Douglas Partners
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Integrated Practical Solutions

Detailed Site (Contamination) Investigation

Botany Aquatic Centre - Stage 1
2 Myrtle Street, Botany

Prepared for
CO-OP Studio Pty Ltd

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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

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Executive Summary

This report presents the results of a Detailed Site (Contamination) Investigation (DSI) for the proposed Stage 1, Botany Aquatic Centre located at 2 Myrtle Street, Botany (the site). The proposed development is understood to comprise the construction of water slides, an out-door aqua play area (i.e., splash pads), single storey change room and associated plant room and the demolition of an existing kids pool and associated structures in the south of the aquatic centre. The current investigation included a desktop study of site information, including a review of a previous detailed site (contamination) investigation for the larger Botany Aquatic Centre area (DP, 2020). The available previous data, as relevant to the current site was considered sufficient to characterise the potential contamination risks.

Relevant results of the previous investigation revealed fill to depths of 0.9 m below ground level (bgl) at the sampled locations. Ash and slag, traces of bitumen and other anthropogenic materials including *inter alia:* brick fragments, ceramic, clinker, concrete, gravel, metal, and plastic, were encountered within the fill. Acid sulfate soil indicators were found in the natural soils beneath the site at select locations and variable depths, mostly associated with the measured groundwater table.

A number of exceedances of the adopted Site Assessment Criteria (SAC) for both health- and environmental-based impacts in soils were previously noted in DP (2020), as relevant to the site, specifically as metals, polycyclic aromatic hydrocarbons (PAH), total recoverable hydrocarbons (TRH) and total petroleum hydrocarbons (TPH) in soil. Based on previous results from the larger aquatic centre area, and the presence of anthropogenic materials in the fill it is considered likely that asbestos containing materials are present in-between test locations and / or in unobserved parts of the site.

Based on the previous results in DP (2020), fill was preliminarily classified as a mixture of General Solid Waste (non-putrescible) and pockets of Restricted and Hazardous waste, attributable to elevated levels of PAH, notably as benzo(a)pyrene in the fill. Subject to confirmatory waste classification either *in situ* using test pits or *ex situ* stockpiles following excavation a general immobilisation order may be applicable, which may reduce the classification to General Solid Waste. Given previous results in the larger aquatic centre and the high presence of building rubble in the fill, it is possible that asbestos is present in-between test locations and / or in unobserved parts of the site, and therefore the material may require re-classification as Special Waste (Asbestos), subject to confirmatory testing and additional observations.

No significant groundwater contamination was previously reported in DP (2020).

Based on the findings of this report, it is considered that the site can be made suitable for the proposed Stage 1 development, subject to the following:

- Preparation of a remediation action plan (RAP) to address identified soil contamination. The RAP is recommended to include an unexpected finds protocol to manage any further unidentified contamination (e.g., asbestos, odorous soils or seepage water, etc.);
- Preparation of an Acid Sulfate Soil Management Plan (ASSMP) to inform the appropriate identification and management of potential ASS, if any works are to involve dewatering or otherwise take place below the groundwater level. An ASSMP may be incorporated within the RAP for relatively minor disturbances of deeper soils which may contain ASS; and
- Conduct additional *ex situ* testing to confirm the waste classification for surplus soils prior to off-site disposal.

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Detailed Site (Contamination) Investigation
Botany Aquatic Centre - Stage 1
2 Myrtle Street, Botany

1. Introduction

Douglas Partners Pty Ltd (DP) has been engaged by CO-OP Studio Pty Ltd (CO-OP Studio) to complete this detailed site (contamination) investigation (DSI) undertaken for the proposed Stage 1 redevelopment of Botany Aquatic Centre at 2 Myrtle Street, Botany (the site). The site is shown on Drawing 1, Appendix B. The investigation was undertaken in accordance with DP's email proposal dated 8 February 2021 and proposal 201489.01.P.002 dated 25 February 2021.

The objective of this investigation is to assess the potential for contamination at the site based on past and present land uses and previous intrusive investigations, assess the suitability of the site for the proposed redevelopment and to comment on the need for further investigation and / or management with regard to the proposed development.

It is noted that a previous detailed contamination investigation (DP, 2020) was completed for the larger aquatic centre area (refer Drawing 1, Appendix B). This DSI report summarises the results of this previous investigation where relevant to the current site, in conjunction with a review of available desktop information.

This report must be read in conjunction with all appendices including the notes provided in Appendix A.

2. Scope of Works

The scope of works conducted for the investigation comprised the following:

- Review (as part of DP, 2020) of:
  - "*Lotsearch Report LS012204 EP*" ('Lotsearch Report') dated 5 May 2020, comprising site history and historical aerial imagery;
  - Historical land titles search;
  - Section 10.7 (2&5) Planning Certificate;
  - SafeWork NSW documentation;
  - Council records of previous environmental investigations undertaken on or near the site; and
  - Background information supplied by the client.
- Review of DP (2020); and
- Preparation of this report summarising the methodology and results of the previous investigation and desktop review of available information. A preliminary *in situ* waste classification on subsurface soils tested is also included to assist project planning.

3. Site Information

Site Address	2 Myrtle Street, Botany
Legal Description	Part of Lot 1, Deposited Plan 1148910
Approximate Area	1725 m^2
Zoning	Zone RE1 Public Recreation
Local Council Area	Bayside Council
Current Use	Recreational Facility - Botany Aquatic Centre
Uses surrounding the aquatic centre	North - Industrial and Port Botany freight rail line East - Port Botany freight rail line, then Eastlakes Golf Club South - Myrtle Street, then residential West - Booralee Park

The site location is shown on Drawing 1, Appendix B. It is noted that the site is situated within the larger Botany Aquatic Centre area (i.e., the lot).

The Botany Aquatic Centre currently consists of three swimming pools, a kiosk, car spaces, open landscaped areas and associated amenities. The current site is in use as open recreational space, with some tree cover and small structures (BBQ area shelters & tables and shade structures) within the larger aquatic centre.

3.1 Proposed Development

It is understood that the proposed Stage 1 development is to include the construction of water slides, an out-door aqua play areas (i.e., splash pads), single storey change room and associated plant room. As all structures are to be on-grade it is understood that there will be minimal changes to existing site levels, other than associated for general levelling purposes and otherwise minimal excavation of soils for foundations and supports.

The proposed Stage 1 works is also understood to comprise the demolition of an existing kids pool and associated structures in the south of the aquatic centre

4. Environmental Setting

4.1 Topography

The topographic contours indicate the site is relatively flat around RL 6 - 8 m AHD with regional topography sloping to the west and north-west of the site (Lotsearch Report, Appendix D).

4.2 Site Geology and Soil Landscape

Reference to the Sydney 1:100 000 Geological Series indicates that the site is underlain by Quaternary Period marine sediment, comprising medium to fine-grained sand with podsols. The mapping also indicates that sediments underlying Mill Stream to the north and west of the site comprise peat, sandy peat and mud (see Lotsearch Report, Appendix D).

