelopment, together with the existing industrial character of the area complement the industrial nature of the simple, concrete lined Haslams Canal.
C4 – Streetscape Character - New development should be compatible with heritage items in terms of its scale and massing, overall bulk and composition. New buildings should not dominate their surroundings.
The proposed redevelopment is of similar bulk and composition of the surrounding development which act as a buffer between 42 Boorea Street and nearby heritage items.
C5 – Streetscape Character - Where a residential flat building is proposed adjoining or adjacent to a heritage item, any height and scale differences between a heritage item and new development should be minimised by stepping the height or locating the bulk of the new development away from the heritage item.
Not relevant.The development is adjacent to a ground based heritage item.

C6 – Streetscape Character - Window and door openings, building lines and building massing of new development should also be designed in the context of its adjoining development.
The new development is compatable with existing neighbouring, non heritage character development in size and form
C7 – Streetscape Character - Where a particular heritage character predominates within a street, the design of new development should be compatible with this heritage character.
Not relevant. Boorea Street is not identified as having a heritage character
C8 – Setbacks and Orientation - New development shall be carefully sited so that it is consistent with the predominant street and boundary setbacks. This may be varied where an increased or decreased front or side setback will assist in ensuring that a new development does not visually dominate any adjoining heritage items.
The site does not have street frontage and therefore does not impact street or boundary setbacks
C9 - Setbacks and Orientation - New buildings within an existing streetscape should not be oriented across sites contrary to the established pattern.
The development is not located across sites
C10 - Setbacks and Orientation - Where a new development is proposed adjoining a significant heritage feature, new development should continue the primary orientation and should provide an appropriate entry design and setback treatment along that frontage.
The development does not adjoin a significant heritage feature
C11 - Siting and location - The siting of new development should not affect the structure of, or otherwise cause physical damage to, any heritage item.
The works are not within an area/heritage curtilage where a heritage item may be damaged
C12 – Siting and Location - New development should be located so that it does not adversely impact upon the identified curtilage, setting or landscaping, solar access or any significant views to or from a heritage item
Currently there are no views to heritage items within the vicinity of the proposed development. The development is likely to create views of Haslams Creek Canal.
C13 - Visual impact - The design of the street elevation should be relatively uncomplicated and consist of simple forms that do not visually compete with the heritage item.
There is no street elevation
C14 - Visual Impact - New development adjoining/adjacent to a heritage item should avoid incorporating large unbroken wall areas.
The nature of warehousing means that there are large unbroken wall areas. However, this is not street facing. It faces similar style developments or the canal. Importantly the aspect facing the canal includes articulation created by covered walkways and awnings. It is also the location of upper story office areas withing the development with windows facing the canal
C15 – Visual Impact - Where new development is necessarily larger than its surrounding development, the bulk can be reduced by breaking long walls into bays or by arranging the openings in the wall so that their size and shape reflect the structure and the openings of its neighbours.
The propose development is not larger than surrounding development
C16 – Visual Impact - Landscaping should be used to minimise the visual appearance of large wall areas in new development adjoining a heritage item.
A green space is located opposite the adjoining Haslams Creek canal both within and outside the study area. It is also the location of covered walkways and awnings
C17 - Visual Impact - Where new development is proposed adjoining a heritage item or conservation area, the development should incorporate the use of colours and materials that are recessive so that they do not visually dominate the heritage item. Darker colours and simple facade treatments can assist in minimising the visual impact of new development on adjoining heritage items.
Not relevant. The proposal is not located in or next to a conservation or a built heritage item. The green corridor along the canal boundary will complement the existing vegetation outside the boundary.

7.3 CONSIDERATION OF HERITAGE VALUES IN THE DESIGN PROCESS

The following questions are taken from the Heritage NSW guidelines to preparing statements of heritage impact (Heritage Office and Department of Urban Affairs & Planning 1996).

WHAT ASPECTS OF THE PROPOSAL RESPECT OR ENHANCE THE HERITAGE SIGNIFICANCE OF THE STUDY AREA?

The location of offices and walkways along the Haslams Creek Canal side of the development create opportunities for visual improvement of views to and from the archaeological site from the study area. Currently it is a mixture of trees, invasive weeds and old chain fencing that are barely visible to visitors to the site. The proposal also creates opportunity and inspiration for neighbouring property owners and managers to develop designs as they redevelop their sites that will complement the canal and create opportunities for a singular, consistent green corridor along the Haslams Creek Canal. Keeping a similar bulk and scale as other development in the area will maintain any minor views and vistas between the study area and nearby heritage items that may become apparent in the future.

WHAT ASPECTS OF THE PROPOSAL COULD HAVE A DETRIMENTAL EFFECT ON THE HERITAGE SIGNIFICANCE OF THE STUDY AREA?

There are no identifiable detrimental impacts of the proposal to nearby heritage items. The proposal is more likely to make improvements through creating better views of and access to the nearest heritage item. Haslam's Creek Canal.

HAVE MORE SYMPATHETIC OPTIONS BEEN CONSIDERED AND DISCOUNTED?

It is not considered that a more sympathetic option could be created for the site without making less land available for use by the development than is currently in use.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 CONCLUSIONS

The proposed works at 42 Boorea Street, Lidcombe are unlikely to have a negative impact on nearby heritage items. They are more likely to have a positive impact by increasing visibility of at least one of the heritage items.

8.2 RECOMMENDATIONS

It is recommended that:

1) No further historical heritage assessment is required within the study area;
2) If historical archaeological relics not assessed or anticipated by this report are found during the works, all works in the immediate vicinity are to cease immediately and the Heritage Division be notified in accordance with the conditions of the Section 60 permit. A qualified archaeologist is to be contacted to assess the situation and consult with the Heritage Division of the Office of Environment and Heritage regarding the most appropriate course of action;
3) Should the actual development be altered significantly from the proposed concept design, then a reassessment of the heritage impact may be required. This includes any impacts not explicitly stated in Section 7; and
4) A copy of this assessment should be lodged by the proponent in the local history section of the local library.

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A-25 Additional Contamination Assessment

JBS&G (Contamination Consultant)

JBS&G 62184- 148308
L03 – 42 Boorea Street Additional TCE Investigation (Rev A)

28 October 2022

Alana Garrick
Hale Capital Partners
Via email: alana.garrick@halecp.com

Additional TCE Investigation, 42 Boorea Street, Lidcombe NSW

Dear Alana,

1. Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Hale Property Services Pty Ltd on behalf of The Trust Company Limited (the owner) to provide environmental consultancy services associated with redevelopment of 42 Boorea Street, Lidcombe NSW (the site). The site is legally identified as Lot 1 in DP 740385 and occupies a total area of approximately 4.1 hectares (ha). JBS&G have previously completed a detailed site investigation at the site (JBS&G 2022[1]) including soil, groundwater and soil vapour sampling and analysis.

Subsequent to completion of the DSI, NSW EPA issued a *Notice to Provide Information and/or Records Section 191 Protection of the Environment Operations Act 1997* (Reference Number N-44295 dated 13 April 2022) to the site owner. The notice indicated that the property located at 11-13 Percy Street Auburn (located across Haslam Creek from the site) is contaminated with trichloroethene (TCE) and its degradation products. Based on consultant reports and EPA's review of information from 11-13 Percy Street the notice indicated that EPA considered that the TCE was "*likely to be migrating onto 11-13 Percy Street Auburn from an offsite source to the east.*"

In response to the notice the EPA was provided copies of the DSI (JBS&G 2022), a Preliminary Site Investigation (PSI) completed by Douglas Partners in 2017 and a preliminary environmental site assessment completed by JBS&G at the site in 2021. The reports included the results of sampling and analysis of groundwater from 10 wells and soil vapour from 31 locations. No detections of TCE were detected in sample collected from the site.

Following review of the supplied DSI, NSW EPA subsequently issued a "Request for Additional Information" (ref DOC22/694163 dated 10 August 2022) letter determining that "insufficient sampling has been carried out to establish that the site is not the source of chlorinated compound contamination". The request for additional information including a recommended scope of works to ensure that multiple lines of evidence were collected to determine whether the site was a source of chlorinated compound contamination.

This letter presents the results of the additional investigations completed in response to the 10 August 2022 request for additional information.

[1] Detailed Site Investigation, 42 Boorea Street, Lidcombe NSW, JBS&G Australia Pty Ltd, dated 10 May 2022. Reference: 62184/143725 Rev 4. (JBS&G 2022)

2. Objectives and Scope of Work

The objective of this additional investigation is to determine whether the site, and specifically the portion (chemical storage shed) of the site directly opposite the area of contamination on 11-13 Percy Street, is the source chlorinated compound contamination.

The scope of works recommended by EPA was as follows:

1. *Soil investigation*
    a. *Conduct a soil investigation using membrane interface probe tool (or equivalent method) to determine if chlorinated compounds are presence in the profile.*
    b. *We recommend undertaking the soil investigation first, as it may better inform the placement of groundwater wells and soil vapour bores.*
2. *Groundwater investigation*
    a. *Installation of groundwater wells.*
    b. *Should include collection of field measurements, water quality parameters, analysis for chlorinated compounds and survey data for updating groundwater contours.*
    c. *Well installation needs to take into account the hydrogeological profile and the physical/chemical properties of chlorinated contamination.*
3. *Soil vapour investigation*
    a. *Installation of soil vapour bores.*
    b. *Should include the installation of shallow and deep soil vapour bores to target the chlorinated compounds which appear to be in the residual alluvial profile within the groundwater.*
4. *Reporting*
    a. *Submit a report documenting the works undertaken, with an updated conceptual site model and detailing the findings.*

Based on the above, JBS&G provided a proposed scope and methodology to EPA on 24 August 2022 that specified the use of a Membrane Interface Probe (MIP) as the primary investigation method with soil/soil vapour/groundwater works to be informed based on the MIP results.

3. Results

3.1 Membrane Interface Probe Assessment

Geochem Technologies Pty Ltd (Geochem) were engaged to utilise their Membrane Interface and Hydraulic Profiling Tool (MiHPT) to undertake the high-resolution vertical profiling works at the site. The MiHPT includes a halogen specific sensor (XSD) that allows direct identification of the presence of chlorinated compounds in the subsurface.

It is noted that interpretation of XSD data is semi-quantitative and is typically undertaken by assessing the magnitude of change from the baseline response. For example, the XSD log presented in the Geologix report for the area of concern on 11-13 Percy Street indicates a change of approximately 1 µVx10^5 in the zone where TCE has been identified.

The Geochem report is provided as **Attachment 3** and **Figure 2** shows the locations of the completed logs. The locations differ to those provided in our correspondence to EPA on 24 August 2022 due to access restrictions associated with steep ground and low hanging tree branches. Notwithstanding it

is considered that the completed locations are sufficient to assess whether chlorinated compounds are present in the area of concern.

The completed works are summarised as follows:

- Logging was completed at five locations. MIP01 was completed directly behind the chemical storage shed, MIP02 slightly to the south of MW07 and MIP03/MIP04 were further to the south (upgradient). MIP05 was completed directly adjacent to MW07 to allow the groundwater analytical data from this well to 'ground truth' the XSD response data;
- Refusal was encountered at all logging locations at depths ranging from 6.9 to 8.1 m (approximately 0.7 to 1.9 mAHD). This depth of refusal is consistent with the identified depth of shale bedrock at MW07 (approximately 2.6 mAHD);
- The variation in XSD values were no more than 0.1 µVx10^5 at all locations and there was no evidence of the presence of chlorinated ethenes (including TCE) in the subsurface;
- The XSD log/responses at MIP05 (adjacent to MW07 where no TCE has been identified in groundwater) were in the same range as those identified at MIP01, MIP02, MIP03 and MIP04 confirming that the responses observed at all locations are not related to the presence of chlorinated ethenes; and
- At a depth of approximately 5.8 to 6 m bgl at MIP04 the PID and XSD logs showed a small increase. While the responses were not considered to be indicative of the presence of chlorinated ethenes (as discussed above) additional assessment has been undertaken at this location and is described further below.

3.2 Well Installation, Soil, Soil Vapour and Groundwater Sampling

To further assess the PID/XSD response observed at MIP04 drilling and well installation was completed at this location. The bore and well installation log (MW14) is provided in **Attachment 4** and the location of the well is provided on **Figure 2**. The well was screened across the zone of interest (5.8-6.0 m bgl/3.0-3.2 mAHD) identified on the MIP log. Field observations during drilling of the well did not indicate the presence of contamination and PID screening of soils did not indicate the presence of volatiles in the subsurface.

Soil samples from 4.0-4.1 and 5.8-6.0 m bgl were selected for laboratory analysis with the results summarised in **Table A Attachment 5** (laboratory certificate are provided in **Attachment 6**). While low concentrations of middle/long chain total recoverable hydrocarbons (TRH) were identified in the 4.0-4.1 m bgl sample no detections of TRH were identified in the 5.8-6.0 m bgl sample and volatile compounds (including TCE/chlorinated ethenes) were not detected in either sample.

Based on water levels in adjacent monitoring wells it was expected that groundwater would be present in the newly installed well. However, no water was identified in the well on 6 October 2022 and insufficient water was present for sampling on 20 October 2022. This is considered to be a result of the low permeability clay present in this area of the site and is consistent with the high pressures/low flows reported by the HPT for this location (MIP04).

Existing monitoring well MW07 was sampled on 6 October 2022 with the field parameters, and analytical results presented in **Table B** and **Table C** respectively in **Attachment 5** (laboratory certificate are provided in **Attachment 6**). While low concentrations of middle chain TRH was identified in the water sample no detections of volatile compounds (including TCE/chlorinated ethenes) were reported. This result confirms that the reported XSD values for the site are not indicative of the presence of chlorinated ethenes in the subsurface.

As a groundwater sample could not be collected from MW14 a soil vapour well was collected on the morning of 24 October 2022 (prior to the rainfall that occurred later that day). The sample was

collected by inserting two tubes into the well (one to the zone of interest at 5.8 m and the other close to the top of the well). The tubes were sealed by use of modelling clay. Prior to sampling greater than one well volume was purged by extracting from the upper tube with sampling (Summa Canister) subsequently occurring from the lower tube (5.8 m). Leak detection was undertaken by placement of a rag saturated with isopropyl alcohol at the top of the well during purging/sampling.

The measured field parameters and soil vapour results are presented in **Table D** and **Table E** respectively in **Attachment 5** (laboratory certificate are provided in **Attachment 6**). While very low concentrations of some volatiles were identified in the vapour sample no chlorinated ethenes (including TCE) were detected in the sample.

QA/QC calculations are provided in **Attachment 7**, field notes for all completed works (including calibration certificates) are provided in **Attachment 8** and survey data for the existing/new wells is provided in **Attachment 9**.

4. Updated Conceptual Site Model and Conclusion

The additional investigations completed as part of this assessment have not identified the presence of chlorinated ethenes in soil, soil vapour or groundwater. The logging completed using the MiHPT tool clearly demonstrates that there is no source of TCE at the chemical storage shed or in areas near Haslam's Creek adjacent to the elevated concentrations reported on 11-13 Percy Street.

A conceptual model for groundwater flow is presented in **Figure 3 Attachment 2**. The water level elevations and surveyed invert for Haslams Creek clearly demonstrate that groundwater from the site cannot flow onto 11-13 Percy Street property. Additionally, there is clear visual evidence (refer photo on **Figure 3**) of seepage with iron staining that is characteristic if groundwater discharge to the creek from 11-13 Percy Street.

Given that TCE has not been identified using any assessment technique or in any media (soil, soil vapour, groundwater) it is concluded that the source of TCE impact identified on 11-13 Percy Street is not located on the 42 Boorea Street property.

Should you require clarification, please contact the undersigned on 02 8245 0300 or by email JNicholson@jbsg.com.au.

Yours sincerely:

Julia Nicholson
Senior Project Manager
JBS&G Australia Pty Ltd

Reviewed by:

Dr Greg Dasey (CEnvP SC)
Senior Principal, Contaminated Land
JBS&G Australia Pty Ltd

Attachments

1) Limitations
2) Figures
3) MIP Report
4) Borehole Logs
5) Data Summary Tables
6) Laboratory Analysis Reports and COCs
7) Quality Assurance/Quality Control
8) Field Notes
9) Survey Data

Attachment 1 – Limitations

This report has been prepared for use by the client who commissioned the works in accordance with the project brief only and has been based in part on information obtained from the client and other parties. The report has been prepared specifically for the client for the purposes of the commission, including use by the Site Auditor acting as an agent of the client in this respect. No warranties, express or implied, are offered to any third parties and no liability will be accepted for use or interpretation of this report by any third party.

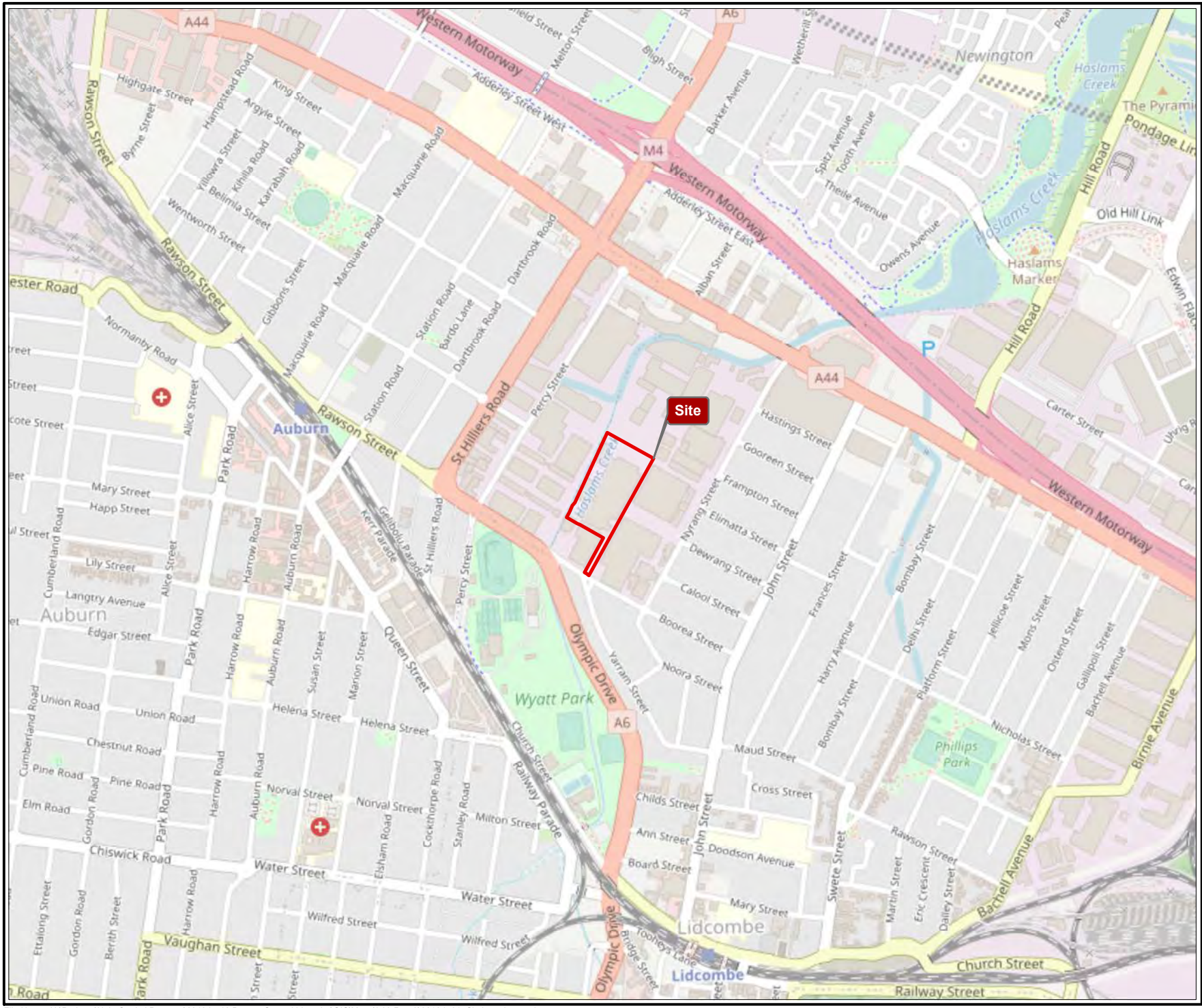
The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose. This report should not be amended in any way without prior approval by JBS&G, or reproduced other than in-full including all attachments as originally provided to the client by JBS&G.

Limited sampling and laboratory analyses were undertaken as part of the investigations reviewed, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history, and which may not be expected at the site.

Changes to the stockpile or subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site or material investigated, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Attachment 2 – Figures



Legend

Approximate Site Boundary

JBS&G

Job No: 62184	
Client: Hale Capital Partners	
Version: L03 Rev 0	Date 21/10/2022
Drawn By: RF	Checked By: JN

Scale 1:15,000

0 250 500

metres

Coord. Sys. GDA 1994 MGA Zone 56

42-44 Boorea Street, Lidcombe, NSW

SITE LOCATION

FIGURE 1

File Name: N:\Projects\Hale Capital Partners\62184 - 42 Boorea Street Lidcombe\GIS\Maps\L03 Rev A\62184_01_SiteLocation.mxd

Reference: © OpenStreetMap (and) contributors, CC-BY-SA

Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)

Sample Locations

- Monitoring Well, JBS&G 2022b
- MIP Soil Bore, JBS&G 2022b

JBS&G

Job No: 62184	
Client: Hale Capital Partners	
Version: L03 Rev 0	Date 26/10/2022
Drawn By: RF	Checked By: MR
Scale 1:2,500	

0 50 100
metres

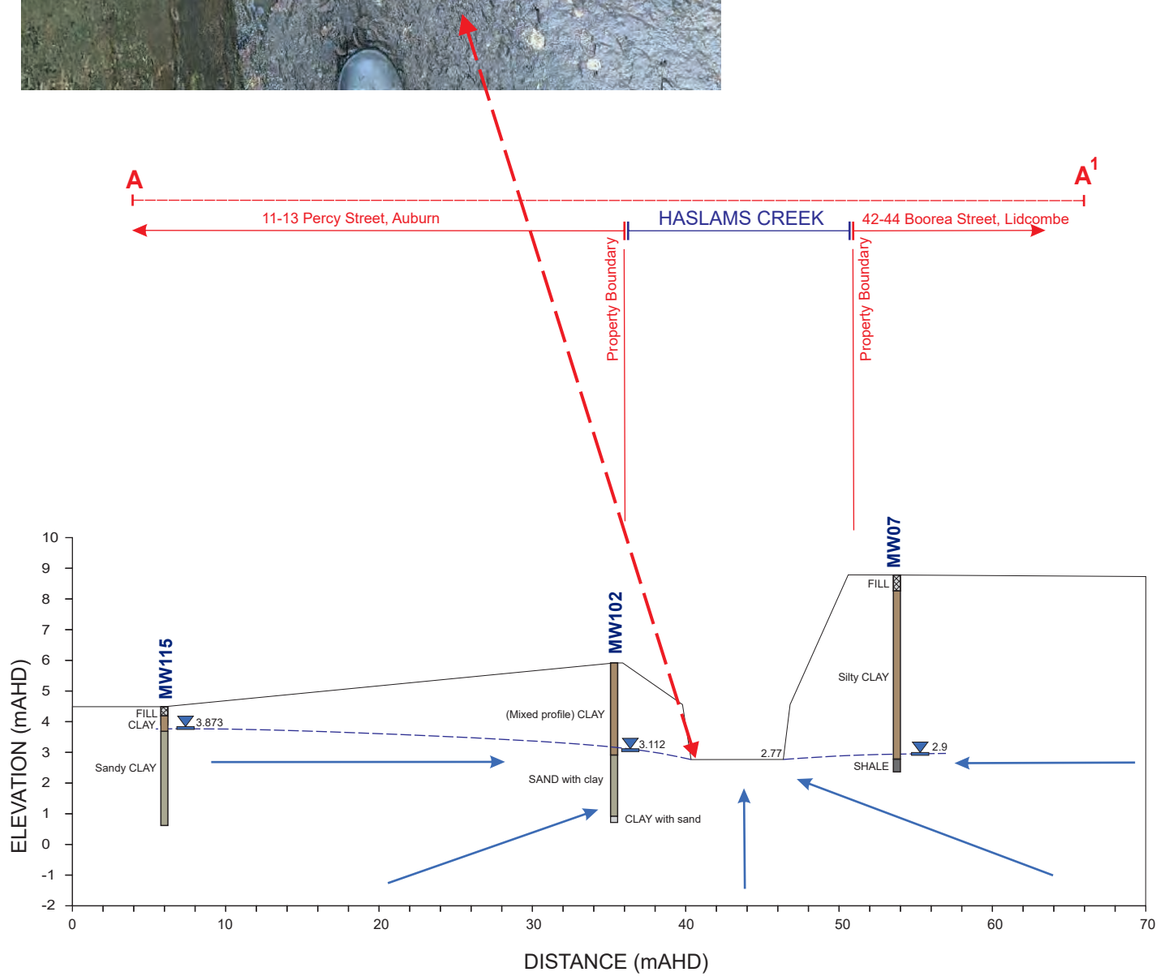
Coord. Sys. GDA 1994 MGA Zone 56

42-44 Boorea Street, Lidcombe, NSW

SITE LAYOUT AND SAMPLE LOCATIONS

FIGURE 2

File Name: N:\Projects\Hale Capital Partners\62184 - 42 Boorea Street Lidcombe\GIS\Maps\L03 Rev A\62184_02_SiteLayout_SampleLocations.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 21/12/2021)



Legend:

- Fill
- Clay / Silty Clay
- Sandy Clay / Clayey Sand
- Shale
- Groundwater Flow Direction
- Groundwater Table
- Groundwater Discharge to Canal

JBS&G

Job No: 62184	
Client: Hale Capital Partners	
Version: L03 Rev A	Date: 28/10/2022
Drawn By: RF/AB	Checked By: JN

Scale: Approximate

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 55

42-44 Boorea Street
Lidcombe, NSW

Cross Section A - A1

FIGURE 3

Attachment 3 – MIP Report

High Resolution Vertical Profiling
Logging Outputs

42 BOOREA STREET
LIDCOMBE, NSW

Client

JBS&G

Geochem Technologies Pty Ltd

25 October 2022

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Appendix A – Log Output Plots

Abbreviations

Term	Definition
GeochemTech	Geochem Technologies Pty Ltd
OH&S	Occupational Health and Safety
JSA	Job Safety Assessment
PPE	Personnel Protective Equipment
MiHPT	Membrane Interface & Hydraulic Profiling Tool
HPT	Hydraulic Profiling Tool
EC	Electrical Conductivity
DT325	Dual Tube Soil Core Sampling System
SP16	Screen Point Direct Push Groundwater Sampler
TCE	Trichloroethylene
N_2	Nitrogen Gas
H_2	Hydrogen Gas
PID	Photo ionization detector
FID	Flame ionization detector
XSD	Halogen specific detector
WHS	Work Health and Safety Management System
VOC	Volatile Organic Compounds
THA	Task Hazard Assessment
SWP	Safe Work Procedure
HRVP	High Resolution Vertical Profiling
UST	Underground Storage Tank
µV	Micro volts
^{O}C	Degrees Celsius
SWL	Standing Water Level
bgl	Below ground level
SOP	Standard Operating Procedure

Document Information

Version	Title	Author	Date	Status
0	High Resolution Vertical Profiling Logging Outputs, Lidcombe, NSW	Nick Pannell	4 October 2022	DRAFT
1	High Resolution Vertical Profiling Logging Outputs, Lidcombe, NSW	Nick Pannell	25 October 2022	FINAL

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1. INTRODUCTION

Geochem Technologies Pty Ltd (Geochem Tech) was commissioned by JBS&G to complete High-Resolution Vertical Profiling (HRVP) of the subsurface at directed locations within the site located at 42 Boorea Street, Lidcombe, New South Wales. The services provided at the request of JBS&G were undertaken on the 28th September 2022 by Geochem Tech operators. This factual report presents a summary of the works undertaken, output data logs, quality assurance and quality control supporting information.

2. OBJECTIVES

The objectives of the HRVP works were to collect high-resolution sub surface:

- geology electrical conductivity and hydraulic conductivity information; and,
- volatile organic compound (VOC) concentration and characteristics information.

This information collection was completed at five locations along the boundary area of interest at the site as directed by JBS&G site representatives.

3. SITE ACTIVITIES

The tasks undertaken by Geochem Tech included the following:

- Mobilisation and equipment setup,
- Membrane Interface and Hydraulic Profiling Tool (MiHPT) sensors QA/QC response testing,
- Drill rig advancement of MiHPT tooling into the subsurface,
- Logging of the MiHPT sensor outputs,
- Equipment decontamination and de-mobilisation, and
- Post logging data review and reporting.

Terratest advanced and extracted the MiHPT probe with a Geoprobe 7822 drilling rig.

3.1. WORK PROCEDURES

To enable the efficient, safe, and reliable sub surface logging, Geochem Tech implemented the following internal and external standard procedures in undertaking the HRVP works:

- ASTM D7352-07, Standard Practice for Direct Push Technology for Volatile Contaminant Logging with the Membrane Interface Probe;
- Geoprobe®, Membrane Interface Probe, Standard Operating Procedure Technical Bulletin No. MK3010, dated January 2015,
- Geoprobe®, Hydraulic Profiling Tool, Standard Operating Procedure Technical Bulletin No. MK3137, dated January 2015,
- Geoprobe Model 6620DT, Direct Push Machine, Owner's Manual, Document Number MK3028, dated January 2008,
- Geochem Tech MiHPT logging services procedure, dated April 2016,

4. SUMMARY OF WORKS

4.1. HRVP MiHPT Works

MiHPT logging was undertaken at five locations at the site as directed by the JBS&G site representative. The approximate locations and their details are presented in Table 1 and Figure 1.

The MiHPT logging included the collection of VOC compound concentrations, geology electrical conductivity and hydraulic conductivity data using a Geoprobe® Membrane Interface Probe (MIP) and Hydraulic Profiling Tool (HPT). The probe was advanced into the subsurface by hydraulic pressure and percussion using a Terratest Geoprobe® 7822 drilling rig. Log data was gathered by the following sensors:

- Photo Ionisation Detector (PID)
- Flame Ionisation Detector (FID)
- Halogen Specific Detector (XSD)
- Electrical Conductivity Dipole (EC)
- Hydraulic pressure and injection flow rate.

The sensor outputs were logged on a computer using the Geoprobe® Direct Image (DI) Acquisition Software for review and reporting.

Table 1 – Log Location(s) Information

Location	Location Description	Location (Degrees)	
		Latitude[1]	longitude[1]
MIP01	Northern most log location, to the west of the chemical store shed.	-33.85095	151.04204
MIP02	Located to the south of existing GW well.	-33.85105	151.04199
MIP03	Located approximately 10 m south of MIP02	-33.85115	151.04192
MIP04	Located southernmost of MIP locations adjacent to the west of the LPG tank	-33.85125	151.04196
MIP05	Located immediately adjacent existing GW well, between MIP01 and MIP02.	-33.85099	151.04201
	Number Locations	**5**	

1 – Hole location recorded by hand held GPS device.

LEGEND

⊕ MIP Log Locations

FIGURE : Approximate MIP Locations	**CLIENT: JBS&G**		geochem TECHNOLOGIES
SITE : BOOREA ST, LIDCOMBE NSW	DATE:4 October 22	*Reference: Base image from Google Earth*	

5. RESULTS

5.1. VOC SENSOR OUTPUTS

The results of the HRVP are summarised in Table 2 and presented in the graphical plots included in Attachment 1.

Table 2 – Log Results Summary

Log ID	Log Date & Start Time	Max Depth (m bgl)	Comments
MIP01	28-09-2022 8:30	7.1	Refusal encountered at 7.1m depth
MIP02	28-09-2022 9:30	7.96	Refusal encountered at 7.9m depth
MIP03	28-09-2022 10:50	6.9	Refusal encountered at 6.9m depth
MIP04	28-09-2022 11:47	7.1	Refusal encountered at 7.1m depth
MIP05	28-09-2022 12:43	8.1	Refusal encountered at 8.1m depth

It is noted that the log depth is recorded from the ground surface at each location.

6. QUALITY ASSURANCE & QUALITY CONTROL

To facilitate the delivery of accurate and repeatable HRVP, standard response tests and procedures, in accordance with relevant industry standards, were undertaken by Geochem Tech operators during the logging program.

The MiHPT QA/QC tests and procedures included:

- Decontamination of MiHPT probe and rods prior to and between each location using a rod wiper, phosphate free detergent, brush and potable water,
- Sensor warmup prior to logging commencement,
- Confirmation of acceptable MIP gas flows, absence of gas leaks & correct sensor electrical connections,
- Confirmation of acceptable sensor baseline outputs prior to logging,
- MIP sensor response testing using prepared standard solutions of relevant site chemicals of interest,
- Verification of acceptable sensor responses to standard solutions,
- Testing and confirmation of acceptable EC and HPT sensor outputs for applied conductive tool & water head pressures,
- Monitoring of key MiHPT properties during logging (gas & water pressures & flow rates, probe temperature) to confirm correct performance parameters,
- Advancement of probe in accordance with SOP rate of advancement,
- Decontamination of trunk gas lines and sensors through flushing with carrier gas between locations,

A summary of the QA response testing and MiHPT measurement parameters is presented in Table 3.

The completed logging program QA and QC results for the subject site are within acceptable ranges indicating the HRVP output logs are of an acceptable accuracy and repeatability.

Table 3 – QA Summary Information

Log ID	QA Item (Response Test)	Date & Time	Sensor Baselines (µV x 1000)			Sensor Response Tests Benzene				Sensor Response Tests TCE				MIP Flow Pressure & Temp	HPT / EC Pass	QA Comment
			PID	FID	XSD	ppm	PID	FID	XSD	ppm	PID	FID	XSD			
MIP01	Pre	28/09/22 8:30	332	54	102	5	381	59	103	5	347	53	119	-	Yes/Yes	
	Pre	28/09/22 8:30	332	54	102	-	-	-	-	10	357	53	144	-	Yes/Yes	
	Post	28/09/22 9:30	202	37	96	5	262	42	96	5	242	37	114	-	Yes/Yes	
	Log max	-	435	210	106	-	-	-	-	-	-	-	-	Ok/Ok/Ok	-	PID sensor connection failure
MIP02	Pre	28/09/22 9:30	202	37	96	5	262	42	96	5	242	37	114	-	Yes/Yes	
	Post	28/09/22 10:50	179	32	98	5	229	36	98	5	207	32	112	-	Yes/Yes	
	Log max	-	551	189	100	-	-	-	-	-	-	-	-	Ok/Ok/Ok	-	✓
MIP03	Pre	28/09/22 10:50	179	32	98	5	229	36	98	5	207	32		-	Yes/Yes	
	Post	28/09/22 11:47	177	32	95	5	213	36	96	5	198	32	114	-	Yes/Yes	
	Log max	-	260	57	105	-	-	-	-	-	-	-	-	Ok/Ok/Ok	-	✓
MIP04	Pre	28/09/22 11:47	177	32	95	5	213	36	96	5	198	32		-	Yes/Yes	
	Post	28/09/22 12:43	167	30	95	5	230	36	95	5	199	30	116	-	Yes/Yes	
	Log max	-	570	181	104	-	-	-	-	-	-	-	-	Ok/Ok/Ok	-	✓
MIP05	Pre	28/09/22 12:43	167	30	95	5	230	36	95	5	199	30		-	Yes/Yes	
	Post	28/09/22 13:47	158	30	95	5	220	35	95	5	189	30	114	-	Yes/Yes	
	Post	28/09/22 13:47	158	30	95	-	-	-	-	10	209	30	132	-	Yes/Yes	
	Log max	-	264	64	102	-	-	-	-	-	-	-	-	Ok/Ok/Ok	-	✓

B = Benzene in methanol / water solution at defined concentration (1 = 1 mg/L), TCE= trichloroethylene in methanol / water solution at defined concentration (1 = 1 mg/L)

6.1. Quality Assurance & Quality Control Discussion

The completed logging program QA and QC results for the subject site are within acceptable ranges indicating the HRVP output logs are of an acceptable accuracy and repeatability.

It is noted that a loose sensor connection from the PID to field instrument resulted in erroneous PID sensor readings for the upper 5.1 m in MIP01 log. This data has therefore not been presented in the report and logs.

6.2. Response Test Summary

The response test aqueous solution concentrations and corresponding observed detector outputs are presented in Table 4 and 5 for consideration in interpreting the MIP output logs.

Table 4 – Benzene Response Test Solutions & Detector output summary

Log ID	Concentration	PID Response	FID Response
	ppm	µV x 1000	µV x 1000
MIP01	5/5	49/60	5/5
MIP02	5/5	60/50	5/4
MIP03	5/5	50/36	4/4
MIP04	5/5	36/63	4/6
MIP05	5/5	63/62	6/5

The median sensor response per 1 ppm benzene response solution is 11,000µV for PID and 1,000µV for FID for this project.

Table 5 – Trichloroethene Response Test Solutions & Detector output summary

Log ID	Concentration	PID Response	XSD Response
	Ppm	µV x 1000	µV x 1000
MIP01	5/10/5	15/25/40	17/42/18
MIP02	5/5	40/28	18/14
MIP03	5/5	28/21	14/19
MIP04	5/5	21/32	19/21
MIP05	5/10/5	32/31/51	21/19/37

The median sensor response per 1 ppm trichloroethene response solution is 5,000µV for PID and 4,000µV for XSD for this project.

7. REFERENCES

ASTM D7352-07, Standard Practice for Direct Push Technology for Volatile Contaminant Logging with the Membrane Interface Probe, ASTM International, D7352 − 07 (Reapproved 2012),

MiHPT Logging & Subsurface Sampling Procedure, Geochem Technologies Pty Ltd, dated 14 April 2016,

Geoprobe®, Membrane Interface Probe, Standard Operating Procedure Technical Bulletin No. MK3010, dated January 2015,

Geoprobe®, Hydraulic Profiling Tool, Standard Operating Procedure Technical Bulletin No. MK3137, dated January 2015,

Geoprobe Model 6620DT, Direct Push Machine, Owner's Manual, Document Number MK3028, dated January 2008,

8. LIMITATIONS

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from and directions provided by the client and other parties.

The information herein relates only to this project and all results conclusions and recommendations made from this information should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

Geochem Technologies Pty Ltd accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by Geochem Technologies Pty Ltd, and should not be relied upon by other parties, who should make their own enquires.

Measurement of targeted environmental and subsurface media is based on appropriate guidance documents made and approved by the relevant regulatory authorities and the limitations of the equipment. Information arising from the investigations undertaken are based on the investigation methods and equipment considered appropriate based on the provided client information and regulatory requirements.

Limited targeted subsurface investigations were undertaken as part of the works program, as described herein. Ground conditions between investigation locations and media may vary, and this should be considered when extrapolating between sampling points. Result outputs are based on the equipment operation and interaction with the subsurface and the sensor performance detailed in this report. Further characteristics or categories of chemicals may exist at the site, which were not identified in the investigations and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The results provided in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein.