Reference to the Sydney 1:100 000 Soil Landscape Series Sheet indicates that the western half of the site is within in an area underlain by disturbed terrain. The eastern half of the site is located within the Tuggerah Soil Landscape which generally comprises gently undulating to rolling aeolian coastal dunefields (see Lotsearch Report, Appendix D). However, based on the mapping it is considered possible that the entirety of the site is within the disturbed terrain given the proximity and potential overlap of the mapping areas.

4.3 Acid Sulfate Soils

Reference to NSW Department of Planning, Industry and Environment Acid Sulfate Soil (ASS) mapping indicates that soils on the site are considered Class 4; located within an area of low probability of ASS occurrence (see Lotsearch Report, Appendix D).

For Class 4 soils, both works more than 2 metres below natural ground surface and / or where the water table is likely to be lowered more than 2 metres below natural ground surface present an environmental risk.

While Class 4 soils are generally not expected to contain ASS materials, highly localised occurrences are possible especially near boundaries with environments posing a high probability of ASS occurrence. The soils of Botany Water Reserves are as close as approximately 200 metres to the north of the site are shown as Class 1. Class 1 soils indicate a high probability of ASS occurrence and present an environmental risk if ASS materials are disturbed by activities such as deep excavations, e.g., large structure foundations or deep dams.

It is noted however, given the location within an area of disturbed terrain there exists uncertainty regarding the acid sulfate risk for any disturbed soils, which may include ASS materials previously deposited onto the site.

Further discussion of the results of the previous investigation (DP, 2020) as relevant to ASS risk is included in Section 10.2.2.

4.4 Surface Water and Groundwater

The water bodies intersecting a 1000 metre buffer of the site include Lachlan Swamps and Mill Pond of the Botany Water Reserves (see Lotsearch Report, Appendix D). Lachlan Swamps is located hydraulically up-gradient of the site, about 450 metres to the north-east, and Mill Pond is located hydraulically down-gradient, about 850 metres to the west.

A search of the publicly available registered groundwater bore database (see Lotsearch Report, Appendix D) indicated that there are 47 registered groundwater bores within ~500 m of the site. The groundwater bores with available standing water level data are summarised in Table 1.

Table 1: Summary of Available Information from Nearby Registered Groundwater Bores

Well ID	Depth (m)	Water Level (m)	Purpose	Relative Direction	Distance to centre of site (m)
GW107233	21.5	0.37	Irrigation, recreation (groundwater)	North-East	200
GW075022	15.75	1.77	-	South-West	220
GW100003	5.8	2.14	Domestic	South	410
GW101136	7.32	4.575	Domestic	East	530

Based on the regional topography and inferred flow direction of nearby water courses, it would be anticipated that regional groundwater would flow to the south-west of the site and converge with Mill Stream, the likely receiving surface water body for the groundwater flow path, draining to Botany Bay.

The inferred groundwater flow direction was previously determined through the measurement of groundwater levels within larger aquatic centre lot area to be to the south-west (DP, 2020), which is in general accordance with the regional topography. The measured standing water levels previously ranged from 1.3 to 2.9 m bgl. It is noted however, that groundwater levels will change with temporal and climatic variance.

Furthermore, the site is located in an area with a porous, extensive and highly productive aquifer (the Botany Sand Beds Aquifer). As a surficial sediment aquifer, the high permeability and lack of consolidation of the hydrogeologic unit means the aquifer is highly vulnerable to contamination. It is noted that the site falls within Botany Groundwater Management Zone 3, and as such, is subject to a regional ban on domestic groundwater use (see Lotsearch Report, Appendix D).

5. Site History

5.1 Title Deeds

A historical title deeds search was used to obtain ownership and occupancy information including company names and the occupations of individuals. The title information can assist in the identification of previous land uses by the company names or the site owners and can, therefore, assist in establishing whether there were potentially contaminating activities occurring at the site. A summary of the title deeds and possible land uses (with reference to the aerial photographs and other historical searches) is presented in Table 2. This applies to the Aquatic Centre as a whole.

It is noted that the current site only comprises a small portion of the larger lot investigated.

Table 2: Historical Title Deeds

Date of Acquisition and Term Held	Registered Proprietor(s) & Occupations	Inferred Land Use
15.12.1926 (1926 to 1935)	Metropolitan Water Sewerage & Drainage Board	Government use
16.08.1935	Minister for Public Works	Government use
20.12.1935	Crown Reserve No. 65711 - Reserved from Sale or Lease	Public recreation
20.12.1935	Crown Reserve No. 65712 - Reserved for Public Recreation and Resting Place	Public recreation
09.04.1943	Council of the Municipality of Botany appointed trustee of Crown Reserve No. 65712	Public recreation
13.04.1995	Assigned the corporate name of: - Booralee Park (P.500129), R.59907 & R. 65712) Reserve Trusts by Gazette 13.04.1995 Folio 1979	Public recreation

5.2 Historical Aerial Photography

Several historical aerial photographs were obtained and presented in the Lotsearch Report from databases held by the NSW Department of Finance, Services and Innovation for the years 1943, 1955, 1961, 1965, 1970, 1978, 1982, 1986, 1991, 1994, 2000, 2007, 2014 and 2019. Extracts of the aerial photographs are included in the Lotsearch Report, Appendix D. It is noted that the Lotsearch Report was prepared for the whole of the Aquatic Centre. A summary of key features observed for the site and surrounding land is presented in Table 3.

Table 3: Summary of Historical Aerial Photographs

Year	Site	Surrounding Land Use
1943	The site comprised the eastern periphery of a factory / warehouse building, apparently covered in a mixture of pavement and open grass surfaces. The site likely used for driveway access and / or storage.	The larger aquatic centre area (i.e., the lot) contained two large warehouse buildings, with rows of apparent storage containers between them. Storage of apparent materials or waste is visible in the far eastern part of the lot. The surrounding lands to the south and east appeared used for market gardens and residential use. The surrounding land to the north-west appeared to be used for industry. Booralee Park was present to the west of the site; the Lakes Golf Club to the north and east and the Botany Water Reserves, further north. Port Botany Freight Line was visible along the north-eastern border of the lot.

Year	Site	Surrounding Land Use
1955	No significant changes since 1943.	Many of the lots further south of the site appear to have been redeveloped for commercial / industrial use. Construction work to the south-west and north of the site adjacent to the Botany Water Reserves was visible.
1961	No significant changes since 1955.	No significant changes since 1955.
1965	The previous surface cover (possible hardstand) had been removed. Evidence of earthworks within the site and in the larger lot area,	Previous structures within the larger lot are demolished. Botany Aquatic Centre was under construction. Previous surface cover (possible hardstand) had been removed.
1970	The site had been resurfaced with grass following completion of the aquatic centre. Completion of hexagonal shaped kids pool in the south of the site was visible.	The aquatic centre, pools and carpark had been constructed. Unidentifiable objects were present in the eastern portion of the larger lot (possibly demolition waste or stockpiles).
1978	No significant changes since 1970.	Evidence of earthworks in the eastern portion of the lot, previous smaller stockpiles (visible in 1970) have been removed. Trees were lined along the border to the north and between the east and west portions of the larger lot. The lots south-east of the railway line had been removed and replaced with a single large building.
1982	No significant changes since 1970.	Further evidence of earthworks and storage of waste and / or soils in the eastern portion of the larger lot and adjacent to the rail line to the north.
1986	No significant changes since 1970.	A water slide had been installed in the eastern portion of the larger lot where grass had been laid and trees had been planted.
1991	No significant changes since 1970.	Facilities in the north-western section of Booralee Park had been upgraded to a large building.
1994	Shade structures (umbrellas) had been installed across the landscaped areas of the aquatic centre, including within the site.	A block containing warehouses to the north-west of the site had been demolished.
2000	Grass removed in small area in the north of the site, possibly indicating construction of a small playground area. Construction of shade over kids pool in the south of the site was visible.	Structures previously occupying the industrial area immediately north-west of the site were removed and new warehouses and a carpark had been built. Excavation work was also being undertaken further to the south-east and south of the golf course.

Year	Site	Surrounding Land Use
		Revegetation work visible within the Botany Water Reserves.
2007	BBQ area / shelters visible in landscaped areas of the aquatic centre, including the peripheries of the site.	High density residential buildings had been built on the area previously excavated further to the south-east of the site.
2014	No significant changes since 2007.	Tracks had been cleared along Botany Water Reserves and a children's playground had been built in Booralee Park.
2019	No significant changes since 2007.	The waterslide to the east of the site had been removed from the aquatic centre A basketball court had been constructed in Booralee Park.

5.3 Public Registers and Planning Records

5.3.1 EPA Notices

Multiple contaminated sites have been notified to the EPA within a 1000 metre buffer of the site (see Lotsearch Report, Appendix D). The sites not requiring regulation under the *Contaminated Land Management Act*, 1997 (CLM Act) are purposed for industrial activities, including a railway, tannery and road works.

Budget Petroleum Eastlakes, a service station situated approximately 920 metres north of the site, was formerly regulated under the CLM Act.

Contamination present in the Underwood Avenue site, situated approximately 810 metres south-west of the site, is currently being managed via the planning process under the *Environmental Planning and Assessment Act*, 1979 (EP&A Act).

Contamination present in the Former Email Pty Ltd (Electrolux manufacturing) site is currently regulated under the CLM Act. The site is used for metal industrial activity and is subject to an Ongoing Maintenance Order (OMO) addressing four principal contaminants in soils present on the site; chlorinated ethenes, semi-volatile, and non-volatile petroleum hydrocarbons, and asbestos impacted soils (JBS&G, 2017). The Former Email site is situated approximately 740 metres to the east, and upgradient of the site.

None of the listed sites are currently considered to pose a significant contamination risk given the relative distance to the site.

5.3.2 EPA Licences

Multiple contaminated sites have been licensed under the *Protection of the Environment Operations Act*, 1997 (POEO Act) within a buffer of 1000 metres from the site (see Lotsearch Report, Appendix D). These include two licences for railway systems activities (the adjacent railway line) the Australian Rail

Track Corporation Limited (ARTC Ltd) and Sydney Trains. The Kellogg (Aust.) Pty Ltd site, located approximately 810 metres downgradient and south-east of the site, is licenced for general agricultural processing.

5.3.3 SafeWork NSW

SafeWork NSW information on Storage of Hazardous Chemicals was obtained for the larger aquatic centre lot and is provided in Appendix D. The results of the SafeWork NSW site search request found that Bayside Council currently holds Dangerous Goods Licence No. 35/036892 for a hypochlorite solution above-ground storage tank of 2000 litre capacity. This storage is not in proximity to the current site and is otherwise not considered a contaminant of concern.

5.3.4 Section 10.7 (2&5) Planning Certificate

The Council Planning Certificate under Section 10.7 of the EP&A Act was obtained for the larger aquatic centre lot and is provided in Appendix D. The site is zoned as 'RE1 Public Recreation'.

The certificate states (under Section 10.7(2)) that, as prescribed by Section 59 (2) of the CLM Act, Council has not been provided with a site audit statement with respect to the site, and the land to which the certificate relates is not:

- Declared to be significantly contaminated land;
- Subject to a management order;
- Subject of an approved voluntary management proposal; or
- Subject of an ongoing maintenance order.

5.3.5 Council Records

Bayside Council provided records of previous environmental investigations undertaken on the site, including a *Soil Contamination Assessment* undertaken by Prensa (2018), and an *Assessment of Potential Contamination* undertaken by JBS&G (2016).

The Prensa (2018) investigation found asbestos-containing fibre cement sheet fragments in two test pits located to the east of the current site (TP5 and TP6). Although no ASS or potential acid sulfate soil (PASS) were identified in the Prensa investigation, during sampling a rotten egg (possibly sulfur) odour was noted at a depth of 1.4-1.6 m at one test location within the old water slide area to the east of the current site. The previous Prensa (2018) test locations are shown on Drawing 1, Appendix B, relevant test results are incorporated into Appendix G.

The investigation undertaken by JBS&G (2016) concluded that the soils in the vicinity of an amenities block in Booralee Park, adjacent to the aquatic centre carpark further to the west of the site, were suitable to remain on-site in Booralee Park. The soils were also anticipated to be acceptable for disposal as General Solid Waste (non-putrescible) due to a singular benzo(a)pyrene (B(a)P) exceedance that was found to be non-leachable during toxicity characteristic leaching procedure (TCLP) testing. A singular B(a)P toxicity equivalent (TEQ) exceedance of the relevant health investigation level was also found during laboratory analysis.

5.4 Other Sources

The supplementary historical photographs shown below were sourced from Bayside Council (Bayside Libraries Community History Collection).

Figure 2: Botany Aquatic Centre during its construction. North-western view of the 22 metre program pool. Hexagonal kids pool structure visible in the background (southern part of the site).

Figure 3: Botany Aquatic Centre during its construction. North-eastern view of the 50 metre outdoor pool.

The photos indicate that uncontrolled fill was previously encountered or used for levelling / construction purposes during construction of the aquatic centre circa 1960.

5.5 Site History Integrity Assessment

The information used to establish the history of the site was sourced from reputable and reliable reference documents, many of which were official records held by Government departments / agencies. The databases maintained by various Government agencies potentially can contain high quality information, but some of these do not contain any data at all.

In particular, aerial photographs provide high quality information that is generally independent of memory or documentation. They are only available at intervals of several years, so some gaps exist in the information from this source. The observed site features are open to different interpretations and can be affected by the time of day and / or year at which they were taken, as well as specific events, such as flooding. Care has been taken to consider different possible interpretations of aerial photographs and to consider them in conjunction with other lines of evidence.

5.6 Summary of Site History

The site history information suggests that the site was originally acquired by the current owner(s) in 1943 through the process of being appointed trustee of crown reserve land. Information on historical aerial photographs suggest the site began being actively used as an aquatic centre sometime following construction works circa 1960 and the completed centre was apparent in the 1970 photograph. Prior to that the site was a part of a larger commercial / industrial facility which contained two large warehouses

and apparently stored shipping containers or similar at various times between about 1940 and 1965. The actual activities at the site during this time are not known.