Plot Legend

Black Plot – Electrical Conductivity

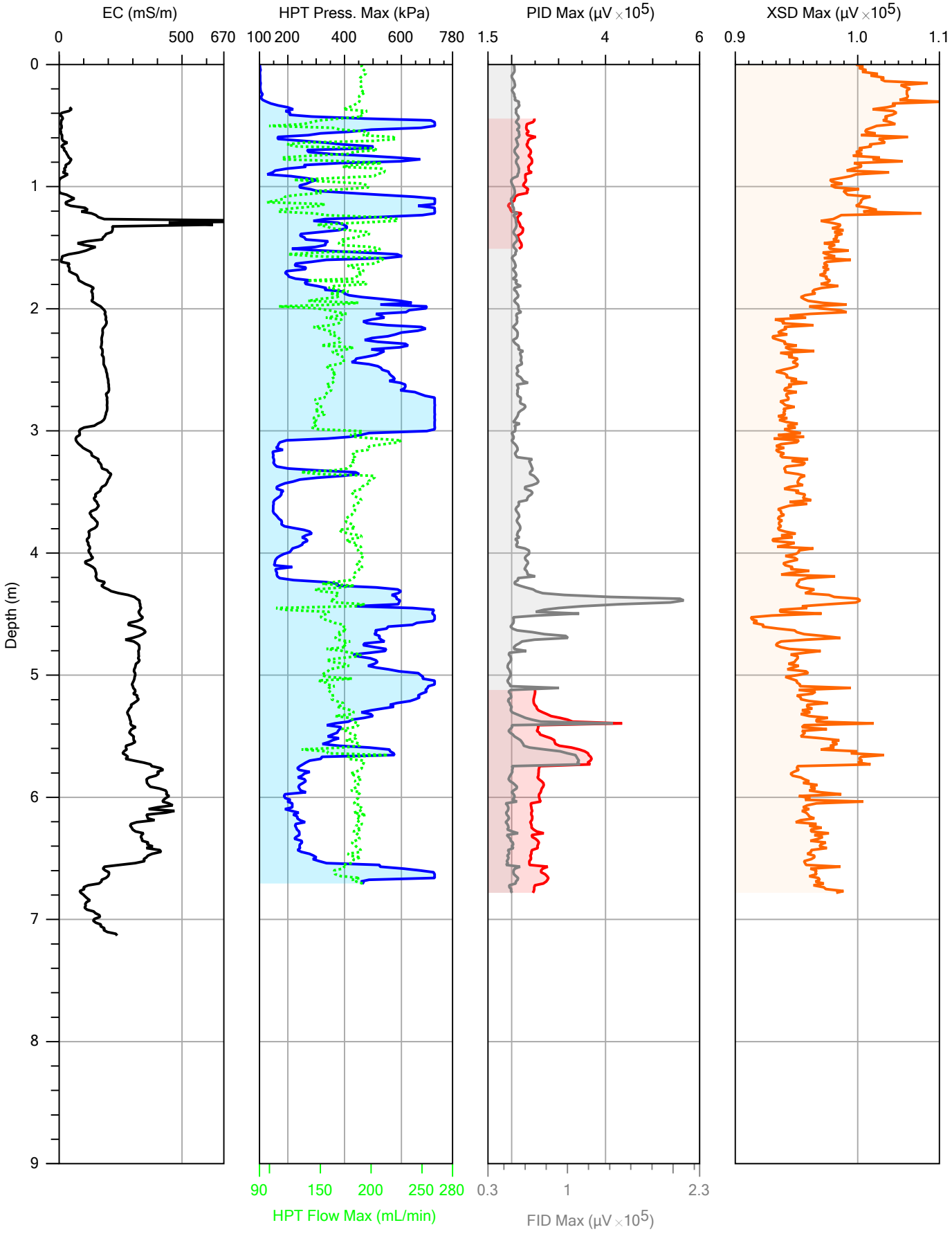
Red Plot – Photo Ionisation Detector (PID) sensor output

Grey Plot – Flame Ionisation Detector (FID) sensor output

Orange Plot – XSD halogen specific detector sensor output

Blue Plot – Hydraulic Profiling Tool (HPT) injection pressure sensor output

Green Plot – Hydraulic Profiling Tool (HPT) injection flow rate sensor output



geochem TECHNOLOGIES

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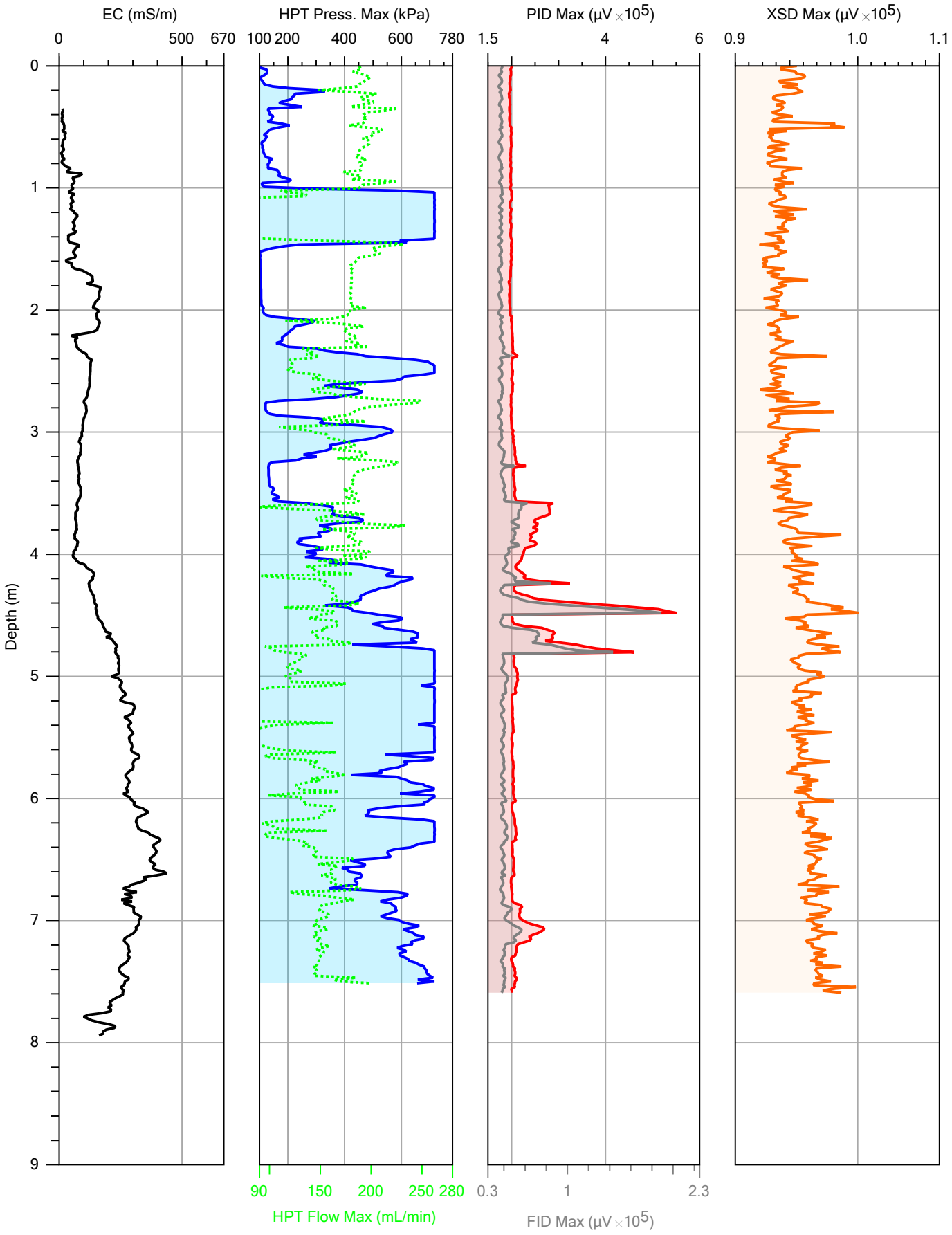
Company: Geochem Technologies	Operator: NBP	Date: 28/09/2022
Project ID: P221221	Client: JBS&G	Location: 33° 51′ 3″ S, 151° 2′ 31″ E



geochem TECHNOLOGIES

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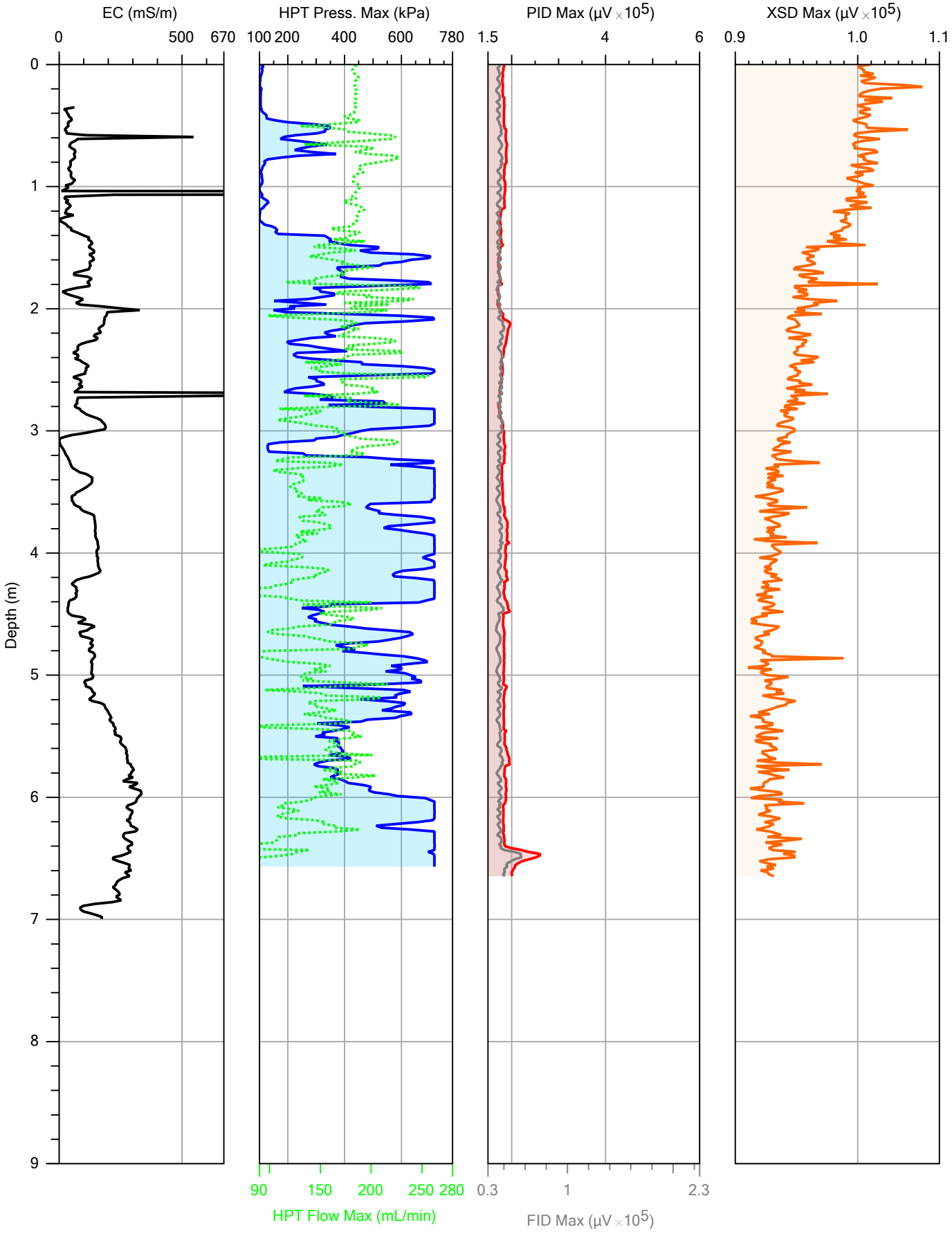
Project ID: P221221	Client: JBS&G	Location: 33° 51′ 4″ S, 151° 2′ 31″ E



geochem TECHNOLOGIES

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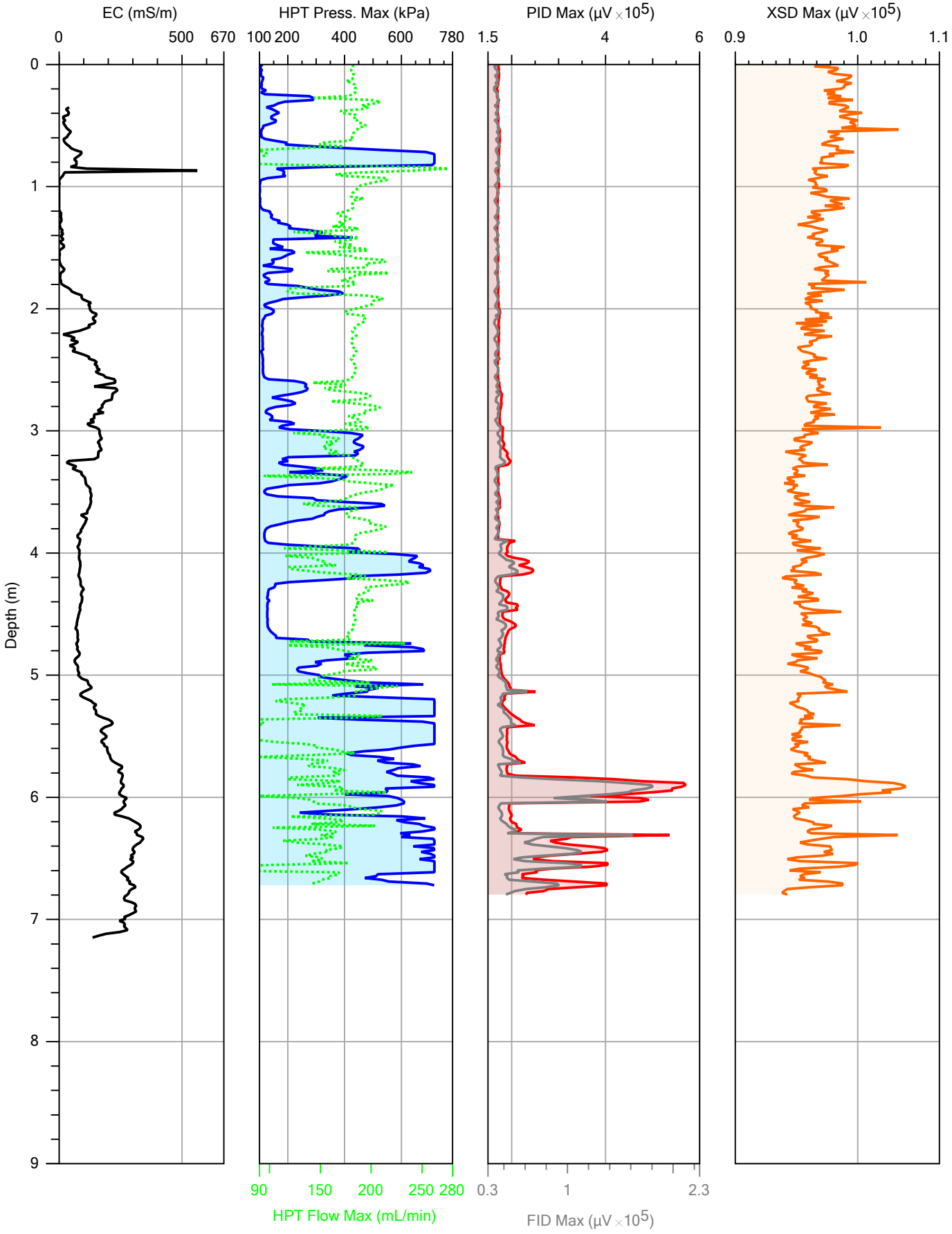
Company: Geochem Technologies	Operator: NBP	Date: 28/09/2022
Project ID: P221221	Client: JBS&G	Location: 33° 51′ 4″ S, 151° 2′ 31″ E



geochem TECHNOLOGIES

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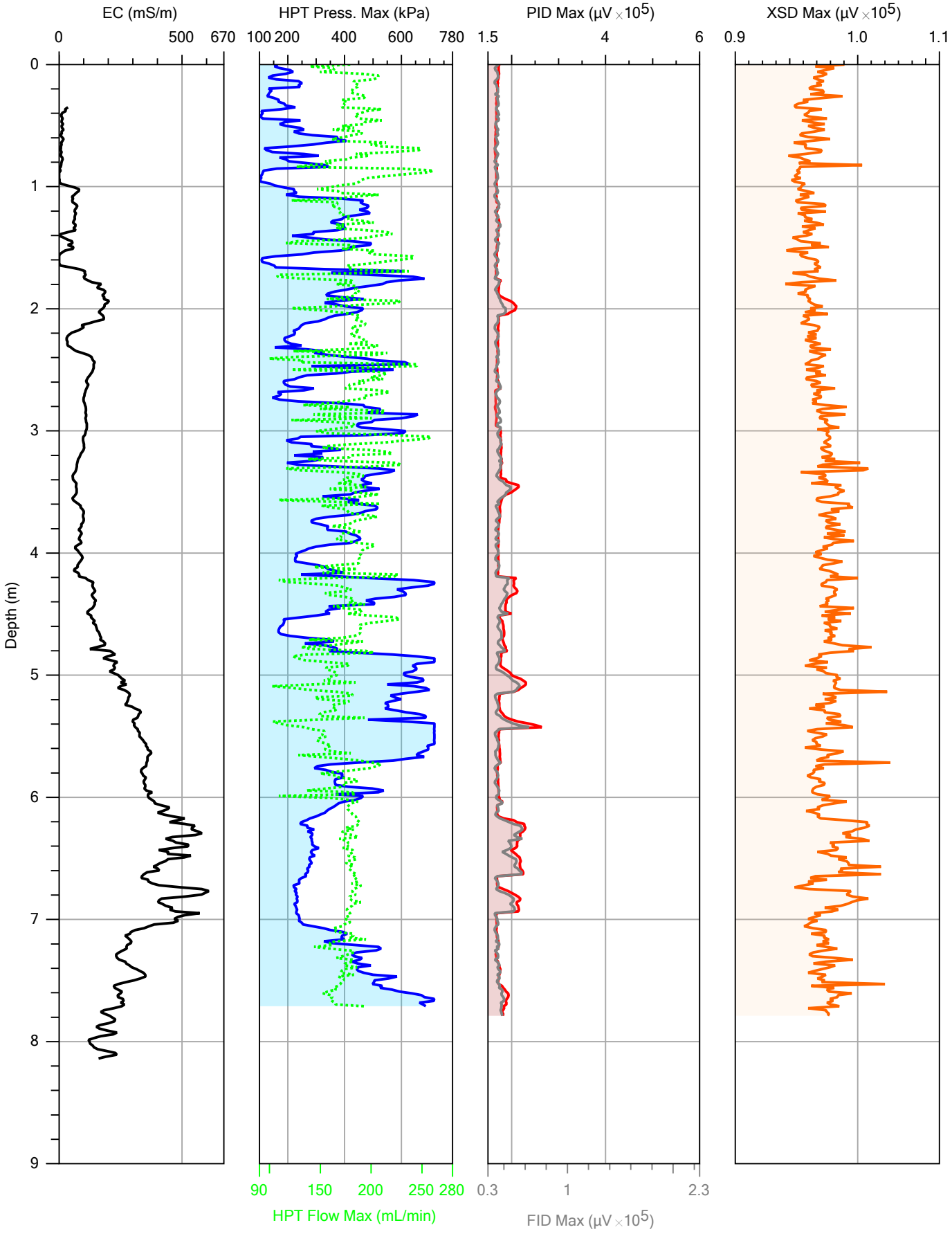
Project ID: P221221	Client: JBS&G	Location: 33° 51′ 5″ S, 151° 2′ 31″ E



geochem TECHNOLOGIES

		File: MIP05.MHP
Company: Geochem Technologies	Operator: NBP	Date: 28/09/2022
Project ID: P221221	Client: JBS&G	Location: 33° 51′ 4″ S, 151° 2′ 31″ E

Attachment 4 – Borehole Logs

GROUNDWATER WELL MW14

PROJECT NUMBER 62184	**DRILLING COMPANY** Terratest	**EASTING** N/A
PROJECT NAME Lidcombe	**DRILLING DATE** 28-Sep-22	**NORTHING** N/A
CLIENT Hale Capital Partners	**DRILL RIG** GeoProbe	**ELEVATION** N/A
PERMIT NO. N/A	**DRILLING METHOD** SFA	**COORD SYS** GDA94_MGA_zone_56
ADDRESS 42 Boorea Street, Lidcombe	**TOTAL DEPTH** 6.8 m bgl	**COORD SOURCE**
	DIAMETER 125 mm	**LOGGED BY** HD

COMPLETION Roadbox | **CASING** Class 18 PVC - 50mm | **SCREEN INTERVAL** 4.8 - 6.8 m bgl

COMMENTS

Drilling Method	Water (m bgl)	Well Details	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
SFA			0.5		Fill	Fill - Silty CLAY, Brown, heterogeneous, dry, low plasticity:soft, inclusions of roots, gravels and wood. Increased gravels at 0.5m bgs.	DR	MW14_0.0-0.1	9.7	No odour, staining or asbestos observed.
			1					MW14_0.5-0.6	11.1	No odour, staining or asbestos observed.
			1.5					MW14_1.0-1.1	9.7	No odour, staining or asbestos observed.
			2		CL	Natural - Silty CLAY, Brown, homogenous, dry, high plasticity, firm	DR	MW14_2.0-2.1	11.3	No odour, staining or asbestos observed.
			2.5							
			3					MW14_3.0-3.1	13.8	No odour, staining or asbestos observed.
			3.5							
			4					MW14_4.0-4.1	17.2	No odour, staining or asbestos observed.
			4.5							
	▽		5					MW14_5.0-5.1	16.9	No odour, staining or asbestos observed.
			5.5		CL	Natural - Silty CLAY, Grey, homogenous, damp, high plasticity, firm	DP			
			6		CL	Natural - Silty CLAY, Orange/Brown, homogenous, damp, high plasticity, firm, grey mottling at 6.5m bgs.	DP	MW14_5.8-6.0	15.8	No odour, staining or asbestos observed.
			6.5					MW14_6.7-6.8	15.1	No odour, staining or asbestos observed. End of hole at 6.8m bgs, program depth.
			7			Termination Depth at: 6.80 m.				
			7.5							

Attachment 5 – Data Summary Tables

Table A - MW14 Soil Analytical Summary Table
Project Number: 62184
Project Name: Lidcombe

	ORG-023_F1_TOT	TPHs (NEPC 1999)					TRHs (NEPC 2013)								
	Naphthalene (value used in F2 calc)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum of Total)	C6-C10	C10-C16	C16-C34	C34-C40	C10-C40 (Sum of total)	F1 (C6-C10 minus BTEX)	F2 (C10-C16 less Naphthalene)	Benzene	Toluene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	20	20	50	50	50	20	50	100	100	100	20	50	0.1	0.1
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil															
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay															
0-1m												310	NL	4	NL
1-2m												480	NL	6	NL
2-4m												NL	NL	9	NL
>4m												NL	NL	20	NL
NEPM 2013 Table 1B(1-5) Generic EIL - Comm/Ind															
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil									2500	6600		215	170	95	135
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil							800	1000	5000	10000					
Field ID	**Sample Date Time**	**Lab Report Number**													
MW14_4.0-4.1	28/09/2022	929236	<0.5	<20	<20	<50	79	79	<20	<50	<100	150	150	<20	<50	<0.1	<0.1
MW14_5.8-6.0	28/09/2022	929236	<0.5	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1

Table A - MW14 Soil Analytical Summary Table
Project Number: 62184
Project Name: Lidcombe

			BTEXN				Chlorinated Alkanes																
			Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																						
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																						
0-1m			NL			NL																
1-2m			NL			NL																
2-4m			NL			NL																
>4m			NL			NL																
NEPM 2013 Table 1B(1-5) Generic EIL - Comm/Ind																						
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil			185			95																
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil																						
Field ID	**Sample Date Time**	**Lab Report Number**																				
MW14_4.0-4.1	28/09/2022	929236	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW14_5.8-6.0	28/09/2022	929236	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table A - MW14 Soil Analytical Summary Table
Project Number: 62184
Project Name: Lidcombe

				Chlorinated Alkenes										Solvents	MAH						
				1,1-dichloroethene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	Acetone	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Styrene	Total MAH	Bromobenzene	Isopropylbenzene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																				
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																				
0-1m																				
1-2m																				
2-4m																				
>4m																				
NEPM 2013 Table 1B(1-5) Generic EIL - Comm/Ind																				
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil																				
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil																				
Field ID	**Sample Date Time**	**Lab Report Number**																		
MW14_4.0-4.1	28/09/2022	929236		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW14_5.8-6.0	28/09/2022	929236		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table A - MW14 Soil Analytical Summary Table
Project Number: 62184
Project Name: Lidcombe

			Miscellaneous Hydrocarbons						Chlorinated Benzenes				Trihalomethanes				Organic Sulfur Compounds	EPA VIC - IWRG621		Other
			1,2-dibromoethane	Bromomethane	Dibromomethane	Iodomethane	4-Methyl-2-pentanone	Methyl Ethyl Ketone	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Dibromochloromethane	Chloroform	Tribromomethane	Bromodichloromethane	Carbon disulfide	Chlorinated Hydrocarbons EPAVic	Other Chlorinated Hydrocarbons EPAVic	Moisture Content (dried @ 103°C)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																				
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																				
0-1m																				
1-2m																				
2-4m																				
>4m																				
NEPM 2013 Table 1B(1-5) Generic EIL - Comm/Ind																				
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil																				
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil																				
Field ID	**Sample Date Time**	**Lab Report Number**																		
MW14_4.0-4.1	28/09/2022	929236	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13
MW14_5.8-6.0	28/09/2022	929236	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15

Table B: Groundwater Gauging Results
Project Number: 62184
Project Name: Lidcombe

Well ID	Date	TOC	Ground Level	Total Well Depth	Depth to Water	Depth to Product	Product Thickness	SWL	Temp	DO	pH	Redox	EC	TDS	Comments & Physical Description
		mAHD	mAHD	m TOC	m BTOC	m BTOC	mm	m AHD	°C	ppm	-	mV	us/cm	mg/L	
MW07	06-Oct-22	8.613	8.784	6.873	5.444	-	-	3.169	19.0	1.58	4.37	57.3	15736	11545	Clear, low turbidity, no odour, no sheen
MW14	06-Oct-22	9.046	8.977	6.883	-	-	-	-	-	-	-	-	-	-	Dry

Table C: Groundwater Results MW07
Project Number: 62184
Project Name: Lidcombe

		TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEXN						Chlorinated Alkanes																			Chlorinated Alken						
	Naphthalene (value used in F2 cal	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum of Total)	C6-C10	C10-C16	C16-C34	C34-C40	C10-C40 (Sum of total)	F1 (C6-C10 minus BTEX)	F2 (C10-C16 less Naphthalene)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1-dichloroethene	1,1-dichloropropene	2-chlorotoluene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	0.02	0.05	0.1	0.1	0.1	0.02	0.05	0.1	0.1	0.1	0.02	0.05	0.001	0.001	0.001	0.001	0.002	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.005	0.005	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001
ADWG (2011) Health x 10 (Recreational) - Updated March-2021														0.01	8	3	6	6	6								0.03					0.03				0.04		0.3					
ANZG (2018) Freshwater 95% toxicant DGVs														0.95	0.18	0.08	0.35	0.075			0.27	0.4	6.5				1.9	0.9	1.1			0.24				4		0.7					
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 4-8m												NL	NL	30	NL	NL			NL																									

Field_ID	Date	Lab_Report																																												
MW07	6/10/2022	929372	<0.01	<0.02	<0.05	0.3	<0.1	0.3	<0.02	0.07	0.3	<0.1	0.37	<0.02	0.07	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001
QA - 20221006 (duplicate pair MW07)	6/10/2022	929372	<0.01	<0.02	<0.05	0.3	<0.1	0.3	<0.02	<0.05	0.3	<0.1	0.3	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001
QC_20221006 (triplicate pair MW07)	6/10/2022	307451	-	<0.01	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.05	-	-	<0.001	<0.001	<0.001	<0.001	<0.002	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	<0.01	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001

Table C: Groundwater Results MW07
Project Number: 62184
Project Name: Lidcombe

	es					Solvents	MAH										Miscellaneous Hydrocarbons							Chlorinated Benzenes						Trihalomethanes					
	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	Acetone	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	Total MAH	Bromobenzene	Isopropylbenzene	1,2-dibromoethane	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	4-Methyl-2-pentanone	Methyl Ethyl Ketone	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Dibromochloromethane	Chloroform	Tribromomethane	Bromodichloromethane	Carbon disulfide	Hexachlorobutadiene
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.001	0.001	0.001	0.001	0.005	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.005	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001
ADWG (2011) Health x 10 (Recreational) - Updated March-2021	0.5				0.003	140							0.3					0.01	0.01								15		0.4	3						0.007
ANZG (2018) Freshwater 95% toxicant DGVs	0.07			0.33	0.1												0.03								0.01	0.17	0.16	0.26	0.06	0.055		0.77				
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 4-8m																																				

Field_ID	Date	Lab_Report																																		
MW07	6/10/2022	929372	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	-
QA - 20221006 (duplicate pair MW07)	6/10/2022	929372	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	-
QC_20221006 (triplicate pair MW07)	6/10/2022	307451	<0.001	<0.001	<0.001	<0.001	<0.01	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001

TABLE D - Vapour Field Measured Parameters
Project Number: 62184
Project Name: Lidcombe

Well ID	Date	Oxygen	CO2	PID	Methane	LEL	H2S	CO
		%	%	ppm	%	%	ppm	ppm
MW14	24/10/2022	3.7	16.80	3.0	0.000	0.0	0.0	0.0

Table E: Vapour Results
Project Number: 62184
Project Name: Lidcombe

	TRHs (NEPC 2013		BTEXN					PAH	Chlorinated Alkanes													Chlorinated A				
	F1 (C6-C10 minus BTEX)	F2 (C10-C16 less Naphthalene)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Naphthalene	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2-dichloroethane	1,2-dichloropropane	1,2-dichlorotetrafluoroethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1,2-trichlorotrifluoroethane	1,1-dichloroethene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene
	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
EQL	0.2	0.04	0.0016	0.0019	0.0022	0.0022	0.0043	0.0026	0.0027	0.0034	0.0027	0.002	0.002	0.0023	0.0025	0.0031	0.0013	0.001	0.0025	0.017	0.0028	0.0038	0.002	0.002	0.0023	0.0034
NEPM 2013 Table 1A(2) Comm/Ind D Soil Vap VOCC HILs									230															0.3		8
NEPM 2013 Table 1A(5) Comm/Ind D Soil Vapour HSL for Vapour Intrusion, Clay 4-8m	130000	NL	530	NL	NL			560																		
Field_ID	**Date**	**Lab_Report**																								
MW14 (probe depth 5.8 m)	24/10/2022	308779	<0.2	<0.04	<0.0016	**0.008**	<0.0022	<0.0022	**0.006**	<0.0026	<0.0027	<0.0034	<0.0027	<0.002	<0.002	<0.0023	<0.0025	<0.0031	<0.0013	<0.001	<0.0025	<0.017	**0.01**	<0.0038	<0.002	<0.002	<0.0023	<0.0034

Table E: Vapour Results
Project Number: 62184
Project Name: Lidcombe

	Alkenes				Solvents												MAH			Miscellaneous Hydrocarbons					
	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	1-methyl-4 ethyl benzene	Heptane	Hexane	Propene	Acetone	1,4-Dioxane	Ethyl Acetate	Methyl Methacrylate	MTBE	Tetrahydrofuran	1,3-Butadiene	Benzyl chloride	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Styrene	1,2-dibromoethane	Bromomethane	Cyclohexane	Vinyl Acetate	2-Hexanone (MBK)	4-Methyl-2-pentanone
	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
EQL	0.002	0.0023	0.0027	0.0013	0.0025	0.002	0.0018	0.0009	0.0119	0.0018	0.0018	0.002	0.0018	0.0015	0.0011	0.0026	0.0025	0.0025	0.0021	0.0038	0.0019	0.0017	0.0018	0.002	0.02
NEPM 2013 Table 1A(2) Comm/Ind D Soil Vap VOCC HILs			0.08	0.1																					
NEPM 2013 Table 1A(5) Comm/Ind D Soil Vapour HSL for Vapour Intrusion, Clay 4-8m																									
Field_ID	**Date**	**Lab_Report**																							
MW14 (probe depth 5.8 m)	24/10/2022	308779	<0.002	<0.0023	<0.0027	<0.0013	<0.0025	<0.002	**0.008**	<0.0009	**0.02**	<0.0018	<0.0018	<0.002	<0.0018	<0.0015	<0.0011	<0.0026	<0.0025	<0.0025	<0.0021	<0.0038	<0.0019	<0.0017	<0.0018	<0.002	<0.02

Table E: Vapour Results
Project Number: 62184
Project Name: Lidcombe

			Chlorinated Benzenes						Trihalomethanes						Organic Alcohols			Organic							Other		
			Methyl Ethyl Ketone	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Dibromochloromethane	Chloroform	Tribromomethane	Bromodichloromethane	Acrolein	Carbon disulfide	2-Propanol	Ethanol	Hexachlorobutadiene	Aliphatic >C10-C12	Aliphatic >C6-C8	Aliphatic >C8-C10	Aromatic >C10-C12	Aromatic >C5-C7	Aromatic >C7-C8	Aromatic >C8-C10	Aliphatic >C5-C6	Vacuum before Analysis	Vacuum before Shipment
			mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	"Hg	"Hg
EQL			0.015	0.0037	0.003	0.003	0.003	0.0023	0.0016	0.0024	0.0052	0.0034	0.011	0.016	0.012	0.009	0.0053	0.05	0.1	0.05	0.02	0.005	0.005	0.05	0.1		
NEPM 2013 Table 1A(2) Comm/Ind D Soil Vap VOCC HILs																											
NEPM 2013 Table 1A(5) Comm/Ind D Soil Vapour HSL for Vapour Intrusion, Clay 4-8m																											
Field_ID	**Date**	**Lab_Report**																									
MW14 (probe depth 5.8 m)	24/10/2022	308779	<0.015	<0.0037	<0.003	<0.003	<0.003	<0.0023	<0.0016	**0.006**	<0.0052	<0.0034	<0.011	<0.016	**0.02**	**0.07**	<0.0053	<0.05	<0.1	<0.05	<0.02	<0.005	**0.008**	<0.05	**0.12**	**-6**	**-30**

Attachment 6 – Laboratory Analysis Reports and COCs

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Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Julia Nicholson**

Report **929236-S**
Project name LIDCOMBE
Project ID 62184
Received Date Oct 06, 2022

Client Sample ID			**MW14_4.0-4.1**	**MW14_5.8-6.0**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S22-Oc0009172**	**S22-Oc0009173**
Date Sampled			**Sep 28, 2022**	**Sep 28, 2022**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	79	< 50
TRH C10-C36 (Total)	50	mg/kg	79	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	150	< 100
TRH >C10-C40 (total)*	100	mg/kg	150	< 100
Volatile Organics				
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			MW14_4.0-4.1	MW14_5.8-6.0
Sample Matrix			Soil	Soil
Eurofins Sample No.			S22-Oc0009172	S22-Oc0009173
Date Sampled			Sep 28, 2022	Sep 28, 2022
Test/Reference	LOR	Unit		
Volatile Organics				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	93	90
Toluene-d8 (surr.)	1	%	114	112
% Moisture	1	%	13	15

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 12, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 12, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 12, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Sydney	Oct 12, 2022	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
% Moisture	Sydney	Oct 06, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 929236
Phone: 02 8245 0300
Fax:

Received: Oct 6, 2022 5:40 AM
Due: Oct 13, 2022
Priority: 5 Day
Contact Name: Julia Nicholson

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Volatile Organics	Moisture Set	Total Recoverable Hydrocarbons
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	MW14_4.0-4.1	Sep 28, 2022		Soil	S22-Oc0009172		X	X	X
2	MW14_5.8-6.0	Sep 28, 2022		Soil	S22-Oc0009173		X	X	X
3	MW14_0-0.1	Sep 28, 2022		Soil	S22-Oc0009174	X			
4	MW14_0.5-0.6	Sep 28, 2022		Soil	S22-Oc0009175	X			
5	MW14_1.0-1.1	Sep 28, 2022		Soil	S22-Oc0009176	X			
6	MW14_2.0-2.1	Sep 28, 2022		Soil	S22-Oc0009177	X			
7	MW14_3.0-3.1	Sep 28, 2022		Soil	S22-Oc0009178	X			
8	MW14_5.0-5.1	Sep 28, 2022		Soil	S22-Oc0009179	X			
9	MW14_6.7-6.8	Sep 28, 2022		Soil	S22-Oc0009180	X			
10	QS1	Sep 28, 2022		Soil	S22-Oc0009181	X			
11	QS1A	Sep 28, 2022		Soil	S22-Oc0009182	X			
12	RINSATE	Sep 28, 2022		Water	S22-Oc0009183	X			
13	TS	Sep 28, 2022		Water	S22-Oc0009184	X			

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Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 929236
Phone: 02 8245 0300
Fax:

Received: Oct 6, 2022 5:40 AM
Due: Oct 13, 2022
Priority: 5 Day
Contact Name: Julia Nicholson

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Volatile Organics	Moisture Set	Total Recoverable Hydrocarbons
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
14	TB	Sep 28, 2022		Water	S22-Oc0009185	X			
Test Counts						12	2	2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Iodomethane	mg/kg	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	103			70-130	Pass	
TRH C10-C14	%	101			70-130	Pass	
Naphthalene	%	100			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
TRH >C10-C16	%	102			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	98			70-130	Pass	
1.1.1-Trichloroethane	%	101			70-130	Pass	
1.2-Dichlorobenzene	%	109			70-130	Pass	
1.2-Dichloroethane	%	116			70-130	Pass	
Benzene	%	106			70-130	Pass	
Ethylbenzene	%	106			70-130	Pass	
m&p-Xylenes	%	110			70-130	Pass	
o-Xylene	%	109			70-130	Pass	
Toluene	%	105			70-130	Pass	
Trichloroethene	%	102			70-130	Pass	
Xylenes - Total*	%	110			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S22-Oc0009172	CP	%	90			70-130	Pass	
TRH C10-C14	N22-Oc0008186	NCP	%	91			70-130	Pass	
Naphthalene	S22-Oc0009172	CP	%	89			70-130	Pass	
TRH C6-C10	S22-Oc0009172	CP	%	89			70-130	Pass	
TRH >C10-C16	N22-Oc0008186	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	S22-Oc0018818	NCP	%	85			70-130	Pass	
1.1.1-Trichloroethane	S22-Oc0018818	NCP	%	83			70-130	Pass	
1.2-Dichlorobenzene	S22-Oc0018818	NCP	%	104			70-130	Pass	
1.2-Dichloroethane	S22-Oc0018818	NCP	%	110			70-130	Pass	
Benzene	S22-Oc0009172	CP	%	86			70-130	Pass	
Ethylbenzene	S22-Oc0009172	CP	%	91			70-130	Pass	
m&p-Xylenes	S22-Oc0009172	CP	%	94			70-130	Pass	
o-Xylene	S22-Oc0009172	CP	%	96			70-130	Pass	
Toluene	S22-Oc0009172	CP	%	96			70-130	Pass	
Trichloroethene	S22-Oc0018818	NCP	%	92			70-130	Pass	
Xylenes - Total*	S22-Oc0009172	CP	%	95			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S22-Oc0015788	NCP	mg/kg	530	550	3.2	30%	Pass	
TRH C15-C28	S22-Oc0015788	NCP	mg/kg	220	220	3.9	30%	Pass	
TRH C29-C36	S22-Oc0015788	NCP	mg/kg	72	< 50	48	30%	Fail	Q15
TRH >C10-C16	S22-Oc0015788	NCP	mg/kg	780	780	1.1	30%	Pass	
TRH >C16-C34	S22-Oc0015788	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S22-Oc0015788	NCP	mg/kg	140	< 100	36	30%	Fail	Q15
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	N22-Oc0008223	NCP	%	42	43	2.5	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Oc0009173	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Oc0009173	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	S22-Oc0009173	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Dibromomethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	S22-Oc0009173	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	S22-Oc0009173	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
o-Xylene	S22-Oc0009173	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	S22-Oc0009173	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S22-Oc0009173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	S22-Oc0009173	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Andrew Black	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Chain of Custody

JBS&G

PROJECT NO.: 62184
PROJECT NAME: Lidcombe
DATE NEEDED BY: —

LABORATORY BATCH NO.:
SAMPLERS: JN JR
QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) JNicholson@jbsg.com.au; (3) JEades@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Hold	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
MW14_0-0.1	soil	28/9/22		Jar		X			
-0.5-0.6									
-1.0-1.1									
-2.0-2.1									
-3.0-3.1									
-4.0-4.1									
-5.0-5.1									
-5.8-6.0									
-6.7-6.8									
QS1									
QS1a									
rinsate	water			bottles					
TS/TB				vials					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: JN DATE: 28/9/22	CONSIGNMENT NOTE NO.	NAME: DATE: 28/9/22 0:93	COOLER SEAL – Yes Yes No No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF:	COOLER TEMP 11.1 deg C #929236
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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62184 Lidcombe

Julia Nicholson <JNicholson@jbsg.com.au>

Thu 2022-10-06 5:40 AM

To: #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

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Hi

Can I please get 2 samples from 62184 Lidcombe which were picked up on 28 Sept from the office analysed: MW14_4-4.1 and MW14_5.8-6.0, QS1 analysed for TRH and VOCs on standard turnaround.

Thanks,
Julia

Julia Nicholson | Senior Project Manager - NSW CLM Team Lead | JBS&G
Gadigal Country | Level 1, 50 Margaret St, Sydney, NSW
T: 02 8245 0300 | M: 0435372567 | E: jnicholson@jbsg.com.au | W: jbsg.com.au | L: Conditions and Limitations

Exceptional Outcomes

#929236

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Sample Receipt Advice

Company name:	JBS & G Australia (NSW) P/L
Contact name:	Julia Nicholson
Project name:	LIDCOMBE
Project ID:	62184
Turnaround time:	5 Day
Date/Time received	Oct 6, 2022 5:40 AM
Eurofins reference	929236

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 11.2 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Julia Nicholson - jnicholson@jbsg.com.au.

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 929236
Phone: 02 8245 0300
Fax:

Received: Oct 6, 2022 5:40 AM
Due: Oct 13, 2022
Priority: 5 Day
Contact Name: Julia Nicholson

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Volatile Organics	Moisture Set	Total Recoverable Hydrocarbons
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	MW14_4.0-4.1	Sep 28, 2022		Soil	S22-Oc0009172		X	X	X
2	MW14_5.8-6.0	Sep 28, 2022		Soil	S22-Oc0009173		X	X	X
3	MW14_0-0.1	Sep 28, 2022		Soil	S22-Oc0009174	X			
4	MW14_0.5-0.6	Sep 28, 2022		Soil	S22-Oc0009175	X			
5	MW14_1.0-1.1	Sep 28, 2022		Soil	S22-Oc0009176	X			
6	MW14_2.0-2.1	Sep 28, 2022		Soil	S22-Oc0009177	X			
7	MW14_3.0-3.1	Sep 28, 2022		Soil	S22-Oc0009178	X			
8	MW14_5.0-5.1	Sep 28, 2022		Soil	S22-Oc0009179	X			
9	MW14_6.7-6.8	Sep 28, 2022		Soil	S22-Oc0009180	X			
10	QS1	Sep 28, 2022		Soil	S22-Oc0009181	X			
11	QS1A	Sep 28, 2022		Soil	S22-Oc0009182	X			
12	RINSATE	Sep 28, 2022		Water	S22-Oc0009183	X			
13	TS	Sep 28, 2022		Water	S22-Oc0009184	X			

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NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 929236
Phone: 02 8245 0300
Fax:

Received: Oct 6, 2022 5:40 AM
Due: Oct 13, 2022
Priority: 5 Day
Contact Name: Julia Nicholson

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Volatile Organics	Moisture Set	Total Recoverable Hydrocarbons
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
14	TB	Sep 28, 2022		Water	S22-Oc0009185	X			
Test Counts						12	2	2	2

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NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Hugo Dinan**

Report **929372-W**
Project name LIDCOMBE
Project ID 62184
Received Date Oct 06, 2022

Client Sample ID			**MW07**	**QA - 20221006**	**RINSATE**	**TS**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S22-Oc0010101**	**S22-Oc0010102**	**S22-Oc0010103**	**S22-Oc0010104**
Date Sampled			**Oct 06, 2022**	**Oct 06, 2022**	**Oct 06, 2022**	**Oct 06, 2022**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	0.3	0.3	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C10-C36 (Total)	0.1	mg/L	0.3	0.3	< 0.1	-
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH >C10-C16	0.05	mg/L	0.07	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	0.07	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	0.3	0.3	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	0.37	0.3	< 0.1	-
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Butanone (MEK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Propanone (Acetone)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			MW07	QA - 20221006	RINSATE	TS
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S22-Oc0010101	S22-Oc0010102	S22-Oc0010103	S22-Oc0010104
Date Sampled			Oct 06, 2022	Oct 06, 2022	Oct 06, 2022	Oct 06, 2022
Test/Reference	LOR	Unit				
Volatile Organics						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromomethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methylene Chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichlorofluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Vinyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Total MAH*	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Bromofluorobenzene (surr.)	1	%	109	111	108	-
Toluene-d8 (surr.)	1	%	118	115	114	-
TRH C6-C10	1	%	-	-	-	93
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	-	-	110
TRH C6-C9	1	%	-	-	-	92
BTEX						
Benzene	1	%	-	-	-	110
Ethylbenzene	1	%	-	-	-	110
m&p-Xylenes	1	%	-	-	-	120
o-Xylene	1	%	-	-	-	120
Toluene	1	%	-	-	-	110
Xylenes - Total	1	%	-	-	-	120
4-Bromofluorobenzene (surr.)	1	%	-	-	-	102

Client Sample ID			TB
Sample Matrix			**Water**
Eurofins Sample No.			**S22-Oc0010105**
Date Sampled			**Oct 06, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	94

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 07, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 07, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Oct 06, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Oct 06, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 07, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Sydney	Oct 07, 2022	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			

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Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 929372
Phone: 02 8245 0300
Fax:

Received: Oct 6, 2022 5:50 PM
Due: Oct 13, 2022
Priority: 5 Day
Contact Name: Hugo Dinan

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Volatile Organics	Total Recoverable Hydrocarbons	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	MW07	Oct 06, 2022		Water	S22-Oc0010101	X	X		
2	QA - 20221006	Oct 06, 2022		Water	S22-Oc0010102	X	X		
3	RINSATE	Oct 06, 2022		Water	S22-Oc0010103	X	X		
4	TS	Oct 06, 2022		Water	S22-Oc0010104				X
5	TB	Oct 06, 2022		Water	S22-Oc0010105			X	
Test Counts						3	3	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	104			70-130	Pass	
TRH C10-C14	%	128			70-130	Pass	
Naphthalene	%	102			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
TRH >C10-C16	%	124			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	99			70-130	Pass	
1.1.1-Trichloroethane	%	92			70-130	Pass	
1.2-Dichlorobenzene	%	103			70-130	Pass	
1.2-Dichloroethane	%	100			70-130	Pass	
Benzene	%	99			70-130	Pass	
Ethylbenzene	%	98			70-130	Pass	
m&p-Xylenes	%	100			70-130	Pass	
o-Xylene	%	99			70-130	Pass	
Toluene	%	93			70-130	Pass	
Trichloroethene	%	95			70-130	Pass	
Xylenes - Total*	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S22-Oc0008228	NCP	%	97			70-130	Pass	
TRH C10-C14	S22-Oc0013010	NCP	%	109			70-130	Pass	
TRH C6-C10	S22-Oc0008228	NCP	%	95			70-130	Pass	
TRH >C10-C16	S22-Oc0013010	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
Naphthalene	S22-Oc0010103	CP	%	114			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	S22-Oc0010103	CP	%	111			70-130	Pass	
1.1.1-Trichloroethane	S22-Oc0010103	CP	%	111			70-130	Pass	
1.2-Dichlorobenzene	S22-Oc0010103	CP	%	115			70-130	Pass	
1.2-Dichloroethane	S22-Oc0010103	CP	%	126			70-130	Pass	
Benzene	S22-Oc0010103	CP	%	108			70-130	Pass	
Ethylbenzene	S22-Oc0010103	CP	%	111			70-130	Pass	
m&p-Xylenes	S22-Oc0010103	CP	%	114			70-130	Pass	
o-Xylene	S22-Oc0010103	CP	%	113			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	S22-Oc0010103	CP	%	109			70-130	Pass	
Trichloroethene	S22-Oc0010103	CP	%	110			70-130	Pass	
Xylenes - Total*	S22-Oc0010103	CP	%	114			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S22-Oc0010101	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S22-Oc0010101	CP	mg/L	0.3	0.3	5.1	30%	Pass	
TRH C29-C36	S22-Oc0010101	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C10-C16	S22-Oc0010101	CP	mg/L	0.07	< 0.05	69	30%	Fail	Q15
TRH >C16-C34	S22-Oc0010101	CP	mg/L	0.3	0.3	8.0	30%	Pass	
TRH >C34-C40	S22-Oc0010101	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Oc0010102	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Naphthalene	S22-Oc0010102	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S22-Oc0010102	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chlorotoluene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloroform	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
cis-1.2-Dichloroethene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Dibromochloromethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Ethylbenzene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iodomethane	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S22-Oc0010102	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methylene Chloride	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
o-Xylene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S22-Oc0010102	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vinyl chloride	S22-Oc0010102	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Xylenes - Total*	S22-Oc0010102	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Andrew Black	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Chain of Custody

JBS&G

PROJECT NO.: 62154	LABORATORY BATCH NO.:
PROJECT NAME: Lidcombe	SAMPLERS: Hugo Diran
DATE NEEDED BY:	QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) h.diran@jbsg.com.au; (3) [illegible]@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TRH	BTEX	VOC	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
MW07	water	6/10/22		1 amber, 4 vials		x	x				
[illegible]											
QA_20220606						x	x				
Rinsate						x	x				
TS				2 vials			x				
TB							x				

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: H. Diran DATE: 6/10/22 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: A-Sylvia DATE: 06/10/22 5:50 OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP 7.9°C deg C #929372
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Con Cw

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Sample Receipt Advice

Company name:	JBS & G Australia (NSW) P/L
Contact name:	Hugo Dinan
Project name:	LIDCOMBE
Project ID:	62184
Turnaround time:	5 Day
Date/Time received	Oct 6, 2022 5:50 PM
Eurofins reference	929372

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 7.9 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Hugo Dinan - HDinan@jbsg.com.au.