It is further noted that immediately to the east of the site that the eastern portion of the larger lot was previously visibly separated from the aquatic centre with possible usage including the storage of materials, soils and / or waste.

6. Site Walkover

A walkover was undertaken by an environmental scientist from DP as a part of the previous investigation (DP, 2020) on 12 May 2020. The general topography of the Aquatic Centre was consistent with that described in Section 4.1. At the time the site was observed to consist of open grassed landscaped area, with tree cover, nearby fixed shade structures (umbrellas) and BBQ shelters. The surrounding aquatic centre was observed to be consistent with the layout visible in the 2020 aerial photograph. Pool and general grounds maintenance machinery and chemicals were also noted to be stored and used within the aquatic centre grounds. Site photographs as relevant to the current site are included in Appendix C.

7. Preliminary Conceptual Site Model

A Conceptual Site Model (CSM) is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM provides the framework for identifying how the site became contaminated and how potential receptors may be exposed to contamination either in the present or the future i.e., it enables an assessment of the potential source - pathway - receptor linkages (complete pathways).

Potential Sources

Based on the historical information and site walkover, the following potential sources of contamination and associated contaminants of potential concern (COPC) have been identified.

- S1: Fill: Associated with levelling, demolition of former buildings adjacent to the site and potential burying of waste and imported fill.
  - COPC include metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), organochlorine pesticides (OCP), phenols and asbestos.
- S2: Previous land-use: i.e., warehousing (unknown activities at the time).
  - COPC include metals, TRH, BTEX, PAH, VOC (e.g., solvents, degreasers).
- S3: Disturbance of Acid Sulfate Soils.
  - COPC include ASS properties.

Potential Receptors

The following potential human receptors have been identified:

- R1: Current users [aquatic centre staff and attendees];
- R2: Construction and maintenance workers;
- R3: End users [aquatic centre staff and attendees]; and
- R4: Adjacent site users [industrial workers and recreational users].

The following potential environmental receptors have been identified:

- R5: Surface water [Mill Stream; fresh];
- R6: Groundwater; and
- R7: Terrestrial ecology.

Potential Pathways

The following potential pathways have been identified:

- P1: Ingestion and dermal contact;
- P2: Inhalation of dust and / or vapours;
- P3: Surface water run-off;
- P4: Lateral migration of groundwater providing base flow to water bodies;
- P5: Leaching of contaminants and vertical migration into groundwater; and
- P6: Contact with terrestrial ecology.

Summary of Potentially Complete Exposure Pathways

A ‘source - pathway - receptor’ approach has been used to assess the potential risks of harm being caused to human or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways (potential complete pathways). The possible pathways between the above sources (S1 to S3) and receptors (R1 to R7) are provided in below Table 4.

Table 4: Summary of Potentially Complete Exposure Pathways

Source and COPC	Transport Pathway	Receptor	Risk Management Action
S1: Fill Metals, TRH, BTEX, PAH, OCP and asbestos S2: Previous Warehousing Metals, TRH, BTEX, PAH, VOC	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P3: Surface water run-off P4: Lateral migration of groundwater providing base flow to water bodies P5: Leaching of contaminants and vertical migration into groundwater	R1: Current users R2: Construction and maintenance workers R3: End users R4: Adjacent site users	An intrusive investigation is recommended to assess possible contamination including testing of the soils and groundwater.
	P2: Inhalation of dust and/or vapours	R4: Adjacent site users	
	P3: Surface water run-off P4: Lateral migration of groundwater providing base flow to water bodies	R5: Surface water	
	P5: Leaching of contaminants and vertical migration into groundwater	R6: Groundwater	
	P6: Contact with terrestrial ecology	R7: Terrestrial ecology	
S3: Disturbance of identified ASS ASS exposure	P1: Ingestion and dermal contact	R2: Construction and maintenance workers	An intrusive investigation is recommended to assess the presence and extent of ASS at the site. If required, preparation of an
	P3: Surface water run-off P4: Lateral migration of groundwater providing base flow to water bodies	R5: Surface water	

Source and COPC	Transport Pathway	Receptor	Risk Management Action
	P5: Leaching of contaminants and vertical migration into groundwater	R6: Groundwater	ASS Management Plan (ASSMP) is recommended to manage the disturbance of ASS and potential oxidation of iron sulfides in PASS during excavation and development works.

8. Site Assessment Criteria

The SAC are the criteria which were used to determine the suitability of the site for the proposed land use. The SAC applied in the current investigation are informed by the CSM, which identified human and environmental receptors to potential contamination on the site, as well as consideration of the proposed development.

The investigation and screening levels applied in the current investigation comprise levels adopted for an open space and recreational land use. Residential land-use has been adopted as an initial conservative screen for potential vapour intrusion risks.

Appendix F outlines in more detail the relevant investigation and screening levels adopted for soil and groundwater, as documented in NEPC (2013). All site specific and / or theoretical assumptions relevant to the selection of the investigation and screening levels have been outlined in each sub-section in Appendix F as required.

9. Previous Investigation (DP, 2020)

The following section summarises the methodology and results of the previous DSI investigation as relevant to the current site.

9.1 Sampling Rationale

The previous intrusive investigation (DP, 2020) comprised 40 systematic sampling points in order to characterise an area approximately 3 ha in size in accordance with the NSW EPA *Sampling Design Guidelines* (NSW EPA, 1995). Four of the test bores were converted into groundwater monitoring wells in order to measure groundwater levels and potential contamination in groundwater.

The current site comprises 2300m^2 (0.23ha), for which NSW EPA (1995) recommends a minimum of eight systematic sampling points to similarly characterise the site. It is noted that seven previous test locations are situated within the current site boundary, with a further seven located within 15-20 m of the site boundary, i.e., within equivalent the circular hot spot radius for the adopted sampling density and site area (NSW EPA, 1995), and are therefore considered suitable as an indication of the potential contamination risks for the current site. The available data is therefore considered sufficient for an initial assessment of the potential contamination risks at the site.

Two locations (BH9/GW9 and BH6/GW6) were previously converted into groundwater monitoring wells and are immediately proximate to the site, or within the site. The remaining two groundwater wells, whilst outside of the site are considered indicative of the groundwater conditions beneath the site and therefore have been included in the current assessment.

9.2 Data Quality Indicators and Data Quality Objectives

It is noted that the previous investigation included an assessment in general accordance with the seven-step data quality objective (DQO) process provided in Appendix B, Schedule B2 of NEPC (2013), which included application of data quality indicators (DQI) as a measurement of performance. Overall, the previous investigation concluded that the DQI were satisfactory and the field and laboratory test data was reliable for the assessment, and therefore are reliable for the current assessment.