Global Leader - Results you can trust

eurofins

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Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: LIDCOMBE
Project ID: 62184

Order No.:
Report #: 929372
Phone: 02 8245 0300
Fax:

Received: Oct 6, 2022 5:50 PM
Due: Oct 13, 2022
Priority: 5 Day
Contact Name: Hugo Dinan

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Volatile Organics	Total Recoverable Hydrocarbons	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	MW07	Oct 06, 2022		Water	S22-Oc0010101	X	X		
2	QA - 20221006	Oct 06, 2022		Water	S22-Oc0010102	X	X		
3	RINSATE	Oct 06, 2022		Water	S22-Oc0010103	X	X		
4	TS	Oct 06, 2022		Water	S22-Oc0010104				X
5	TB	Oct 06, 2022		Water	S22-Oc0010105			X	
Test Counts						3	3	1	1

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CERTIFICATE OF ANALYSIS 307451

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	H Dinan
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**62184, Lidcombe**
Number of Samples	1 Water
Date samples received	06/10/2022
Date completed instructions received	06/10/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	13/10/2022
Date of Issue	12/10/2022

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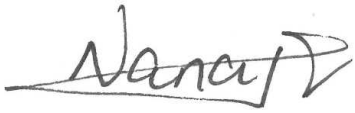
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Josh Williams, Organics and LC Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in water		
Our Reference		307451-1
Your Reference	UNITS	QC_20221006
Date Sampled		06/10/2022
Type of sample		Water
Date extracted	-	08/10/2022
Date analysed	-	08/10/2022
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1

VOCs in water		
Our Reference		307451-1
Your Reference	UNITS	QC_20221006
Date Sampled		06/10/2022
Type of sample		Water
Bromoform	µg/L	<1
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1
1,2,3-trichloropropane	µg/L	<1
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	112
Surrogate toluene-d8	%	102
Surrogate 4-BFB	%	101

vTRH in Water (C6-C9) NEPM		
Our Reference		307451-1
Your Reference	UNITS	QC_20221006
Date Sampled		06/10/2022
Type of sample		Water
Date extracted	-	08/10/2022
Date analysed	-	08/10/2022
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
Surrogate Dibromofluoromethane	%	112
Surrogate toluene-d8	%	102
Surrogate 4-BFB	%	101

svTRH (C10-C40) in Water		
Our Reference		307451-1
Your Reference	UNITS	QC_20221006
Date Sampled		06/10/2022
Type of sample		Water
Date extracted	-	10/10/2022
Date analysed	-	11/10/2022
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	80

Method ID	Methodology Summary
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			08/10/2022	[NT]	[NT]	[NT]	[NT]	08/10/2022	[NT]
Date analysed	-			08/10/2022	[NT]	[NT]	[NT]	[NT]	08/10/2022	[NT]
Dichlorodifluoromethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
2,2-dichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
1,1,1-trichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
1,1-dichloropropene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromomethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Bromodichloromethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
1,2-dibromoethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromoform	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Styrene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	111	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate toluene-d8	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate 4-BFB	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: vTRH in Water (C6-C9) NEPM						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			08/10/2022	[NT]	[NT]	[NT]	[NT]	08/10/2022	[NT]
Date analysed	-			08/10/2022	[NT]	[NT]	[NT]	[NT]	08/10/2022	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	107	[NT]
Surrogate Dibromofluoromethane	%		Org-023	111	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate toluene-d8	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate 4-BFB	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			10/10/2022	[NT]	[NT]	[NT]	[NT]	10/10/2022	[NT]
Date analysed	-			11/10/2022	[NT]	[NT]	[NT]	[NT]	11/10/2022	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	89	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	89	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate o-Terphenyl	%		Org-020	92	[NT]	[NT]	[NT]	[NT]	127	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Chain of Custody

JBS&G

PROJECT NO.: 62164	LABORATORY BATCH NO.:
PROJECT NAME: Liddcombe	SAMPLERS: Hugo Dixon
DATE NEEDED BY:	QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....@jbsg.com.au; (3) .....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TRH	Combination VOC	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
1	QC - 20221006	water	6/10/22		1 amber, 4 vials		X	X			

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 307451
Date Received: 06/10/22
Time Received: 1640
Received By: CH
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: H. Dixon DATE: 10/6/22	CONSIGNMENT NOTE NO.	NAME: Christine	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 06/10/22	
		OF: ENV 1640	COOLER TEMP 1 deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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CERTIFICATE OF ANALYSIS 308779

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	J Nicholson
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**62189 Lidcombe**
Number of Samples	1xCanister
Date samples received	24/10/2022
Date completed instructions received	24/10/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	26/10/2022
Date of Issue	26/10/2022

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Results Approved By
Amanda Chui, Air Toxics Team Leader

Authorised By

Nancy Zhang, Laboratory Manager

TO15 in Canisters/Bags		
Our Reference		308779-1
Your Reference	UNITS	MW14
Date Sampled		24/10/2022
Type of sample		Air
Air Kit Security No.		2263
Vacuum before Shipment	Hg"	-30
Vacuum before Analysis	Hg"	-6
Date prepared	-	25/10/2022
Date analysed	-	25/10/2022
Propylene	ppbv	<0.5
Dichlorodifluoromethane	ppbv	<0.5
Chloromethane	ppbv	<0.5
1,2-Dichlorotetrafluoroethane	ppbv	<0.5
Vinyl chloride	ppbv	<0.5
1,3-Butadiene	ppbv	<0.5
Bromomethane	ppbv	<0.5
Chloroethane	ppbv	<0.5
Ethanol	ppbv	40
Acrolein	ppbv	<5
Trichlorofluoromethane (Freon 11)	ppbv	2
Acetone	ppbv	7
Isopropyl Alcohol	ppbv	7
1,1-Dichloroethene	ppbv	<0.5
1,1,2-Trichlorotrifluoroethane	ppbv	<0.5
Methylene chloride (Dichloromethane)	ppbv	<5
Carbon Disulfide	ppbv	<5
trans-1,2-dichloroethene	ppbv	<0.5
MTBE	ppbv	<0.5
1,1- Dichloroethane	ppbv	<0.5
Vinyl Acetate	ppbv	<0.5
MEK	ppbv	<5
Hexane	ppbv	2
cis-1,2-Dichloroethene	ppbv	<0.5
Ethyl Acetate	ppbv	<0.5
Chloroform	ppbv	1
Tetrahydrofuran	ppbv	<0.5
1,1,1-Trichloroethane	ppbv	<0.5
1,2-Dichloroethane	ppbv	<0.5
Benzene	ppbv	<0.5
Carbon tetrachloride	ppbv	<0.5

TO15 in Canisters/Bags		
Our Reference		308779-1
Your Reference	UNITS	MW14
Date Sampled		24/10/2022
Type of sample		Air
Air Kit Security No.		2263
Cyclohexane	ppbv	<0.5
Heptane	ppbv	<0.5
Trichloroethene	ppbv	<0.5
1,2-Dichloropropane	ppbv	<0.5
1,4-Dioxane	ppbv	<0.5
Bromodichloromethane	ppbv	<0.5
Methyl Methacrylate	ppbv	<0.5
MIBK	ppbv	<5
cis-1,3-Dichloropropene	ppbv	<0.5
trans-1,3-Dichloropropene	ppbv	<0.5
Toluene	ppbv	2
1,1,2-Trichloroethane	ppbv	<0.5
Methyl Butyl Ketone	ppbv	<0.5
Dibromochloromethane	ppbv	<0.5
Tetrachloroethene	ppbv	<0.5
1,2-Dibromoethane	ppbv	<0.5
Chlorobenzene	ppbv	<0.5
Ethylbenzene	ppbv	<0.5
m-& p-Xylene	ppbv	1
Styrene	ppbv	<0.5
o-Xylene	ppbv	<0.5
Bromoform	ppbv	<0.5
1,1,2,2-Tetrachloroethane	ppbv	<0.5
4-ethyl toluene	ppbv	<0.5
1,3,5-Trimethylbenzene	ppbv	<0.5
1,2,4-Trimethylbenzene	ppbv	<0.5
1,3-Dichlorobenzene	ppbv	<0.5
Benzyl chloride	ppbv	<0.5
1,4-Dichlorobenzene	ppbv	<0.5
1,2-Dichlorobenzene	ppbv	<0.5
1,2,4-Trichlorobenzene	ppbv	<0.5
Naphthalene	ppbv	<0.5
Hexachloro- 1,3-butadiene	ppbv	<0.5
Surrogate-Bromochloromethane	% rec	106
Surrogate -1,4-Difluorobenzene	% rec	108
Surrogate-Chlorobenzene-D5	% rec	104

TO15 in Canisters µg/m3		
Our Reference		308779-1
Your Reference	UNITS	MW14
Date Sampled		24/10/2022
Type of sample		Air
Air Kit Security No.		2263
Vacuum before Shipment	Hg"	-30
Vacuum before Analysis	Hg"	-6
Date prepared	-	25/10/2022
Date analysed	-	25/10/2022
Propylene	µg/m³	<0.9
Dichlorodifluoromethane	µg/m³	<2.5
Chloromethane	µg/m³	<1.0
1,2-Dichlorotetrafluoroethane	µg/m³	<2.5
Vinyl chloride	µg/m³	<1.3
1,3-Butadiene	µg/m³	<1.1
Bromomethane	µg/m³	<1.9
Chloroethane	µg/m³	<1.3
Ethanol	µg/m³	70
Acrolein	µg/m³	<11
Trichlorofluoromethane (Freon 11)	µg/m³	10
Acetone	µg/m³	20
Isopropyl Alcohol	µg/m³	20
1,1-Dichloroethene	µg/m³	<2
1,1,2-Trichlorotrifluoroethane	µg/m³	<3.8
Methylene chloride (Dichloromethane)	µg/m³	<17
Carbon Disulfide	µg/m³	<16
trans-1,2-dichloroethene	µg/m³	<2
MTBE	µg/m³	<1.8
1,1- Dichloroethane	µg/m³	<2
Vinyl Acetate	µg/m³	<1.8
MEK	µg/m³	<15
Hexane	µg/m³	8
cis-1,2-Dichloroethene	µg/m³	<2
Ethyl Acetate	µg/m³	<1.8
Chloroform	µg/m³	6
Tetrahydrofuran	µg/m³	<1.5
1,1,1-Trichloroethane	µg/m³	<2.7
1,2-Dichloroethane	µg/m³	<2
Benzene	µg/m³	<1.6
Carbon tetrachloride	µg/m³	<3.1

TO15 in Canisters µg/m3		
Our Reference		308779-1
Your Reference	UNITS	MW14
Date Sampled		24/10/2022
Type of sample		Air
Air Kit Security No.		2263
Cyclohexane	µg/m³	<1.7
Heptane	µg/m³	<2
Trichloroethene	µg/m³	<2.7
1,2-Dichloropropane	µg/m³	<2.3
1,4-Dioxane	µg/m³	<1.8
Bromodichloromethane	µg/m³	<3.4
Methyl Methacrylate	µg/m³	<2
MIBK	µg/m³	<20
cis-1,3-Dichloropropene	µg/m³	<2.3
trans-1,3-Dichloropropene	µg/m³	<2.3
Toluene	µg/m³	8
1,1,2-Trichloroethane	µg/m³	<2.7
Methyl Butyl Ketone	µg/m³	<2
Dibromochloromethane	µg/m³	<1.6
Tetrachloroethene	µg/m³	<3.4
1,2-Dibromoethane	µg/m³	<3.8
Chlorobenzene	µg/m³	<2.3
Ethylbenzene	µg/m³	<2.2
m-& p-Xylene	µg/m³	6
Styrene	µg/m³	<2.1
o-Xylene	µg/m³	<2.2
Bromoform	µg/m³	<5.2
1,1,2,2-Tetrachloroethane	µg/m³	<3.4
4-ethyl toluene	µg/m³	<2.5
1,3,5-Trimethylbenzene	µg/m³	<2.5
1,2,4-Trimethylbenzene	µg/m³	<2.5
1,3-Dichlorobenzene	µg/m³	<3
Benzyl chloride	µg/m³	<2.6
1,4-Dichlorobenzene	µg/m³	<3
1,2-Dichlorobenzene	µg/m³	<3
1,2,4-Trichlorobenzene	µg/m³	<3.7
Naphthalene	µg/m³	<2.6
Hexachloro- 1,3-butadiene	µg/m³	<5.3
Surrogate-Bromochloromethane	% rec	106
Surrogate -1,4-Difluorobenzene	% rec	108
Surrogate-Chlorobenzene-D5	% rec	104

TPH in canisters in µg/m3		
Our Reference		308779-1
Your Reference	UNITS	MW14
Date Sampled		24/10/2022
Type of sample		Air
Air Kit Security No.		2263
Date prepared	-	25/10/2022
Date analysed	-	25/10/2022
TPH C_5 - C_6 Aliphatic	µg/m^3	120
TPH >C_6 - C_8 Aliphatic	µg/m^3	<100
TPH >C_8 - C_{10} Aliphatic	µg/m^3	<50
TPH >C_{10} - C_{12} Aliphatic	µg/m^3	<50
TPH C_5 - C_7 Aromatic	µg/m^3	<5
TPH >C_7 - C_8 Aromatic Toluene	µg/m^3	8
TPH >C_8 - C_{10} Aromatic	µg/m^3	<50
TPH >C_{10} - C_{12} Aromatic	µg/m^3	<20
TPH C_6 - C_{10} - BTEX (F1)	µg/m^3	<200
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m^3	<40

Method ID	Methodology Summary
AT-005	Measurement of Air-Phase Petroleum Hydrocarbons and Ozone Precursors by GC-MS.
TO15	USEPA TO15 - Analysis of VOC's in air using USEPA TO15 and in house method AT-002. Note, longer term stability of some oxygenated compounds is questionable where significant humidity is present.
USEPA 18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography using USEPA m18.

QUALITY CONTROL: TO15 in Canisters/Bags						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Vacuum before Shipment	Hg"			[NT]	1	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	1	-6	-6	0	[NT]	[NT]
Date prepared	-			25/10/2022	1	25/10/2022	25/10/2022		25/10/2022	[NT]
Date analysed	-			25/10/2022	1	25/10/2022	25/10/2022		25/10/2022	[NT]
Propylene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	118	[NT]
Dichlorodifluoromethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Chloromethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Vinyl chloride	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,3-Butadiene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Bromomethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Chloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Ethanol	ppbv	5	TO15	<5	1	40	40	0	[NT]	[NT]
Acrolein	ppbv	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	ppbv	0.5	TO15	<0.5	1	2	2	0	[NT]	[NT]
Acetone	ppbv	5	TO15	<5	1	7	7	0	[NT]	[NT]
Isopropyl Alcohol	ppbv	5	TO15	<5	1	7	7	0	[NT]	[NT]
1,1-Dichloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	ppbv	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
Carbon Disulfide	ppbv	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
trans-1,2-dichloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
MTBE	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,1- Dichloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Vinyl Acetate	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
MEK	ppbv	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
Hexane	ppbv	0.5	TO15	<0.5	1	2	2	0	105	[NT]
cis-1,2-Dichloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Ethyl Acetate	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Chloroform	ppbv	0.5	TO15	<0.5	1	1	1	0	[NT]	[NT]
Tetrahydrofuran	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,1,1-Trichloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Benzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	100	[NT]
Carbon tetrachloride	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Cyclohexane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	80	[NT]
Heptane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	117	[NT]

QUALITY CONTROL: TO15 in Canisters/Bags						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Trichloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichloropropane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,4-Dioxane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Bromodichloromethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Methyl Methacrylate	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
MIBK	ppbv	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
cis-1,3-Dichloropropene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
trans-1,3-Dichloropropene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Toluene	ppbv	0.5	TO15	<0.5	1	2	2	0	110	[NT]
1,1,2-Trichloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Methyl Butyl Ketone	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Dibromochloromethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Tetrachloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,2-Dibromoethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Chlorobenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	108	[NT]
m-& p-Xylene	ppbv	1	TO15	<1	1	1	1	0	111	[NT]
Styrene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	90	[NT]
o-Xylene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	106	[NT]
Bromoform	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
4-ethyl toluene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	108	[NT]
1,3,5-Trimethylbenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	111	[NT]
1,2,4-Trimethylbenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	109	[NT]
1,3-Dichlorobenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Benzyl chloride	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,4-Dichlorobenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichlorobenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,2,4-Trichlorobenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Naphthalene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	113	1	106	109	3	110	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	107	1	108	107	1	109	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	105	1	104	103	1	110	[NT]

QUALITY CONTROL: TO15 in Canisters µg/m3					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Vacuum before Shipment	Hg"			[NT]	1	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	1	-6	-6	0	[NT]	[NT]
Date prepared	-			25/10/2022	1	25/10/2022	25/10/2022		[NT]	[NT]
Date analysed	-			25/10/2022	1	25/10/2022	25/10/2022		[NT]	[NT]
Propylene	µg/m³	0.9	TO15	<0.9	1	<0.9	<0.9	0	[NT]	[NT]
Dichlorodifluoromethane	µg/m³	2.5	TO15	<2.5	1	<2.5	<2.5	0	[NT]	[NT]
Chloromethane	µg/m³	1.0	TO15	<1.0	1	<1.0	<1.0	0	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	µg/m³	2.5	TO15	<2.5	1	<2.5	<2.5	0	[NT]	[NT]
Vinyl chloride	µg/m³	1.3	TO15	<1.3	1	<1.3	<1.3	0	[NT]	[NT]
1,3-Butadiene	µg/m³	1.1	TO15	<1.1	1	<1.1	<1.1	0	[NT]	[NT]
Bromomethane	µg/m³	1.9	TO15	<1.9	1	<1.9	<1.9	0	[NT]	[NT]
Chloroethane	µg/m³	1.3	TO15	<1.3	1	<1.3	<1.3	0	[NT]	[NT]
Ethanol	µg/m³	9	TO15	<9	1	70	70	0	[NT]	[NT]
Acrolein	µg/m³	11	TO15	<11	1	<11	<11	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	µg/m³	2.8	TO15	<2.8	1	10	10	0	[NT]	[NT]
Acetone	µg/m³	11.9	TO15	<11.9	1	20	20	0	[NT]	[NT]
Isopropyl Alcohol	µg/m³	12	TO15	<12	1	20	20	0	[NT]	[NT]
1,1-Dichloroethene	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	µg/m³	3.8	TO15	<3.8	1	<3.8	<3.8	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	µg/m³	17	USEPA 18	<17	1	<17	<17	0	[NT]	[NT]
Carbon Disulfide	µg/m³	16	TO15	<16	1	<16	<16	0	[NT]	[NT]
trans-1,2-dichloroethene	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
MTBE	µg/m³	1.8	TO15	<1.8	1	<1.8	<1.8	0	[NT]	[NT]
1,1- Dichloroethane	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
Vinyl Acetate	µg/m³	1.8	TO15	<1.8	1	<1.8	<1.8	0	[NT]	[NT]
MEK	µg/m³	15	TO15	<15	1	<15	<15	0	[NT]	[NT]
Hexane	µg/m³	1.8	TO15	<1.8	1	8	8	0	[NT]	[NT]
cis-1,2-Dichloroethene	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
Ethyl Acetate	µg/m³	1.8	TO15	<1.8	1	<1.8	<1.8	0	[NT]	[NT]
Chloroform	µg/m³	2.4	TO15	<2.4	1	6	6	0	[NT]	[NT]
Tetrahydrofuran	µg/m³	1.5	TO15	<1.5	1	<1.5	<1.5	0	[NT]	[NT]
1,1,1-Trichloroethane	µg/m³	2.7	TO15	<2.7	1	<2.7	<2.7	0	[NT]	[NT]
1,2-Dichloroethane	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
Benzene	µg/m³	1.6	TO15	<1.6	1	<1.6	<1.6	0	[NT]	[NT]
Carbon tetrachloride	µg/m³	3.1	TO15	<3.1	1	<3.1	<3.1	0	[NT]	[NT]
Cyclohexane	µg/m³	1.7	TO15	<1.7	1	<1.7	<1.7	0	[NT]	[NT]
Heptane	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters µg/m3						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Trichloroethene	µg/m³	2.7	TO15	<2.7	1	<2.7	<2.7	0	[NT]	[NT]
1,2-Dichloropropane	µg/m³	2.3	TO15	<2.3	1	<2.3	<2.3	0	[NT]	[NT]
1,4-Dioxane	µg/m³	1.8	TO15	<1.8	1	<1.8	<1.8	0	[NT]	[NT]
Bromodichloromethane	µg/m³	3.4	TO15	<3.4	1	<3.4	<3.4	0	[NT]	[NT]
Methyl Methacrylate	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
MIBK	µg/m³	20	TO15	<20	1	<20	<20	0	[NT]	[NT]
cis-1,3-Dichloropropene	µg/m³	2.3	TO15	<2.3	1	<2.3	<2.3	0	[NT]	[NT]
trans-1,3-Dichloropropene	µg/m³	2.3	TO15	<2.3	1	<2.3	<2.3	0	[NT]	[NT]
Toluene	µg/m³	1.9	TO15	<1.9	1	8	9	12	[NT]	[NT]
1,1,2-Trichloroethane	µg/m³	2.7	TO15	<2.7	1	<2.7	<2.7	0	[NT]	[NT]
Methyl Butyl Ketone	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
Dibromochloromethane	µg/m³	1.6	TO15	<1.6	1	<1.6	<1.6	0	[NT]	[NT]
Tetrachloroethene	µg/m³	3.4	TO15	<3.4	1	<3.4	<3.4	0	[NT]	[NT]
1,2-Dibromoethane	µg/m³	3.8	TO15	<3.8	1	<3.8	<3.8	0	[NT]	[NT]
Chlorobenzene	µg/m³	2.3	TO15	<2.3	1	<2.3	<2.3	0	[NT]	[NT]
Ethylbenzene	µg/m³	2.2	TO15	<2.2	1	<2.2	<2.2	0	[NT]	[NT]
m-& p-Xylene	µg/m³	4.3	TO15	<4.3	1	6	6	0	[NT]	[NT]
Styrene	µg/m³	2.1	TO15	<2.1	1	<2.1	<2.1	0	[NT]	[NT]
o-Xylene	µg/m³	2.2	TO15	<2.2	1	<2.2	<2.2	0	[NT]	[NT]
Bromoform	µg/m³	5.2	TO15	<5.2	1	<5.2	<5.2	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	µg/m³	3.4	TO15	<3.4	1	<3.4	<3.4	0	[NT]	[NT]
4-ethyl toluene	µg/m³	2.5	TO15	<2.5	1	<2.5	<2.5	0	[NT]	[NT]
1,3,5-Trimethylbenzene	µg/m³	2.5	TO15	<2.5	1	<2.5	<2.5	0	[NT]	[NT]
1,2,4-Trimethylbenzene	µg/m³	2.5	TO15	<2.5	1	<2.5	<2.5	0	[NT]	[NT]
1,3-Dichlorobenzene	µg/m³	3.0	TO15	<3.0	1	<3	<3	0	[NT]	[NT]
Benzyl chloride	µg/m³	2.6	TO15	<2.6	1	<2.6	<2.6	0	[NT]	[NT]
1,4-Dichlorobenzene	µg/m³	3.0	TO15	<3.0	1	<3	<3	0	[NT]	[NT]
1,2-Dichlorobenzene	µg/m³	3.0	TO15	<3.0	1	<3	<3	0	[NT]	[NT]
1,2,4-Trichlorobenzene	µg/m³	3.7	TO15	<3.7	1	<3.7	<3.7	0	[NT]	[NT]
Naphthalene	µg/m³	2.6	TO15	<2.6	1	<2.6	<2.6	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	µg/m³	5.3	TO15	<5.3	1	<5.3	<5.3	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	113	1	106	109	3	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	107	1	108	107	1	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	105	1	104	103	1	[NT]	[NT]

QUALITY CONTROL: TPH in canisters in µg/m3						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			25/10/2022	1	25/10/2022	25/10/2022		25/10/2022	[NT]
Date analysed	-			25/10/2022	1	25/10/2022	25/10/2022		25/10/2022	[NT]
TPH C_5 - C_6 Aliphatic	µg/m^3	100	AT-005	<100	1	120	100	18	97	[NT]
TPH >C_6 - C_8 Aliphatic	µg/m^3	100	AT-005	<100	1	<100	<100	0	116	[NT]
TPH >C_8 - C_{10} Aliphatic	µg/m^3	50	AT-005	<50	1	<50	<50	0	[NT]	[NT]
TPH >C_{10} - C_{12} Aliphatic	µg/m^3	50	AT-005	<50	1	<50	<50	0	[NT]	[NT]
TPH C_5 - C_7 Aromatic	µg/m^3	5	AT-005	<5	1	<5	<5	0	94	[NT]
TPH >C_7 - C_8 Aromatic Toluene	µg/m^3	5	AT-005	<5	1	8	8	0	103	[NT]
TPH >C_8 - C_{10} Aromatic	µg/m^3	50	AT-005	<50	1	<50	<50	0	107	[NT]
TPH >C_{10} - C_{12} Aromatic	µg/m^3	20	AT-005	<20	1	<20	<20	0	104	[NT]
TPH C_6 - C_{10} - BTEX (F1)	µg/m^3	200	TO15	<200	1	<200	<200	0	107	[NT]
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m^3	40	TO15	<40	1	<40	<40	0	104	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

CHAIN OF CUSTODY - CANISTERS / BAGS / TD TUBES

See reverse side for TERMS AND CONDITIONS FOR PROVISION OF SAMPLING EQUIPMENT

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ENVIROLAB GROUP

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Client: JBS&G AUSTRALIA PTY LTD
Contact Person: J NICHOLSON
Project Mgr: J NICHOLSON
Sampler: C HAUFFMAN
Address: LVL 1/50 MARGARET ST SYDNEY
Phone: 0 Mob: 0425229446
Email: JNicholson@jbsg.com.au

Client Project Name / Number / Site etc. (i.e. report title): LIDCOMBE
PO No.: 62184
Envirolab Quote No.:
Date results required: 48hour TAT
Or choose: standard / same day / 1 day / 2 day / 3 day
Note: Inform lab in advance if urgent turnaround is required - surcharges apply
Additional report format: esdat / equis /
Lab Comments:

Envirolab Sample ID	Client Sample ID (Field Location)	Canister / TD Tube #	Soil Gas Train / Mass Flow Controller #	Leak Test Passed (Y/N)	PID Reading (ppmv)	Date of Collection	Collection Time: Time On	Collection Time: Time Off	Canister Vacuum (Hg"): Initial	Canister Vacuum (Hg"): Final	Flow Rate (Bags/TD Tubes only)	Tests Required: TO-15 (Cans/Bags) / TO-17 (Tubes)	TPH	5 Sulphides (Cans/Bags only)	Ozone Precursors	General Gases* (Cans/Bags only)	RGA Full List (Cans/Bags only)	TO14a + TO15 extended	Isopropanol	Comments
	SVQA	1874	1969	Y	3.0	24.10.22	08:20	08:44	30	2								X	X	V0.0
-1	MW14	2263	1957	Y	3.0	24.10.22	08:57	09:58	30	8										

* General Gases - Please tick one:

- ☐ 1) Methane, Oxygen, Carbon dioxide, Carbon monoxide, Nitrogen
- ☐ 2) Methane, Oxygen, Carbon dioxide, Carbon monoxide, Helium, Hydrogen
- ☐ 3) Specify analytes (NB: If both Nitrogen and Helium/Hydrogen are require, please contact the laboratory

Relinquished by (Company): JBS&G
Print Name: CHRIS HAUFFMAN
Date & Time: 24/10/22 1:30PM

Received by (Company): ELS
Print Name: JW
Date & Time: 24/10/2022 500PM

Lab Use Only:
Job Number: 308779
Security seal: Intact / Broken / None
TAT Req - SAME day / 1 / 2 / 3 / 4 / STD

issue date 17 February 2022

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	J Nicholson

Sample Login Details

Your reference	62189 Lidcombe
Envirolab Reference	308779
Date Sample Received	24/10/2022
Date Instructions Received	24/10/2022
Date Results Expected to be Reported	26/10/2022

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1xCanister
Turnaround Time Requested	2 days
Temperature on Receipt (°C)	n/a
Cooling Method	Not applicable
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	TO15 in Canisters/Bags	TO15 in Canisters µg/m3	TPH in canisters in µg/m3
mw14	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Attachment 7 – Quality Assurance/Quality Control

The pre-determined data quality indicators (DQIs) established for the project are discussed below in relation to precision, accuracy, representativeness, comparability and completeness (Table 1).

- **Precision** - measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** - measures the bias in a measurement system. The accuracy of the laboratory data that is generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** –expresses the degree which sample data accurately and precisely represents a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** - expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** - expresses the appropriateness of the chosen field and laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Summary of Quality Assurance / Quality Control Program

Data Quality Indicator	Frequency	Data Quality Acceptance Criteria
Precision		
Blind duplicates (intra laboratory)	1 / 20 soil samples	<50% RPD[1]
Blind duplicates (inter laboratory)	1 / 20 soil samples	
Laboratory duplicates	1 / 20 soil samples	<50% RPD[1]
Accuracy		
Surrogate spikes	All organic samples	70-130%
Laboratory control samples	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes	All samples	All samples
Samples extracted and analysed within holding times.	All samples	TRH/BTEX/PAHs/OCPs – 14 days, PCBs/heavy metals – 28 days, PFAS – 180 days, Asbestos – no holding time
Method blank	1 per laboratory batch	<LOR
Field Blank	1 per laboratory batch	<LOR
Trip spike	1 per sampling event (volatile or semi-volatile COPCs)	70-130% recovery
Trip blank	1 per sampling event (volatile or semi-volatile COPCs)	<LOR
Rinsate	1 per sampling event (where reusable sampling equipment is used)	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All samples	All samples
Standard analytical methods used for all analyses	All samples	All samples
Consistent field conditions, sampling staff and laboratory analysis	All samples	All samples
Limits of reporting appropriate and consistent	All samples	All samples
Completeness		
Soil description and COCs completed and appropriate	All samples	All samples
Appropriate documentation	All samples	All samples
Satisfactory frequency and result for QC samples	All QA/QC samples	-
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	All samples	LOR to be less than or equal to adopted site assessment criteria (where possible)

NOTE: ([1]) If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgment will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.

QA/QC Results Summary

Data Quality Indicator	Frequency	DQI Met?
Precision		
Blind duplicates	Soil: No samples analysed Water: 1/1 sample Vapour: No samples analysed	Soil: Partial[1] Water: 0-95% RPD[1] Vapour: Partial[1]
Blind triplicates	Soil: No samples analysed Water: 1/1 sample Vapour: No samples analysed	Soil: Partial[1] Water: 0-175% RPD[1] Vapour: Partial[1]
Laboratory duplicates	Soil: 3/1 sample Water: 2/1 sample Vapour: 1/1 sample	Soil: 0-48% RPD Water: 0-69% RPD[1] Vapour: 0-18% RPD
Accuracy		
Surrogate spikes	All organic samples	Soil: 90-114% Water: 94-118% Vapour: 104-108%
Laboratory control samples	>1 per lab batch	Soil: 98-116% Water: 92-128% Vapour: 80-118%
Matrix spikes	>1 per lab batch	Soil: 83-110% Water: 95-126% Vapour: N/A[1]
Representativeness		
Sampling appropriate for media and analytes	All samples	Yes
Samples extracted and analysed within holding times	All samples	No major exceedances
Method blank	>1 per laboratory batch	Soil: <LOR Water: <LOR Vapour: <LOR
Field blank	No field blank analysed	N/A[1]
Trip spike	1 per sampling event (volatile or semi-volatile COPCs)	92-120% recovery
Trip blank	1 per sampling event (volatile or semi-volatile COPCs)	<LOR
Rinsate	1 per sampling event (where reusable sampling equipment is used)	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All samples	Yes
Standard analytical methods used for all analyses	All samples	Yes
Consistent field conditions, sampling staff and laboratory analysis	All works	Yes
Limits of reporting appropriate and consistent	All samples	Yes
Completeness		
Soil description and COCs completed and appropriate	All samples	Yes
Appropriate documentation	All works	Yes
Satisfactory frequency and result for QC samples	All samples	Yes
Data from critical samples is considered valid	-	Yes
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	All samples	Yes

[1] See discussion of QA/QC results

Discussion of QA/QC Results

Precision

Blind Duplicates/Triplicates

The rates of blind duplicate and triplicate sampling are considered appropriate for the water data set. Blind duplicate samples were within the range of 0-50% RPD, with the exception of a limited number of analytes. The elevated RPD values are due to the concentrations being close to the laboratory's detection limits.

Based on the limited nature of the investigation, the duplicate and triplicate samples collected were not analysed as a part of the soil or vapour assessment. Samples collected in this assessment met the NATA accredited laboratory internal quality control acceptance limits as detailed within the laboratory reports. Therefore, the soil and vapour data are considered to be of an acceptable quality upon which to draw conclusions regarding the contamination status of soil and vapour.

Laboratory Duplicates

A sufficient number of laboratory duplicates were analysed. Laboratory duplicate samples were generally within the range of 0-50% RPD for all analytes, with the exception of one water RPD of 69%, which passed the laboratories acceptance criteria.

Accuracy

Surrogate Spikes

Surrogate spike recoveries were within the acceptable range of 70-130%.

Laboratory Control Samples

Laboratory control sample (LCS) recoveries were within the acceptable range of 70-130%.

Matrix Spikes

Matrix spike recoveries were within the acceptable range of 70-130%. No matrix spikes were not analysed for the vapour sample.

Representativeness

Sampling appropriate for media and analytes

All soil, groundwater and soil vapour sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures. Soil samples were collected by hand using a fresh pair of disposable nitrile free gloves at each sample depth. Samples were transferred directly to laboratory provided sample jars. Groundwater sampling was completed using a low flow peristaltic pump which is considered appropriate for the potential site contaminants in groundwater. Samples were then placed into an esky with ice for transport to the laboratory. Vapour probe was correctly installed, sealed and leak detection was performed. The summa canister used was appropriate for the COPCs.

Holding times

There were no exceedances of analysis of samples within holding times.

Trip spike/Trip blank

A trip spike and trip blank was analysed for the water data set and all results are found to be acceptable.

A trip spike and trip blank sample was not analysed for the soil data set. Samples were directly placed on ice following collection and the loss of volatile contaminants was unlikely during

transportation. Additionally, most laboratory results were below detection limits, therefore the risk of cross-contamination between samples is considered low.

The PID further reported that there was no volatile impact present in the samples. The robustness of JBS&G sampling handling and preservation practices to prevent cross-contamination and volatile loss has been previously demonstrated through the implementation of the preceding DSI works. The absence of the trip spike and trip blank sample from this analytical dataset is not considered to significant affect the assessment of data reliability.

Rinsate blank

A rinsate blank was analysed for the water data set and all results are found to be acceptable.

A rinsate blank was not analysed for the soil data set. Most laboratory results were below detection limits, therefore the risk of cross-contamination between samples is considered low.

Comparability

Eurofins Environment testing and Envirolab Services Pty Ltd were used as the primary and secondary laboratories for the duration of the assessment. The laboratories implemented standard analytical procedures as detailed in the laboratory reports provided in **Attachment 6**, and are NATA accredited for all methods.

Experienced JBS&G personnel undertook all sampling in accordance with standard JBS&G sampling methods.

Completeness

Documentation

All field documentation including field screening forms and COCs were completed to a satisfactory standard. All documentation is complete and correct.

Frequency for QC Samples

Duplicate and triplicate sample frequency is considered appropriate for the assessment.

Sensitivity

Limits of reporting were below the adopted site assessment criteria.

Assessment of QA/QC

The field sampling and handling procedures produced QA/QC results suitable for use in the material assessments.

The laboratory results indicate that the project laboratories were achieving required levels of sensitivity for the purposes of this assessment.

On the basis of the field and laboratory QA/QC program, the soil, water and vapour data are of an acceptable quality upon which to draw conclusions regarding the nature and extent of soil, water and vapour impacts.

Groundwater RPDs
Project Number: 62184
Project Name: Lidcombe

Field Duplicates (water)
Filter: SDG in('ENVIROLAB 2022-10-25T00:00:00','929372','929236')

SDG	929372	929372		929372	ENVIROLAB 2022-10-06T00:00:00	
Field ID	MW07	QA - 20221006	RPD	MW07	QC_20221006	RPD
Sampled Date/Time	6/10/2022	6/10/2022		6/10/2022	6/10/2022	

Chem_Group	ChemName	Units	EQL						
ORG-023_F1_TOT	Naphthalene (value used in F2 calc)	mg/l	0.01	<0.01	<0.01	0	<0.01		
TPHs (NEPC 1999)	C6-C9 Fraction	mg/l	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
	C10-C14 Fraction	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05	0
	C15-C28 Fraction	mg/l	0.1	0.3	0.3	0	0.3	<0.1	**143**
	C29-C36 Fraction	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	C10-C36 Fraction (Sum of Total)	mg/l	0.1 : 0.05 (Interlab)	0.3	0.3	0	0.3	<0.05	**169**
TRHs (NEPC 2013)	C6-C10	mg/l	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
	C10-C16	mg/l	0.05	0.07	<0.05	**95**	0.07	<0.05	**95**
	C16-C34	mg/l	0.1	0.3	0.3	0	0.3	<0.1	**143**
	C34-C40	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	C10-C40 (Sum of total)	mg/l	0.1 : 0.05 (Interlab)	0.37	0.3	21	0.37	<0.05	**175**
	F1 (C6-C10 minus BTEX)	mg/l	0.02	<0.02	<0.02	0	<0.02		
	F2 (C10-C16 less Naphthalene)	mg/l	0.05	0.07	<0.05	**95**	0.07		
BTEXN	Benzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Toluene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Ethylbenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Xylene (o)	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Xylene (m & p)	mg/l	0.002	<0.002	<0.002	0	<0.002	<0.002	0
	Xylene Total	mg/l	0.003	<0.003	<0.003	0	<0.003		
Chlorinated Alkanes	1,1,1,2-tetrachloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1,1-trichloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1,2,2-tetrachloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1,2-trichloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1-dichloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,2,3-trichloropropane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,2-dichloroethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,2-dichloropropane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,3-dichloropropane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Bromochloromethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Carbon tetrachloride	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Chloroethane	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
	Chloromethane	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
	Dichlorodifluoromethane	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
	Dichloromethane	mg/l	0.005	<0.005	<0.005	0	<0.005		
	Trichlorofluoromethane	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
Chlorinated Alkenes	1,1-dichloroethene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	3-chloropropene	mg/l	0.001	<0.001	<0.001	0	<0.001		
	4-chlorotoluene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	cis-1,2-dichloroethene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	cis-1,3-dichloropropene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Tetrachloroethene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	trans-1,2-dichloroethene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	trans-1,3-dichloropropene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Trichloroethene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Vinyl Chloride	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
Solvents	Acetone	mg/l	0.005	<0.005	<0.005	0	<0.005		
MAH	1,2,4-trimethylbenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,3,5-trimethylbenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Styrene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Total MAH	mg/l	0.003	<0.003	<0.003	0	<0.003		
	Bromobenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Isopropylbenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Miscellaneous Hydrocarbons	1,2-dibromoethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Bromomethane	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
	Dibromomethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Iodomethane	mg/l	0.001	<0.001	<0.001	0	<0.001		
	4-Methyl-2-pentanone	mg/l	0.005	<0.005	<0.005	0	<0.005		
	Methyl Ethyl Ketone	mg/l	0.005	<0.005	<0.005	0	<0.005		
Chlorinated Benzenes	1,2-Dichlorobenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,3-dichlorobenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,4-dichlorobenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Chlorobenzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Trihalomethanes	Dibromochloromethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Chloroform	mg/l	0.005 : 0.001 (Interlab)	<0.005	<0.005	0	<0.005	<0.001	0
	Tribromomethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Bromodichloromethane	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Organic Sulfur Compounds	Carbon disulfide	mg/l	0.001	<0.001	<0.001	0	<0.001		
EPA VIC - IWRG621	Chlorinated Hydrocarbons EPAVic	mg/l	0.005	<0.005	<0.005	0	<0.005		
	Other Chlorinated Hydrocarbons EPAVic	mg/l	0.005	<0.005	<0.005	0	<0.005		

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Attachment 8 – Fieldnotes and Calibration Sheets

Field Equipment Calibration and Decontamination

PROJECT NAME: Lidcombe	PROJECT NO: 62184
FIELDWORK DATES: 28/9/22	SAMPLERS: JR/JN
TYPE OF INVESTIGATION: MIP drilling	PROJECT MANAGER: JN

CALIBRATION SUMMARY

EQUIPMENT: PID
CALIBRATION STANDARD: 100 ppm Isobutylene

DATE	TIME	READING (ppm)	COMMENTS
28/9	841	0	Zero Cal
28/9	842	100	100 ppm Isobutylene
28/9	843	99.6	Post Cal Bump test.

DECONTAMINATION SUMMARY

EQUIPMENT: MIP Probe., Augers

1	Was the equipment decontaminated appropriately prior to sampling at each location?	(Y)	N	NA
2	Was excess soil removed by scraping, brushing or wiping with disposable towels?	(Y)	N	NA
3	Was the equipment contaminated with grease, tar or similar material?	Y	N	(NA)
	If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y	N	(NA)
4	Was phosphate-free detergent used to wash the equipment?	(Y)	N	NA
5	Was the equipment rinsed with clean water?	(Y)	N	NA
6	Was the equipment then rinsed with deionised water?	(Y)	N	NA
7	Were all sample containers cleaned and acid or solvent washed prior to sample collection?	(Y)	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS

New pair of ~~the~~ Nitrile gloves used for each sample

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Calibration and Service Report

EXPERT TESTING SERVICES
ABN: 74 619 717 350
Contact: 02 9730 2019
Email: sales@experttesting.com.au
9/171 Power Street, Glendenning NSW 2761
Web: www.experttesting.com.au

Company:	JBS&G Australia Pty Ltd	**Manufacturer:**	Honeywell	**Serial #:**	592-932272
Contact:	Justin Da Costa	**Instrument:**	MiniRAE 3000	**Asset #:**	-
Address:	132 McCredie Rd, GUILDFORD NSW 2161	**Model:**	PGM7320	**Part #:**	-
		Configuration:	VOC	**Sold:**	-
Phone:	0413 623 858	**Wireless:**	-	**Last Cal:**	23.08.2022
Fax:		**Network ID:**	-	**Job #:**	102390
Email:	jdacosta@jbsg.com.au	**Unit ID:**	-	**Cal Spec:**	Std
				Order #:	59279

Item	Test	Pass/Fail	Comments	Part Code	S/W
Battery	NiCd, NiMH, Dry cell, Li Ion	✓			
Charger	Charger, Power supply	✓			
	Cradle	✓			
Pump	Flow	✓	>500ml/min		
Filter	Filter, fitting, etc	X	Replaced		
Alarms	Audible, visual, vibration	✓			
Display	Operation	✓			
Switches	Operation	✓			
PCB	Operation	✓			
Connectors	Condition	✓			
Firmware	Version	✓	Upgraded Version: 2.22		
Datalogger	Operation	✓			
Monitor Housing	Condition	✓			
Case	Condition/Type	✓			
Sensors					
PID	Lamp	X	Dirty - Cleaned		
PID	Sensor	X	Corroded – replaced		
THP	Sensor	✓			

Engineer's Report

Replaced corroded PID sensor electrode assembly and tested operation.
Cleaned lamp sensor and filter – Tested operation okay
Checked unit settings and configuration – okay
Checked pump flowrate and reset stall values
Unit allowed to stabilize and zero calibration performed as per manufacturers specifications
Calibration procedure written and performed to manufacturers specification using traceable gases.

Calibration Certificate

Sensor	Type	Serial No:	Span Gas	Concentration	Traceability Lot #	CF	Reading	
							Zero	Span
PID	10.6eV		Isobutylene	100ppm	WO233801		0	100ppm

Calibrated/Repaired by: **Amend Kumar** Date: **23.08.2022** Next Due: **23.02.2023**

GCC ISO 9001 Certified GCC ISO 14001 Certified JAS-ANZ WWW.JAS-ANZ.ORG/REGISTER

Field Equipment Calibration and Decontamination

PROJECT NAME: Lidcombe	PROJECT NO: 62184
FIELDWORK DATES: 6/10/22	SAMPLERS: Hugo Dinan
TYPE OF INVESTIGATION: LME	PROJECT MANAGER: Julie Nicholson

CALIBRATION SUMMARY

EQUIPMENT:
CALIBRATION STANDARD:

DATE	TIME	READING (ppm)	COMMENTS

DECONTAMINATION SUMMARY

EQUIPMENT: Electronic IP

1	Was the equipment decontaminated appropriately prior to sampling at each location?	(Y)	N	NA
2	Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	(NA)
3	Was the equipment contaminated with grease, tar or similar material?	Y	(N)	NA
	If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y	N	(NA)
4	Was phosphate-free detergent used to wash the equipment?	(Y)	N	NA
5	Was the equipment rinsed with clean water?	(Y)	N	NA
6	Was the equipment then rinsed with deionised water?	(Y)	N	NA
7	Were all sample containers cleaned and acid or solvent washed prior to sample collection?	(Y)	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS

New Nitrile Gloves Used @ each sample location

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Groundwater Gauging Data

PROJECT NAME: Lidcombe	PROJECT NO: 62187
FIELDWORK DATES: 6/10/22	SAMPLERS: Hugo Dinon
TYPE OF INVESTIGATION: LME	PROJECT MANAGER: Julia Nicholson

WELL ID	DATE	TIME	DEPTH TO LNAPL (mbtoc)	DEPTH TO WATER (mbtoc)	DEPTH TO DNAPL (mbtoc)	TOTAL DEPTH (mbtoc)	NAPL VISUALLY VERIFIED	COMMENTS
MW07	6/10/22	1635	-	5.444	-	6.873	N/A	No OIS.
MW14	6/10/22	1034	-	-	-	6.883	N/A	Dry.

Notes:

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Groundwater Sampling Form

PROJECT NAME: Lidcombe	PROJECT NO: 62184
SAMPLING DATES: 6/10/22	SAMPLERS: Hugo Dixon
TYPE OF INVESTIGATION: GME	PROJECT MANAGER: Julie Nicholson
WELL ID: MW07	WEATHER: Rain

Casing Diameter (mm): 50mm	Depth to NAPL (mBTOC): -
Well Completion: Flush Mount / Monument	Depth to SWL (mBTOC): 5.444
Well Cap Type: Locking Cap / PVC / Other	NAPL Thickness (m): 0
Well Condition: Good / Compromised	Depth to EoH (mbtoc): 6.873
Calculated Well Volume (L):	Water Column Depth (m): 1.429m
Sampling Method:	NAPL Visually Verified? N/A
Purge Volume 4 Casings Vol. (L)	
Low Flow Pump Submersion depth (mBTOC)	

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☐ % ☑ mgL/ppm	TEMP °C	pH pH units	EC _S/cm	ORP mV	Comments Inc SWL for low flow (mBTOC) TDS	DTW
1101	0.2	0.49	18.9	4.35	15664	-0.1	11515	5.686
1103	0.4	0.61	19.0	4.36	15709	7.8	11524	5.740
1105	0.6	0.01	18.9	4.38	15682	19.5	11525	5.793
1107	0.8	1.20	19.0	4.38	15692	25.0	11524	5.840
1109	1.0	1.40	19.0	4.39	15694	33.4	11520	5.923
1111	1.2	1.49	19.0	4.39	15704	40.4	11524	5.971
1113	1.4	1.55	18.9	4.38	15695	49.5	11538	6.024
1115	1.6	1.57	19.0	4.37	15722	54.9	11539	6.091
1117	1.8	1.58	19.0	4.37	15736	57.3	11545	6.103
Acceptable Variations*		+/-10%	+/- 0.2 °C	+/-0.05 pH	+/-3%	+/-10mV	Results Acceptable: YES / NO	

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	Turbidity (v low)	Sheen:	YES / NO
Colour:	colourless	Odour:	YES / NO

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Groundwater Sampling Form

PROJECT NAME: Lidcombe	**PROJECT NO:** 62184
SAMPLING DATES: 6/10/22	**SAMPLERS:** Hugo Dinan
TYPE OF INVESTIGATION: GME	**PROJECT MANAGER:** Julia Nicholson
WELL ID: MW14	**WEATHER:** Rainy

Casing Diameter (mm): 50	**Depth to NAPL (mBTOC):** –
Well Completion: Flush Mount / Monument	**Depth to SWL (mBTOC):** –
Well Cap Type: Locking Cap / PVC / Other	**NAPL Thickness (m):** –
Well Condition: Good / Compromised	**Depth to EoH (mbtoc):** 6.385
Calculated Well Volume (L):	**Water Column Depth (m):** –
Sampling Method:	**NAPL Visually Verified?** –
Purge Volume 4 Casings Vol. (L)	
Low Flow Pump Submersion depth (mBTOC)	

TIME	VOLUME PURGED L	DSSOLVED OXYGEN ☐ % ☐ mgL/ppm	TEMP °C	pH pH units	EC _S/cm	ORP mV	Comments Inc SWL for low flow (mBTOC)
DRY - NO SAMPLE ABLE TO BE COLLECTED							
Acceptable Variations*		+/-10%	+/- 0.2 °C	+/-0.05 pH	+/-3%	+/-10mV	Results Acceptable: YES / NO

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		**Sheen:**	**YES / NO**
Colour:		**Odour:**	**YES / NO**

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Calibration and Service Report

ABN: 74 619 717 350
Contact: 02 9730 2019
Email: rentals@experttesting.com.au
9/171 Power Street, Glendenning NSW 2761
Web: www.experttesting.com.au

Company:	Expert Testing Services (Hire) Pty Ltd	**Manufacturer:**	Geotech	**Serial #:**	7158
Address:	9/171 Power Street GLENDENNING NSW 2761	**Instrum./Model:**	GP2	**Head S/N:**	
Phone:	02 9730 2019	**Client Company:**	JBS&G	**Client Email:**	jnicholson@jbsg.com.au
Email:	rentals@experttesting.com.au	**Client Name:**	Julia Nicholson	**Client Phone:**	

Equipment Check

Geopump Peristaltic Pump

Customer:	JBS&G	**Manufacturer:**	Geotech
Contact:	Julia Nicholson	**Instrument:**	GP2
Order:		**Serial #:**	7158
		Head Serial #:	
		Cable length:	4.5m

Item	Test	Pass	Comments
Battery	12 Voltage	✓	Voltage above 13 V
	Fuses	✓	
	Capacity	✓	
Pump	Decontaminated	✓	
	Condition	✓	
	Operation	✓	
	0.5 m Silicon Tubing	✓	New Tubing
Charger	Condition	✓	
Hard Case	Condition	✓	
Instrument Test	Operation checked	✓	
Instruction manual	Included	✓	

Comments

2 Batteries sent out with unit.

This is to certify that the above instrument has been checked and is in good working order.

Checked By: Milenko Sisic

Check Date: 04/10/2022 **Due for Check:** 04/04/2023

GCC ISO 9001 Certified
GCC ISO 14001 Certified
JAS-ANZ WWW.JAS-ANZ.ORG/REGISTER

Calibration and Service Report

ABN: 74 619 717 350
Contact: 02 9730 2019
Email: rentals@experttesting.com.au
9/171 Power Street, Glendenning NSW 2761
Web: www.experttesting.com.au

Company:	Expert Testing Services (Hire) Pty Ltd	**Manufacturer:**	YSI	**Serial #:**	21K103668
Address:	9/171 Power Street GLENDENNING NSW 2761	**Instrum./Model:**	Pro Quatro	**Cable S/N:**	21M100418
Phone:	02 9730 2019	**Client Company:**	JBS&G	**Client Email:**	jnicholson@jbsg.com.au
Email:	rentals@experttesting.com.au	**Client Name:**	Julia Nicholson	**Client Phone:**	

Item	Test	Pass	Comments
Battery	2 x Alkaline C-cells	✓	Voltage reading above 2.9V
	Battery Saver	✓	Automatically turns off after 60 minutes if not used
Connections	Condition	✓	Good, clean
Cable	Condition	✓	Clean, no tears
Display	Operation	✓	
Firmware	Version	✓	0.0.79
Keypad	Operational	✓	
Display	Screen	✓	
Unit	Condition, seals and O-rings	✓	
Monitor housing	Condition	✓	
pH			
Condition		✓	Good, clean
pH millivolts for pH7 calibration range 0 mV ± 50 mV		✓	
pH 4 mV range + 165 to + 180 from 7 buffer mV value		✓	
pH slope		✓	55 to 60 mV/pH; ideal 59mV
Response time < 90 seconds		✓	
Calibrated and conforms to manufacturer's specifications		✓	
ORP			
Condition		✓	Good, clean
Response time < 90 seconds		✓	
within ± 80mv of reference Zobell Reading		✓	
Calibrated and conforms to manufacturer's specifications		✓	Variance range ± 20mV
Conductivity			
Condition		✓	Good, clean
Temperature		✓	°C
Conductivity cell constant 5.0 ± 1.0 in GLP file		✓	
Clean sensor reads less than 3 uS/cm in dry air		✓	
Calibrated and conforms to manufacturer's specifications		✓	µs/cm
Dissolved Oxygen			
Condition		✓	Good, clean
DO sensor in use		✓	Galvanic
1.25 mil PE membrane (yellow membrane):		✓	
DO Sensor Value		✓	(min 4.31 uA - max 8.00 uA) Avg 6.15 uA
Calibrated and conforms to manufacturer's specifications		✓	ppm

				Instrument Readings		
Parameter	**Standards**	**Reference**	**Calibration Point**	**Before**	**After**	**Units**
Temperature	Hanna HI98509; SN:31E0C9	Room Temp.	16.9	N/A	16.9	°C
pH	pH 4.00	378281	4.00	4.00	4.00	pH
pH	pH 7.00	375757	7.03	7.04	7.03	pH
Conductivity	2760 µs/cm at 25°C	21/1910	2760	2756	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	A21/1611 & B21/1611	245.8	244.5	245.8	mV
Zero Dissolved Oxygen	NaSO3 in distilled water	123302	0.0	-0.1	0.0	%
100% Dissolved Oxygen	100% Air Saturation	Fresh Air	100.7	107.7	100.7	%

Checked By: Milenko Sisic
Check Date: 04/10/2022 **Due for Check:** 04/04/2023

ISO 9001 Certified ISO 14001 Certified WWW.JAS-ANZ.ORG/REGISTER

Calibration and Service Report

ABN: 74 619 717 350
Contact: 02 9730 2019
Email: rentals@experttesting.com.au
9/171 Power Street, Glendenning NSW 2761
Web: www.experttesting.com.au

Company:	Expert Testing Services (Hire) Pty Ltd	**Manufacturer:**	Solinst	**Serial #:**	484553
Address:	9/171 Power Street GLENDENNING NSW 2761	**Instrum./Model:**	Interface Probe 122	**Tape Length:**	30m
Phone:	02 9730 2019	**Client Company:**	JBS&G	**Client Email:**	jnicholson@jbsg.com.au
Email:	rentals@experttesting.com.au	**Client Name:**	Julia Nicholson	**Client Phone:**	

Equipment Check

Oil/Water Interface Meter - Solinst 122 Interface Meter

Customer:	JBS&G	**Manufacturer:**	Solinst Interface Meter
Contact:	Julia Nicholson	**Instrument:**	Model 122
Order:		**Serial #:**	484553
		Tape length:	30m

Item	Test	Pass	Comments
Battery	Voltage (2 x 9v battery)	✓	Voltage above 7.9v
Probe	Decontaminated	✓	
	Condition	✓	
	Operation	✓	
Connectors	Condition	✓	
Tape Check	Condition	✓	
	Decontaminated	✓	
Instrument Test	At surface level	✓	Tap water and Petrol
Speaker	Operation	✓	

Comments

New unit.

This is to certify that the above instrument has been checked and is in good working order.

Checked By: Milenko Sisic

Check Date: 04/10/2022 **Due for Check:** 04/04/2023

GCC ISO 9001 Certified
GCC ISO 14001 Certified
JAS-ANZ WWW.JAS-ANZ.ORG/REGISTER

Field Equipment Calibration and Decontamination

PROJECT NAME: Tidcombe	PROJECT NO: 62148
FIELDWORK DATES: 24.10.21	SAMPLERS: CH
TYPE OF INVESTIGATION: SV	PROJECT MANAGER: JN

CALIBRATION SUMMARY

EQUIPMENT: PID, GA5000, GFM
CALIBRATION STANDARD: 100 iso + supplier cal

DATE	TIME	READING (ppm)	COMMENTS
24.10.21	07:01	0.0	PID zero
L	07:02	100.1	PID Bump

DECONTAMINATION SUMMARY

EQUIPMENT: Summa.	

1	Was the equipment decontaminated appropriately prior to sampling at each location?	Y	N	NA
2	Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	NA
3	Was the equipment contaminated with grease, tar or similar material?	Y	N	NA
	If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y	N	NA
4	Was phosphate-free detergent used to wash the equipment?	Y	N	NA
5	Was the equipment rinsed with clean water?	Y	N	NA
6	Was the equipment then rinsed with deionised water?	Y	N	NA
7	Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS

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Soil Vapour Screening Form

JBS&G

Project Number: 62184	Date: 24.10.22	Sampler/s: CK
Site Address: Lidcombe	Sample Method: Summa	Weather: cloudy

Field Measurements

	Borehole ID	Time	Baro Pressure	Oxygen	Carbon Dioxide	Methane (%)	H2S	CO	Balance %	Flow	PID	Leak Detection (PID)	Summa On	Summa Off
Deep Probe GA5000	MW14	07:15	1009	10.2	5.6	0.0	0	0	-	-	3.0	3.0		
		+30	↑	3.9	16.2	0.0	0	0	-	-	↓	↓		
		+30		3.7	16.5	0.0	0	0	-	-				
		+30		3.7	16.5	0.0	0	0	-	-				
		+30		3.7	16.5	0.0	0	0	-	-				
		+30	↓	3.7	16.5	0.0	0	0	-	-				
shallow probe GA5000		07:18	1009	20.2	0.1	0.0	0	0	-	-	3.2	3.3		
		+30		14.2	6.0	0.0	0	0	-	-	↑	↑		
		+30		13.8	6.5	0.0	0	0	-	-				
		+30		↓	↓	↓	↓	↓						
		+30												
		+30		↓	↓	↓	↓	↓			↓	↓		
							LEL							
Deep probe GFM		7:22		5.4	15.1	0	~~0~~	~~0~~						
		+30		3.4	16.8	0	0					3.2		leak check
		+30		↓	↓	↓	↓							
		+30												
							LEL							
shallow probe GFM		7:25		18.9	1.2	0	0					3.2		leak check
		+30		13.2	6.4	0	0							
		+30		↓	↓	↓	↓							
		+30												
		7:28	48 minute of GA5000 purging shallow probe to remove one well volume (GA flow = 550mL/min)											
		↓												
		8:16												
deep probe	SUQA												08:20	08:44
	MW14												08:57	09:58

* error with flow quick overload void

Attachment 9 – Survey Data

2nd February 2022

RE: Monitoring Well Locations Lidcombe

Hi Chris,

Please find below table of values for the monitoring wells at 42 Boorea St Lidcombe.

Measurements are in AHD and MGA94,

NAME	EASTING	NORTHING	RL	DESC
MW01	318979.48	6252593.253	9.552	LID
MW01	318979.481	6252593.283	9.473	PIPE
MW02	318924.618	6252715.399	9.008	LID
MW02	318924.571	6252715.398	8.918	PIPE
MW03	318787.364	6252513.296	7.693	LID
MW03	318787.404	6252513.278	7.512	PIPE
MW05	318849.721	6252604.049	8.266	LID
MW05	318849.73	6252604.017	8.15	PIPE
MW06	318767.812	6252444.344	8.022	LID
MW06	318767.841	6252444.339	7.903	PIPE
MW07	318852.931	6252640.25	8.784	LID
MW07	318852.931	6252640.25	8.613	PIPE
MW08	318907.689	6252629.01	9.744	LID
MW08	318907.712	6252628.973	9.661	PIPE
MW09	318941.434	6252626.054	9.758	LID
MW09	318941.434	6252626.054	9.682	PIPE
MW10	318851.247	6252573.412	8.473	LID
MW10	318851.241	6252573.415	8.361	PIPE
MW11	318863.98	6252552.438	9.775	LID
MW11	318863.948	6252552.437	9.679	PIPE
MW12	318794.79	6252505.172	7.832	LID
MW12	318794.784	6252505.171	7.72	PIPE
MW13	318883.759	6252475.343	9.768	LID
MW13	318883.752	6252475.347	9.644	PIPE
MW14	318842.534	6252615.43	9.046	LID
MW14	318842.566	6252615.409	8.977	PIPE

Best regards
Glen Watson
Director
Onsite Surveying Pty Ltd

A-26 Hazardous Building Materials Report by WSP Environmental

WSP Environmental (HAZMAT Consultant)

CBRE PTY LTD

42 BOOREA ST, LIDCOMBE, NSW 2141

HAZARDOUS BUILDING MATERIALS REPORT

JUNE 2021

Question today
Imagine tomorrow
Create for the future

42 Boorea St, Lidcombe, NSW 2141
Hazardous Building Materials Report

CBRE Pty Ltd

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REV	DATE	DETAILS
A	07/06/21	First Edition

	NAME	DATE	SIGNATURE
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Reviewed by:	Chris Virtue	08/06/2021	
Approved by:	Neil Kumar	09/06/2021	

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GLOSSARY

ACRONYM	DEFINITION
A	Amosite Asbestos (brown Asbestos)
AC	Asbestos cement (Asbestos-containing fibrous cement material)
ACM	Asbestos containing material
AS 1216	Standards Association of Australia, Classification and Class Labels for Dangerous Goods
AS 1319	Standards Association of Australia, Rules for the Design and Use of Safety Signs for the Occupational Environment
AS 1715	Standards Association of Australia, Selection, Use and Maintenance of Respiratory Protective Devices
AS 1716	Standards Association of Australia, Respiratory Protective Devices
ASCC	Australian Safety & Compensation Council
C	Crocidolite Asbestos (blue Asbestos)
CH	Chrysotile Asbestos (white Asbestos)
DECC	Department of Environment and Climate Change (now NSW EPA)
EPA	Environment Protection Authority
Fibres/mL	Countable fibres per millilitre of air sampled
FC	Fibre cement (usually sheeting)
L/min	Litres per minute of air
NAD	No Asbestos Detected
NATA	National Association of Testing Authorities, Australia
NOHSC	National Occupational Health and Safety Commission
PAM	Presumed Asbestos material
PCB	Polychlorinated biphenyls
PPE	Personal protective equipment
RPE	Respiratory protective equipment
SMF	Synthetic Mineral Fibre
WH&S	Workplace health and safety

EXECUTIVE SUMMARY

WSP Australia Pty Limited (WSP) was engaged by CBRE Pty Ltd (the Client) to conduct a Hazardous Building Materials Survey of the nominated building located at 42 Boorea St, Lidcombe, NSW 2141. The assessment was undertaken by Christopher Virtue (Occupational Hygiene Consultant) on the 1st June 2021.

The scope of services for this inspection comprised a detailed visual inspection of all accessible areas within the nominated Building. Representative samples were collected from materials suspected of containing asbestos, lead based paint and lead in dust. Visual identification was undertaken for Synthetic Mineral Fibres (SMF) and Polychlorinated Biphenyls (PCBs). All data generated from the survey was used to create a hazardous building material register (Appendix C). A summary of the hazardous building materials inspection findings is shown in **Table E.1** and a summary of inaccessible areas is shown in **Table E.2.**

Table E.1 Summary of hazardous materials identified at the time of inspection

HAZARDOUS MATERIAL	FOUND
Friable Asbestos Containing Materials (ACM)	Yes (Presumed)
Non-friable ACM	Yes
Lead-based Paints	Yes
Lead in Dust	No
Synthetic Mineral Fibre (SMF)	Yes (Presumed)
Capacitors with Polychlorinated Biphenyls (PCBs)	Yes (Presumed)

Table E.2 Summary of inaccessible areas at time of inspection

INACCESSIBLE AREAS	DETAILS
Above 3 meters in height	Not fully accessed in line with company OHS policies
Within confined spaces	Not fully accessed in line with company OHS policies
Electrical equipment	All electrical equipment, internal and external, was unable to be assessed due to electrical hazards.
Other areas	Only buildings within scope were inspected as listed in **Table 1.1**. For other specific inaccessible areas, please refer to hazardous building materials registers (Appendix C).

Details of all hazardous building materials identified are presented within the register in Appendix C.

To assist in the management of possible hazardous building materials being identified on site and to ensure compliance with relevant regulations, it is recommended that a separate Hazardous Building Materials Management Plan be prepared, which should include information regarding:

- Roles and responsibilities
- Prohibitions
- Management plan and register reviews
- Labelling
- Demolition and refurbishment works
- Asbestos removal works
- Lead paint removal works
- Incidents and emergencies
- Record keeping

1 INTRODUCTION

WSP Australia Pty Limited (WSP) was engaged by CBRE Pty Ltd (the Client) to conduct a Hazardous Building Materials Survey of the nominated building located at 42 Boorea St, Lidcombe, NSW 2141. The assessment was undertaken by Christopher Virtue (Occupational Hygiene Consultant) on the 1st June 2021.

The term hazardous building materials for the purpose of this report refers to the following:

- Asbestos Containing Materials (ACM);
- Lead based Paints and Lead Containing Dust;
- Synthetic Mineral Fibre (SMF) materials;
- Light fittings and accessible electrics that may contain Polychlorinated biphenyls (PCB) capacitors.

This report presents the findings for the buildings surveyed during this assessment as listed in **Table 1.1** below.

Table 1.1 Building in scope

BUILDING NAME
42 Boorea St, Lidcombe, NSW 2141

A complete list of the in-situ and suspected hazardous materials identified during the inspection, including details about the condition and the risk posed by each situation and a risk matrix, has been provided in the hazardous building materials register including photographs and certificates of analysis that form the deliverable component of the project. These are attached as Appendices A to E.

No one section or part of a section of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including the asbestos materials register and sample results

1.1 LEGISLATIVE REQUIREMENTS

The inspection works and production of this report have been undertaken in accordance with the requirements of the following documents:

- Work Health and Safety Act 2011 (Commonwealth)
- Work Health and Safety Act 2011 (NSW)
- Work Health and Safety Regulation 2017 (NSW)
- How to Manage and Control Asbestos in the Workplace: NSW Code of Practice 2019.
- How to Safely Remove Asbestos: NSW Code of Practice 2019.
- Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres. 2nd Edition [NOHSC:3003(2005)]
- ANZECC (1997) Identification of PCB-containing Capacitors: An information booklet for Electricians and Electrical Contractors.
- AS 1319:1994, Safety Signs for the Occupational Environment
- AS/NZS 1715:2009, Selection, Use and Maintenance of Respiratory Protective Equipment
- AS/NZS 1716:2012, Respiratory Protective Devices
- AS 2601:2001, The Demolition of Structures
- AS/NZS 4361.1:2017, Guide to Hazardous Paint Management, Part 1: Lead and other hazardous metallic pigments in industrial applications
- AS/NZS 4361.2:2017, Guide to Hazardous Paint Management, Part 2: Lead paint in residential, public and commercial buildings
- National Code of Practice for the Control and Safe Use of Inorganic Lead at Work [NOHSC:2015 (1994)].
- AIOH positional paper: Synthetic Mineral Fibres and Occupational Health Issues 2011
- NOHSC (1989b). Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibres. [NOHSC:3006 (1989)] June 1989
- National Standard for Synthetic Mineral Fibres [NOSHC:1004 (1990)].
- National Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOSHC:2006 (1990)].
- AS 3640:2009, Workplace Atmospheres - Methods for Sampling and Gravimetric Determination of Inhalable Dust
- Protection of the Environment Operations Act 1997 (NSW).

1.2 SCOPE OF SERVICES

The objectives of the hazardous building material inspection were to:

- Conduct a non-intrusive inspection to the nominated building located at 42 Boorea St, Lidcombe, NSW 2141 to identify hazardous building materials
- Confirm the type, location, friability, disturbance potential and labelling status of hazardous building materials identified;
- Sampling of representative materials suspected of containing asbestos and lead;
- Suspected Lead containing paints collected during the inspection were sent to Envirolab NATA accredited laboratories for analysis.
- Suspected Asbestos containing materials collected during the inspection were sent to WSP's NATA accredited laboratories for analysis.
- Prepare a Hazardous Building Materials Register (**Appendix C)**, including asbestos containing materials;
- Provide a semi-quantitative risk assessment of the hazardous building materials identified and;
- Provide recommendations on the ongoing control measure strategies prior to refurbishment or demolition works.

2 SURVEY METHODOLOGY

2.1 SITE INSPECTION

The identification of hazardous building materials involves a combination of visual inspection of the accessible areas of the building/structure and the collection of representative samples of the suspect materials for the purpose of analytical confirmation. Where identical suspect materials are detected at different locations, visual confirmation only may have been made rather than additional sample collection.

Access was made only where safe access by solid floors, decking, walkways, protected catwalks or ladders was available. Minimal to no disturbance of any equipment was undertaken as part of the survey as all plant, electrical installations, pipe-work and associated equipment were considered live at the time of the survey.

Access through the building and structures on the site was made by systematic walkthrough, with the order of the items listed in the Asbestos Register reflective of the order of the inspection.

2.2 IDENTIFICATION OF MATERIAL

2.2.1 ASBESTOS CONTAINING MATERIALS (ACM)

Representative samples of materials suspected to contain asbestos were collected and analysed at WSP Australia's NATA Accredited Laboratory. The identification of asbestos fibres is based on using Polarised Light Microscopy supplemented with Dispersion Staining techniques. This is detailed in Australian Standard 4964-2004 'Method for the qualitative identification of asbestos in bulk samples'. Asbestos samples were only collected for analysis where the safety of personnel would not be compromised. Sampling was conducted in accordance with the WSP Australia's in house survey guide, SafeWork NSW's Code of Practice, 'How to Manage and Control Asbestos in the Workplace' and the United Kingdom Health & Safety Executive publication, 'HSG 264: Asbestos: The survey guide'. he scope and limitations of this report and considering the age of the building, no ACM samples were required to be collected.

2.2.2 LEAD-BASED PAINT SYSTEMS

Representative samples of paint suspected to be lead based were collected and analysed at Envirolab Services NATA Accredited Laboratory. Laboratory analysis of lead based paints is used to achieve a reportable weight by weight percentage of lead throughout the paint layers and is reported against AS/NZS 4361.2:2017, Guide to Hazardous Paint Management, Part 2: Lead paint in residential, public and commercial buildings lead containing paint system level of 0.1 per cent (w/w) of the dried film.

The analysis of the physical samples is achieved by digestion of the sample for determination of lead content by one of two methods, atomic absorption spectroscopy (AAS) or inductively coupled plasma emission spectrometry (ICP-AES). Collection of lead based paint samples was only conducted where the safety of personnel would not be compromised. Sampling was conducted in accordance with the WSP Australia's in house survey guide and AS/NZS 4361.2:2017, Guide to Hazardous Paint Management, Part 2: Lead paint in residential, public and commercial buildings.

Sampling methodology will consider the various paint coats and record these layers accordingly, these observations will be referred to alongside the analytical sample results to acknowledge that lead paint layers of varying lead content will affect the analytically observed lead weight concentration recorded from the sample. To this end, where multiple lead paint layers have been visually recorded but analytically determined lead percentage of the collective paint layers is below actionable limits, the paint undercoats may still be determined as hazardous due to its dilution in the sample by the non-lead topcoats. Sampling methodology may also consist of the use of a lead paint chemical colorimetric test

reagent that can provide an instantaneous result of lead presence within specific layers. This testing will however be used in conjunction with a physical sample to determine the lead concentration as above.

2.2.3 LEAD CONTAINING DUST

Within the scope and limitations of this report and considering the age of the building, no lead dust samples were required to be collected.

2.2.4 SYNTHETIC MINERAL FIBRES (SMF) MATERIALS

If representative samples of materials suspected to contain asbestos were collected and analysed at WSP Australia's in-house NATA Accredited Laboratory, SMF can also be identified. The identification of SMF fibres is based on using Polarised Light Microscopy supplemented with Dispersion Staining techniques. Alternatively, our experienced surveyor visually identified and recorded the presence of synthetic mineral fibre products onsite.

2.2.5 POLYCHLORINATED BIPHENYLS (PCBS)

Where access was available, and power was isolated representative examples of each major type of fluorescent light fittings were examined to determine which lights were fitted with PCB containing ballast capacitors. The details of the brand, model of each capacitor and capacity were recorded and checked against with the ANZECC database of known PCB capacitors and PCB free capacitors.

The Australian and New Zealand Environment Conservation Council 'Polychlorinated Biphenyls Management Plan, November 1996' outlines the National Strategy for the management of PCBs.

The document defines PCB materials and wastes as follows:

Table 2.1 PCB Concentration Classification

PCB CONCENTRATION	WASTE CLASSIFACTION
<2 mg/kg	PCB free
2 mg/kg to <50 mg/kg	Non-scheduled PCB material or waste
>50 mg/kg	Scheduled PCB material or waste
>100,000 (10%)	Concentrated PCB material

3 SITE DESCRIPTION

3.1 SITE LOCATION

The site is located at 42 Boorea St, Lidcombe, NSW 2141 and the assessment includes the following buildings;

Table 3.1 Building in scope

BUILDING NAME	BUILDING DESCRIPTION
42 Boorea St, Lidcombe NSW 2141	All units were of identical construction consisting of: - Two storey, pebblecrete external walls with pitched metal roof. - Interior administration areas consisted of combination of plaster, concrete and fibre cement walls, carpet and concrete flooring, ceiling tiles and plaster ceilings. - Interior warehouse areas consist of sarked roofing, pebblecrete, concrete and brick walls, concrete and vinyl floor tile floors. Mezzanine levels consisted of fibre cement and plaster walls, metal.

3.2 SITE DESCRIPTION

The survey was restricted to buildings nominated by CBRE Pty Ltd and included in Table 3.1 above.

3.3 SURVEY RESTRICTIONS

The inspection was limited to the building/areas listed above. The survey was not fully intrusive and therefore, confined spaces were not accessible. Only limited access was possible to the ceiling spaces and electrical equipment.

INACCESSIBLE AREAS	DETAILS
Above 3 meters in height	Not fully accessed in line with company OHS policies
Within confined spaces	Not fully accessed in line with company OHS policies
Electrical equipment	All electrical equipment, internal and external, was unable to be assessed due to electrical hazards.
Wall Cavities	Not fully accessed in line with non-destructive assessment as per scope of works.
Other areas	Only buildings within scope were inspected as listed in **Table 3.1**. For other specific inaccessible areas, please refer to hazardous building materials registers (Appendix A)

4 HAZARDOUS MATERIALS RISK ASSESSMENT

To assess the health risk posed by the presence of ACMs, SMF, lead based paint, PCBs and ODSs, the following factors must be considered:

4.1 ACM & SMF RISK ASSESSMENT FACTORS

These factors include:

- Condition of the material. This is described as being either good (not been damaged or have not deteriorated), medium (minor deterioration or damage) or poor (materials which have been extensively damaged, or their condition has deteriorated over time);
- Proximity of air plenums and direct air stream;
- Friability of the material (ease with which the material can be crumbled) listed as either friable or non-friable;
- Requirement for access for building or maintenance operations and accessibility (low, medium or high);
- Likelihood of disturbance of the material;
- Exposed surface areas and;
- Environmental conditions.

These aspects are in turn judged upon; (i) potential for fibre generation; and, (ii) the potential for exposure. When these factors have indicated that there is a possibility of exposure to airborne fibres, appropriate recommendations for repair, maintenance or abatement of the asbestos containing materials are made.

4.2 LEAD BASED PAINT RISK ASSESSMENT FACTORS

Risk assessment factors include:

- Concentration of lead in paint;
- Condition of the paint.
- Deterioration/damage (peeling, flaking);
- Proximity of air plenums, direct air stream and sensitive receptors such as foodstuffs;
- Ease with which the paint can be disturbed/removed;
- Requirement for access for building or maintenance operations and accessibility (low, medium or high); and
- Magnitude of exposed surface areas.

These aspects are in turn judged upon the potential for exposure. When these factors have indicated that there is a possibility of exposure to lead-based paint/dust, appropriate recommendations for the repair, maintenance, abatement and removal of the paint are made.

4.3 POLYCHLORINATED BIPHENYLS (PCBS) RISK ASSESSMENT FACTORS

Risk assessment factors include:

- The manufacture age and location of the capacitor;
- The condition of the capacitor (visible leaks/spills of fluid);
- Potential of exposure to the PCBs from contact with capacitors;
- Ease with which the capacitors can be accessed and;
- The requirement for access to light fittings for building or maintenance operations and accessibility (low, medium or high).

As above, these aspects are in turn judged upon the potential for exposure. When risk factors have indicated a possibility of exposure to PCBs, appropriate recommendations for the removal and disposal of the capacitors are made.

5 FINDINGS AND RECOMMENDATIONS

The findings of the assessment are presented in **Appendix C: Hazardous Buildings Materials Register**, including the details of inaccessible areas, the hazardous materials identified, extent of hazardous materials and the risk assessment for each hazardous material finding. Recommendations for each finding are also included in the register.

Non-Friable asbestos presumed to be present:

— Electrical backing boards, resinous boards, fuses, mastic at 42 Boorea Street within the warehouse area and external docks. The electrical backing boards should remain in their current condition if to remain in-situ and should be removed by a licensed contractor under controlled conditions prior to demolition or refurbishment works.

Friable asbestos presumed to be present:

- Potentially within the insulation of pump(s) and related equipment in the Pump Room. This occurrence can be left in situ provided it is not disturbed.

Lead containing paints identified were observed to be in good condition during the assessment to workshop internal walls, structural beams and roller doors. This condition must be maintained if to stay in-situ.

Suspected SMF materials in the form of laserlite infill panels and SMF sarking should be maintained in its current condition if to remain in-situ.

Documents included and referenced in the findings are:

— **Hazardous Buildings Materials Register**

— **Representative Photographs**

— **Certificates of Analysis**

Please note this hazardous building materials survey is not a destructive or pre-demolition type survey. Prior to demolition or invasive works, a pre-demolition hazardous materials survey must be undertaken.

5.1 RECOMMENDATIONS

The findings of the assessment are presented in **Appendix C: Hazardous Buildings Materials Results**, including recommendations for each finding in the register.

CBRE Pty Ltd should seek to action any recommendations in the registers including preventative maintenance to keep hazardous materials in a good sealed condition.

A site Hazardous Materials Management Plan should be implemented to assist with ongoing management, of hazardous materials including; labelling, maintenance, disturbance works procedures and abatement strategies and procedures.

6 GENERAL MANAGEMENT GUIDELINES

6.1 HAZARDOUS BUILDING MATERIALS MANAGEMENT PLAN

To assist in the management of ACM and to ensure compliance with relevant regulations, it is recommended that a separate Hazardous Materials Management Plan be prepared, which should include information regarding:

- Roles and responsibilities
- Prohibitions
- Management plan and register reviews
- Labelling
- Demolition and refurbishment works
- Remediation works
- Incidents and emergencies
- Record keepings

6.2 ASBESTOS GENERAL MANAGEMENT GUIDELINES

- Friable asbestos presumed to be present potentially within the insulation of pump(s) and related equipment in the Pump Room. This occurrence can be left in situ provided it is not disturbed.
- Non-friable asbestos in the form of visually identified electrical distribution boards, resinous boards, fuses, mastic were identified.
- All ACM in an in-tact condition may remain in-situ provided they are not drilled, ground or otherwise disturbed. If generated, broken pieces are to be removed as soon as practicable. As part of good ongoing management, we recommend regular inspections of ACM left in-situ to check the condition of these materials.
- Any areas of the workplace that contain ACM including plant, equipment and components should be signposted with appropriate warning signs to ensure that asbestos is not unknowingly disturbed without the correct precautions being taken. These signs should be placed at all the main entrances to the work areas where asbestos is present and should conform with *Australian Standard 1319-1994 Safety Signs for the Occupational Environment*.
- This document should be held as an Asbestos Register of the areas inspected and updated every 5 years or earlier where ACM have been disturbed or a risk assessment indicates the need for re-assessment. All occupiers of the workplace are to be provided with a copy of this register and all updates to it.
- In order to comply with the *Work Health and Safety Regulations 2017 (NSW)*, implement Asbestos management plan. A suitably qualified and experienced consultant, such as WSP, can advise and assist in developing an asbestos management plan.
- Prior to renovation or demolition works a refurbishment/demolition asbestos building materials survey should be undertaken by a suitable qualified and experience consultancy, such as WSP. A Refurbishment and/or Demolition Survey is required under the *WHS Code of Practice: Demolition Work (2016)* and *AS2601 (2001): The Demolition of Structures*.

- Prior to the commencement of any specific asbestos removal works, a site and material specific asbestos removal control plan must be developed by a competent person such as a licenced asbestos assessor or licensed asbestos removal contractor.
- All persons engaged in asbestos removal work should wear appropriate PPE including respiratory protective equipment (RPE) conforming with the requirements of AS/NZS 1716:2012, *Respiratory Protective Devices* and AS/NZS 1715:2009, *Selection, Use and Maintenance of Respiratory Protective Equipment*. Protective disposable coveralls must be chosen that provide particle-tight protection (Type 5) and limited splash-tight protection (Type 6). Disposable coveralls should not have external pockets or Velcro fastenings.
- All work should be carried out in accordance with SafeWork NSW How to Safely Remove Asbestos, Code of Practice 2019 and the NSW WHS Regulation 2017 made under NSW WHS Act 2011. Handling and disposal of asbestos waste material should be carried out in accordance with the relevant guidelines.
- All fibre air monitoring shall be carried out by a competent person or licenced asbestos assessor with NATA accreditation in accordance with National Occupational Health and Safety Commission (NOHSC), Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC:3003(2005)], NOHSC, Australia.
- Personal decontamination must be undertaken each time workers leave the asbestos work area and at the completion of the asbestos removal work. Personal decontamination should be undertaken within the nominated decontamination area. The extent of decontamination required is dependent upon the type of asbestos being removed. If friable asbestos is being removed, then a three-stage wet decontamination unit shall be required. If it is noted that non-friable ACM is being removed this may be undertaken in a nominated dry decontamination area. Refer to SafeWork NSW How to Safely Remove Asbestos, Code of Practice 2019 and NSW WHS Regulation 2017 made under the NSW WHS Act 2011 for personal decontamination methods.
- A clearance inspection of the work area shall be undertaken at the completion of the works by a licenced asbestos assessor such as WSP Australia in accordance with SafeWork NSW How to Safely Remove Asbestos, Code of Practice 2019.

6.3 GENERAL LEAD PAINT MANAGEMENT

All lead paint removal/stabilisation must be undertaken in accordance with AS/NZS 4361.2:2017, *Guide to Hazardous Paint Management, Part 2: Lead paint in residential, public and commercial buildings*. It should be noted that this document does not replace AS/NZS 4361.2:2017. Rather it provides general advice to assist with the creation of a site-specific document to facilitate the safe removal/stabilisation of lead paint works.