9.3 Fieldwork Results

9.3.1 Soil

The subsurface conditions encountered in the boreholes within the current site, as excavated in the previous investigation are presented in the borehole logs in Appendix E, accompanied by notes for the related descriptive terms and classification methods. The test locations are shown on Drawing 1, Appendix B. Bore locations of DP (2020) outside the site boundary are also shown for reference. The materials encountered within the current site can be summarised as follows:

- FILL/Silty SAND and SAND: Typically, fine to medium, dark brown to grey, with various inclusions of organics, igneous gravel, clay and anthropogenic materials including asphaltic gravel, brick and ceramic fragments, clinker and metal. A hydrocarbon odour was also intermittently present. This fill layer was generally present from depths of 0 m to 1.9 m bgl;
- ASH/ FLY ASH: Typically, with clinker and fine to coarse asphaltic gravel as well as various inclusions of clay and presence of a strong hydrocarbon odour. This layer was generally present from depths of 0.4 m to 1 m bgl; and
- SAND: Fine to medium, grey, yellow, orange and brown, occasionally with a trace of silt, generally present below 0.6-1.0 m bgl, however was also present from up to 0.55 m bgl.

There were some signs of contamination observed within the fill layers, including staining and a hydrocarbon odour. No asbestos containing material was observed on site, however, it is noted that building rubble such as glass, tile, brick and concrete fragments and metal wire can also be an indicator for the potential presence of asbestos. It is also noted that the adopted investigation methods (boreholes) are not ideally suited for identifying potential asbestos materials in fill.

PID results varied from <1 ppm to 36 ppm which indicates a generally low potential for contamination from volatile chemicals. The higher readings were considered indicative of PAH present as ash, clinker and asphalt in the fill.

9.3.2 Groundwater

The results of previous groundwater level monitoring in the installed monitoring wells within the Aquatic Centre is detailed in Table 5 below.

Table 5: Groundwater Levels

Borehole	Groundwater Depth (m bgl)	Groundwater Elevation (m AHD)
BH6/GW6	2.85	5.15
BH9/GW9	1.9	5.5
BH17/GW17	2.1	4.7
BH30/GW30	2	7.7

No phase separated hydrocarbons were previously observed or recorded using an interface meter during both well development and sampling. Stabilised groundwater parameters, as summarised in Table 6 below, indicated electrical conductivity (EC) at approximately 191-218 µS/cm which is consistent with a desirable fresh water EC of approximately <800 µS/cm, in addition to a measured pH of 5.5 to 6.1 indicating slightly acidic conditions. Groundwater was observed to be clear to pale yellow with a sulfur odour in all wells.

Table 6: Groundwater Field Results

Bore	Surface Level (m AHD)	Groundwater Depth (m bgl)	Groundwater Elevation (m AHD)	Temp	DO	EC	pH	Turbidty	Redox
BH6/GW6	8	2.85	5.15	18.4	0.15	191	6.1	5.1	-161
BH9/GW9	7.4	1.9	5.5	16.8	0.25	206	6.0	9	-73
BH17/GW17	6.8	2.1	4.7	21.9	0.09	188	5.9	212	-107
BH30/GW30	9.7	2	7.7	18.5	0.01	218	5.5	26.5	-144

Note: ** Stabilised Reading
DO Dissolved oxygen (mg/L)
EC Electrical conductivity (µS/cm)
Temp Temperature (°C)
Turb Turbidty (NTU)
Redox Reduction – oxidation potential (mV)

9.4 Laboratory Analytical Results

The analytical results relevant to the current site are summarised against the SAC in the following tables in Appendix G:

Tables 1A / 1B: Soil analytical results
Table 2A: Preliminary Waste Classification
Table 3A: Groundwater Results

The complete laboratory reports are shown in Appendix H.

10. Discussion

10.1 Site History

Based on site history, it appears that the site has been used as part of an aquatic centre, specifically within a landscaped, open space area since at least 1970 and has continued for such use to the present day. The previous land-use was commercial / industrial potentially as a warehousing facility, although there is no indication of what materials or specific operations occurred on the site.

There have been multiple buildings constructed and demolished at the larger aquatic centre lot over time. It is noted that the eastern portion of the larger lot was potentially used for the storage of materials, soils and / or waste up until circa 1980 based on aerial imagery.

The larger surrounding area has been occupied by a mix of residential, commercial and industrial site uses since at least the 1940s with a significant increase in recorded activity since the 1950s. The majority of the commercial / industrial uses were associated with manufacturing, furniture, paint, polish and packaging, mechanics and repairs, and wine/spirit sellers and distilleries (see Lotsearch Report, Appendix D). Several other potentially contaminating, but less common activities included: manufacturing of machinery, plastics, cleaning products and asbestos, as well as butchers, wool combers, carbonisers and scourers, meat exporters and fellmongers (i.e., tannery).

The potential sources of historical contamination identified are from surficial soil fill, past site uses, deterioration of existing buildings and adjacent land uses (past and present), as presented in the CSM (Section 7).

10.2 Soil

10.2.1 Contamination

The previous investigation noted multiple exceedances of the SAC for soil samples recovered across the Aquatic Centre, notably for metals, TRH and PAH in soils.

Exceedances of the SAC specific to the current site (or within close proximity) are summarised below in Table 7.

Table 7: Summary SAC Exceedances

Sample ID	HIL / HSL C Exceedance(s) (measured mg/kg | SAC mg/kg)	EIL / ESL C Exceedance(s) (measured mg/kg | SAC mg/kg)
BH2/0.4-0.5 (Prensa 2018)	-	TRH F3 (300 | 300)
BH4/0.9-1.0	B(a)P TEQ (4.2 | 3)	B(a)P (2.9 | 0.7) Zinc (380 | 350)
BH6/0.5-0.6	B(a)P TEQ (26 | 3) Total PAH (310 | 300)	B(a)P (18 | 0.7) Zinc (610 | 350)
BH9/0.5-0.6	B(a)P TEQ (49 | 3), Total PAH (400 | 300)	Copper (130 | 130) TRH F3 (1400 | 300) B(a)P (33 | 0.7)
BH10/0.4-0.5	B(a)P TEQ (14 | 3), *B(a)P TEQ (33 | 3) *Total PAH (300 | 300)	B(a)P (9.8 | 0.7) *TRH F3 (680 | 300) *B(a)P (22 | 0.7)
BH12/0.5-0.6	B(a)P TEQ (100| 3), Total PAH (640 | 300	TPH F3 (1200|300) B(a)P (68 | 0.7)

Sample ID	HIL / HSL C Exceedance(s) (measured mg/kg | SAC mg/kg)	EIL / ESL C Exceedance(s) (measured mg/kg | SAC mg/kg)
BH18/0.4-0.5	B(a)P TEQ (110 | 3), Total PAH (1200 | 300)	Copper (160 | 130) TPH F2 (200 | 120) **TPH F3 (4000 | 300)** B(a)P (72 | 0.7)
BH19/0.4-0.5	B(a)P TEQ (510 | 3) TPH F2 (130 | 110 VI) Total PAH (7200 | 300)	TPH F2 (1000 | 120) TPH F3 (1500 | 300) Naphthalene (490 | 170) B(a)P (350 | 0.7)
BH22/0.4-0.5	B(a)P TEQ (730 | 3) Total PAH (10000 | 300) TPH F2 (520 | 110 VI)	Copper (220 | 130) TPH F2 (520 | 120) **TPH F3 (6600 | 300)** Naphthalene (290 | 170) B(a)P (520 | 0.7)
BH27/1.4-1.5	B(a)P TEQ (34 | 3) Total PAH (430 | 300)	Copper (140 | 130) Zinc (590 | 350) TRH F3 (880 | 300) B(a)P (23| 0.7)

Note - Results in bold refer to an exceedance of both ML and HIL/HSL or EIL/ESL. Refer to SAC Section (Appendix F)
* - results from blind duplicate
B(a)P - benzo(a)pyrene
B(a)P TEQ - benzo(a)pyrene toxic equivalent quotient
F2 - TRH fractions C_{10}-C_{16} minus naphthalene
F3 - TRH fractions C_{16} – C_{34}
VI – Exceedance for vapour intrusion

It is noted that exceedances of the ESL for B(a)P within 33 mg/kg are not considered to be significant when considered against the higher reliability CRC Care ecological guidelines for urban residential and public open space (CRC CARE, 2017). However, it is noted that a number of locations exceed the higher reliability CRC CARE guideline.

Based on previous results from the larger aquatic centre area, and the presence of anthropogenic materials in the fill it is considered likely that asbestos containing materials are present in-between test locations and / or in unobserved parts of the site.

Given the depth and variable distribution of the contaminants, it is considered that the results are associated with the fill placed across the site (and the larger Aquatic Centre). Higher concentrations of TRH/TPH and PAH are considered largely associated with the encountered fly ash layers and inclusions of asphalt, ash and clinker in fill.

Based on the exceedances of the adopted SACs, it is noted that a Remediation Action Plan (RAP) is required to address the identified soil contamination.

10.2.2 Acid Sulfate Soils

The ASSMAC screening criteria were previously noted to exceed at BH11 between depths of 4 - 4.45 m, additional exceedances were also previously noted, albeit outside of the site boundary. Based on the screening results and descriptions of the soils encountered, additional chromium reducible sulfur (Scr) testing was previously requested on 6 samples (BH3, BH13, BH17, BH21, BH25 and BH32). Sulfur odours were also noted both in the Prensa (2018) investigation and previous DP investigation (DP, 2020).

Based on the results it was previously considered that:

- ASS is present in certain natural soils underlying the site, due to the findings of ASS in BH3 between depths of 1.9 - 2 m;
- It is likely PASS is also present in the deeper layers of natural soils, particularly the indurated sand; and
- It is very likely PASS resides around and generally below the groundwater table (i.e., approximately 2 m bgl).

Based on the previous results exceeding the ASSMAC action criteria from within the current site and in soils within the larger aquatic centre lot, an acid sulfate soil management plan (ASSMP) is required should the disturbance of the applicable soils or dewatering be necessary. It was previously recommended that additional sampling, testing and analysis of samples in accordance with ASSMAC should be conducted to gain a better understanding of the nature and extent of ASS across the Aquatic Centre (including the current site). This should, however, be done with consideration of the proposed design and associated subsurface disturbance, if any.

10.2.3 Preliminary Waste Classification

10.2.3.1 Fill

The following Table 8 presents the results of the six-step procedure outlined in NSW EPA (2014) for determining the type of waste and the waste classification. This process applies to the fill (including surface soils) at the site.

Table 8: Six Step Classification Procedure

Step	Comments	Rationale
1. Is the waste special waste?	No (refer further discussion below)	No asbestos-containing materials (ACM), clinical or related waste, or waste tyres were observed in the boreholes. Asbestos was not detected by the analytical laboratory.
2. Is the waste liquid waste?	No	The fill comprised a soil matrix.
3. Is the waste "pre-classified"?	No	The fill is not pre-classified with reference to NSW EPA (2014).
4. Does the waste possess hazardous waste characteristics?	No	The fill was not observed to contain or considered at risk to contain explosives, gases, flammable solids, oxidising agents, organic peroxides, toxic substances, corrosive substances, coal tar, batteries, lead paint or dangerous goods containers.
5. Determining a wastes classification using chemical assessment	Conducted	Refer to Table 2A, Appendix G.
6. Is the waste putrescible or non-putrescible?	No	The fill does not contain materials considered to be putrescible [a].

Note: a wastes that are generally not classified as putrescible include soils, timber, garden trimmings, agricultural, forest and crop materials, and natural fibrous organic and vegetative materials (NSW EPA, 2014).

As shown in Table 2A, Appendix G, concentrations of contaminants for the previously analysed fill samples were within the contaminant thresholds (CT1) and SCC1 (specific contaminant concentration)/TCLP1 (leachable concentration) for General Solid Waste (GSW) except for the exceedances of lead, nickel, and in particular, B(a)P and total PAH present in many samples.

It is noted, however, that anthropogenic materials were found in the bores within the site, and the larger aquatic centre lot. Two previous Prensa (2018) test locations (TP4 and TP5) to the east of the current site noted the presence of asbestos in fill. Therefore, it is considered that there is a high probability that asbestos containing materials are present within the fill between the sampled locations. The presence of asbestos will change the waste classification of soils being removed from site.

The following samples exceeded the CT1 and SCC1/TCLP1 for GSW and therefore nearby soils are preliminarily classified as **Restricted Solid Waste** (RSW):

- B(a)P in BH6/0.50.6 (18 mg/kg), BH10/0.4-0.5 (duplicate sample, 22 mg/kg) and BH27/1.4-1.5 m (23 mg/kg); and
- Total PAH in BH9/0.5-0.6 (400 mg/kg).

The following samples exceeded the CT2, and SCC2/TCLP2 for RSW and therefore nearby soils are preliminarily classifiable as **Hazardous Waste**:

- B(a)P in BH22/0.4-0.5 (520 mg/kg), BH19/0.4-0.5 (350 mg/kg), BH18/0.4-0.5 (72 mg/kg, BH12/0.5-0.6 (68 mg/kg) and BH9/0.5-0.6 (33 mg/kg); and
- Total PAH in BH22/0.4-0.5 (10000 mg/kg), BH19/0.4-0.5 (7200 mg/kg), BH18/0.4-0.5 (1200 mg/kg) and BH17/0.4-0.5 (1300 mg/kg).

Samples classified as RSW and Hazardous Waste are contaminated with PAH, notably as B(a)P. Ash and clinker material were encountered across the site, including in the boreholes with elevated concentrations of B(a)P and PAH, and are considered likely to be the source of the elevated concentrations of B(a)P and PAH in the soil.

The NSW EPA *Immobilisation of Contaminants in Waste 1999/05* is a general immobilisation approval for ash/coal-contaminated materials, which allows waste classification for such materials based on their leachability concentration (TCLP) value alone. Given the low leachability of B(a)P and PAH in the samples analysed, it is considered the immobilisation approval could be applied to the samples containing concentrations of B(a)P and PAH which exceeded the GSW and RSW criteria. Therefore, the fill across the site where ash and clinker were observed may be classifiable as GSW under the *Immobilisation of Contaminants in Waste 1999/05.* Usage of the immobilisation order will require further *ex-situ* confirmation.