This document provides general guidance for the removal of lead based paint systems via various methods commonly employed such as the use of a chemical strippers and the stabilisation of flaking lead based paints via scraping and wet sanding. Reference is made to a particular brand name of chemical stripper; however, this advice does not replace information provided by the manufacturer and one should always refer to the products guidance and relevant Australian legislation, standards, MSDS and guidance material.

In addition, it provides guidance for decontamination procedures. Disposal requirements and provisions for lead air monitoring and clearance inspections.

As a matter of priority, appropriate environmental management and Work, Health and Safety procedures should be put in place for the remediation works to protect the works, site staff, general public and the environment. All lead containing paints identified during this assessment were identified to be in good condition and can be left in situ. The current good condition of these lead containing paints should be maintained and regularly inspected.

6.3.1 LEAD PAINT CLEARANCE

- Following the completion of the lead based paint removal works the occupational hygiene consultant will be required to undertake a thorough visual inspection of the work area and transit route.
- If removal works are not to the satisfaction of the occupational hygiene consultant, removal contractors will be required to re-enter the work area and rectify any issues arising from the inspection.
- AS/NZS 4361.2:2017 states that following the completion of works and the appropriate clean-up of the area, samples of dust can be collected and sent for analysis to determine if there has been a significant impact on the property and surrounding area from works undertaken and if the building is safe to reoccupy. Clearance dust samples can be collected and compared with the surface dust loading levels detailed below in table 6.1:

6.4 GENERAL SMF MANAGEMENT GUIDELINES

All SMF removal should be done in accordance with the National Occupational Health and Safety Commission *National Code of Practice for the Safe Use of Synthetic Mineral Fibres* [NOHSC: 2006 (1990)]. Some of the practices recommended are as follows:

- The work area should be designated by using barricade tape and signs where workable. Persons not involved in the removal should not be within 3 metres of the designated area.
- Waste shall be placed in plastic bags or other containers which prevent fibre and/or dust emission, and disposed of in accordance with local waste disposal authority requirements.
- PPE including goggles, half-face P2 respirator, gloves, long sleeve and loose fitting clothing should be worn.

6.5 GENERAL PCB MANAGEMENT GUIDELINES

Older fluorescent light fittings which are assumed to contain PCBs were identified during the survey.

Material containing less than 50 g of PCBs at a concentration of 50 mg/kg or greater should be disposed of as scheduled PCB waste at the end of its useful life.

- Waste containing less than 50 g of PCBs at a concentration of 50 mg/kg or greater shall be disposed of as scheduled PCB waste.
- Material containing PCBs at a concentration greater than 2 mg/kg and up to 50 mg/kg shall, at the end of its useful life, be disposed of by a method approved by the agency in accordance with the guidance notes appended to this plan.

APPENDIX A

STATEMENT OF LIMITATIONS

Limitation Statement: Hazardous Materials Assessment

This Report is provided by WSP Australia Pty Limited (*WSP*) for CBRE pty Ltd (*Client*) in response to specific instructions from the Client and in accordance with WSP's proposal dated 25th May 2021 and agreement with the Client dated 26th May 2021 (*Agreement*).

PERMITTED PURPOSE

This Report is provided by WSP for the purpose described in the Agreement and no responsibility is accepted by WSP for the use of the Report in whole or in part, for any other purpose (*Permitted Purpose*).

QUALIFICATIONS AND ASSUMPTIONS

The services undertaken by WSP in preparing this Report were limited to those specifically detailed in the Report and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

Except as otherwise stated in the Report and to the extent that statements, opinions, facts, conclusion and / or recommendations in the Report (*Conclusions*) are based in whole or in part on information provided by the Client and other parties identified in the report (*Information*), those Conclusions are based on assumptions by WSP of the reliability, adequacy, accuracy and completeness of the Information and have not been verified. WSP accepts no responsibility for the Information.

Where the survey identifies that hazardous materials are on site, the Conclusions are indicative of the presence of hazardous materials and cannot be regarded as absolute without further extensive sampling, outside the scope of the services set out in the Agreement. Its conditions, including the extent and visibility of hazardous materials, can change with time. On all sites, varying degrees of non-uniformity of conditions are encountered and the presence of hazardous materials which are not visually apparent at the time of inspection, are not likely to be detected. No monitoring, common testing or sampling technique provides results that are totally representative of the presence or non-presence of hazardous materials at the Site. Site conditions, including subsurface conditions can change with time due to natural and anthropogenic causes. .

Only material that was physically accessible at the time of inspection was sampled. Consequently, not all hazardous material may have been located at the Site. The survey identifying hazardous materials on site should be reviewed prior to demolition or refurbishment as a more detailed destructive survey may be required prior to demolition or refurbishment works. Care should be taken during normal site works, refurbishment or demolition works when entering previously inaccessible areas. If suspect material is encountered, works should cease in the area until samples have been collected and analysed by competent personnel.

It is impossible to locate all hazardous materials during an inspection. This is due to such factors as (without limitation):

- Time, budget and constraints requested by the Client;
- Access restrictions;
- The need to avoid causing physical damage to fixtures or structures on the Site;
- The need to minimise hazardous materials exposures to building occupants;
- The need to minimise inconvenience when the Site is in use (e.g. occupied) whilst an inspection is being conducted; and / or
- The availability of relevant building / plant construction plans.

Hazardous materials that could be routinely encountered in the normal day-to-day activities occurring on the Site, have been identified and assessed, however there is no guarantee that the Site is free of hazardous materials, since future activities may reveal hazardous materials in areas inaccessible or unknown to WSP.

Within the limitations referred to above, the preparation of this Report has been undertaken and performed in a professional manner in accordance with generally accepted practices, using a degree of skill and care ordinarily exercised by reputable consultants. No other warranty, expressed or implied, is made.

WSP has prepared the Report without regard to any special interest of any person other than the Client when undertaking the services described in the Agreement or in preparing the Report.

Limitation Statement: Hazardous Materials Assessment

USE AND RELIANCE

This Report should be read in its entirety and must not be copied, distributed or referred to in part only. The Report must not be reproduced without the written approval of WSP. WSP will not be responsible for interpretations or conclusions drawn. This Report (or sections of the Report) should not be used as part of a specification for a project or for incorporation into any other document without the prior agreement of WSP.

WSP is not (and will not be) obliged to provide an update of this Report to include any event, circumstance, revised Information or any matter coming to WSP's attention after the date of this Report. The passage of time; manifestations of latent conditions; or the impact of future events (including (without limitation) changes in policy, legislation, guidelines, scientific knowledge; and changes in interpretation of policy by statutory authorities); may require further investigation or subsequent re-evaluation of the Conclusions.

This Report can only be relied upon for the Permitted Purpose and may not be relied upon for any other purpose. The Report does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise. It is the responsibility of the Client to accept (if the Client so chooses) the Conclusions and implement any recommendations in an appropriate, suitable and timely manner. WSP does not (and will not) accept liability arising out of or in connection with any health or safety risks associated with hazardous materials.

In the absence of express written consent of WSP, no responsibility is accepted by WSP for the use of the Report in whole or in part by any party other than the Client for any purpose whatsoever. Without the express written consent of WSP, any use which a third party makes of this Report or any reliance on (or decisions to be made) based on this Report is at the sole risk of those third parties without recourse to WSP. Third parties should make their own enquiries, rely on the results of their own site inspections, and / or obtain independent advice in relation to any matter dealt with or conclusions expressed in the Report.

DISCLAIMER

No warranty, undertaking or guarantee whether expressed or implied, is made with respect to the data reported or the conclusions drawn. To the fullest extent permitted at law, WSP, its related bodies corporate and its officers, employees and agents assumes no responsibility and will not be liable to any third party for, or in relation to any losses, damages or expenses (including any indirect, consequential or punitive losses or damages or any amounts for loss of profit, loss of revenue, loss of opportunity to earn profit, loss of production, loss of contract, increased operational costs, loss of business opportunity, site depredation costs, business interruption or economic loss) of any kind whatsoever, suffered or incurred by a third party.

APPENDIX B

RISK MATRIX

Table 1 Definitions

CODE	ITEM	DEFINITION
U	Unknown	No access to assess friability or condition
N/A	Not Applicable / Practicable	Not Applicable / Practicable
FRIABILITY (ASBESTOS AND SMF)		
F	Friable	Material that; (A) is in a powder form or that can be crumbled, pulverised or reduced to powder by hand pressure when dry, and (B) contains asbestos.
NF	Non-friable	Material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound.

Note: Friability only applies to asbestos and SMF

Table 2 Condition and Disturbance Assessment

CONDITION		
1	Unknown	No access to assess condition
2	Poor	Obvious damage or deterioration, extensive dust and contamination
3	Moderate	Major damage throughout, no debris or dust, not sealed or encapsulated
4	Fair	Minor damage or deterioration, not sealed or encapsulated
5	Good	No obvious damage or deterioration, secured in place, sealed and encapsulated
DISTURBANCE POTENTIAL		
A	Public	Public access areas
B	Certain	Disturbance very likely to occur during typical occupancy of the building and during maintenance works
C	High	Disturbance may occur during typical occupancy of the building and is likely during maintenance works
D	Medium	Disturbance unlikely during typical occupancy of the building however may occur during maintenance works
E	Low	Disturbance unlikely during typical occupation of the building

Table 3 Risk Assessment Chart

MATERIAL CONDITION		PROBABILITY OF DISTURBANCE				
		Public	Certain	Likely	Possible	Unlikely
		A	B	C	D	E
Unknown	1	1	2	4	7	11
Poor	2	3	5	8	12	16
Moderate	3	6	9	13	17	20
Fair	4	10	14	18	21	23
Good	5	15	19	22	24	25

LEGEND: 1-6 HIGH RISK 7-15 MEDIUM RISK 16-25 LOW RISK

APPENDIX C

HAZARDOUS BUILDING MATERIALS REGISTER

Property Address: 42 Boorea St Lidcombe
Consultant: Ned Price
Survey Date: 01/06/2021

MATERIAL IDENTIFICATION										RISK ASSESSMENT				RISK MANAGEMENT	CORRECTIVE ACTIONS	
Building	**Level**	**Primary Location**	**Secondary Location**	**Material**	**Application**	**Sample Number**	**Result**	**Size**	**Photo Number**	**Friability (F, NF)**	**Condition (1-5)**	**Disturbance Potential (A-E)**	**Risk Rating (L, M, H)**	**Consultant Comments**	**Remediation Comments**	**Remediation Date**
Asbestos Containing Materials																
Main Bld	G	Interior	Main warehouse, north-western elevation	Grey Vinyl floor tiling	Floor covering	WSP - 130027	No Asbestos Detected	100m2	1	NF	4	D	NA	No further action required		
Main Bld	G	Interior	Main warehouse, concrete slab throughout	Bituminous Material	Slab expansion joint	WSP - 130029	No Asbestos Detected	20m2	2	NF	5	D	NA	No further action required		
Main Bld	G	Inteior	South-western warehouse adjacent central corridor, ground floor male toilet	Fibre cement sheet	Wall lining	WSP - 130031	No Asbestos Detected	15m2	-	NF	4	D	NA	No further action required		
Main Bld	G	Interior	Main warehouse, eastern wall northern end	Resinous board	Electrical distribution board	Visual Identification	**Presumed positive**	3m2	5	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	1	Interior	Main warehouse, central section west wall mezzanine	Electrical distribution board and fuses	Electrical distribution cabinet bank	Visual Identification	**Presumed positive**	25m2	8	nf	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	G	Interior	Main warehouse, corridor connecting main office area and north-eastern offices	Electrical distribution boards and fuses	Electrical cupboards	Visual Identification	**Presumed Positive**	5m2	3	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	G	Internal	Main warehouse, north east offices/store	Electical distribution board	Electrical cupboards	Visual Identification	**Presumed positive**	3 units	same as 3	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		

Property Address: 42 Boorea St Lidcombe
Consultant: Ned Price
Survey Date: 01/06/2021

MATERIAL IDENTIFICATION										RISK ASSESSMENT				RISK MANAGEMENT	CORRECTIVE ACTIONS	
Building	Level	Primary Location	Secondary Location	Material	Application	Sample Number	Result	Size	Photo Number	Friability (F, NF)	Condition (1-5)	Disturbance Potential (A-E)	Risk Rating (L, M, H)	Consultant Comments	Remediation Comments	Remediation Date
Main Bld	G	Internal	Main warehouse, north east offices/store	Electrical distribution board	Crane cupboard	Visual Identification	**Presumed positive**	2m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	G	Internal	Main warehouse, north east offices/store	Mastic	AirConditioning ducting joints	Visual Identification	**Presumed Positive**	5m2	4	NF	5	E	L	No access at the time of inspection. Confirm status prior to demolition or refurbishment works. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	1	Internal	Main warehouse, north east offices/store, server room	Vinyl floor tiling	Floor covering	Visual Identification	Presumed Negative	20m2	-	NF	5	E	L	Presumed negative based off age and appearance		
MainBld	1	Internal	Main warehouse, north east offices/store	Electrical distribution board	Electrical cupboards	Visual Identification	**Presumed positive**	4 units	same as 3	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main bld	G	Internal	Main warehouse, eastern wall central elevation	Electrical distribution board	Electrical cupboards	Visual Identification	**Presumed positive**	3 units	same as 5	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	G	Internal	Southern warehouse adjacent main warehouse	Electrical distribution boards	Electrical cupboards	Visual Identification	**Presumed Positive**	3 units	same as 5	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		

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MATERIAL IDENTIFICATION									RISK ASSESSMENT				RISK MANAGEMENT	CORRECTIVE ACTIONS	
Building	Level	Primary Location	Secondary Location	Material	Application	Sample Number	Result	Size	Photo Number	Friability (F, NF)	Condition (1-5)	Disturbance Potential (A-E)	Risk Rating (L, M, H)	Consultant Comments	Remediation Comments	Remediation Date
Main Bld	G	Internal	South East mezzanine/meal area adjacent corridor	Electrical Distribution boards	Electrical cupboards	Visual Identification	**Presumed Positive**	1m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	1	Internal	South East mezzanine/meal area adjacent corridor	Mezzanine Vinyl flooring	Floor covering	Visual Identification	Presumed Negative	20m2	-	NF	5	E	NA	Presumed negative based off age and appearance		
Main Bld	G	Internal	South Eastern warehouse, electrical switch room	Electrical distribution banks x 4	Switchroom electrical cupboards	Visual Identification	**Presumed positive**	30m2	9	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	G	Internal	South Eastern warehouse, electrical switch room	Electrical distribution boards x 2	Switchroom electrical backing boards	Visual Identification	**Presumed positive**	2m2	9	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	G	Internal	South East Warehouse, store room adjacent electrical switch room	Vinyl floor tile	Floor covering to northern store	Presumed same as WSP - 130018	Presumed Negative	20m2	-	NF	5	E	NA	Presumed negative based on WSP - 130018 results		
Main Bld	G	Internal	South East Warehouse, pump room	Insulation	Pipe lagging	Visual Identification	**Presumed Positive**	10m2	10	F	5	E	L	Internal lagging inaccessible during assessment due to live services. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) licensed asbestos removal contractor.		

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MATERIAL IDENTIFICATION										RISK ASSESSMENT				RISK MANAGEMENT	CORRECTIVE ACTIONS	
Building	Level	Primary Location	Secondary Location	Material	Application	Sample Number	Result	Size	Photo Number	Friability (F, NF)	Condition (1-5)	Disturbance Potential (A-E)	Risk Rating (L, M, H)	Consultant Comments	Remediation Comments	Remediation Date
Main Bld	G	Internal	South East Warehouse	Electrical Distribution Board	Orange electrical cupboard	Visual Identification	**Presumed positive**	1m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	G	Internal	South-western warehouse adjacent central corridor	Electrical Distribution Board	Electrical cupboard x2	Visual Identification	**Presumed positive**	1m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	G	Internal	Northern Main office, kitchen	Vinyl floor sheeting	floor covering to kitchen	Visual Identification	Presumed Negative	10m2	-	NF	5	E	NA	Presumed negative based off age and appearance. Confirm status prior to demolition or refurbishment works.		
Main Bld	G	Interior	Northern Main offices, eastern locker rooms	Fibre cement Sheet	Wall lining	WSP - 130034	No Asbestos Detected	30m2	-	NF	5	D	NA	No further action required		
Main Bld	G	Interior	Northern offices, central Electrical storeroom	Vinyl floor tiling	Floor covering	WSP - 130035	No Asbestos Detected	2m2	7	NF	5	D	NA	No further action required		
Main Bld	G	Internal	Northern Main offices, eastern locker rooms	Electrical distribution board	Electrical cupboard adjacent male toilets	Visual Identification	**Presumed positive**	1m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	G	Internal	Northern Main offices	Electrical distribution board	Electrical cupboard adjacent male toilets	Visual Identification	**Presumed Positive**	1m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	1	Internal	Northern Main offices	Vinyl flooring	Kitchen floor covering	Visual Identification	Presumed Negative	10m2	-	NF	5	E	NA	Presumed negative based off age and appearance. Confirm status prior to demolition or refurbishment works.		

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MATERIAL IDENTIFICATION										RISK ASSESSMENT				RISK MANAGEMENT	CORRECTIVE ACTIONS	
Building	Level	Primary Location	Secondary Location	Material	Application	Sample Number	Result	Size	Photo Number	Friability (F, NF)	Condition (1-5)	Disturbance Potential (A-E)	Risk Rating (L, M, H)	Consultant Comments	Remediation Comments	Remediation Date
Main Bld	1	Internal	Northern Main offices	Electrical distribution board	Electrical cupboard	Visual Identification	**Presumed positive**	1m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
North west detached building 'Dock 3'	G	Internal	Warehouse	Electrical distribution board	Electrical cupboard	Visual Identification	**Presumed positive**	1m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
North west detached building 'Dock 3'	G	Internal	Warehouse	Vinyl flooring	Floor cover west office	Visual Identification	Presumed Negative	10m2	-	NF	5	E	NA	Presumed negative based off age and appearance. Confirm status prior to demolition or refurbishment works.		
North west detached building 'Dock 3'	G	Internal	Warehouse	Electrical distribution board	West electrical cupboard x 1	Visual Identification	**Presumed positive**	2m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.		
Main Bld	B	External	Western dock	Electrical distribution board	Electrical cupboard	Visual Identification	**Presumed Positive**	1m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) licensed asbestos removal contractor.		
Dock 1	G	External	Western dock, support beam	Electrical Distribution board	Electrical cupboard	Visual Identification	**Presumed positive**	1m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) licensed asbestos removal contractor.		

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MATERIAL IDENTIFICATION										RISK ASSESSMENT				RISK MANAGEMENT	CORRECTIVE ACTIONS	
Building	Level	Primary Location	Secondary Location	Material	Application	Sample Number	Result	Size	Photo Number	Friability (F, NF)	Condition (1-5)	Disturbance Potential (A-E)	Risk Rating (L, M, H)	Consultant Comments	Remediation Comments	Remediation Date
Dock 1	G	Internal	Warehouse	Electrical Distribution board	Electrical cupboard	Visual Identification	**Presumed positive**	1m3	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) licensed asbestos removal contractor.		
Dock 1	G	Internal	Western dock, Toilets	Mastic	Air Conditioning ducting joints	Visual Identification	**Presumed positive**	<1m2	-	NF	5	E	L	Internal components inaccessible during assessment.		
Dock 2	G	Internal	Warehouse	Electrical Distribution board	Electrical cupboard	Visual Identification	**Presumed positive**	1m2	-	NF	5	E	L	Inaccessible due to electrical hazard. Confirm status prior to demolition or refurbishment works. Maintain in current condition if to remain in-situ. Remove under controlled friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) licensed asbestos removal contractor.		
Lead Containing Materials																
Main Bld	G	Interior	Main warehouse	Green paint system	Structural beam paint	WSP - 130026	0.079 %w/w	50m2	11	NA	5	E	NA	Result <0.079% lead. < / = 0.1% lead content, "lead-free" paint as described in AS 4361.2:2017 Guide to hazardous paint management		
Main Bld	G	Interior	Main warehouse	White Paint system	Structural beam paint	WSP - 130028	0.079 %w/w	40m2	-	NA	5	E	NA	Result <0.079% lead. < / = 0.1% lead content, "lead-free" paint as described in AS 4361.2:2017 Guide to hazardous paint management		
Main Bld	G	Interior	Main warehouse - Eastern storeroom	Yellow paint system	Paint to Guard rails	WSP - 130030	<0.005 %w/w	2m2	-	NA	4	E	NA	Result <0.005% lead. < / = 0.1% lead content, "lead-free" paint as described in AS 4361.2:2017 Guide to hazardous paint management		
Main Bld	G	Interior	South-western warehouse adjacent central corridor, male toilet	Green paint system	Paint to mens toilet door	WSP - 130032	<0.005 %w/w	2m2	-	NA	5	E	NA	Result <0.005% lead. < / = 0.1% lead content, "lead-free" paint as described in AS 4361.2:2017 Guide to hazardous paint management		
Main Bld	G	Interior	South-western warehouse adjacent central corridor	Grey/Blue paint system	Paint to doors throughout	WSP - 130033	<0.005 %w/w	20m2	-	NA	5	E	NA	Result <0.005% lead. < / = 0.1% lead content, "lead-free" paint as described in AS 4361.2:2017 Guide to hazardous paint management		
Shed 5	G	Interior	South elevation	Green paint system	Structural beam paint	WSP - 130036	**Positive - 0.18 %w/w**	50m2	11	NA	5	E	L	Result 0.18% lead. Remove flaking sections and repaint as soon as reasonably practicable in accordance with AS 4361.2:2017 Guide to hazardous paint management		
Main Bld	G	Exterior	South loading dock - adjacent dock office	Yellow paint system	Paint to Guard rails	WSP - 130038	<0.005 %w/w	2m2	12	NA	4	E	NA	Result <0.005% lead. < / = 0.1% lead content, "lead-free" paint as described in AS 4361.2:2017 Guide to hazardous paint management		

Property Address: 42 Boorea St Lidcombe
Consultant: Ned Price
Survey Date: 01/06/2021

MATERIAL IDENTIFICATION										RISK ASSESSMENT				RISK MANAGEMENT	CORRECTIVE ACTIONS	
Building	**Level**	**Primary Location**	**Secondary Location**	**Material**	**Application**	**Sample Number**	**Result**	**Size**	**Photo Number**	**Friability (F, NF)**	**Condition (1-5)**	**Disturbance Potential (A-E)**	**Risk Rating (L, M, H)**	**Consultant Comments**	**Remediation Comments**	**Remediation Date**
Dock 2	G	Internal	Warehouse	Green paint system	Structural beam paint	Presumed same as WSP - 130026	Presumed Negative	50m2	-	NA	5	E	L	Result <0.079% lead. < / = 0.1% lead content, "lead-free" paint as described in AS 4361.2:2017 Guide to hazardous paint management		
Dock 2	G	Internal	Warehouse	Red paint system	Fire suppression system paint	Visual Identification	**Presumed Positive**	30m2	-	NA	5	E	L	Inaccessible due to height restrictions, presumed positive. Remove flaking sections and repaint as soon as reasonably practicable in accordance with AS 4361.2:2017 Guide to hazardous paint management		
Main Bld	G	Interior	Throughout all warehouses	Red paint system	Fire suppression system paint	Visual Identification	**Presumed Positive**	NQ	-	NA	5	E	L	Inaccessible due to height restrictions, presumed positive. Remove flaking sections and repaint as soon as reasonably practicable in accordance with AS 4361.2:2017 Guide to hazardous paint management		
Syntehtic Mineral Fibre (SMF) Materials																
Main Bld	G	Internal	Main warehouse, eastern wall, central elevation	SMF	Wall insulation	Visual Identification	**Presumed Positive**	200m2	6	NA	5	E	L	Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibre Products [NOHSC: 2006 (1990)].		
Dock 3	G	Internal	Warehouse	SMF	Wall sarking	Visual Identification	**Presumed Postive**	40m2	-	NA	5	E	L	Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibre Products [NOHSC: 2006 (1990)].		
Main Bld	B	External	Western dock	SMF	Roof sarking	Visual Identification	**Presumed Positive**	100m2	-	NA	5	E	L	Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibre Products [NOHSC: 2006 (1990)].		
Dock 1	G	Internal	Warehouse	SMF	AC flexi ducting	Visual Identification	**Presumed Positive**	5m2	-	NA	5	E	L	Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibre Products [NOHSC: 2006 (1990)].		
Dock 2	G	Internal	Warehouse	SMF	Sarking	Visual Identification	**Presumed Positive**	100m2	-	NA	5	E	L	Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibre Products [NOHSC: 2006 (1990)].		
Main Bld	G	Interior	Main Warehouse	SMF	Sarking	Visual Identification	**Presumed Positive**	800m2	8	NA	5	E	L	Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibre Products [NOHSC: 2006 (1990)].		
Main Bld	G	Interior	Main Warehouse	SMF	Laser Light panels	Visual Identification	**Presumed Positive**	20m2	-	NA	5	E	L	Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibre Products [NOHSC: 2006 (1990)].		
PolyChlorinated Biphenyls (PCB) Materials																
Main Bld	G	Internal	South East mezzanine/meal area	PCB's	Light fittings	Visual Identification	**Presumed Positive**	2 units	-	NA	5	E	L	PCB-containing capacitors are suspected due to age & appearance of electrical fittings. Confirm or remove and dispose of in accordance with the Polychlorinated Biphenyls Management Plan, Revised Edition April 2003		

Property Address: 42 Boorea St Lidcombe
Consultant: Ned Price
Survey Date: 01/06/2021

MATERIAL IDENTIFICATION										RISK ASSESSMENT				RISK MANAGEMENT	CORRECTIVE ACTIONS	
Building	Level	Primary Location	Secondary Location	Material	Application	Sample Number	Result	Size	Photo Number	Friability (F, NF)	Condition (1-5)	Disturbance Potential (A-E)	Risk Rating (L, M, H)	Consultant Comments	Remediation Comments	Remediation Date
Dock 4	G	Internal	Warehouse	PCB's	Light fittings	Visual Identification	**Presumed Positive**	1 unit	-	NA	5	E	L	PCB-containing capacitors are suspected due to age & appearance of electrical fittings. Confirm or remove and dispose of in accordance with the Polychlorinated Biphenyls Management Plan, Revised Edition April 2003		
Dock 4	G	External	Warehouse	PCB's	Light fittings	Visual Identification	**Presumed Positive**	1 unit	-	NA	5	E	L	PCB-containing capacitors are suspected due to age & appearance of electrical fittings. Confirm or remove and dispose of in accordance with the Polychlorinated Biphenyls Management Plan, Revised Edition April 2003		
Main Bld	G	Internal	South East mezzanine/meal area	PCB's	Light fittings	Visual Identification	**Presumed Positive**	2 units	-	NA	5	E	L	PCB-containing capacitors are suspected due to age & appearance of electrical fittings. Confirm or remove and dispose of in accordance with the Polychlorinated Biphenyls Management Plan, Revised Edition April 2003		

APPENDIX D

CERTIFICATES OF ANALYSIS

Certificate of Analysis

WSP Australia Pty Limited

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Email ANZLab@wsp.com

ABN 80 078 004 798

Accredited for compliance with ISO/IEC: 17025 - Testing (No. 17199)
NCSI Certified Quality System ISO 9001

LOCATION:	**42 Boorea St, Lidcombe NSW**	**CERTIFICATE NO:**	**SYD-PS125187-0001-142853**
CLIENT:	CBRE Group	DATE\S SAMPLED:	1/06/2021
CLIENT ADDRESS:	Level 34, 8 Exhibition Street, Melbourne VIC 3000	DATE RECEIVED:	3/06/2021
TELEPHONE:	0432 052 082	DATE ANALYSED:	3/06/2021
EMAIL:	alastair.cardno@cbre.com.au	ORDER NUMBER:	N/A
CONTACT:	Alastair Cardno	SAMPLED BY:	Ned Price

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples.

Lab No	Sample ID	Location	Description	Dimensions	Identification Type
001	WSP - 130027	Main Building, Warehouse, Grey vinyl floor tiling	Vinyl	55 g	OF, NAD
001A			Adhesive		OF
002	WSP - 130029	Main Building, Warehouse, Slab expansion joint	Bituminous Membrane	3 g	NAD
003	WSP - 130031	Main Building, South eastern warehouse, Mens Toilet wall lining	Fibre Cement Sheet	1 g	OF, NAD
004	WSP - 130034	Main Building, Lower office area, Mens lockers, Southern wall lining	Fibre Cement Sheet	1 g	OF, NAD
005	WSP - 130035	Main Building, Lower Office area, electrical store room flooring.	Vinyl	44 g	OF, NAD
005A			Adhesive		OF

LEGEND:

NAD	-	No Asbestos Detected
CH	-	Chrysotile Asbestos Detected
A	-	Amosite Asbestos Detected
C	-	Crocidolite Asbestos Detected
UMF	-	Unknown Mineral Fibres Detected
SMF	-	Synthetic Mineral Fibres Detected
OF	-	Organic Fibres Detected
[1]	-	No asbestos detected at the reporting limit of 0.1 g/kg
[2]	-	Identification not possible due to adhering materials
[3]	-	Identification not possible due to degradation of fibres

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:
If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.
The results contained within this report relate only to the sample(s) submitted for testing. Sampling is not covered by the scope of accreditation. Samples analysed on an 'As Received' basis. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons, or data supplied by external persons.
This document may not be reproduced except in full.

Approved Identifier

Name: Melanie Reed

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Thursday, 3 June 2021

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 270593

Client Details

Client	WSP Australia Pty Limited
Attention	Chris Virtue
Address	GPO Box 5394, Sydney, NSW, 2001

Sample Details

Your Reference	**42 Boorea St, Lidcombe**
Number of Samples	7 Paint
Date samples received	02/06/2021
Date completed instructions received	02/06/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	03/06/2021
Date of Issue	02/06/2021

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Hannah Nguyen, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Lead in Paint						
Our Reference		270593-1	270593-2	270593-3	270593-4	270593-5
Your Reference	UNITS	WSP-130026	WSP-130028	WSP-130030	WSP-130032	WSP-130033
Date Sampled		01/06/2021	01/06/2021	01/06/2021	01/06/2021	01/06/2021
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	02/06/2021	02/06/2021	02/06/2021	02/06/2021	02/06/2021
Date analysed	-	02/06/2021	02/06/2021	02/06/2021	02/06/2021	02/06/2021
Lead in paint	%w/w	0.079	0.079	<0.005	<0.005	<0.005

Lead in Paint			
Our Reference		270593-6	270593-7
Your Reference	UNITS	WSP-130036	WSP-130037
Date Sampled		01/06/2021	01/06/2021
Type of sample		Paint	Paint
Date prepared	-	02/06/2021	02/06/2021
Date analysed	-	02/06/2021	02/06/2021
Lead in paint	%w/w	0.18	<0.005

Method ID	Methodology Summary
Metals-020/021/022	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.

QUALITY CONTROL: Lead in Paint						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			02/06/2021	[NT]	[NT]	[NT]	[NT]	02/06/2021	[NT]
Date analysed	-			02/06/2021	[NT]	[NT]	[NT]	[NT]	02/06/2021	[NT]
Lead in paint	%w/w	0.005	Metals-020/021/022	<0.005	[NT]	[NT]	[NT]	[NT]	98	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

APPENDIX E

PHOTOGRAPHS

Photographs – 42 Boorea St Lidcombe

Photo 1: Internal, Main warehouse, vinyl floor tiling.

Photo 2: Internal, Main warehouse, slab expansion joint.

Photo 3: Internal, Main building, south east elevation, electrical cupboards.

Photo 4: Main building, East office/store, ac ducting joints presumed positive for asbestos.

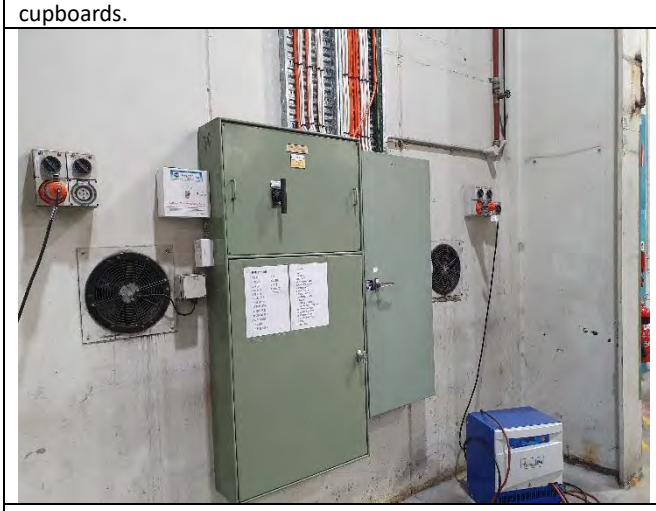

Photo 5: Main warehouse, electrical distribution board

Photo 6: Eastern customs area, SMF wall insulation

Photo 7: Main reception area, electrical storeroom, vinyl floor tiles	**Photo 8:** Central ware house, West wall mezzanine, electrical distribution cabinet bank
Photo 9: South east warehouse, electrical room room, electrical distribution banks	**Photo 10:** South east warehouse, pumproom piping
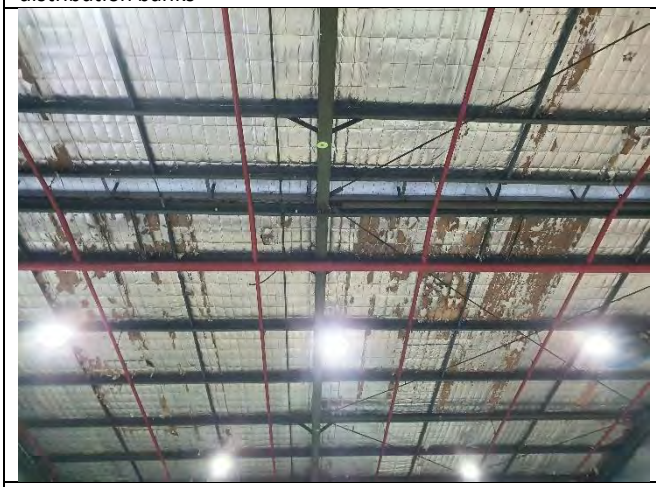	
Photo 11: Representative photo of ceiling sarking, green support beams and red fire suppression system to docks.	**Photo 12:** South loading dock, adjacent dock office, yellow painted guard rails.

A-27 Evidence of Stakeholder Consultation

ADCO Constructions (Head Contractor)

Our ref: SSD-36464788-PA-1 to SSD-36464788-PA-10

Ms Alana Garrick
Development Manager
Hale Property Services Pty Ltd
Suite 903, MLC Centre, 25 Martin Place
SYDNEY NSW 2000

8 May 2024

Subject: Boorea Street Warehouse and Distribution Centre - Construction Environmental Management Plan

Dear Ms Garrick

Reference is made to the Construction Environmental Management Plan (CEMP) and associated sub-plans for the Boorea Street Warehouse and Distribution Centre (WDC) submitted for approval on the Major Projects Portal, as required by the conditions of the consent (SSD-36464788).

The Department of Planning, Housing and Infrastructure (the Department) has reviewed the CEMP and associated sub-plans and considers more information is required to satisfy the conditions of consent. I, as nominee of the Planning Secretary, request that Hale Property Services revises the following plans addressing the points raised by the Department in **Attachment 1** of this letter by **Monday 20 May 2024** (or as otherwise agreed by the Planning Secretary):

- Construction Environmental Management Plan (condition C2)
- Construction Traffic Management Plan (condition B1)
- On-Site Traffic Control Plan (condition B6)
- Construction Flood Emergency Response Plan (condition B18)
- Construction Noise and Vibration Management Plan (condition B27)
- Construction and Demolition Waste Management Plan (condition B62)
- Unexpected Contamination Finds Procedure (condition B69).

Should you wish to discuss the matter further, please contact me on 9274 6431 or via email at sally.munk@planning.nsw.gov.au.

Yours sincerely

Sally Munk
Principal Planner, Industry Assessments

As nominee of the Planning Secretary

Attachment: Department's Request for Information

Attachment 1
Department's Request for Information

1. Construction Environmental Management Plan (SSD-36464788-PA-1)

Condition C1

Sub-clauses (a), (b) and (c)

- The CEMP notes that Section 4.1.2 addresses the requirements of sub-clauses (b), (c) and (e) of condition C2, however, this section only includes a contingency plan, which addresses the requirement of sub-clause (d). The requirements of these clauses do not appear to be addressed in the CEMP.

Sub-clause (f)

- The protocol outlined in section 6.3 of the CEMP is very generic and does not talk to the project specific requirements for compliance and incident notification of the development consent (condition C9 to C12).

Sub-clause (g)

- Section 4.1.1 outlines a program to review the CEMP and sub-plans. However, this should also refer to the requirement to review the plan under condition C7 and C8 of the development consent.

Recommendation: The matters required by condition C1, subclauses (b), (c), (e), (f) and (g), must be addressed in the CEMP. The information presented must be specifically relevant to the approved development and should not be generic in nature.

General Comments

- The CEMP is very generic in nature and does not appropriately reference project specific requirements specified in the development consent and the associated sub-plans prepared as part of the overarching CEMP.
- The project information in Section 2.5 of the CEMP is incorrect. The project description must reflect the approved development.
- Section 5.7 should refer to the project specific Construction Flood Emergency Response Plan.
- Section 6.3 should refer to the requirements under the development consent, namely conditions C9 to C12.

Recommendation: The CEMP must be presented as a project-specific document that correctly describes the approved development and addresses the specific requirements in the development consent.

2. Construction Traffic Management Plan (SSD-36464788-PA-2)

Condition B1

Sub-clause (a)

- Confirmation of the qualifications of the document author(s) is required.

Sub-clause (b)

- Section 1.3 of the CEMP confirms that consultation was undertaken with Cumberland City Council with regards to the CTMP and Council approved the CTMP subject to conditions on 27 March 2024. It is not clear if the Applicant accepts these conditions and commits to complying with these requirements.

Recommendation: The CTMP must either incorporate the requirements of Council into the final CTMP or confirm that the requirements of Council will be implemented as part of the CTMP.

Sub-clause (d)(i)

- Section 3.10 states that swept path diagrams have been provided for a 25m articulated vehicle, however, the figures presented show a 19m AV. It is not clear which will be the largest vehicle expected to access the site during construction.
- Section 3.15 indicates that street parking is available on surrounding streets. It is not appropriate for construction workers to rely on street parking. Parking arrangements for construction vehicles have not been adequately addressed.

Recommendation: The CTMP should clearly state the largest vehicle to access the site and present swept path diagrams for that vehicle type. On-site parking for construction workers should be provided.

General Comments

- The project description in Section 1.1 incorrectly describes the approved development.
- Section 2.1 incorrectly states that all surrounding roads are local roads. Olympic Drive is a State road. This section also refers to a school site, not the approved development.

Recommendation: The CTMP must be presented as a project-specific document that correctly describes the approved development.

3. On-Site Traffic Control Plan (TCP) (SSD-36464788-PA-9)

Condition B6

Sub-clause (d)

- Sub-clause (d) requires the TCP to include detailed architectural plans illustrating the location of all line marking, signage (including speed limit signage), and convex mirrors required for operation of the development. Convex mirrors have not been incorporated into the plans. The Ason Group response dated 1 March 2023 confirmed a convex mirror would be provided to assist with sight line of the vehicles maneuvering up and down the ramp to the Level 1 loading area.
- Speed limits only appear to be noted at the ground floor level and not anywhere else, including the ramp to Level 1.

Recommendation: The OTMP should include proposed locations of convex mirrors and additional speed limit signs as agreed to by the Applicant as part of the approved DA documents.

4. Construction Flood Emergency Response Plan (FERP) (SSD-36464788-PA-10)

Condition B18

Sub-clause (b)

- Sub-clause (d) requires the FERP to be prepared in consultation with the State Emergency Service. No evidence of this consultation has been provided.

Recommendation: Evidence of consultation with the SES must be provided with the FERP.

5. Construction Noise and Vibration Management Plan (SSD-36464788-PA-4)

Condition B27

Sub-clause (d)

- Sub-clause (d) requires the CNVMP to include mitigation measures identified in the 'Noise and Vibration Impact Assessment' prepared for the development by RWDI Australia Pty Ltd dated 6 February 2023, Version B, Final.
- Section 5 of the CNVMP Report refers to an earlier version of the approved NVIA. This needs to be rectified and consistency in noise predictions confirmed between NVIA predictions and the CNVMP (section 6.5).
- It is not clear how the construction noise assessment in Section 6.5 relates to the predicted construction noise at receivers carried out in the approved NVIA. The levels predicted here are higher than predicted in Table 9-2 of the approved NVIA. Predicted levels at receivers should be included in the CNVMP and be consistent with that in the approved NVIA.
- The proposed mitigation measures must include those from the approved NVIA which stated the CNVMP should also employ the follow standard mitigation measures where practicable:
    - Maximising the offset distance between high vibration plant items and nearby buildings
    - Substitution by alternative equipment, plant, and processes
    - Reduction vibration settings levels when operating the vibratory roller nearby buildings
    - Consultation with affected residences and business owners.

Recommendation: The CNVMP must be based on the findings of the most recent version of the approved NVIA. This includes, but is not limited to, section 6.5 and Table 9, as relevant.

6. Construction and Demolition Waste Management Plan (SSD-36464788-PA-5)

Condition B62

Sub-clause (a)

- Sub-clause (a) requires details of the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations. This has not been provided in the CWMP.

Recommendation: The CWMP must include the quantities of each waste type that will be generated throughout the construction or demolition stage.

7. Unexpected Contamination Finds Procedure (SSD-36464788-PA-6)

Condition B69

- This condition requires the Applicant to prepare an unexpected contamination finds procedure to ensure that potentially contaminated material is appropriately managed. The procedure must ensure any material identified as contaminated is disposed of in accordance with the POEO Act and its associated regulations.
- The document provided only describes management of unexpected asbestos contamination and must be amended to address any form of contamination found on the site. Refer to Section 6.5 of the Department's assessment report for the context of this condition.

Recommendation: The Unexpected Contamination Finds Procedure must be updated to include all contamination types.

Our Ref: ID2449
Your Ref: SSD-36464788-PA-10

17 May 2024

Sally Munk
Department of Planning, Housing & Infrastructure
Locked Bag 5022
Parramatta NSW 2124
Via Major Portal

email: sally.munk@planning.nsw.gov.au
CC: pcassimatis@adcoconstruct.com.au; shelly.stingmore@one.ses.nsw.gov.au

Dear Sally,

Construction Flood Emergency Response Plan for Boorea Street Warehouse & Distribution Centre

Thank you for the opportunity to provide advice on the Construction Flood Emergency Response Plan (FERP) for the proposed development at 42-44 Boorea Street, Lidcombe, Warehouse & Distribution Centre.

The NSW State Emergency Service (NSW SES) is the agency responsible for dealing with floods, storms and tsunami in NSW. This role includes, planning for, responding to and coordinating the initial recovery from floods. As such, the NSW SES has an interest in the public safety aspects of the development of flood prone land, particularly the potential for changes to land use to either exacerbate existing flood risk or create new flood risk for communities in NSW.

It is the preference of NSW SES that all development follows the application of sound land use planning and flood risk management in accordance with the Flood Prone Land Policy, the Flood Risk Management Manual 2023 (the Manual) and supporting guidelines.

The NSW SES has reviewed the proposed FERP and the flood risk information available to the NSW SES (for example, the Cumberland LGA Flood Emergency Sub Plan 2021, Haslams Creek Floodplain Risk Management Study and Plan 2003, and the Cumberland Council Flood Maps 2021).

We refer to our previous correspondence and recommendations provided on 04 September 2023 in relation to the request for initial comment on the proposal. As stated in our previous advice, the proposed site appears to be located on a low flood island, isolated by the 1% Annual Exceedance Probability (AEP) flood event[1] and subsequently inundated. The site is

[1] Updated Civil Engineering Report, Section 7.3, Cumberland Flood Map – Map 2, page 36

adjacent to Haslam's Creek flood channel, which has H6 hazard flooding in 1% Annual Exceedance Probability (AEP) events. When this channel floods, it occurs rapidly within minutes following intense falls of rain over a short period of time and with little to no warning. Localised flooding is exacerbated by channel blockages and high tides. Noting that flood warnings are not available for the site, it may be difficult for people to safely evacuate from the site prior to the sole exit point onto the evacuation route[2] becoming flooded.

The NSW SES does not have statutory authority to endorse or approve flood emergency response plans, however, provides the following advice based on the principles outlined in the Guidelines as detailed in Attachment A.

In summary, we:

- **Note** that the modelling analysed flood levels at one point (Reporting Point 1) along the proposed evacuation route (but not at the site exit point)[3]. We **recommend** considering the impact of flooding on evacuation routes, up to and including the Probable Maximum Flood (PMF). The modelling shows that the sole evacuation route is cut by a floodway in a 1% AEP event,[4] which could see people trapped on site and evacuation from the area not completed. Site design should avoid the entry or exit through high hazard areas, such as the access/egress point onto Boorea Street, as far as possible.
- **Recommend** seeking advice from the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) regarding the flood risk and impact of the proposed development on flood behaviour.
- **Recommend** ensuring that buildings are as safe as possible to occupy during flood events; buildings must be designed for potential flood and debris loadings of the Probable Maximum Flood (PMF) event, so that structural failure is avoided during a flood, especially considering the flash flood nature at the site.
- **Recommend** pursuing, if relevant, site design and stormwater management that reduces the impact of flooding and minimises risk to the community. Any improvements that can be made to reduce flood risk will benefit the community - people using the site, visitors, as well as workers during the construction phase.
- **Recommend** changes to the FERP, detailed further in Attachment A. This includes the removal of all references stating that NSW SES would issue flood warnings for this site. As per our previous advice, there is currently no formal flood warning system available for the proposed area, which is subject to flash flooding. Further, NSW SES

[2] PTC. 2024. Multi-level Warehouse ADCO, Construction Traffic Management Plan, page 1
[3] Costin Roe Consulting, 2024, Flood Management Plan Incorporating Flood Emergency – Proposed Industrial Facility, 42 Boorea Street, Lidcombe NSW, Rev: A, page 18
[4] Cumberland City Council. 2021. Stormwater and Flood Maps. Map 2 Flood Hydraulic Categories

does not have the operational capacity to provide individualised flood warnings for each business site[5].

- **Recommend** that flooding emergency plans should be regularly exercised (similar to building fire evacuation drills) and updated at regular intervals, and whenever additional flood information becomes available or is highlighted during exercise drills or flood events.

Further useful information can be found here:

- NSW SES website
- Emergency Business Continuity Plan
- The Department of Climate Change, Energy, the Environment and Water website

Please feel free to contact Ana Chitu via email at rra@ses.nsw.gov.au should you wish to discuss any of the matters raised in this correspondence. The NSW SES would also be interested in receiving future correspondence regarding the outcome of this referral via this email address.

Yours sincerely,

Elspeth O'Shannessy
Manager Emergency Risk Assessment
NSW State Emergency Service

[5] Costin Roe Consulting, 2024, Flood Management Plan Incorporating Flood Emergency – Proposed Industrial Facility, 42 Boorea Street, Lidcombe NSW, Rev: A, page 29

ATTACHMENT A: Principles Outlined in the Support for Emergency Management Planning Guideline[6]

Principle 1 Any proposed Emergency Management strategy should be compatible with any existing community Emergency Management strategy.

Any proposed Emergency Management strategy for an area should be compatible with the evacuation strategies identified in the relevant local or state flood plan or by the NSW SES. As per the NSW State Flood Plan[7], and the Cumberland LGA Flood Emergency Sub Plan[8] evacuation is the primary emergency management strategy for people impacted by flooding.

Areas that do not have independent means of evacuation complicate the SES flood response. The NSW SES has very limited human resources and cannot assist evacuation at all sites that may need it.

We support developing a flood emergency response strategy and plan for the site, however, this should not replace, or be considered as a development consent condition instead of the application of sound land use planning and flood risk management.

The Flood Risk Management Manual 2023 notes flood risk management plans are 'living documents' which need to be regularly reviewed to ensure they remain appropriate to address the flood risk to the community, can be practically implemented and consider changing information and lessons learnt from any floods since the last review.

Although NSW SES encourages homes and businesses to be prepared and has developed a home FloodSafe toolkit and a Business FloodSafe toolkit, even well written plans are dependent on human application and often rely on technical support systems. Most plans will rely on the actions of one or more third parties and all plans require regular maintenance and review, and most importantly an ongoing commitment from all participants. These conditions are difficult to implement and are unlikely to be achieved at all in a private ownership context where there is no external audit or monitoring.

Any plan that a resident or facility manager may wish to prepare for a site should address the following issues. The list is also an indication of the issues that should be addressed in any detailed major development proposal, especially if some of the key issues such as the reliability of evacuation routes, can be dealt with through better design and construction.

1. Is the site a frequently flooded site where residents may become complacent about the smaller more frequent floods and will be surprised and caught-out by bigger events?

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[6] NSW Government. 2023. Principles Outlined in the Support for Emergency Management Planning Guideline

[7] NSW Government. 2021. NSW State Flood Plan. Section 1.6 Key Principles, page 5

[8] NSW SES. 2021. Cumberland LGA Flood Emergency Sub-Plan. Section 1.6 Key Principles, page 7

At first glance it may seem that if people live in an area where frequent low-level floods occur, they would be more flood aware. Unfortunately, although they may be aware of flooding, they generally come to the view that they are not at risk because they think all floods are like the small ones they often see. This is not true and big floods will almost always catch people by surprise and exceed their capacity to deal with the situation unless they have considered this scenario in their planning and preparedness.

2. Is it a location for which flood height prediction is either not available at all or within a reasonable time frame or where prediction is inherently uncertain?

These issues will make flood planning, warning and response timing very difficult. There are many locations where the time from rainfall to flooding is less than six hours and these are termed flash flood environments. In these locations, Severe Weather Warnings will be the most likely form of advice about the potential for flood producing storms and rainfall. Business owners/operators must be weather aware and act early on publicly broadcast severe weather and flood warnings.

3. Is the location remote from the main community and therefore not linked to existing community networks for warning and assistance purposes?

It will be difficult for the NSW SES to monitor remote locations such as rural residential communities. The more specific the warning requirement for individuals and sites becomes, the more difficult it is for the NSW SES to deliver warnings in the short time frames that often apply.

a) Will residents require special flood warning arrangements because of isolation, short warning times, age or ill health?

Neither the NSW SES nor the Bureau of Meteorology can undertake to provide special individual flood warning services for each business site. The more specific the warning requirement for individuals and sites becomes, the more difficult it is for the NSW SES to deliver warnings in the short time frames that often apply. Business owners/operators must be weather aware and act early on publicly broadcast severe weather and flood warnings.

b) Will evacuation rely on a third party for warning, transport or temporary accommodation?

Areas that do not have independent means of evacuation complicate the NSW SES flood response. The NSW SES has very limited human resources and cannot undertake to help out at all sites that may need it. Evacuation plans must be self-sufficient and need to consider that other sections in the community may be placing demands of public and private transport resources.

In the matter of Lensing v Snowy Valley Council [2022] NSWLEC 1486, the Commissioner found the application for development relied too heavily on the SES to provide appropriate and timely response, which the SES themselves recognise may not be feasible when needed which would result in residents relying on their own resources and that of the local community. The Commissioner concluded the site was not suitable for the proposed development due to an unacceptable risk to life and likely adverse social impact to the locality during evacuation of the site.

c) Is the area isolated by floodwater before inundation of the land the dwelling is built upon? i.e. is the only the safe road out closed by river floodwater or local stormwater before flooding is obvious to residents, making it difficult to motivate people to action?

Vehicular escape routes that rise steadily and lead away from the flood are the best. In the worst case, a community would be cut-off by floodwater and left stranded on an island on high ground that could subsequently be submerged. The problem of localised closure of roads due to inadequate stormwater capacity can be critical where the available warning and evacuation time is short. If an area is cut off from road access but still has some overland escape route, then at least people will not drown.

d) Is the development relying on an elevated structure to achieve compliance with habitable floor level requirements?

This approach, although effective for property protection, brings with it the problem that residents will be convinced that it is safe to "sit-out the flood". Unless the floor level is above the limit of all flooding i.e. above the PMF this is not true because the water could keep rising over the floor level after residents have lost their escape route.

People tend to resist calls to evacuate before the land around them is obviously flooded. Unfortunately, our experience is that people change their mind about this option **after** they have been surrounded by flood water or when essential services such as water, power and sewer cease to function. Rescue, resupply and medical responses are difficult and can be dangerous under these conditions.

In flash flood environments (floods with less than 6 hours warning) provision of a safe refuge above the limit of flooding (PMF) may be an advantage if the duration of flooding will be very short and the flood depth or velocity is high on or adjacent to the site. The success of this strategy will depend very much on the likely behaviour of people and building designs which put cars or other property under the refuge area may encourage people to take risks to save these items.

e) Will an SES response such as difficult/dangerous rescue or demand on limited SES resources be required if the private arrangements fail and people do not leave early enough (see above)?

During periods of widespread flooding the NSW SES will have to deal with many communities facing the impact of flooding. There is no thing as a safe period of isolation although obviously the shorter the better and the longer the period of isolation, the more chance there is for mishap requiring external intervention. Even relatively brief periods of isolation, in the order of a few hours, can lead to personal medical emergencies that have to be responded to.

f) Is communication to the area reliant on services such as telephone and power which are known to be subject to failure during floods/storms?

Inability to communicate in an emergency will complicate the implementation of any plan and could be fatal. Lack of communication to and from the site also requires someone from outside to confirm the safety of people on the site.

Principle 2 Decisions should be informed by understanding the full range of risks to the community.

Decisions relating to future development should be risk-based and ensure Emergency Management risks to the community of the full range of floods, are effectively understood and managed.

The site is located adjacent to the Haslam's Creek flood channel, which has H6 hazard flooding in 1% Annual Exceedance Probability (AEP) and rarer events[9]. The proposed site, and is located on a low flood island, isolated by the 1% AEP flood[10] and at risk of overland and creek flooding.

According to the available information, the site is within the Flood Planning Area[11]. In a Probable Maximum Flood (PMF), the western side of the site (and particularly the southwestern corner) is impacted by high hazard flooding[12], with low hazard flood waters impacting the rest of the site[13] [14].

The site is adjacent to Haslam's Creek flood channel, which has H6 hazard flooding in 1% Annual Exceedance Probability (AEP) events (even post-development). Based on observations NSW SES teams made during previous events, when this channel floods, it occurs rapidly within minutes following intense falls of rain over a short period of time and with little to no warning. Localised flooding is exacerbated by channel blockages and high tides. We have observed flash flooding both upstream and downstream of the site location impacting on properties and infrastructure, as well as flooding across Boorea Street at the intersection of

[9] Costin Roe Consulting, 2024, Flood Management Plan Incorporating Flood Emergency – Proposed Industrial Facility, 42 Boorea Street, Lidcombe NSW, Rev: A, page 14
[10] Cumberland City Council. 2021. Stormwater and Flood Maps. Map 2 Flood Hydraulic Categories
[11] Cumberland City Council. 2021. Stormwater and Flood Maps. Map 1 Flood controls Lots
[12] Costin Roe Consulting, 2024, Flood Management Plan Incorporating Flood Emergency – Proposed Industrial Facility, 42 Boorea Street, Lidcombe NSW, Rev: A, Figure 5.5, Page 23
[13] Cumberland City Council. 2021. Stormwater and Flood Maps. Map 3 Flood Hazard Categories
[14] Costin Roe Consulting, 2024, Flood Management Plan Incorporating Flood Emergency – Proposed Industrial Facility, 42 Boorea Street, Lidcombe NSW, Rev: A, Figure 6.1, page 27

Olympic Drive. In addition, there has been significant development of this area that may also impact on flooding behaviour.

It appears the buildings have been blocked out in the modelling. We would like to understand if modelling was conducted taking into consideration the heights of entry points to the buildings, up to and including the PMF flood levels, as this is important to understand if there is a risk of over-floor flooding.

Further, the site has only one access/egress point, which is via the internal road and onto Boorea Street.[15] We note that the modelling only analysed the flood hazard at one point (Reporting Point 1) along the proposed evacuation route. The modelling suggests that the exit point onto Boorea Street is cut by a floodway in a 1% AEP event.[16] In a PMF event, the flood velocity on Boorea Street westbound can reach over 6m/s in some areas, and eastbound can reach over 4 m/s; this suggests that the hazard level on the evacuation route in a PMF is H5-H6.[17] In a PMF event the site entry may be isolated up to 8.5 hours[18] by high hazard flood waters. [19] *"The time between overtopping of the Haslam Creek culverts and access from the site being above the H1 threshold is less than 1 hour."*[20] This suggests that the site would become isolated and high hazards flood waters would prevent people from safely evacuating the site.

We recommend conducting further analysis of the flood modelling to understand the suitability of the proposed evacuation route for events up to and including the PMF. Ideally, the access/egress routes should provide rising road access and/or be passable up to 1 in 500 year local flooding. This standard has been adopted for the Hawkesbury-Nepean Valley evacuation routes.

Principle 3 Development of the floodplain does not impact on the ability of the existing community to safely and effectively respond to a flood.

The ability of the existing community to effectively respond (including self-evacuating) within the available timeframe on available infrastructure is to be maintained. It is not to be impacted on by the cumulative impact of new development.

Risk assessment should have regard to flood warning and evacuation demand on existing and future access/egress routes. Consideration should also be given to the impacts of localised

[15] PTC. 2024. Multi-level Warehouse ADCO, Construction Traffic Management Plan, page 1
[16] Cumberland City Council. 2021. Stormwater and Flood Maps. Map 2 Flood Hydraulic Categories
[17] Costin Roe Consulting. 2024, Flood Management Plan Incorporating Flood Emergency – Proposed Industrial Facility, 42 Boorea Street, Lidcombe NSW, Rev: A, page 47 - 50
[18] Costin Roe Consulting. 2024, Flood Management Plan Incorporating Flood Emergency – Proposed Industrial Facility, 42 Boorea Street, Lidcombe NSW, Rev: A, Figure 6.1, page 27
[19] Cumberland City Council. 2021. Stormwater and Flood Maps. Map 3 Flood Hazard Categories
[20] Costin Roe Consulting. 2024, Flood Management Plan Incorporating Flood Emergency – Proposed Industrial Facility, 42 Boorea Street, Lidcombe NSW, Rev: A, page 21

flooding on evacuation routes. **Evacuation must not require people to drive or walk through flood water.**

Development strategies relying on an assumption that mass rescue may be possible where evacuation either fails or is not implemented are not acceptable to the NSW SES. The flood evacuation constraints in an area should not be used as a reason to justify new development by requiring the new development to have a suitable refuge above the PMF or a private evacuation plan. Allowing such development will increase the number of people exposed to the effects of flooding.

As detailed under Principle 2 in this document, the site is at risk of isolation as frequently as 1% AEP events when the site entry becomes cut by a floodway, before becoming inundated.

'Shelter in place' strategy is not endorsed for flood management by the NSW SES for *future development*. Such an approach is only considered suitable to allow existing dwellings that are currently at risk to reduce their risk, without increasing the number of people subject to such risk. During flooding it is likely that there will be a reduced capacity for the relevant emergency service agencies to respond in these times. Even relatively brief periods of isolation, in the order of a few hours, can lead to personal medical emergencies that have to be responded to.

Principle 4 Decisions on development within the floodplain does not increase risk to life from flooding.

Managing risks associated with flood islands requires careful consideration of development type, likely users, and their ability respond to minimise their risks. This includes consideration of:

- Isolation – There is no known safe period of isolation in a flood, the longer the period of isolation the greater the risk to occupants who are isolated.
- Secondary risks – This includes fire and medical emergencies that can impact on the safety of people isolated by floodwater. The potential risk to occupants needs to be considered and managed in decision-making.
- Consideration of human behaviour – The behaviour of individuals such as choosing not to remain isolated from their family or social network in a building on a floor above the PMF for an extended flood duration or attempting to return to a building during a flood, needs to be considered.

Principle 5 Risks faced by the itinerant population need to be managed.

Any Emergency Management strategy needs to consider people visiting the area or using a development.

Principle 6 Recognise the need for effective flood warning and associated limitations.

An effective flood warning strategy with clear and concise messaging understood by the community is key to providing the community an opportunity to respond to a flood threat in an appropriate and timely manner.

NSW SES utilises the Australian Warning System which is a nationally consistent, three-tiered approach to issue clear warnings and lead people to take action ahead of severe weather events. The three warning tiers consist of Advice, Watch and Act and Emergency Warning. These warnings can be viewed on the SES website and the HazardWatch website and app.

It is important to note that there is currently no formal flood warning system available for the proposed area, which is subject to flash flooding. Therefore, there are challenges associated with flood planning, warning, evacuation, and response timing for any future development. We request removing all references from the FERP stating that NSW SES would issue flood warnings for this site and recommend using early triggers for the activation of the FERP, such as a Severe Weather Warning issued by the Australian Government Bureau of Meteorology (BoM). This will be the most likely form of advice about the potential for flood producing storms and rainfall in the Haslams Creek catchment.

Issuing flood warnings via text message (SMS)[21] is not the primary method of NSW SES warning messaging and should not be relied upon, even for areas where flood warnings are available. Therefore, we would like to request the removal of any references to this from the FERP.

We also note the FERP stating *"Flood warden to contact SES for additional updates."*[22] We request the removal of this statement, as NSW SES does not have the operational capacity to provide individualised flood warnings for each business site. NSW SES does not have the operational capacity and is not able to commit to providing individualised flood warnings or site-specific advice to individual businesses during an event. The more specific the warning requirement for individuals and sites becomes, the more difficult it is for the NSW SES to deliver warnings in the short time frames that often apply. Business owners/operators must be weather aware and act early on publicly broadcast severe weather and flood warnings.

Principle 7 Ongoing community awareness of flooding is critical to assist effective emergency response.

The flood risk at the site and actions taken to reduce risk to life should be communicated to all site users (includes increasing risk awareness, community connections, preparedness actions, appropriate signage and emergency drills) during and after the construction phase. However, it is important to note that **the NSW SES is opposed to the imposition of development consent**

[21] Costin Roe Consulting, 2024, Flood Management Plan Incorporating Flood Emergency – Proposed Industrial Facility, 42 Boorea Street, Lidcombe NSW, Rev: A, pages 25 - 29
[22] Costin Roe Consulting, 2024, Flood Management Plan Incorporating Flood Emergency – Proposed Industrial Facility, 42 Boorea Street, Lidcombe NSW, Rev: A, page 29

conditions requiring private flood evacuation plans rather than the application of sound land use planning and flood risk management.

Development in a floodplain will increase the need for NSW SES to undertake continuous community awareness, preparedness, and response requirements. Residents and users of the proposed development should be made aware of their flood risk, the Hazards Near Me app (a tool to receive severe weather and flood warnings as part of the Australian Warning System) and the NSW SES website which contains comprehensive information for the general community about what to do before, during and after floods as well as in-language resources and HazardWatch (NSW SES interactive information and warnings site).

Paul Cassimatis

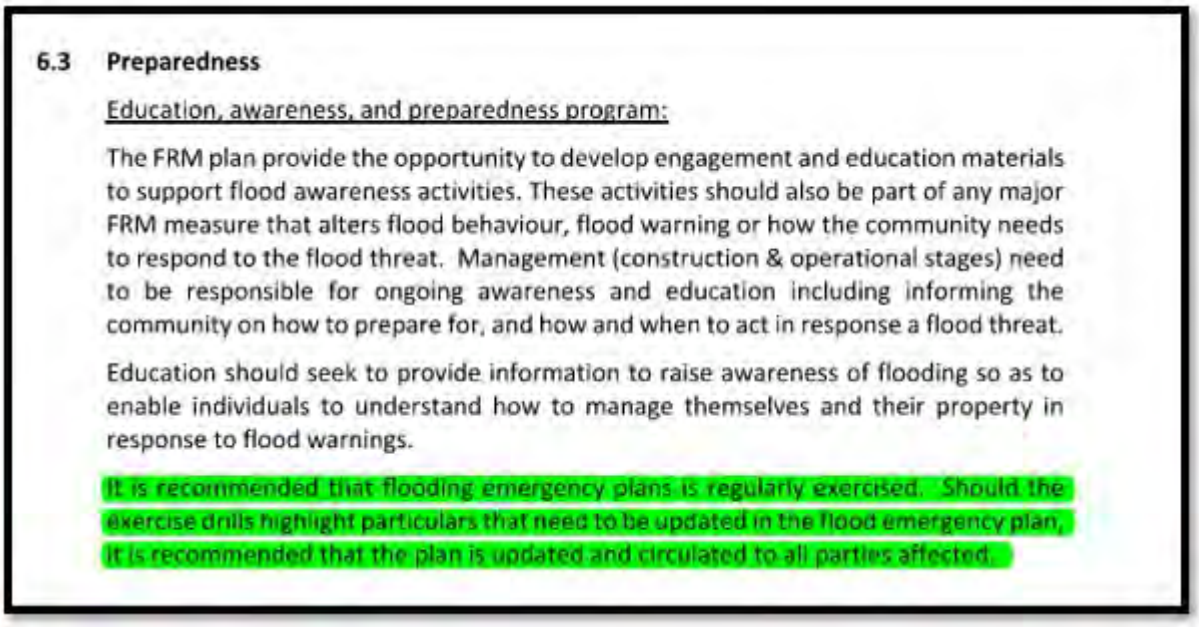
From: Lourens de Villiers <lourens.devilliers@costinroe.com.au>
Sent: Monday, 20 May 2024 5:27 PM
To: Nicholas Napoli; Paul Cassimatis; Ali Haghjoo; Daniel Soliman
Cc: Ahmed Farzan; Brandon Provenzano
Subject: RE: Boorea Street WDC, Lidcombe - Boorea St WDC - Construction FERP SSD-36464788-PA-10 - Request for Additional Information
Attachments: Co14411.01-13c.ltr.pdf; Co14411.01-12d.ltr.pdf; SES Advice on FERP.pdf; RFI on FERP - 20 May 2024.pdf

Hi Nicholas and team,

Sharepoint: 24.05.20 - Updated FERP

Please see updated FERP with mention to SES warning removed. We have only revised Section 6 of the report, per the below extracts. Further reference should be made to letters referenced **Co14411.01-12d.ltr** & **Co14411.01-13c.ltr** for further information on our extreme flood and access assessment conducted during the SSDA stage.

Let us know if there are any further comments or information required.



6.3 Preparedness

Education, awareness, and preparedness program:

The FRM plan provide the opportunity to develop engagement and education materials to support flood awareness activities. These activities should also be part of any major FRM measure that alters flood behaviour, flood warning or how the community needs to respond to the flood threat. Management (construction & operational stages) need to be responsible for ongoing awareness and education including informing the community on how to prepare for, and how and when to act in response a flood threat.

Education should seek to provide information to raise awareness of flooding so as to enable individuals to understand how to manage themselves and their property in response to flood warnings.

It is recommended that flooding emergency plans is regularly exercised. Should the exercise drills highlight particulars that need to be updated in the flood emergency plan, it is recommended that the plan is updated and circulated to all parties affected.

This flood awareness program should be incorporated into the induction process for new and existing staff members of tenants on the development site and is to be repeated annually as part of any "refresher" training. The program is to be reviewed when new tenants move into the building. Management should consider installing signage in around the site which outlines the flood evacuation procedure.

Visitors are to be briefed on the basics of the flood evacuation procedure upon arrival to the site. This training may include identification of the Flood Warden on site during the duration of their stay and showing visitors the designated refuge areas and evacuation pathways.

As noted, the advice in this report can be used as a framework for these site-specific plans, in conjunction with Cumberland Council and SES sub plans as required. During construction, the warehouse site should have a responsible person (EM or site manager) who understands the flood behaviour of this area, is familiar with this report and flood management responses set out in the FERP.

The Bureau of Meteorology (BoM) will issue flood alerts as part of their responsibility for the issue of warnings of weather conditions likely to give rise to Floods and for the provision of forecasting and warning services for Extreme Weather and Hazard Impact Events. Severe Weather Warnings, Severe Thunderstorm Warnings & Flood warnings are issued by the Bureau of Meteorology to alert communities to the threat of severe weather at (http://www.bom.gov.au/nsw/warnings/ & http://www.bom.gov.au/nsw/flood/sydney.shtml).

Development Owners and Management should appoint personnel (person or committee) involved with the implementation of this plan. As part of an early warning system, the appointed person or committee should be aware of the weekly weather forecast to identify heavy forecasted rainfall to prepare according. It is recommended that, if possible, the committee/Flood warden, bookmark the BoM warning pages for quick access.

The appointed person or committee should, during periods of heavy or forecast heavy rainfall, diligently observe the Severe Weather Warnings, rainfalls and road closures from the BoM.

As described in **Section 6.5** below, the BoM warning system is based on predicted rainfall and gauges in the Sydney region. This includes identification of potential flooding areas, estimated impacts of flooding at different heights and action time.

The BOM warning system will provide good initial guidance for triggering of flood measures. A suitable response/trigger methodology has been outlined in **Section 6.5** which can be utilised to inform users of the site to prepare their own site-specific flood management response plans.

Flood warning and emergency response for the development site will be based on the rainfall within the adjoining catchments.

Real-time data (updated at 15-minute intervals) for these sites can be accessed through the BoM website via the following hyperlink: http://www.bom.gov.au/nsw/flood/sydney.shtml (refer **Figure 6.1** for an indication of the relevant site-specific station):

Lourens de Villiers
Senior Design Engineer - Civil

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From: Nicholas Napoli <nnapoli@adcoconstruct.com.au>
Sent: Monday, May 20, 2024 1:25 PM
To: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>; Lourens de Villiers <lourens.devilliers@costinroe.com.au>; Ali Haghjoo <ali.haghjoo@costinroe.com.au>; Daniel Soliman <daniel.soliman@costinroe.com.au>
Cc: Ahmed Farzan <afarzan@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>
Subject: RE: Boorea Street WDC, Lidcombe - Boorea St WDC - Construction FERP SSD-36464788-PA-10 - Request for Additional Information

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Lourens – Just tried to call.

Can you confirm how your travelling with below? Urgent we try and get something returned to DPIE today..

Please let me know.

Thanks,

Nicholas Napoli
Project Manager

02 8437 5000 0428 535 423
Level 2, 7-9 West Street
North Sydney NSW 2060
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From: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Sent: Monday, May 20, 2024 10:01 AM
To: Lourens de Villiers <lourens.devilliers@costinroe.com.au>; Ali Haghjoo <ali.haghjoo@costinroe.com.au>; Daniel Soliman <daniel.soliman@costinroe.com.au>
Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>
Subject: FW: Boorea Street WDC, Lidcombe - Boorea St WDC - Construction FERP SSD-36464788-PA-10 - Request for Additional Information

Morning Lourens,

Further to last week's email on Friday – can we please action this today for our **Construction Flood Emergency Response Plan (CFERP)** regarding our **Lidcombe MSW Project**.

Please see additional information attached / below.

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
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From: Kamila Markiewicz <kmarkiewicz@tacticalgroup.com.au>
Sent: Monday, May 20, 2024 9:58 AM
To: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Cc: Ahmed Farzan <afarzan@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ebrahim Nateghi <enateghi@tacticalgroup.com.au>; Sachin Kaul <skaul@tacticalgroup.com.au>
Subject: FW: Boorea Street WDC, Lidcombe - Boorea St WDC - Construction FERP SSD-36464788-PA-10 - Request for Additional Information

Hi Nick,

Please find attached an RFI on the CFRRP.

Can you please revise the Report accordingly? Can you let us know how much work is required here and approx. how much time is required to address the comments?

- **Recommend** changes to the FERP, detailed further in Attachment A. T
  removal of all references stating that NSW SES would issue flood w
  site. As per our previous advice, there is currently no formal flood
  available for the proposed area, which is subject to flash flooding. Fu

Kind regards

Kamila

Kamila Markiewicz
Assistant Project Manager

TACTICAL

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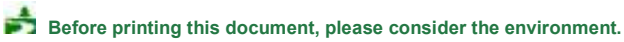

From: Alana Garrick <alana.garrick@halecp.com>
Sent: Monday, May 20, 2024 9:51 AM
To: Kamila Markiewicz <kmarkiewicz@tacticalgroup.com.au>; Sachin Kaul <skaul@tacticalgroup.com.au>; Ebrahim Nateghi <enateghi@tacticalgroup.com.au>
Subject: FW: Boorea Street WDC, Lidcombe - Boorea St WDC - Construction FERP SSD-36464788-PA-10 - Request for Additional Information

FYI – SES response on Construction FERP

Hale

Alana Garrick
Development Manager | Hale Capital Partners

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Suite 903, 25 Martin Place Sydney, NSW 2000

From: Sally Munk <Sally.Munk@planning.nsw.gov.au>
Sent: Monday, May 20, 2024 9:47 AM
To: Alana Garrick <alana.garrick@halecp.com>
Subject: FW: Boorea Street WDC, Lidcombe - Boorea St WDC - Construction FERP SSD-36464788-PA-10 - Request for Additional Information

Caution: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Alana

Please see request for information attached.

Regards

Sally

From: no-reply@majorprojects.planning.nsw.gov.au <no-reply@majorprojects.planning.nsw.gov.au>
Sent: Monday, 20 May 2024 9:45 AM
To: bthomas@urbis.com.au
Cc: Sally Munk <Sally.Munk@planning.nsw.gov.au>
Subject: Boorea Street WDC, Lidcombe - Boorea St WDC - Construction FERP SSD-36464788-PA-10 - Request for Additional Information

Dear Belinda Thomas,

The Department is requesting that you provide additional information in relation to the Boorea Street WDC, Lidcombe - Boorea St WDC - Construction FERP.

Please access your profile for details of this request and to upload your response. You are requested to provide this response by 3/06/2024 .

If you have any enquiries, please contact Sally Munk on 9274 6431 /at sally.munk@planning.nsw.gov.au .

To sign in to your account click here or visit the Major Projects Website.

Please do not reply to this email.

Kind regards

The Department of Planning and Environment

NSW GOVERNMENT

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10 November 2023

Tactical Group (Pty) Ltd
Attention: Mr Ebrahim Nateghi

email: enateghi@tacticalgroup.com.au

Re: Response to Submissions (RtS) - SSD-36464788
42 Boorea Street, Lidcombe, NSW

In reaction to the letter from Environment and Heritage dated 4 September 2023, referenced DOC23/743027, we have updated the Flood modelling as well as the SSDA report. The responses to EHG's comments can be found in the following sections of the report.

We further note that EHG had requested consultation with SES as part of their information request. We note that receipt of comments from SES (refer **Enclosure 2**) has been received and responded to in **Enclosure 3**.

Our response to the EHG letter is as follows:

Environment and Heritage Comment	CRC Response
The updated reports by Costin Roe Consulting Modelling does not provide EHG with all of the requested mapping at an appropriate scale for assessment. Maps submitted to EHG for assessment needs in Section 7 of the updated Civil engineering report (Co14411.01-03g.rpt) are required to be provided at an appropriate zoom level to provide the context of the site in conjunction to key access routes to understand the full flood constrains to the site.	The extent of the flood model was initially conducted locally around the development site. EHG requested the extent be broader to "*provide the context of the site in conjunction to key access routes to understand the full flood constraints to the site*". The extent of the flood model (and assessment) was confirmed by EHG on 25 September 2023. The agreed extent is included in **Figure 7.4** on **page 43** of our report. The full suite of high-resolution flood output mapping (which allows for agencies to zoom to an appropriate level) is included in **Appendix L2** of the updated report.
The proponent has submitted additional advice to DPE in a letter dated 22 August 2023 detailing why the afflux presented in the most recent submission to EHG is "not appropriate" as it does not reflect the "approved levels of the Woolworths Warehouse and Distribution Centre". EHG wishes to emphasise that any approved levels from previous SSDs must be incorporated into the pre-development scenario	Surrounding new developments in the area have been considered in this flood assessment and modelling has been completed using the best currently available information. In relation to the Woolworths Warehouse and Distribution Centre (SSDA-10470), investigation of this property revealed that the development (per the approved design documentation of the development under SSDA-10470) required the building to be

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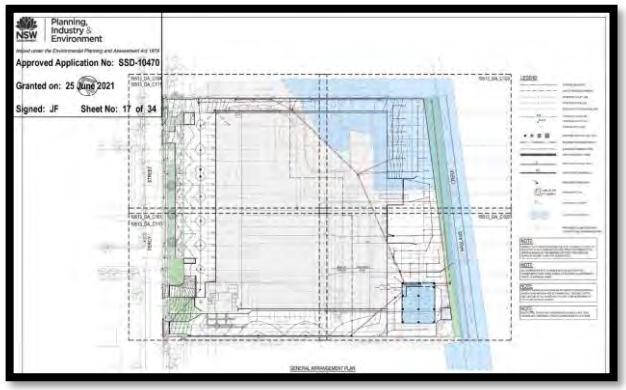
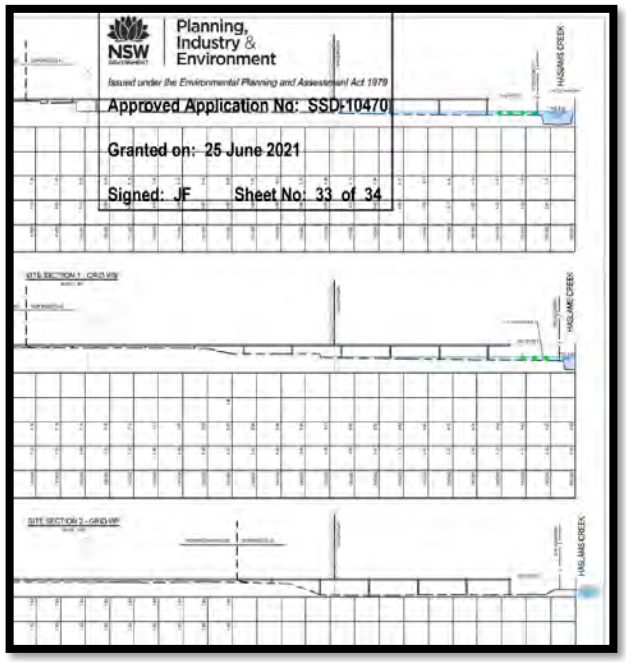
Environment and Heritage Comment	CRC Response
modelled by the proponent. This is so EHG can properly assess the changes which are apparent to the current development and the impacts from the current development to adjacent properties. It is neither adequate nor appropriate to use previous hydraulic models without incorporating changes to reflect the best available information at the time or provide additional commentary to the formal modelling submitted as part of this package.	suspended over the flood affected portion of the site without any material changes to the existing ground levels below. As such, for modelling purposes associated with this project, the adopted lidar digital terrain within the Woolworths property does not materially change and the flood model is therefore not affected by this development and considered appropriate for flood impact and risk assessments. Refer to **Section 7, page 33** of the updated report mentioning the above.  
Previously EHG has raised concerns about the site being a high flood island and emergency management issues as a key constraint for this development, as the proposal is for a	Refer to **Section 7** as well as **Appendix L** for the updated flood modelling and results based on the wider flood model extent.

Environment and Heritage Comment	CRC Response
warehouse facility with heavy vehicular access. In the most recent submission, the proponent states: "flooding during the 1% AEP has a hazard category of H1/H2 at the crossover point. However, given the short critical storm duration and the flashy nature of overland flooding at Haslams Creek the proposed flood evacuation strategy has been updated such that refuge should be sought in the higher levels of the site. The modelling [also] indicates that this flooding has a hazard category of H5 at the crossover point. As such, the proposed flood evacuation strategy has been updated such that refuge should be sought in the higher levels of the site, clear of the flood extent, until flood waters recede, prioritising safety and avoid being caught in floodwaters." The access to the site is a Hazard Category of H5 in the PMF which means that it is "unsafe for vehicles and people. All buildings susceptible to structural damage, some less robust building types are vulnerable to failure". An appreciation of the hazard constraints to the access of the site is critical to ensuring the increase in risk to life from flood events can be adequately managed as the users of this site will need to walk or drive through flood waters to evacuate.	It is noted that the flooding behaviour identified in Boorea Street is associated with runoff being generated by the local road and residential catchment (as gutter flow), coupled with breakout flows associated with overtopping water from Haslam Creek at the hydraulic constraint formed by the Boorea street culverts. The breakout flows are shown to extend for a distance of 50m from the Haslam Creek culverts, and are approximately 75m downstream from the property access point. We note the periods of flooding/ overland flows within Boorea Street are also noted to be coupled with extremely intense rainfall and climatic conditions. As the rainfall rate reduces so too does the inundation of the road. A detailed extreme flood and accessibility assessment (Ref: **Co14411.01-13c.ltr**) has been completed to accompany the submission as included as **Enclosure 1** of this letter and **Appendix M** of the report. The accessibility assessment has reviewed both 1% AEP and PMF warning times, rate of rise, depth and duration of inundation of the floodwater levels and hazard categorisation within Boorea Street at both the property access location and over the Haslam Creek culverts where Boorea street crosses those culverts. The assessment in **Enclosure 1** also includes detailed staged water level graphs for the various events to assist in demonstrating the short periods of inundation and access restrictions during those extreme events. The outcomes of the accessibility assessment are summarised as follows: • Safe access (Hazard Categorisation H1) for pedestrian and vehicles is available for the 1% AEP and PMF events at the property access point onto Boorea Street. • Safe egress east along Boorea Street is available in the PMF and 1% AEP events. • Safe egress west along Boorea Street is limited at the Haslam Creek culverts for a period of 1hr in the 1% AEP, and 7-8hours in the PMF.

Environment and Heritage Comment	CRC Response
	• The time between overtopping of the Haslam Creek culverts and access from the site being above the H1 threshold is less than 1 hour. • At the peak of the 1% AEP flood event at the property access point, the hazard categorisation is H1. • At the peak of the PMF flood event at the property access point, the hazard categorisation is H1. Reference to the Table 1 of *NSW Flood Risk Manual – The Policy and manual for the management of flood liable land* (DPE 2023), included as **Figure 7** of our letter in **Enclosure 1** shows that the probability of a 0.01% AEP (1:10,000 ARI) event being experienced once in an 80year period is 0.8% and twice is 0.003%. We note the definition of a PMF is not readily quantifiable to an AEP or ARI, however the 2005 Floodplain development manual notes a PMF could be between a 1:10,000 to a 1:10,000,000 ARI. As such the probabilities quoted above (per **Figure 7**) are considered to be upper bound probabilities. These figures further demonstrate the likeliness of access being restricted due to flooding is extremely low, and so low that the risk associated with these events is considered acceptable. Other than the access into the site from Boorea Street, the site in its entirety is sited above the PMF flood event. Noting the short period of restricted egress described above to the west of Boorea Street (i.e. at the Haslams Creek Culverts), or if there are other conditions that restrict access (eg climatic conditions like wind coupled with the heavy rainfall or traffic), shelter-in-place could be taken for the occupants of the facility. Refer to the detailed access assessment enclosed to this letter, and **Sections 7.4.4**, **7.4.5**, **7.5.2** and **Appendix L** for updated comments on evacuation and flood risk.
The proponent has recommended a shelter in place strategy for occupants of the site during rare storm events. EHG does not support shelter	Shelter in place is not required as discussed above.

Environment and Heritage Comment	CRC Response
in place for new developments and any proposal to shelter in place must consult with NSW SES as the key emergency combat agency during floods. EHG has previously requested consultation with NSW SES prior to the approval of this development. EHG notes this advice has not been sought or considered.	We note that contact has been made with SES and an official response have been received on 4 September 2023, referenced **ID-2097** and is included in **Enclosure 2**. CRC's detailed response to each of SES's comments are included in **Enclosure 3**.

Yours faithfully,

COSTIN ROE CONSULTING PTY LTD

LOURENS DE VILLIERS
Design Engineer

COSTIN ROE CONSULTING PTY LTD

MARK WILSON MIEAust CPEng NER
Director

Encl.
1. Access Assessment letter **Co14411.01-13c.ltr**
2. SES response letter
3. CRC Response to SES Comments

ENCLOSURE 1
Access Assessment letter Co14411.01-13c.ltr

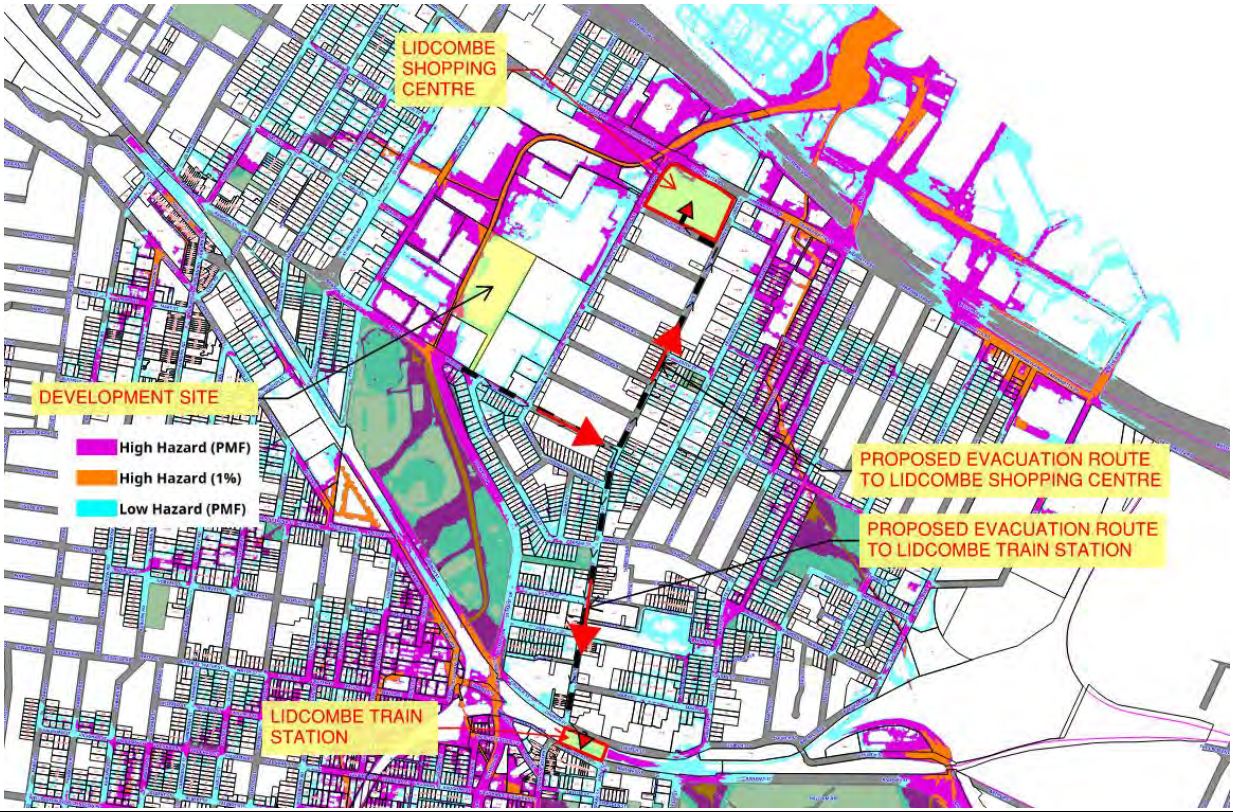
ENCLOSURE 2
SES response letter.

ENCLOSURE 3
CRC Responses to SES Comments

The letter from SES (dated 4 September 2023, referenced ID-2097, included as Enclosure 2) forms part of the overall risk assessment for the development lot. **Table 4** on page 15 of the DPE's **Flood Impact and Risk Assessment** manual mentions typical measures to minimise impacts due to development, which proposes the development consider emergency response issues and options and provide management measures consistent with advice from emergency services. The table below provides a summary of SES's specific remarks regarding the proposed development, along with CRC's corresponding responses to each of these remarks.

NSW SES COMMENTS	CRC RESPONSE
Principle 1 Any proposed Emergency Management strategy should be compatible with any existing community Emergency Management strategy. Any proposed Emergency Management **(EM)** strategy for an area should be compatible with the evacuation strategies identified in the relevant local or state flood plan or by the NSW SES.	The full suite of high-resolution flood output mapping (which allows for agencies to zoom to an appropriate level) is included in **Appendix L2** of the updated Civil Engineering report. With a low-risk evacuation available from the site (to the east/south-east of the development site) for all storm events, it is considered that the EM strategy is compatible with the relevant NSW SES requirements. NSW SES's primary strategy for managing populations at risk of flooding is **evacuation**, which is possible from the development site (Refer to Section 5.8 of NSW SES's **Cumberland LGA Flood Emergency Sub Plan.**). Refer to our **FIGURE A** below this response to Principle 1, showing the proposed safe evacuation routes to either the Lidcombe Shopping Centre or the Lidcombe Train Station. The document referenced "**Cumberland LGA Flood Emergency Sub Plan**" dated 24 November 2021, which is a sub plan of the Local Emergency Management Plan (EMPLAN) was reviewed and we note the following: - The development of warning systems discussed in Section 4.4.1 mentions that "(d) The State Government, in partnership with Local Government, is responsible for developing and maintaining **flash flood warning systems** for local catchments where required.". - Section 4.6.2 actions NSW SES to work together with individuals, communities, businesses and government agencies to build flood resilience. - Section 5.6, road and traffic control would be an important risk management factor to consider and could impact the evacuation strategy from the proposed development site.
The flood evacuation constraints in an area should not be used as a reason to justify new development by requiring the new development to have a suitable refuge above the PMF. Allowing such development will increase the number of people exposed to the effects of	The updated flood modelling, covering a broader area, confirmed that there is a safe evacuation route to the east/south-east from the development site, up to the PMF event, which would form the basis of the evacuation strategy of this development site. The only

NSW SES COMMENTS	CRC RESPONSE
flooding. Note that the NSW SES has no statutory authority nor capacity as the flood combat agency to review, assess or approve requests by applicants to review these plans. The NSW SES does not consider requiring a site-specific response plan as a consideration of consent. Plans developed in this context are not considered to be an effective measure for addressing continuing risk to users of new development, nor suitable for addressing the impacts the development may have on the EM risks to the existing community.	restriction noted was that evacuation and access to the development site from the west would be limited for certain durations of the 1% AEP storm event. Reference should also be made to letter **Co14411.01-13c.ltr** included in this letter in **Enclosure 1**. The intent of the assessment discussed in this letter is to inform the users of the site of the potential risks and time associated with inundation of Boorea Street due to flood waters, and the probabilities of such events occurring. This information can then be used to inform how the site is accessed during periods of inundation and how this access can be managed within the risk-based framework included in the NSW Flood Risk Manual – The Policy and manual for the management of flood liable land (DPE 2023).
It is unacceptable, as the primary evacuation strategy, to expect people to escape from a flood on foot (also referred to as overland escape/overland access), especially with the high likelihood of ongoing poor weather conditions. Pedestrian evacuation is a backup strategy. The location of sensitive developments, whose populations are vulnerable in evacuation, needs to consider the consequences of these people being unable to evacuate for both the community and emergency services.	The Flood Hazard within Boorea Street at the access to the development site during both the 1% AEP and PMF storm event is noted to be Hazard Categorisation **H1**, which is considered "generally safe for people, vehicles and buildings".
The NSW SES recommends careful consideration of the proposal to locate a warehouse development on the flood prone site, with the associated flood risks.	It should be noted that the existing site comprises a functioning industrial warehouse, and both the updated CRC model and council's flood maps confirms that the development site is free of flooding in 1% AEP and has minor low hazard overland flow in the PMF.
'Shelter in place' strategy is not endorsed for flood management by the NSW SES for future development. Such an approach is only considered suitable to allow existing dwellings that are currently at risk to reduce their risk, without increasing the number of people subject to such risk. During flooding it is likely that there will be a reduced capacity for the relevant emergency service agencies to respond in these times. Even relatively brief periods of isolation, in the order of a few hours, can lead to personal medical emergencies that have to be responded to.	The modelling and model interrogation confirms that safe access and egress (Hazard Categorisation H1) can be achieved from the property to Boorea Street to the **east** and south-east, during both the 1% AEP and PMF events, as shown (Refer to **Figure A** below). A 'Shelter in place' strategy is not proposed as the primary emergency response, but noted as a feasible option noting the short period of restricted egress described above to the **west** of Boorea Street (i.e. at the Haslams Creek Culverts), or if there are other conditions that restrict access (eg climatic conditions like wind coupled with the heavy rainfall or traffic).

NSW SES COMMENTS	CRC RESPONSE
FIGURE A (EXTRACT FROM CUMBERLAND COUNCIL'S MAP 3)  	
<u>Principle 2 Decisions should be informed by understanding the full range of risks to the community.</u> Decisions relating to future development should be risk-based and ensure Emergency Management risks to the community of the full range of floods are effectively understood and managed. The proposed site is a low flood island, isolated by the 1% AEP flood and subsequently inundated. We recommend that the proposal is updated to clearly demonstrate how the full range of risks are to be managed.	CRC have conducted a detailed TuFLOW flood modelling suite for a full range of flooding events (50%, 20%, 5%, 1%, 0.5%, 0.2% AEP & PMF). The full suite of high-resolution flood output mapping (which allows for agencies to zoom to an appropriate level) is included in Appendix L2 of the updated Civil Engineering report. An assessment of the 0.2% AEP and 0.5% AEP was included as a proxy for the effect of climate change and is considered a conservative assessment for a 10% increase in flow to the 1% AEP event. The full range of flooding events have been interrogated and it has been concluded that the site have safe access and egress (Hazard Categorisation H1) achievable from the property to Boorea Street to the **east and south-east**, during both the 1% AEP and PMF events, as shown. Refer to **Figure A** above. A notable risk is that egress to the **west** (i.e. at the Haslams Creek Culverts)) along Boorea Street toward Olympic Drive would be impacted by breakout flows of

NSW SES COMMENTS	CRC RESPONSE
	>H1, from Haslam Creek, for short periods of time (1hour) in the 1% AEP event, however longer periods (7Hrs >H3 and 8.5hrs >H1) of restricted access, beginning at a point 75m north of the site access drive, would be present during a PMF event. Reference to the Table 1 of NSW Flood Risk Manual – The Policy and manual for the management of flood liable land (DPE 2023), shows that the probability of a 0.01% AEP (1:10,000 ARI) event being experienced once in an 80year period is 0.8% and twice is 0.003%. We note the definition of a PMF is not readily quantifiable to an AEP or ARI, however the 2005 Floodplain development manual notes a PMF could be between a 1:10,000 to a 1:10,000,000 ARI. As such the probabilities quoted above are noted to be upper bound probabilities. These figures further demonstrate the likeliness of a flood event which would result in access being restricted is extremely low, and so low that when considering the confirmed Hazard categorisation, the risk associated with these events is considered acceptable.
Principle 3 Development of the floodplain does not impact on the ability of the existing community to safely and effectively respond to a flood. The proposed development would increase the complexity of flood operations for the Cumberland City LGA, and directly transfer the risk to NSW SES for evacuation, resupply and potentially rescue. The assessment should address any impacts the development may have upon existing community emergency management arrangements for flooding.	It should be noted that the existing site comprises a functioning industrial warehouse, and both the updated CRC model and council's flood maps confirms that the development site is free of flooding in 1% AEP and has minor low hazard overland flow in the PMF. The assessment of the 1% AEP event confirms that Haslem's Creek Channel along the north-western side of the proposed estate development is unaffected by the proposed development. There is negligible effect on flood water local to the development. The TUFLOW Modelling completed by Costin Roe Consulting confirms there is no affectation of upstream, downstream or adjoining properties. Refer response to Principle 2 above. Noting the **short period of restricted egress** described above to the west of Boorea Street (i.e. at the Haslams Creek Culverts), or if there are other conditions that restrict access for example the mentioned road closures, shelter-in-place is feasible for all occupants of the facility if required.

NSW SES COMMENTS	CRC RESPONSE
Rescue may be required for the proposed development if the industrial area becomes isolated due to road closures. In addition, sewerage, power, medical or other emergencies may occur during flooding and require rescue operations.	This is noted and speaks further to the development of warning systems discussed in Section 4.4.1 of the NSW SES's Cumberland LGA Flood Emergency Sub Plan, which mentions that "(d) The State Government, in partnership with Local Government, is responsible for developing and maintaining flash flood warning systems for local catchments where required.".
Severe Weather Warnings will be the most likely form of advice about the potential for flood producing storms and rainfall in the Haslams Creek catchment. Business owners/operators must be weather aware and act early on publicly broadcast severe weather and flood warnings.	This is noted. Refer response to Principle 2 above. Refer to **Figure A** above depicting possible safe evacuation routes to either the Lidcombe Shopping Centre nearby or the Lidcombe Train Station.
Consideration should also be given to the impacts of localised flooding on evacuation routes. The evacuation route may be cut by localised flooding, which could see evacuation not completed in time. The problem of localised closure of roads due to inadequate stormwater capacity can be critical where the available warning and evacuation time is short. Within the Haslams Creek floodplain, key roads where access will be compromised by flooding include Parramatta Road and Olympic Drive. Flooding in the 1% AEP event can inundate the access to Lidcombe, creating a potential issue for emergency services. Multiple road closure locations on the access roads to the site are impacted by flash flooding. Shorter duration events may also produce flash flooding with limited warning time during intense rain events. In flash flood environments, floods with less than 6 hours warning, provision of a safe refuge above the limit of flooding (PMF) for infill development may be an advantage if the duration of flooding will be very short and the flood depth or velocity is high on or adjacent to the site.	Noting the **short period of restricted egress** described above to the west of Boorea Street (i.e. at the Haslams Creek Culverts), or if there are other conditions that restrict access for example the mentioned road closures, shelter-in-place is feasible for all occupants of the facility if required.
Principle 4 Decisions on redevelopment within the floodplain does not increase risk to life from flooding. Locating developments whose users are vulnerable during flooding, including in evacuation, in an area that needs to be evacuated within the available warning time results in a higher increase in risk of fatalities and demand on limited emergency management resources than if it were located in an area where it could be	CRC have conducted a detailed TuFLOW flood modelling suite for a full range of flooding events (50%, 20%, 5%, 1%, 0.5%, 0.2% AEP & PMF). The full suite of high-resolution flood output mapping (which allows for agencies to zoom to an appropriate level) is included in Appendix L2 of the updated Civil Engineering report.

NSW SES COMMENTS	CRC RESPONSE
easily evacuated in the time available or where evacuation is not required. It is useful for NSW SES to understand the compounding concurrent emergency management issues for a site when it has been referred for advice. Information can contribute to understanding what assets and populations have a flood risk and how this may impact on the NSW SES response capabilities and capacity.	The full suite of high-resolution flood output mapping (which allows for agencies to zoom to an appropriate level) is included in **Appendix L2** of the updated Civil Engineering report.
Principle 5 Risks faced by the itinerant population need to be managed.	
Principle 6 Recognise the need for effective flood warning and associated limitations It is important to note that there is currently no formal flood warning system available for the proposed area, which is subject to flash flooding. Therefore, there are challenges associated with flood planning, warning, evacuation, and response timing for any future development. Even with a local warning system, the more specific the warning requirement for individuals and sites becomes, the more difficult it is for the NSW SES to deliver warnings in the short time frames that may apply.	We understand that with no formal flood warning system available for the proposed area, that flood planning and evacuation for emergency services would be challenging. With a low-risk evacuation option from the site (to the east/south-east of the development site) available for all storm events to either the Lidcombe Shopping Centre or Lidcombe train station, as shown on Figure A (based on information available from CRC's updated flood modelling as well as referencing Cumberland Council's MAP 3), Self Managed Evacuation/Relocation is deemed to be available for all storm events up to the PMF. Road blocks would need to be considered. The development of warning systems discussed in Section 4.4.1 of the NSW SES's Cumberland LGA Flood Emergency Sub Plan, which mentions that "(d) The State Government, in partnership with Local Government, is responsible for developing and maintaining flash flood warning systems for local catchments where required.".
Principle 7 Ongoing community awareness of flooding is critical to assist effective emergency response.	

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10 November 2023

Tactical Group (Pty) Ltd
Attention: Mr Ebrahim Nateghi

email: enateghi@tacticalgroup.com.au

Re: 42 Boorea Street, Lidcombe, NSW (SSD-36464788)
Extreme Flood and Access Assessment

We provide this letter in relation to the proposed multi-level industrial development at the above property address. This letter is provided to accompany our response to the letter from NSW Environment and Heritage Group (EHG) dated 4 September 2023, referenced DOC23/743027, and forms an enclosure to our response letter **Co14411.01-12d.ltr,** and an appendix to our stormwater management report and associated civil engineering design drawings included in the EIS.

The intent of this assessment is to inform the users of the site of the potential risks and time associated with inundation of Boorea Street due to flood waters, and the probabilities of such events occurring. This information can then be used to inform how the site is accessed during periods of inundation and how this access can be managed within the risk-based framework included in the *NSW Flood Risk Manual – The Policy and manual for the management of flood liable land* (DPE 2023). This information can form part of further detailed site-specific Flood Management Plan requirements, which are expected to form part of the post approval documentation requirements for the facility.

As shown in **Figure 1**, the site is located on the north side of Boorea Street. The site access point is located 125m East of the Haslam Creek and Haslam Creek culverts at their crossing of the Olympic Drive and Boorea Street intersection. The level of Boorea Street at the site access point is noted to be approximately 2m higher than the level of Boorea Street at the Haslam Creek culverts. A direct, unobstructed, line of sight is available for persons leaving the subject property to the Haslam Creek culverts.

The Haslam Creek culverts are noted to be a triple cell 2.6m x 1.9m box culverts.

We also note that the in-ground street drainage system design ARI (per Council and TfNSW design requirements) is the 1:10 ARI (10% AEP), with allowance for overland flow to the 1:100 ARI (1% AEP). No design considerations for storm events greater than the 1% AEP would have been required to be considered within Boorea Street or the surrounding trunk drainage infrastructure, including Haslam Creek.

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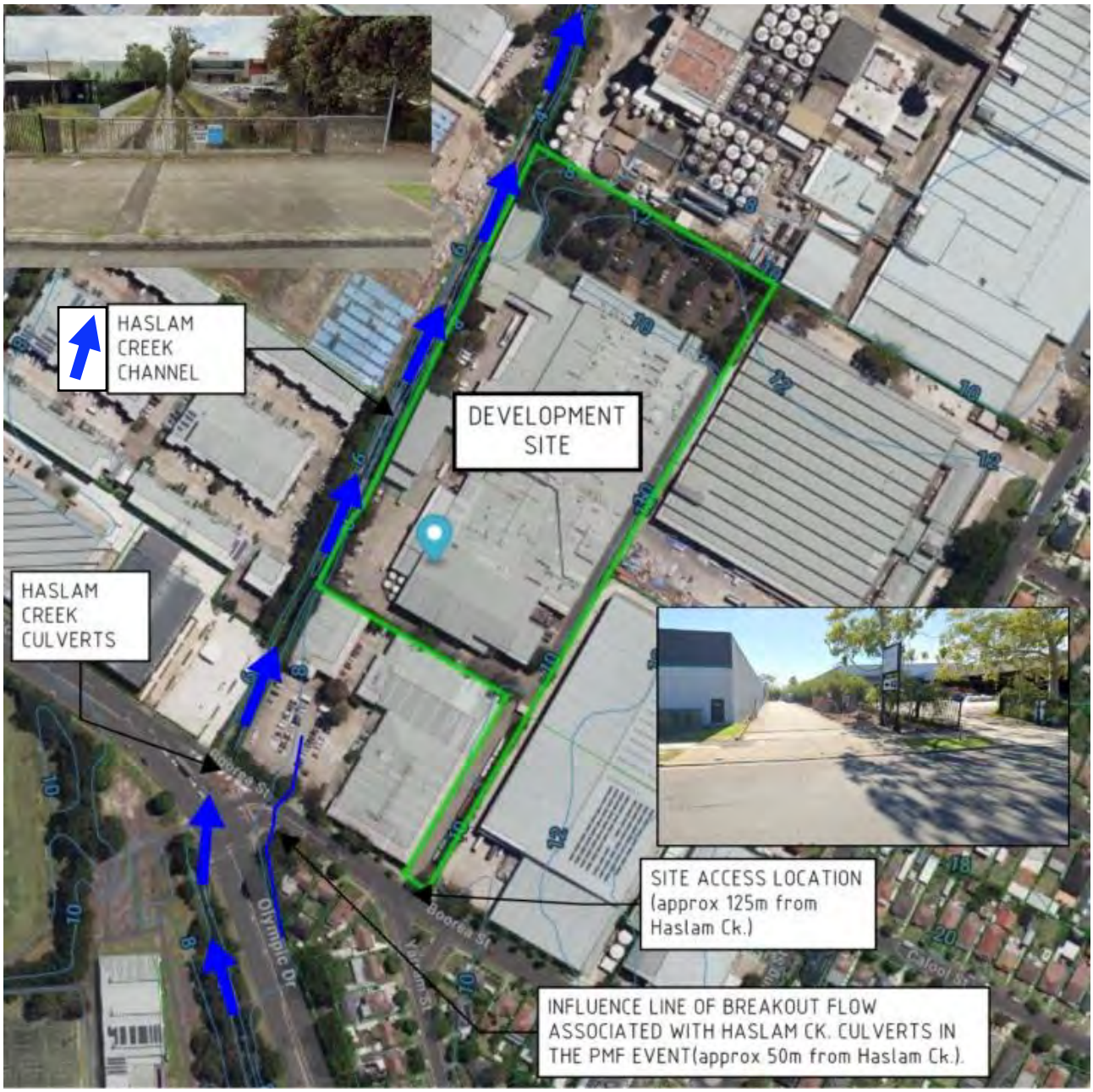


Figure 1. Site Location and Features

Flood Behaviour

The flooding behaviour identified in Boorea Street is associated with runoff within the local road network (namely flow with the kerb and gutter) generated from the road network and residential areas, coupled with breakout flows associated with overtopping water from Haslam Creek at the hydraulic constraint formed by the Boorea street culverts.

The modelling shows that runoff immediately in front of the site access point is a function of the runoff from the local catchment only (in both 1% AEP and PMF events) and that the influence of breakout flows

from the Haslam Creek culverts extend 50m from the Culverts (refer **Figure 1**). The flood influence associated with Haslam Creek, as such, is 75m from the site access point.

The contributing catchment to Boorea Street, and Haslam Creek, is relatively small. As such, the catchment has a short response time meaning the area is sensitive to short duration intense storm events and flash flooding. Flooding and overland flow will typically be coupled with intense heavy rainfall which dissipates quickly as the rainfall intensity reduces. The critical storm duration for the 1% AEP event in Haslams Creek is noted to be 12hours and the PMF to be 6hrs.

Modelling of the system has been completed based on a 50% blockage scenario (as per Council blockage policy) and an unblocked (0%) scenario. Noting the size of the culverts are triple cell 2.6m wide x 1.9m high, a 50% blockage during an actual flood event is considered unlikely. This being said, it would also be unlikely there would be no blockage.

Other councils (e.g. Blacktown LGA) adopt a sliding scale for blockage factors when assessing flooding, depending on the size of the culvert. For these culverts a value of 25% blockage would be more commensurate to the size of the system. Noting all of these items, for the purpose of these assessments and consideration to risk and hydraulic hazards, we consider the upper and low bound flood range and the appropriate access and hazard categorisation will be between the 0% and 50% blockage scenarios modelled.

We note that the blockage factors do not affect the flood depth or velocity at the property access point, however significantly affect the depth of flow and inundation of Boorea Street at the Haslam Creek culverts.

The periods of inundation are also noted to be coupled with extremely intense rainfall and climatic conditions. As the rainfall rate reduces so too does the inundation of the road.

The 1% AEP and PMF output are shown in **Figures 2** and **3** below.

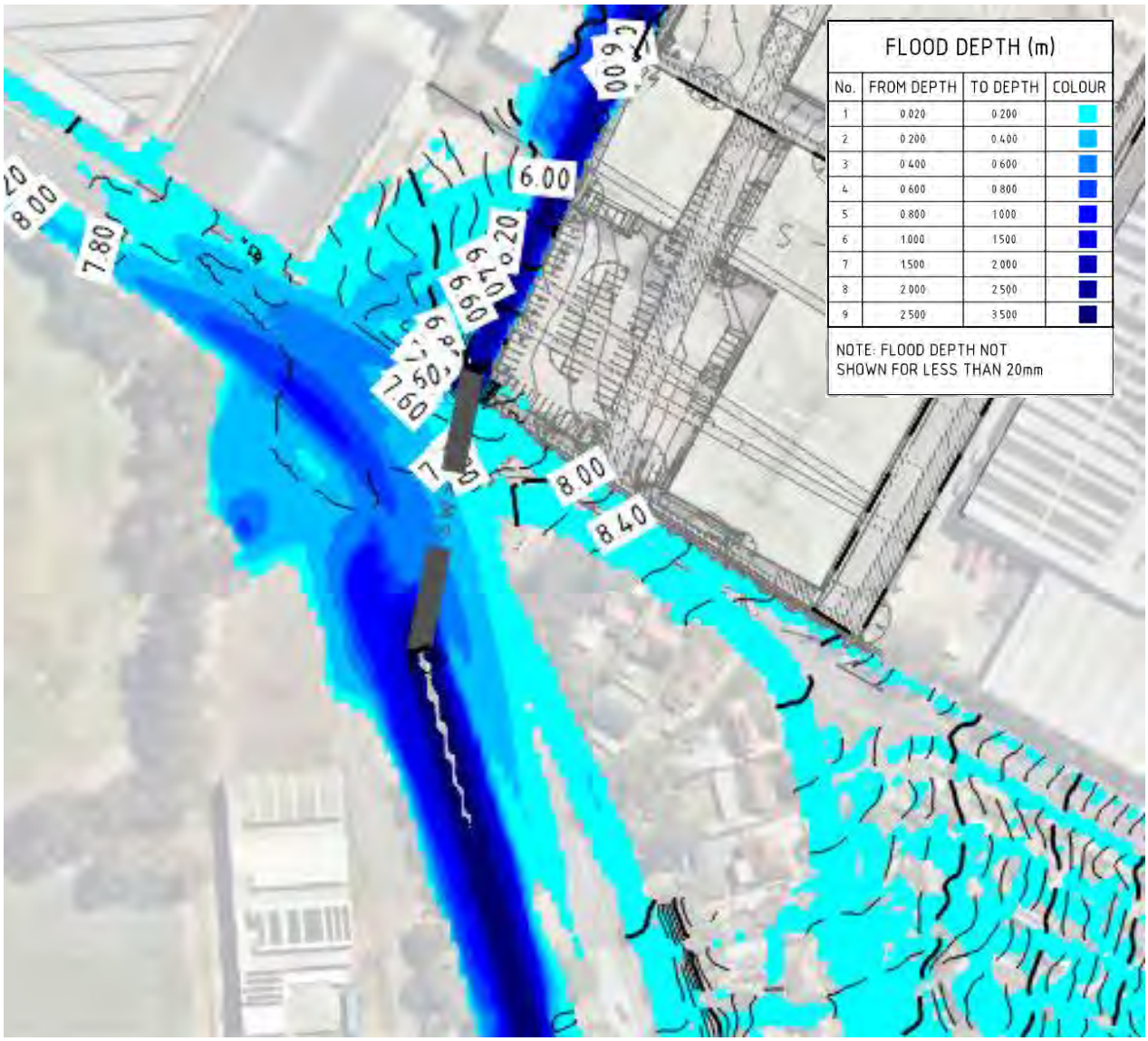


Figure 2. 1% AEP Flood Extent (50% blocked)

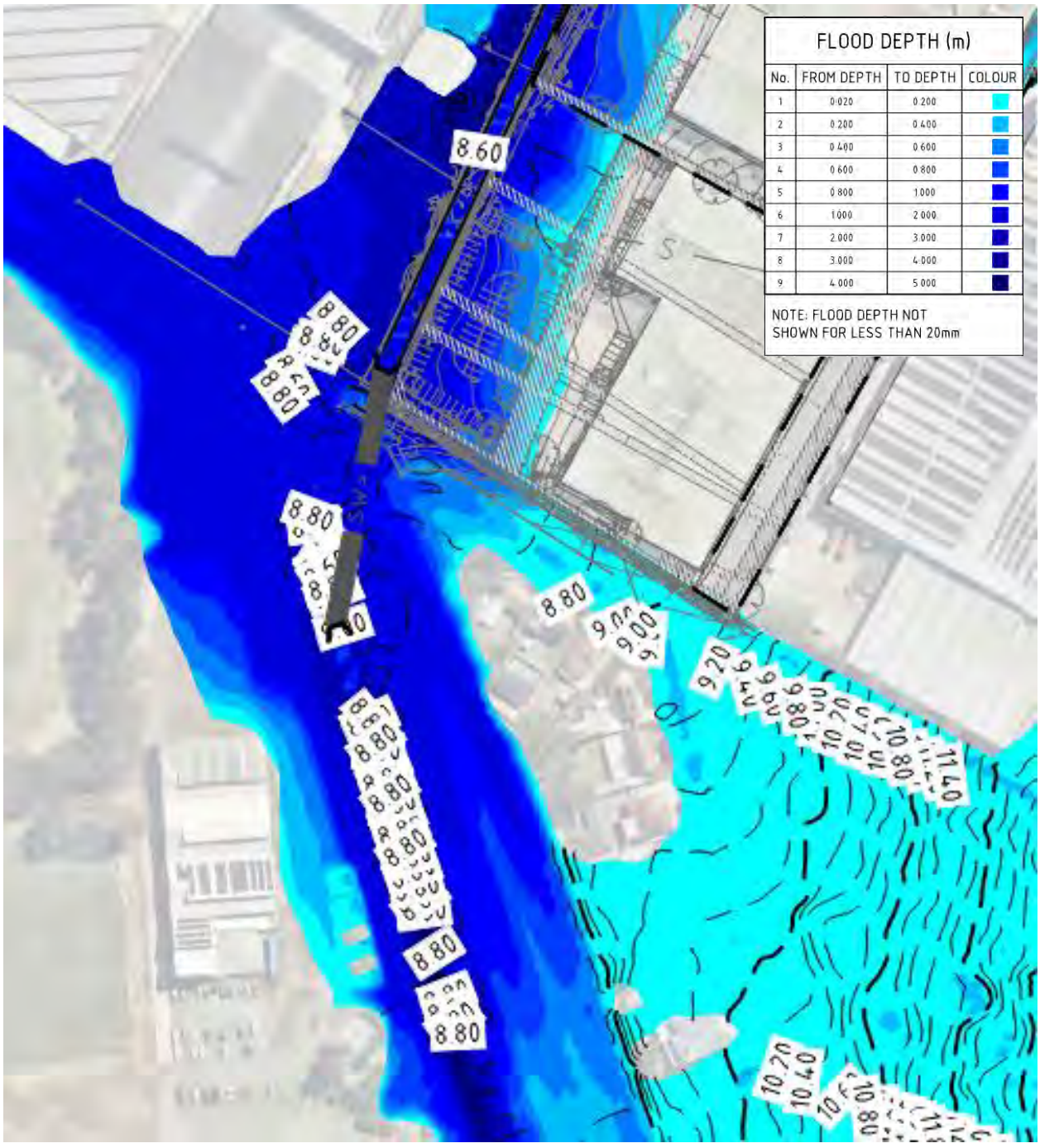


Figure 3. PMF Flood Extent (50% blocked)

Timing of Flooding and Hazard Categorisation.

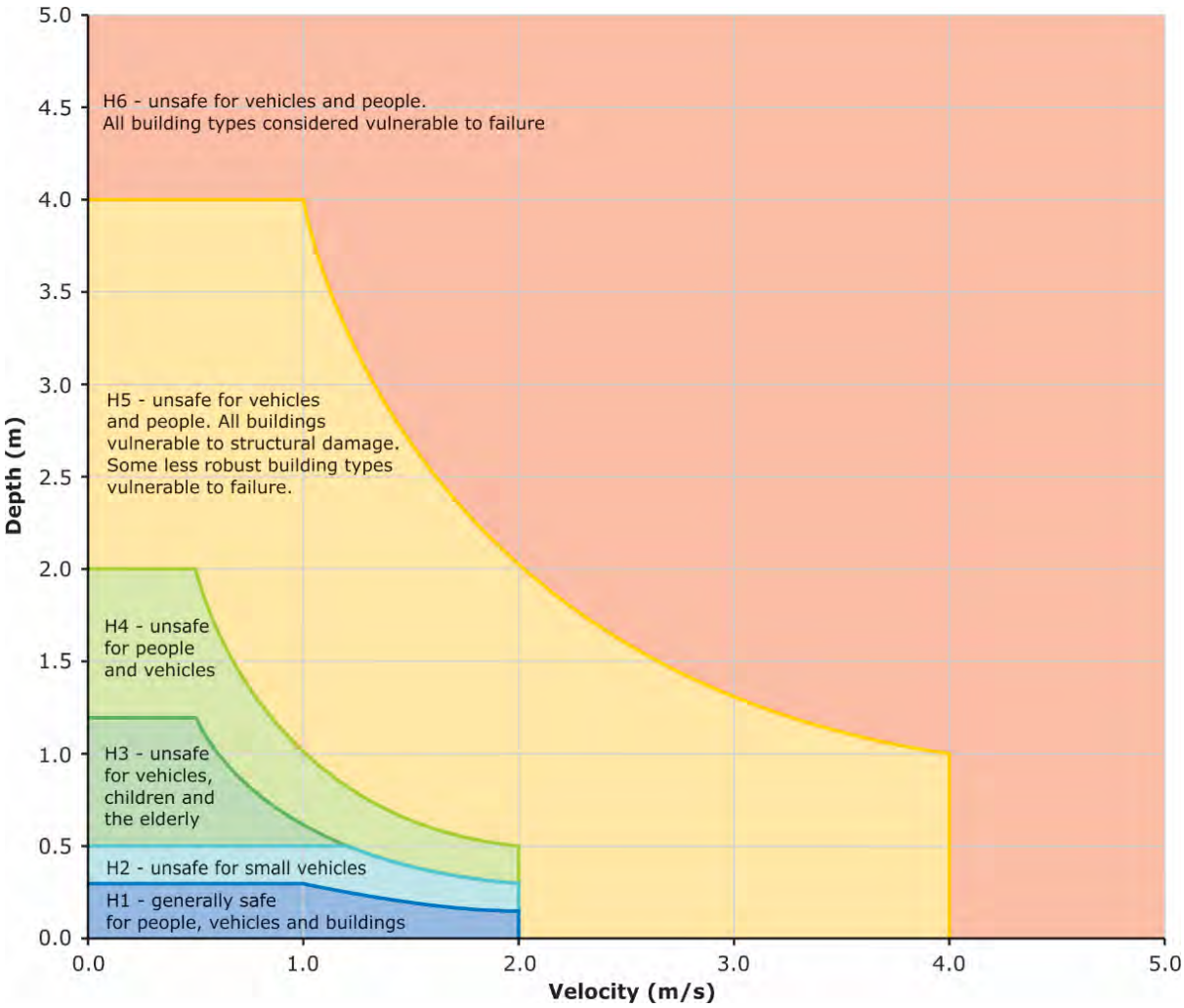


Figure 4. AR&R Hazard Categorisation

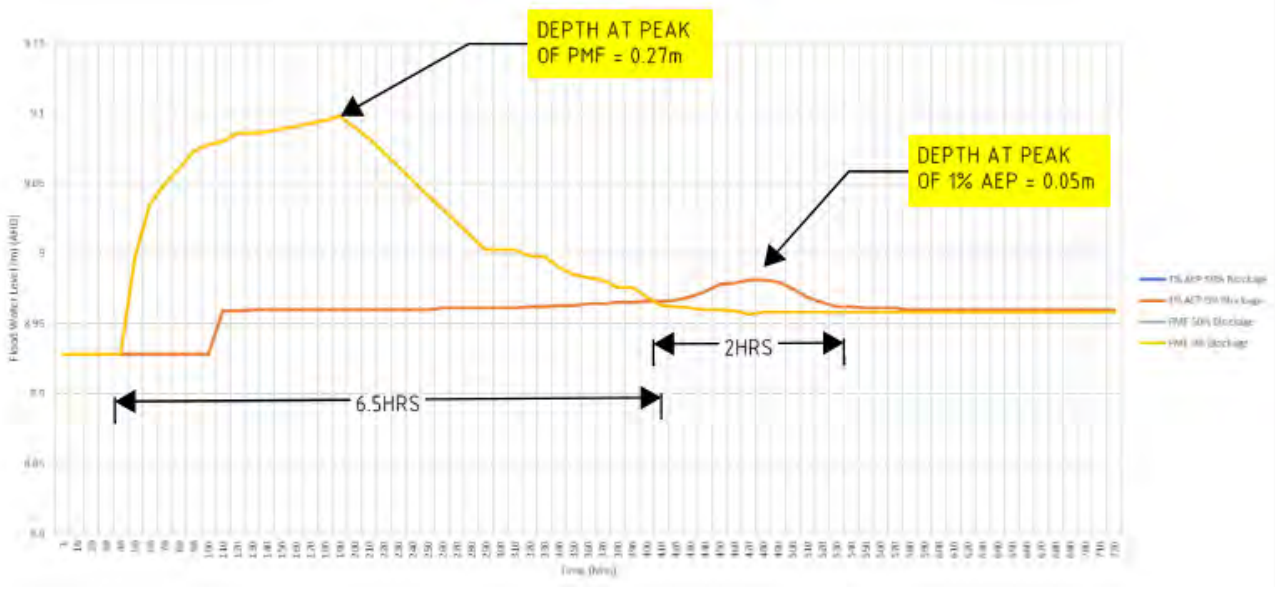


Figure 5. Stage Height Graph at Property Driveway

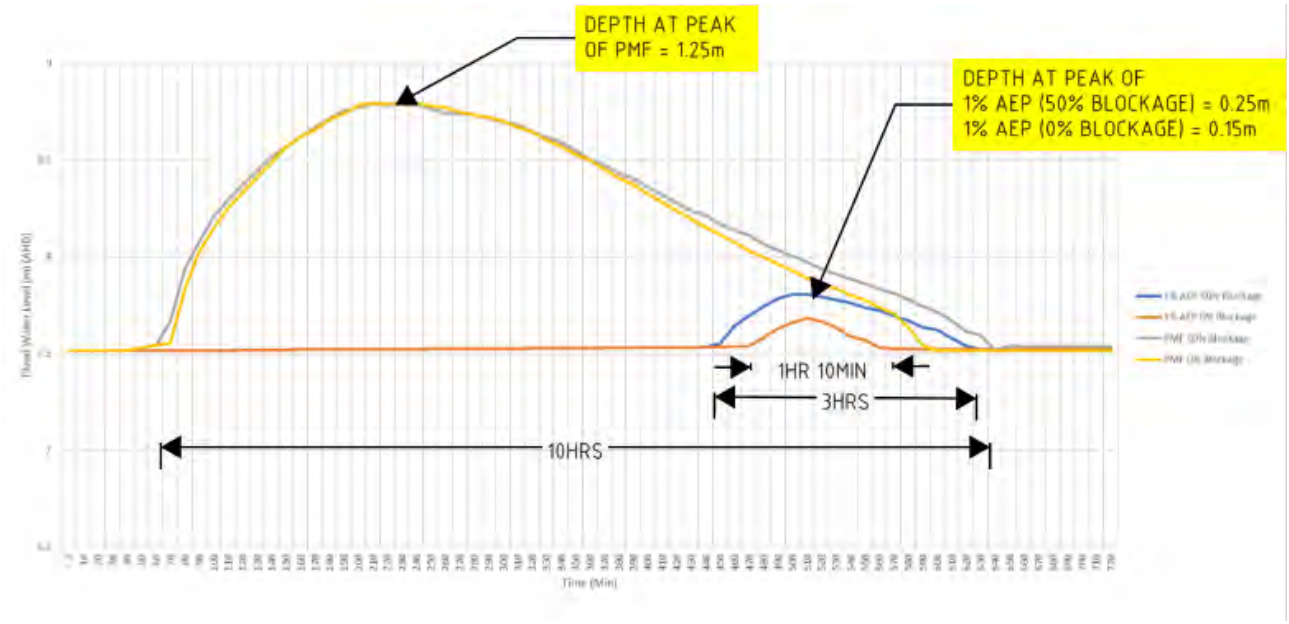


Figure 6. Stage Height Graph at Haslam Creek Culverts

Table 1. Duration of Inundation of Boorea Street 1% AEP (50% Blocked)

Location	Duration of Inundation (Hrs)	Duration of Inundation >H1 (Hrs)	Duration of Inundation >H3
Property Access	2	0	0
Haslam Ck.	3	1	0

Table 2. Duration of Inundation of Boorea Street PMF (50% Blocked)

Location	Duration of Inundation (Hrs)	Duration of Inundation >H1 (Hrs)	Duration of Inundation >H3
Property Access	6.5	0	0
Haslam Ck.	10	8.5	7

Review of **Figures 5 & 6**, and **Tables 1** and **2**, in conjunction with earlier figures and discussion shows that access from the site to Boorea Street can be achieved safely (Hazard <H1) in both the 1% AEP and PMF events. Access north along Boorea Street toward Olympic Drive would be impacted by breakout flows of >H1, from Haslam Creek, for short periods of time (1hour) in the 1% AEP event, however longer periods (7Hrs >H3 and 8.5hrs >H1) of restricted access, beginning at a point 75m north of the site access drive, would be present

during a PMF event. Blockage factors applied to the culverts have little influence on the timing or depth of the inundation of Boorea Street at Haslam Creek.

The modeling and model interrogation confirm that safe access can be established from the property to Boorea Street in the east and southeast directions during both the 1% AEP and PMF events, with potential safe evacuation routes available to either the Lidcombe Shopping Centre or Lidcombe Train Station.

In addition to the information above, it's worth noting that the primary strategy employed by the NSW SES for managing populations at risk of flooding is evacuation. Please refer to **Figure 7** below, which illustrates the potential safe evacuation routes to either the Lidcombe Shopping Centre or the Lidcombe Train Station.

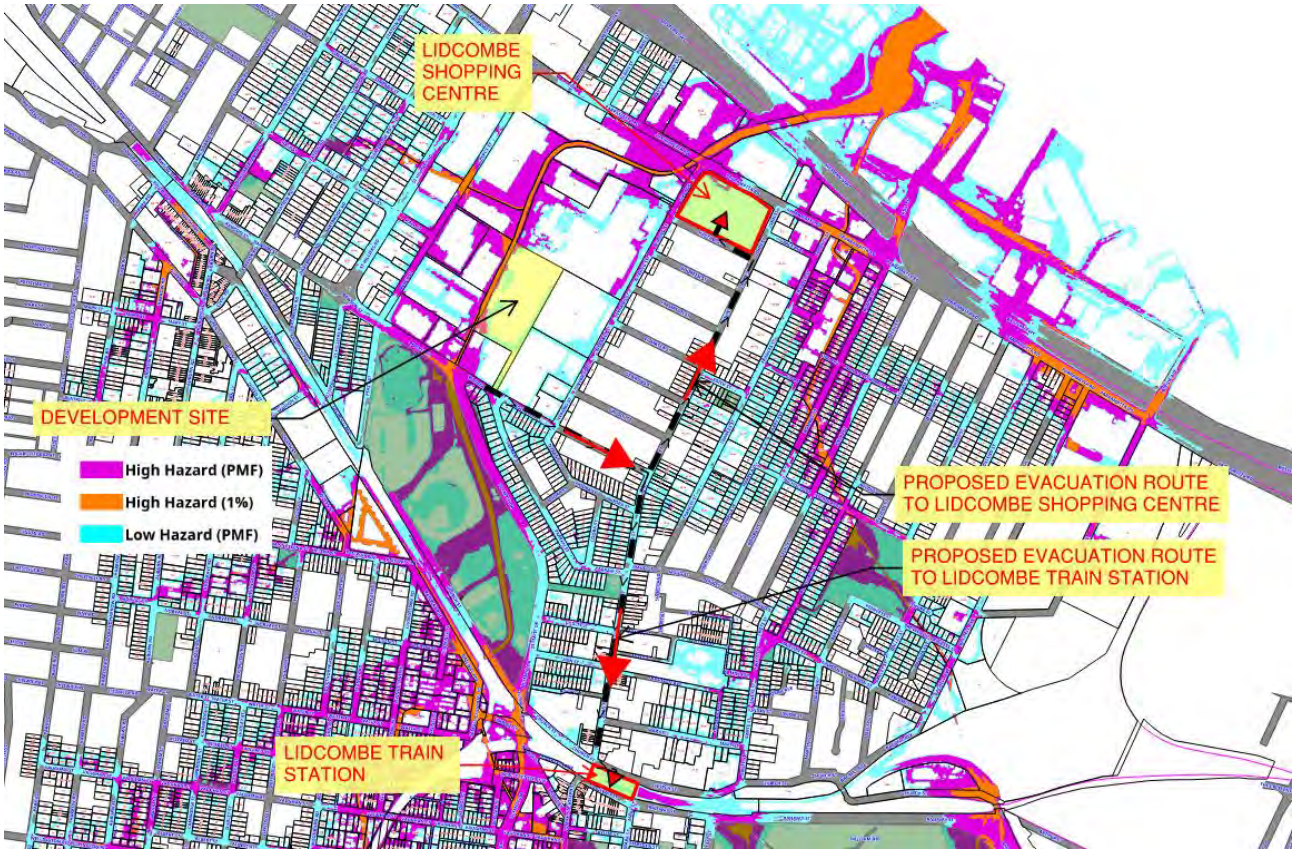


Figure 7. Potential flood evacuation routes to Lidcombe Shopping Centre or Lidcombe Train Station (Shown on an excerpt from Cumberland Council's MAP 3)

Flood Event Likelihood

Reference to the *Table 1* of *NSW Flood Risk Manual – The Policy and manual for the management of flood liable land* (DPE 2023), included as **Figure 8** below, shows that the probability of a 0.01% AEP (1:10,000 ARI) event being experienced once in an 80year period is 0.8% and twice is 0.003%.

We note the definition of a PMF is not readily quantifiable to an AEP or ARI, however the 2005 Floodplain development manual notes a PMF could be between a 1:10,000 to a 1:10,000,000 ARI. As such the probabilities quoted above (per **Figure 8**) are noted to be upper bound probabilities.

These figures further demonstrate the likeliness of a flood event which would result in access being restricted is extremely low, and so low that when considering the confirmed Hazard categorisation, the risk associated with these events is considered acceptable.

Table 1 Chance of encountering a given sized flood one or more times in 80 years

Annual exceedance probability %	Average recurrence interval (1 in x years)	Chance of experiencing in an 80-year period	
		at least once %	at least twice %
20	5	100	100
10	10	99.9	99.8
5	20	98.4	91.4
2	50	80.1	47.7
1	100	55.3	19.08
0.5	200	33	6.11
0.2	500	14.8	1.14
0.1	1,000	7.69	0.3
0.01	10,000	0.8	0.003

Figure 8. Table 1 of *NSW Flood Risk Manual – The Policy and manual for the management of flood liable land* (DPE 2023)

Conclusion

A detailed review of flood depth, timing and hazard has been undertaken in relation to the access to the proposed development. The assessment has been completed with consideration to the risk-based framework included in the *NSW Flood Risk Manual – The Policy and manual for the management of flood liable land* (DPE 2023).

The review shows that safe access (Hazard Categorisation <H1) is available to the site in both the 1% AEP and PMF events. Safe evacuation routes to the east and south-east of the site's access are available and occupants would be able to move to PMF free areas, at the direction of the SES or other appropriate authority.

The hazard categorision of the overland flow at the Haslam Creek culverts, within Boorea Street, results in up to H5 hazard levels for a period of 8-9hours, and as such use of this direction as an escape route would be restricted during the infrequent/ low probability PMF event. Only minor restrictions are noted in this area in the 1% AEP event.

This assessment confirms appropriate and acceptable access to the development can be managed during periods of storm and overland flows, noting the low hazard at the driveway to the property and that driveway being subject to local overland flows and not influenced by breakout flow from Haslam Creek.

The information in this letter can be included in the preparation of a detailed site-specific Flood Management Plan, which is expected to form part of the post approval documentation requirements for the facility.

We trust the information contained in this letter meets your current requirements. Please contact the undersigned if further information or clarification is necessary.

Yours faithfully,

COSTIN ROE CONSULTING PTY LTD

MARK WILSON MIEAust CPEng NER
Director

A-28 Site Environmental Emergency Response Plan

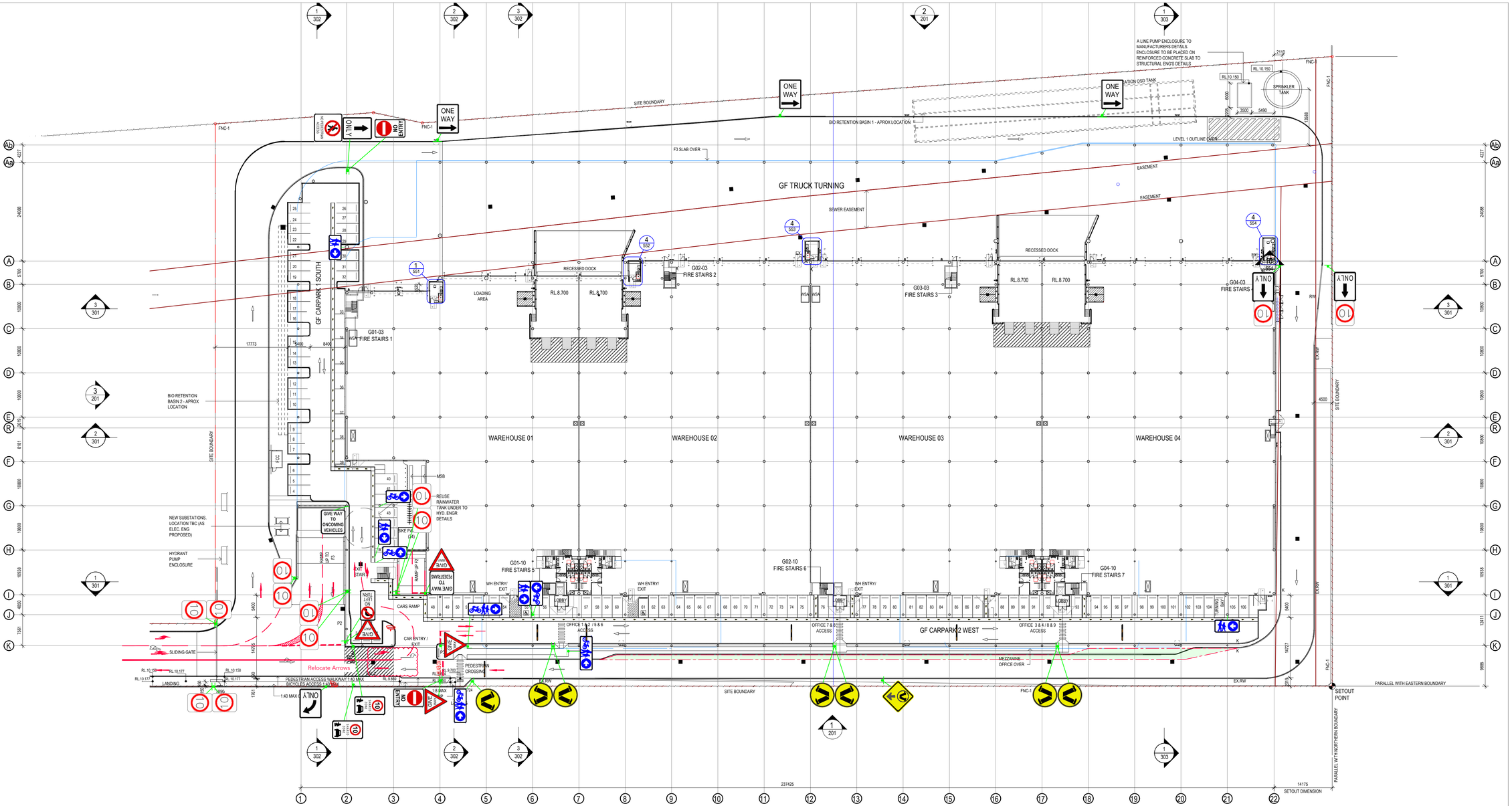
ADCO Constructions

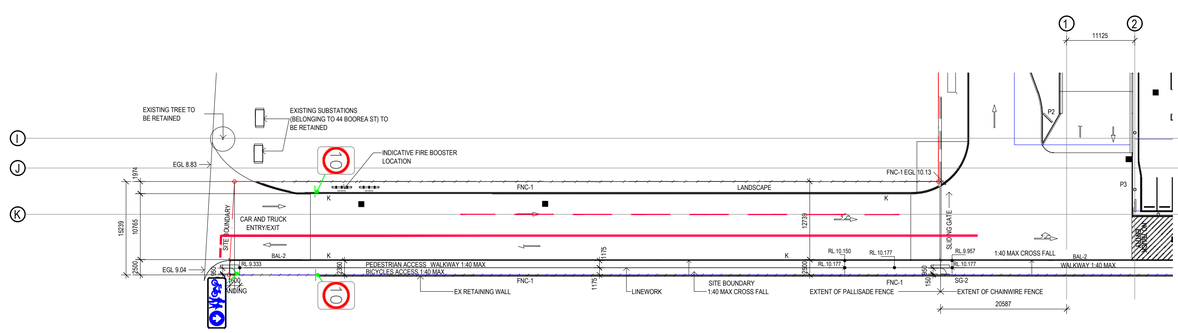
Potential emergency	What to do?	Relevant authorities and persons
Injury caused by: • Fire • Explosion • Machinery accidents • Minor injuries	• For serious injuries, call an ambulance. You should also have the contact details of the nearest doctor, medical centre, and hospital. • Immediately inform the site first aid officer. • Follow the procedures as detailed in the Site Safety Plan. • For major injuries, contact the site manager or project manager.	• Emergency services • Nearest doctor • Medical centre • Site Manager • Project Manager
Fire **Fire at the diesel tank** **Fire at any of the machineries** **Fire caused by vandalism**	• Evacuate all personnel to a safe area immediately. • Call the fire brigade (emergency services). • If the fire is likely to damage neighbouring property, inform the adjacent residents. • Follow the procedures as detailed in the Site Safety Plan. • For major fire emergencies, contact the site manager or project manager. • Inform terminal security. **Note:** fire extinguishers are located throughout the site as detailed in the Emergency Evacuation Map.	• Emergency services • Site Manager • Project Manager • Adjacent residents
Spills management and contaminated soils. **Major spills:** • Spill or release of diesel fuel or oil • Spill or release of other hazardous chemicals or material.	For major spills (defined as a spill that is likely to have direct environmental consequences): • Immediately call the Fire Brigade and notify the project manager. • Identify the source of the spill. • Refer to the Safety Data Sheet (SDS) and evaluate the hazards of the material.	• Emergency services (fire brigade) • HSE Manager • Site Manager and Project Manager • EPA

Potential emergency	What to do?	Relevant authorities and persons
Minor site spills **Acid sulphate soils**	• If the material is dangerous, evacuate the site immediately and notify all neighbours. • If it is safe to do so, halt the source of the spill immediately. • Contain the spill and control its flow. • Block storm water drains downstream of the spill. • EPA and local council must be notified about any spills that are likely to threaten the environment. • Minor spills (defined as spills which can be contained and rectified correctly without the need of external services), shall be contained, and rectified with the site spill kit and disposed of correctly. Superintendent to be notified via incident report. • Reported to the Site Manager. • Where acid sulphate soils are discovered, the spoil shall not be removed from site; subsequent notification and testing will follow.	• Emergency services (fire brigade) • HSE Manager • Site Manager and Project Manager • EPA
Heavy rainstorm and flood beyond the capacity of the sediment and erosion controls on-site or failure of the sedimentation control measures.	• Contain/ minimise the flow. • Contact council immediately. • Investigate reasons for failure and prepare an incident report. • Contact the Project Manager.	• Council • Site manager • Project Manager
Discovery of items of conservation value (e.g., flora and fauna, heritage).	Fence-off the area as 'no go' zone and contact the site manager or project manager immediately for further action.	• Site Manager • Project Manager
Discovery of contaminated material on site (e.g., underground fuel storage tanks).	Fence-off the area as 'no go' zone and contact the site manager or project manager immediately for further action.	• Site Manager • Project Manager

A-29 On-Site Traffic Control Plans

ptc. consultants (Traffic Engineering Consultant)





9	13/05/24	UPDATED ARCH PLANS	SW	SW/JJ
8	29/04/24	UPDATED ARCH PLANS	SW	SW/JJ
7	12.04.24	FOR INFORMATION	JA.I	SW
6	04.04.24	FOR INFORMATION	SW/JJ	SW/JJ
5	26/03/24	UPDATED ASSESSMENT	SW	SW/JJ
P4	19/02/24	UPDATED ASSESSMENT	SW	SW/JJ
P3	04/02/24	UPDATED ASSESSMENT	SW	SW/JJ
REV	DATE	DESCRIPTION	DRAWN	REVIEWED

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

DRAWING KEY

PROJECT
LIDCOMBE MULTI-LEVEL WAREHOUSE

DRAWING TITLE
GROUND FLOOR SIGNAGE DESIGN PLAN

CLIENT	ADCO
DRAWING #	TRA-DWG-12-0G-S1
PROJECT #	23-0799
SCALE	1 : 500

PRELIMINARY
REV 8

WAREHOUSE 01
WAREHOUSE 02
WAREHOUSE 03
WAREHOUSE 04
G01-03 FIRE STAIRS 1
G02-03 FIRE STAIRS 2
G03-03 FIRE STAIRS 3
G04-03 FIRE STAIRS 4
FIRE STAIRS 5
FIRE STAIRS 6
FIRE STAIRS 7
OFFICE 01
OFFICE 02
OFFICE 03
OFFICE 04
DECK
RL 13.600
F1 PARKING (8)
9 2.5x5.4m spaces
9 motorbike spaces
Change ped path to zebra crossing
RAMP FROM F2
RAMP UP
EXIT STAIR 8
SITE BOUNDARY
F2 OVER
RAMP UP TO F3
RAMP UP FROM MEZZ DECK
OFFICE 1 TOP COVER
OFFICE 2 TOP COVER
OFFICE 3 TOP COVER
OFFICE 4 TOP COVER
206-03 FIRE STAIRS 5
209-03 FIRE STAIRS 6
209-03 FIRE STAIRS 7
OFFICE UNDER
9 2.5x5.4m spaces
Clash with column covert to small car space & adjust ped path
65 2.5x5.4m spaces
ACCESS TO OFFICE 5&6
F2 CARPARK
ACCESS TO OFFICE 7&8
ACCESS TO OFFICE 9&10
FLOOR
6.1m aisle width required
FLOOR OVER

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
9	13/05/24	UPDATED ARCH PLANS	SW	SW/JJ
8	29/04/24	UPDATED ARCH PLANS	SW	SW/JJ
7	12.04.24	FOR INFORMATION	JAJ	SW
6	04.04.24	FOR INFORMATION	SW/JJ	SW/JJ
5	26/03/24	UPDATED ASSESSMENT	SW	SW/JJ
P4	19/02/24	UPDATED ASSESSMENT	SW	SW/JJ
P3	04/02/24	UPDATED ASSESSMENT	SW	SW/JJ

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

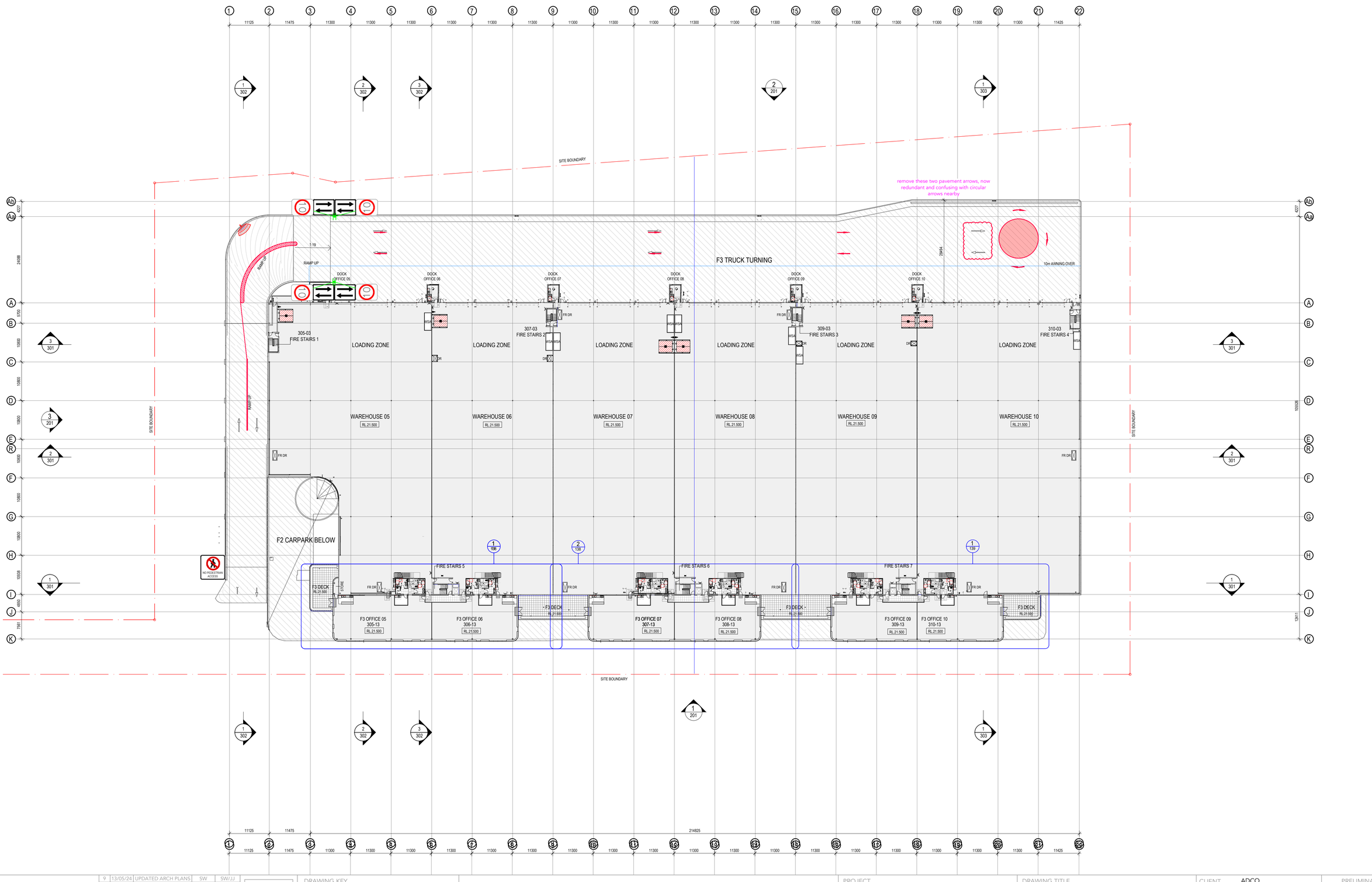
DRAWING KEY

PROJECT
LIDCOMBE MULTI-LEVEL WAREHOUSE

DRAWING TITLE
PRELIMINARY MEZZANINE & LEVEL 1
SIGNAGE DESIGN PLAN

CLIENT	ADCO
DRAWING #	TRA-DWG-12-0M-S1
PROJECT #	23-0799
SCALE	1 : 500

PRELIMINARY
REV 8



ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
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P4	19/02/24	UPDATED ASSESSMENT	SW	SW/JJ
P3	04/02/24	UPDATED ASSESSMENT	SW	SW/JJ

DRAWING KEY

PROJECT
LIDCOMBE MULTI-LEVEL WAREHOUSE

DRAWING TITLE
GROUND FLOOR SIGNAGE DESIGN PLAN

CLIENT	ADCO
DRAWING #	TRA-DWG-12-01-S1
PROJECT #	23-0799
SCALE	1 : 500

PRELIMINARY
REV 8

A-30 Cumberland City Council Consultation

ADCO Constructions (Head Contractor)

Paul Cassimatis

From: Thang Tran <thang.tran@cumberland.nsw.gov.au>
Sent: Wednesday, 27 March 2024 2:38 PM
To: Paul Cassimatis
Cc: Brandon Provenzano; Ahmed Farzan; Elizabeth Creswell; Matthew Wilkinson; Sarah Hussein
Subject: RE: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]
Attachments: RDA2024_0293 - 42 BOOREA ST LIDCOMBE.pdf

Hi Paul,

The CTMP has been assessed and approved by Council.

Please find the approval with conditions attached.

Regards

CUMBERL
CITY COU

THANG TRAN
TRAFFIC AND TRANSPORT ENGINEER

16 Memorial Avenue, PO Box 42 Merrylands NSW 2160
T +61 2 8757 9534
E thang.tran@cumberland.nsw.gov.au
W www.cumberland.nsw.gov.au

From: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Sent: Monday, March 25, 2024 4:51 PM
To: Thang Tran <thang.tran@cumberland.nsw.gov.au>
Cc: Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Matthew Wilkinson <mwilkinson@adcoconstruct.com.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Subject: [EXTERNAL] RE: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

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Thanks Thang,

Just confirming the below invoice has been paid by Nicholas Napoli our Project Manager (attached confirmation) on Saturday morning (23/03) for the **Lidcombe Multi Storey Warehouse.**

Please let me know if you need anything on our end further.

We would like to receive a response this week if possible so we can lodge the overall CEMP to Department of Planning before the long weekend.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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From: Thang Tran <thang.tran@cumberland.nsw.gov.au>
Sent: Friday, March 22, 2024 4:05 PM
To: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Cc: Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Subject: FW: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

Hi Paul,

Council has received the Construction Traffic Management Plan (CTMP) for Condition B1. Council Officers are in the process of reviewing it.

As per Council's adopted Fees and Charges there is an assessment fee of $374 payable to Council for assessment of the CTMP.

Council's Customer Service will forward an invoice to you to pay shortly.

If you have further enquiry, please contact me on 8757 9534.

Regards

CUMBERL
CITY COU

THANG TRAN
TRAFFIC AND TRANSPORT ENGINEER

16 Memorial Avenue, PO Box 42 Merrylands NSW 2160
T +61 2 8757 9534

E thang.tran@cumberland.nsw.gov.au
W www.cumberland.nsw.gov.au

From: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Sent: Tuesday, March 12, 2024 5:33 PM
To: Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>
Subject: [EXTERNAL] FW: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

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Afternoon Sarah,

Earlier this afternoon, I spoke with a representative over the phone at Cumberland City Council and we understand you are managing the request for the **Cumberland City Council Review** of the **CTMP** on our **Lidcombe MSW Project.**

If you require any information from our end, please feel free to reach out. Please note that due to file size, the CTMP is accessible via. the below DropBox Link:

Link to ADCO CTMP & Drivers Code of Conduct: https://www.dropbox.com/scl/fo/gy0n6vl4wixln836uaz9g/h?rlkey=dzkdr89i95gkxx9dlal0bmiwz&dl=0

In the background, we've already prepared our overall CEMP a couple of weeks ago, intended for submission to the Department of Planning.

Our client, Tactical Group & Hale Capital, has conducted a preliminary review, and we are currently incorporating their feedback.

We would greatly appreciate receiving your review, along with any commentary or endorsement, by the end of the week if possible.

Additionally, please refer to the attached document for the request regarding the **Cumberland City Council Review** of the **CNVMP**.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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immediately. ADCO does not guarantee the integrity of emails or attached files. The views or opinions expressed are the author's own and may not reflect the views or opinions of ADCO.

From: Paul Cassimatis
Sent: Monday, March 4, 2024 12:58 PM
To: council@cumberland.nsw.gov.au
Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Gary Petersen <gpetersen@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Hedieh Tizrou <htizrou@adcoconstruct.com.au>
Subject: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

Dear City of Cumberland Council,

I hope this email finds you well.

Could this email please be directed to the **City of Cumberland Transport / Traffic Department**.

I would like to take this opportunity to introduce myself as one of the Senior Design Managers working for ADCO Constructions on the **Lidcombe - Boorea Street Warehouse & Distribution Centre Project [Approved SSD-36464788].**

I have also copied in our Project Manager (Nicholas Napoli) and our Site Manager (Gary Petersen) whom will be working on this project for your reference.

In line with the below SSDA Consent Condition regarding our Future Development (Lidcombe Multi-Storey Warehouse Project - SSD-36464788), please find attached our **Construction Traffic Management Plan** (prepared for ADCO by ptc. consultants) for Council Consultation - your review and comment.

Link to ADCO CTMP & Drivers Code of Conduct: https://www.dropbox.com/scl/fo/gy0n6vl4wixln836uaz9g/h?rlkey=dzkdr89i95gkxx9dlal0bmiwz&dl=0

Boorea Street Warehouse & Distribution Centre Project

SSDA Reference: SSD-36464788
Relevant Condition: B1

Condition B1:
Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary.
The plan must form part of the CEMP required by condition C2 and must:

a) be prepared by a suitably qualified and experienced person(s);
b) be prepared in consultation with Council;
c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction;
d) include details of:
    (i) heavy vehicle types, routes, access and parking arrangements;
    (ii) the strategies that would be implemented to minimise the number of construction workers who will drive to the site; and
    (iii) any potential impacts to general traffic, cyclists, and pedestrians within the vicinity of the site from construction vehicles during the construction of the development;
e) include a Driver Code of Conduct and Induction Program to:
    (i) minimise the impacts of earthworks and construction on the local and regional road network;
    (ii) minimise conflicts with other road users;
    (iii) minimise road traffic noise; and
    (iv) ensure truck drivers use specified routes;

f) include a program to monitor the effectiveness of these measures; and
g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.

Link to Planning Portal: https://www.planningportal.nsw.gov.au/major-projects/projects/boorea-street-warehouse-distribution-centre

---

Should you have any further inquiries or require additional information, please do not hesitate to contact us.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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CUMBERLAND
CITY COUNCIL

Ref: RDA2024/0293

27 March 2024

ADCO Constructions Pty Ltd
Level 2
7-9 West Street
NORTH SYDNEY NSW 2060

Dear Sir/ Madam,

Subject:	**Approval to Construction Traffic Management Plan (CTMP)**
Application No:	RDA2024/0293
Property Address:	42 Boorea Street LIDCOMBE NSW 2141
Determination Date:	27 March 2024

Under Section 138 of the Road Act, 1993, approval is hereby granted to the proposed CTMP subject to the following conditions:

- That all heavy vehicles must follow the truck route as indicated in the CTMP.
- That there will not be any temporary partial road and footpath closures fronting the development site during the construction period. In the event a temporary partial road and footpath closure is required (i.e. stand plant permit, concrete pour permit, utility connection works, driveway & footpath reconstruction works, etc.), then prior to undertaking any closure, the applicant shall submit the Temporary Roadside/lane Closure Application Form to Council for approval.
- That all deliveries such as steel, concrete pump, etc. shall be undertaken on site and not on the road or footway, unless otherwise approved by Council.
- That there will not be any construction materials be placed on the public road reserve without approval from Council.
- That if the site required a 'Works Zone' fronting the development site with 'Works Zone' signs, then a separate application must be submitted and subject to approval from the Cumberland Traffic Committee. It is advised that any such application be received at least 6 weeks in advance.
- That safe pedestrian access is maintained at all times.
- That all trucks shall enter/exit safely with adequate sight distance. Any traffic controllers will require a separate application and shall be submitted to Council for approval. It is advised that any such application be received with adequate notice to allow for Council processing times.

- That any damage to road pavement or footpath caused by construction activities shall be repaired by the applicant in no later than four weeks after the damage.

- That the contractors shall not bag or block any traffic signs in this area without Council or Police approval.

- That there shall be no queuing on public roads by trucks deliveries to the construction site, unless otherwise approved by Council.

- That any traffic or public issues that arise during the undertaking of the works shall be immediately notified to the Police and Council.

Council reserves the right to revoke an approval at any time.

Should you have any enquiries regarding this matter, please contact Thang Tran on 8757 9534 during normal business hours, Monday to Friday and quote reference RDA2024/0293.

Yours faithfully,

Thang Tran
Traffic and Transport Engineer

Paul Cassimatis

From: Thang Tran <thang.tran@cumberland.nsw.gov.au>
Sent: Wednesday, 24 April 2024 3:54 PM
To: Paul Cassimatis; Sarah Hussein
Cc: Nicholas Napoli; Brandon Provenzano; Ahmed Farzan; Elizabeth Creswell; Matthew Wilkinson
Subject: RE: 240422 - Lidcombe Multi-Storey Warehouse - On-Site Traffic Control Plan [SSD-36464788 | Condition B6 b)]

Hi Paul,

I have reviewed the On-Site Traffic Control Plan (OSTCP) and in general Council have no objection to the proposed OSTCP.

Regards

CUMBERL
CITY COU

THANG TRAN
TRAFFIC AND TRANSPORT ENGINEER

16 Memorial Avenue, PO Box 42 Merrylands NSW 2160
T +61 2 8757 9534
E thang.tran@cumberland.nsw.gov.au
W www.cumberland.nsw.gov.au

From: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Sent: Monday, April 22, 2024 1:34 PM
To: Thang Tran <thang.tran@cumberland.nsw.gov.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Matthew Wilkinson <mwilkinson@adcoconstruct.com.au>
Subject: [EXTERNAL] 240422 - Lidcombe Multi-Storey Warehouse - On-Site Traffic Control Plan [SSD-36464788 | Condition B6 b)]

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Afternoon Thang,

Tried giving you a call this afternoon regarding the below On-Site Traffic Control Plans for our Lidcombe MSW Project (SSD-36464788).

Whenever you're available this week please give me a call back anytime. More than happy to go over the plans with you.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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From: Paul Cassimatis
Sent: Friday, April 19, 2024 7:53 AM
To: Thang Tran <thang.tran@cumberland.nsw.gov.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Matthew Wilkinson <mwilkinson@adcoconstruct.com.au>
Subject: RE: 240409 - Lidcombe Multi-Storey Warehouse - On-Site Traffic Control Plan [SSD-36464788 | Condition B6 b)]

Good morning Thang & Sarah,

I hope you're both doing well.

I'm just following up on the below On-Site Traffic Control Plan (Condition B6 - SSD-36464788) to see if you've had a chance to review it yet.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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From: Paul Cassimatis
Sent: Friday, April 12, 2024 5:56 PM

To: Thang Tran <thang.tran@cumberland.nsw.gov.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Matthew Wilkinson <mwilkinson@adcoconstruct.com.au>
Subject: RE: 240409 - Lidcombe Multi-Storey Warehouse - On-Site Traffic Control Plan [SSD-36464788 | Condition B6 b)]

Evening Thang & Sarah,

Just an update with the below submission, we have amended plans to include some extra over provisions and have now updated.

Could you please review the attached plans and please advise if they are satisfactory. Please don't hesitate to call me on my mobile (0411 458 502) or reply via. return email.

For clarify, below is a summary of the changes made since the original submission:

1. Additional pavement stencilling utilised to clearly delineate the truck exit section is no-entry.
    - Complementing signage was maintained as provided per our current plans on the south of the truck road to prevent truck driver confusion to the standard parking vehicle entry (for cars & vans).
2. Speed humps documented with a maximum spacing of 50 meters between them. Further, extra speed hump documented before the pedestrian crossing on the truck exit road.
3. Extra speed control signs are documented on both upper and lower loading dock areas . These repeater speed signs are not necessary although have been implemented per Hale Capital's (Developer's) request.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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From: Paul Cassimatis
Sent: Tuesday, April 9, 2024 12:19 PM
To: Thang Tran <thang.tran@cumberland.nsw.gov.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Cc: Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Matthew Wilkinson <mwilkinson@adcoconstruct.com.au>
Subject: 240409 - Lidcombe Multi-Storey Warehouse - On-Site Traffic Control Plan [SSD-36464788 | Condition B6 b)]

Afternoon Thang & Sarah,

Further to the below approval with conditions for the CTMP (B1)and in line with the below SSDA Consent Condition regarding our **Lidcombe Multi-Storey Warehouse Project** (Specifically Condition B6 b) of SSD-36464788), please find attached our **Construction Traffic Management Plan** (prepared for ADCO by ptc. consultants) for Cumberland City Council Consultation.

This condition will need to be satisfied as per the SSDA prior to commencement of construction.

Could you please review and comment on the attached plans.

Please don't hesitate to reach out if you require any further information from our end (0411 458 502).

Boorea Street Warehouse & Distribution Centre Project

SSDA Reference: SSD-36464788
Relevant Condition: B6 – On-Site Traffic Control Plan

Condition B6:

Prior to the commencement of construction of the development, the Applicant must prepare an On-Site Traffic Control Plan for the development to the satisfaction of the Planning Secretary.

The On-Site Traffic Control Plan must:

a) be prepared by a suitably qualified and experienced person(s);
b) be prepared in consultation with Council;
c) include details of all safety and efficiency measures to be implemented on-site to manage and mitigate the potential for on-site pedestrian and vehicle conflict during operation of the development for all internal roads, parking areas, loading/unloading areas and access ramps and the site access driveway; and
d) include detailed architectural plans illustrating the location of all line marking, signage (including speed limit signage), and convex mirrors required for operation of the development.

Link to Planning Portal: https://www.planningportal.nsw.gov.au/major-projects/projects/boorea-street-warehouse-distribution-centre

---

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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From: Thang Tran <thang.tran@cumberland.nsw.gov.au>
Sent: Wednesday, March 27, 2024 2:38 PM
To: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Cc: Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Matthew Wilkinson <mwilkinson@adcoconstruct.com.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Subject: RE: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

Hi Paul,

The CTMP has been assessed and approved by Council.

Please find the approval with conditions attached.

Regards

CUMBERL
CITY COU

THANG TRAN
TRAFFIC AND TRANSPORT ENGINEER

16 Memorial Avenue, PO Box 42 Merrylands NSW 2160
T +61 2 8757 9534
E thang.tran@cumberland.nsw.gov.au
W www.cumberland.nsw.gov.au

From: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Sent: Monday, March 25, 2024 4:51 PM
To: Thang Tran <thang.tran@cumberland.nsw.gov.au>
Cc: Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Matthew Wilkinson <mwilkinson@adcoconstruct.com.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Subject: [EXTERNAL] RE: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

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Thanks Thang,

Just confirming the below invoice has been paid by Nicholas Napoli our Project Manager (attached confirmation) on Saturday morning (23/03) for the **Lidcombe Multi Storey Warehouse.**

Please let me know if you need anything on our end further.

We would like to receive a response this week if possible so we can lodge the overall CEMP to Department of Planning before the long weekend.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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From: Thang Tran <thang.tran@cumberland.nsw.gov.au>
Sent: Friday, March 22, 2024 4:05 PM
To: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Cc: Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>; Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>
Subject: FW: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

Hi Paul,

Council has received the Construction Traffic Management Plan (CTMP) for Condition B1. Council Officers are in the process of reviewing it.

As per Council's adopted Fees and Charges there is an assessment fee of $374 payable to Council for assessment of the CTMP.

Council's Customer Service will forward an invoice to you to pay shortly.

If you have further enquiry, please contact me on 8757 9534.

Regards

CUMBERL
CITY COU

THANG TRAN
TRAFFIC AND TRANSPORT ENGINEER

16 Memorial Avenue, PO Box 42 Merrylands NSW 2160
T +61 2 8757 9534
E thang.tran@cumberland.nsw.gov.au
W www.cumberland.nsw.gov.au

From: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Sent: Tuesday, March 12, 2024 5:33 PM
To: Sarah Hussein <Sarah.Hussein@cumberland.nsw.gov.au>

Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Elizabeth Creswell <ecreswell@adcoconstruct.com.au>
Subject: [EXTERNAL] FW: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

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Afternoon Sarah,

Earlier this afternoon, I spoke with a representative over the phone at Cumberland City Council and we understand you are managing the request for the **Cumberland City Council Review** of the **CTMP** on our **Lidcombe MSW Project.**

If you require any information from our end, please feel free to reach out. Please note that due to file size, the CTMP is accessible via. the below DropBox Link:

Link to ADCO CTMP & Drivers Code of Conduct: https://www.dropbox.com/scl/fo/gy0n6vl4wixln836uaz9g/h?rlkey=dzkdr89i95gkxx9dlal0bmiwz&dl=0

In the background, we've already prepared our overall CEMP a couple of weeks ago, intended for submission to the Department of Planning.

Our client, Tactical Group & Hale Capital, has conducted a preliminary review, and we are currently incorporating their feedback.

We would greatly appreciate receiving your review, along with any commentary or endorsement, by the end of the week if possible.

Additionally, please refer to the attached document for the request regarding the **Cumberland City Council Review** of the **CNVMP**.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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From: Paul Cassimatis
Sent: Monday, March 4, 2024 12:58 PM
To: council@cumberland.nsw.gov.au

Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Gary Petersen <gpetersen@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Hedieh Tizrou <htizrou@adcoconstruct.com.au>
Subject: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Traffic Management Plan [SSD-36464788]

Dear City of Cumberland Council,

I hope this email finds you well.

Could this email please be directed to the **City of Cumberland Transport / Traffic Department**.

I would like to take this opportunity to introduce myself as one of the Senior Design Managers working for ADCO Constructions on the **Lidcombe - Boorea Street Warehouse & Distribution Centre Project [Approved SSD-36464788].**

I have also copied in our Project Manager (Nicholas Napoli) and our Site Manager (Gary Petersen) whom will be working on this project for your reference.

In line with the below SSDA Consent Condition regarding our Future Development (Lidcombe Multi-Storey Warehouse Project - SSD-36464788), please find attached our **Construction Traffic Management Plan** (prepared for ADCO by ptc. consultants) for Council Consultation - your review and comment.

Link to ADCO CTMP & Drivers Code of Conduct: https://www.dropbox.com/scl/fo/gy0n6vl4wixln836uaz9g/h?rlkey=dzkdr89i95gkxx9dlal0bmiwz&dl=0

Boorea Street Warehouse & Distribution Centre Project

SSDA Reference: SSD-36464788
Relevant Condition: B1

Condition B1:
Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary.
The plan must form part of the CEMP required by condition C2 and must:

a) be prepared by a suitably qualified and experienced person(s);
b) be prepared in consultation with Council;
c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction;
d) include details of:
    (i) heavy vehicle types, routes, access and parking arrangements;
    (ii) the strategies that would be implemented to minimise the number of construction workers who will drive to the site; and
    (iii) any potential impacts to general traffic, cyclists, and pedestrians within the vicinity of the site from construction vehicles during the construction of the development;
e) include a Driver Code of Conduct and Induction Program to:
    (i) minimise the impacts of earthworks and construction on the local and regional road network;
    (ii) minimise conflicts with other road users;
    (iii) minimise road traffic noise; and
    (iv) ensure truck drivers use specified routes;
f) include a program to monitor the effectiveness of these measures; and
g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.

Link to Planning Portal: https://www.planningportal.nsw.gov.au/major-projects/projects/boorea-street-warehouse-distribution-centre

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Should you have any further inquiries or require additional information, please do not hesitate to contact us.

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

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Paul Cassimatis

From: Sarah Kacir <sarah.kacir@cumberland.nsw.gov.au>
Sent: Wednesday, 3 April 2024 11:06 AM
To: Paul Cassimatis
Cc: Nicholas Napoli; Gary Petersen; Ahmed Farzan; Brandon Provenzano
Subject: RE: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Noise & Vibration Management Plan [SSD-36464788]

Hi Paul,

Thank you for your email, I hope you are well. I believe we were speaking in March on the Construction Noise and Vibration Management Plan.

I reviewed the management plan in March and provided my feedback to the Senior Planner managing this application. The plan satisfied the B27 condition.

Kind regards,

Sarah

CUMBERL
CITY COU

SARAH KACIR
COORDINATOR ENVIRONMENTAL HEALTH

16 Memorial Avenue, PO Box 42 Merrylands NSW 2160
T +61 2 8757 9172
E sarah.kacir@cumberland.nsw.gov.au
W www.cumberland.nsw.gov.au

From: Paul Cassimatis <pcassimatis@adcoconstruct.com.au>
Sent: Thursday, March 28, 2024 7:18 AM
To: Records Department <council@cumberland.nsw.gov.au>
Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Gary Petersen <gpetersen@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>
Subject: [EXTERNAL] RE: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Noise & Vibration Management Plan [SSD-36464788]

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Hi Cumberland City Council,

Thank you for sending through the approval of the CTMP previously for our Lidcombe Multistorey Warehouse Project.

Can we please be provided with an update regarding the below review of our Construction Noise & Vibration Management Plan (attached).

Thanks,

Paul Cassimatis
Senior Design Manager

02 8437 5000 0411 458 502
Level 2, 7-9 West Street
North Sydney NSW 2060
adcoconstruct.com.au

SYDNEY
MELBOURNE
BRISBANE
GOLD COAST
PERTH
PEOPLE WHO BUILD

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From: Paul Cassimatis
Sent: Monday, March 4, 2024 2:21 PM
To: council@cumberland.nsw.gov.au
Cc: Nicholas Napoli <nnapoli@adcoconstruct.com.au>; Gary Petersen <gpetersen@adcoconstruct.com.au>; Ahmed Farzan <afarzan@adcoconstruct.com.au>; Brandon Provenzano <bprovenzano@adcoconstruct.com.au>; Hedieh Tizrou <htizrou@adcoconstruct.com.au>
Subject: 2400304 - Lidcombe Multi-Storey Warehouse - Construction Noise & Vibration Management Plan [SSD-36464788]

Dear City of Cumberland Council,

I hope this email finds you well.

Could this email please be directed to the **City of Cumberland Acoustic / Noise Department**.

I would like to take this opportunity to introduce myself as one of the Senior Design Managers working for ADCO Constructions on the **Lidcombe - Boorea Street Warehouse & Distribution Centre Project [Approved SSD-36464788].**

I have also copied in our Project Manager (Nicholas Napoli) and our Site Manager (Gary Petersen) whom will be working on this project for your reference.

In line with the below SSDA Consent Condition regarding our Future Development (Lidcombe Multi-Storey Warehouse Project - SSD-36464788), please find attached our **Construction Noise & Vibration Management Plan** (prepared for ADCO by Pulse White Noise Acoustics) for Council Consultation - your review and comment.

Boorea Street Warehouse & Distribution Centre Project

SSDA Reference: SSD-36464788
Relevant Condition: B27

Condition B27:
The Applicant must prepare a Construction Noise and Vibration Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must:

a) be prepared by a suitably qualified and experienced noise expert;
b) describe procedures for achieving the noise management levels in the Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time);
c) describe the measures to be implemented to manage high noise or vibration generating works such as piling, in close proximity to sensitive receivers;
d) include mitigation measures identified in the 'Noise and Vibration Impact Assessment' prepared for the development by RWDI Australia Pty Ltd dated 6 February 2023, Version B, Final; and
e) include a complaints management system that would be implemented for the duration of the development.

Link to Planning Portal: https://www.planningportal.nsw.gov.au/major-projects/projects/boorea-street-warehouse-distribution-centre

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Should you have any further inquiries or require additional information, please do not hesitate to contact us.

Thanks,

Paul Cassimatis
Senior Design Manager

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Level 2, 7-9 West Street
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ADCO

SYDNEY
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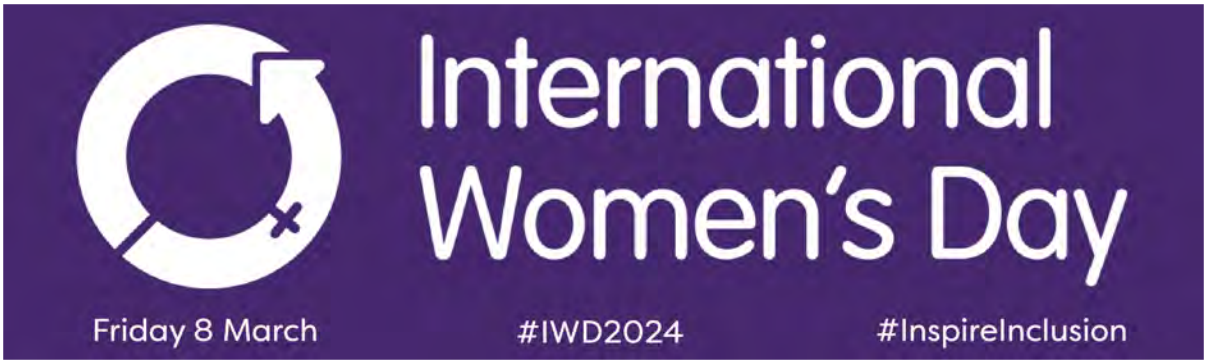

We acknowledge the Traditional Custodians of the land and pay our respects to their Elders past and present.

We value and encourage flexible working to ensure balance within our people's lives. If this is received outside of your working hours, please be assured I respect your working pattern.

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