It was previously noted for the potential for asbestos to be present in other sections of the site. As such whilst the above classifications are preliminary in nature, it is considered a possibility that soils in other areas are classifiable as **Special Waste (Asbestos)**.

Classification of underlying natural soils would be required to be conducted following removal of all fill and / or during *ex-situ* analysis. It is noted that due to the presence of AASS and PASS within parts of the larger lot, the natural soils will require further analysis to confirm the presence or absence of ASS.

10.3 Groundwater

All previous groundwater samples reported concentrations of contaminants below the SAC with the exception of cadmium, copper and nickel in GW9 (see Table 3A, Appendix G).

Exceedances of the SAC in GW9 were noted as:

- Cadmium (0.2 µg/L) exceeded the SAC of 0.2 µg/L;
- Copper (2 µg/L) exceeded the SAC of 1.7 µg/L; and
- Zinc (16 µg/L) exceeded the SAC of 9.8 µg/L.

The minor exceedances were previously considered to represent diffuse urban-sourced background contaminant levels typical of groundwater in the Sydney metropolitan area and / or a reflection of the natural minerology of the aquifer matrix (soil / rock), and were therefore not considered significant. Low levels of BTEX (as toluene) and PAH were detected below the SAC, and were considered likely to have leached from the soils within the site.

11. Updated CSM

Based on the results of the current investigation a revised CSM based on the preliminary model developed in Section 7 is presented in Table 9 below. Pathways given in italics are considered less significant given the low leachability of contaminants measured, and either detection below laboratory limits, or otherwise low detection of contaminants in groundwater. Accordingly, further assessment of groundwater is currently not considered to be required unless as informed by additional data.

Table 9: Updated CSM

Source and COPC	Transport Pathway	Receptor	Risk Management Action
S1: Fill Metals, TRH, BTEX, PAH, and asbestos S2: Previous land-use Metals, TRH, BTEX and PAH	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours *P3: Surface water run-off* *P4: Lateral migration of groundwater providing base flow to water bodies* *P5: Leaching of contaminants and vertical migration into groundwater*	R1: Current users R2: Construction and maintenance workers R3: End users R4: Adjacent site users	Development of a RAP to manage the identified contamination in soils. *Ex-situ* testing of soils requiring off-site disposal to confirm preliminary waste classifications.
	P2: Inhalation of dust and / or vapours	R4: Adjacent site users	
	P3: Surface water run-off *P4: Lateral migration of groundwater providing base flow to water bodies*	R5: Surface water	
	P5: Leaching of contaminants and vertical migration into groundwater	R6: Groundwater	
	P6: Contact with terrestrial ecology	R7: Terrestrial ecology	
S3: Disturbance of identified ASS ASS exposure	P1: Ingestion and dermal contact	R2: Construction and maintenance workers	Where proposed works may disturb identified soils (i.e. at or beneath the water table) preparation of an ASS Management Plan (ASSMAP) is recommended.
	P3: Surface water run-off P4: Lateral migration of groundwater providing base flow to water bodies	R5: Surface water	
	P5: Leaching of contaminants and vertical migration into groundwater	R6: Groundwater	

The main identified contamination pathways are therefore ingestion and direct contact, and inhalation of dust or vapours.

12. Conclusions and Recommendations

Based on the findings of this report, it is considered that the site can be made suitable for the proposed aquatic centre redevelopment as outlined in Section 3.1, subject to the following:

- Preparation of a remediation action plan (RAP) to address identified soil contamination. The RAP is recommended to include an unexpected finds protocol to manage any further unidentified contamination (e.g., asbestos, odorous soils or seepage water, etc.);
- Preparation of an acid sulfate soil management plan (ASSMP) to inform the appropriate identification and management of potential ASS, if any works are to involve dewatering or otherwise take place below the groundwater level. An ASSMP may be incorporated within the RAP for relatively minor disturbances of deeper soils which may contain ASS; and
- Conduct additional *ex situ* testing to confirm the waste classification for any surplus soils prior to off-site disposal.

13. References

Australian Collaborative Land Evaluation Program, Acid Sulfate Soils Risk Map [http://www.asris.csiro.au/arcgis/rest/services/ASRIS/Acid_Sulfate_Soils/MapServer]

CO-OP Studio Pty Ltd, *Botany Aquatic Centre Project Area Schedule 28.04.20*, (CO-OP Studio, 2020) Geological Survey of NSW Sydney, 1:100 000 Geology Sheet

DP (2020). *Detailed Site Investigation, Botany Aquatic Centre, 2 Myrtle Street, Botany. DP ref 99679.01 dated August 2020*

JBS&G Australia Pty Ltd (JBS&G), *Amenities Block Booralee Park Contamination Assessment - Rev A*, (JBS&G, 2016)

JBS&G Australia Pty Ltd (JBS&G), *Long Term Environmental Management Plan (51568/111266 Rev E)*, (JBS&G, 2017)

NEPC (2013) National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013), (NEPC, 2013)

NSW EPA. (2014). *Waste Classification Guidelines, Part 2: Immobilisation of Waste*. NSW Environment Protection Authority, (NSW EPA, 2014)

NSW EPA. (2016). *Addendum to the Waste Classification Guidelines (2014) - Part 1: Classifying Waste*. NSW Environment Protection Authority, (NSW EPA, 2016)

NSW EPA. (2018, May 25). *Virgin excavated natural material*. Retrieved from https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/virgin-excavated-natural-material, (NSW EPA, 2018)

NSW EPA. (2020). *Consultants reporting on contaminated land: Contaminated and Guidelines*. NSW Environment Protection Authority, (NSW EPA, 2020)

Prensa Pty Ltd (Prensa), *Soil Contamination Assessment - Botany Aquatic Centre, Cnr Myrtle and Jasmine Streets Botany NSW 2019*, (Prensa, 2018)

Soil Conservation Service of NSW, Sydney 1:100 000 Sheet

14. Limitations

Douglas Partners (DP) has prepared this Detailed Site (Contamination) Investigation (DSI) report for this project at 2 Myrtle Street, Botany in accordance with DP's email proposal dated 8 February 2021. The work was carried out under the Subconsultant Agreement Contract No. F19/1266, dated 30 April 2020. This report is provided for the exclusive use of CO-OP Studio for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Asbestos has not been detected by observation or by laboratory analysis, either on the surface of the site, or in fill materials at the test locations sampled and analysed. However, a previous intrusive environmental investigation undertaken by Prensa (2018) found asbestos fibre-cement sheeting on the site. Furthermore, building demolition materials, such as brick fragments, cable, ceramic, concrete, gravel, metal, particle board, plastic and PVC, however, were located in previous below-ground fill, and these are considered as indicative of the possible presence of hazardous building materials (HBM), including asbestos.

Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been sampled and analysed. This is either due to undetected variations in ground conditions or to budget constraints (as discussed above), or to parts of the site being inaccessible and not available for inspection/sampling, or to vegetation preventing visual inspection and reasonable access. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that asbestos is not present.

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk. This design process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in the Comments section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the environmental groundwater components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

Douglas Partners Pty Ltd

Appendix A

Notes About this Report

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

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This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

Appendix B

Drawings

LOCALITY MAP

Notes:
1. Basemap from metromap.com.au (dated 4/12/2020)

Legend

- Stage 1 Boundary (the site)
- Previous Investigation Area (DP 2020)
- Geotechnical Borehole Locations (DP 2020)
- Environmental Borehole Locations (DP 2020)
- Test Pit (Prensa 2018)
- Borehole (Prensa 2018)

0 25 50 75 m

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	CO-OP Studio Pty Ltd		
OFFICE:	Sydney	DRAWN BY:	JJH
SCALE:	1:1250 @ A3	DATE:	11.03.2021

TITLE: **Site Overview and Previous Test Locations**
Botany Aquatic Centre Stage 1
Corner Myrtle and Jasmine Streets, Botany, NSW

N

PROJECT No:	201489.01
DRAWING No:	1
REVISION:	1

LOCALITY MAP

Notes:
1. Basemap from metromap.com.au (dated 4/12/2020)

Legend

- Stage 1 Boundary (the site)
- Geotechnical Borehole Locations (DP 2020)
- Environmental Borehole Locations (DP 2020)
- Test Pit (Prensa 2018)
- Borehole (Prensa 2018)

0 10 20 30 m

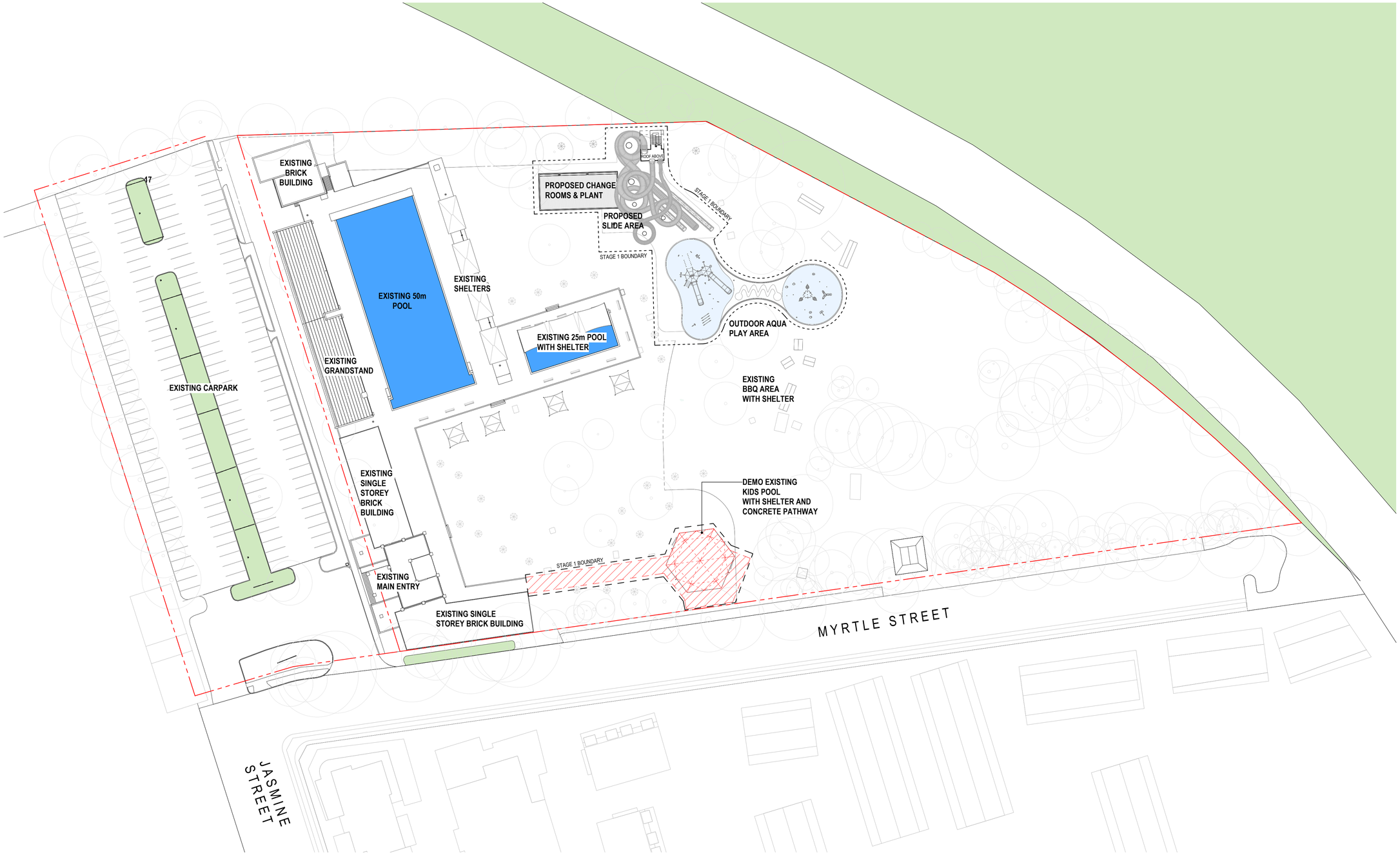
Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	CO-OP Studio Pty Ltd		
OFFICE:	Sydney	DRAWN BY:	JJH
SCALE:	1:750 @ A3	DATE:	11.03.2021

TITLE: **Stage 1 - Previous Test Locations**
Botany Aquatic Centre Stage 1
Corner Myrtle and Jasmine Streets, Botany, NSW

N

PROJECT No:	201489.01
DRAWING No:	1
REVISION:	1



Notes
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Verify all dimensions and levels on site and report any discrepancies to
Co-op for direction prior to the commencement of work.
Drawings are to be read in conjunction with all other contract documents.

Use figured dimensions only. Do not scale from drawings.
Co-op cannot guarantee the accuracy of content and format for copies of drawings issued electronically.
The completion of the Issue Details Checked and Authorised section below is confirmation of the status of the drawing. The drawing shall not be used for construction unless endorsed 'For Construction' and authorised for issue.
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Registered Business Name ABN 93 167 783 600

REV	DESCRIPTION	DATE	APP
B	ISSUE FOR COORDINATION	11/02/2021	TB
A	ISSUE FOR DRAFT DA	05/02/2021	TB

CLIENT BAYSIDE COUNCIL

CO-OP
CO-OP STUDIO
Level 7, 176 Wellington Parade, East Melbourne, 3002
Office: +61 452 281 614
admin@co-opstudio.com.au

PROJECT

BOTANY AQUATIC CENTRE - STAGE 01

PROJECT NUMBER

100239

DRAWING

SITE PLAN - STAGE 1

SCALE 1 : 500 @ A1

FOR APPROVAL
NOT TO BE USED DURING CONSTRUCTION

DRAWING NO. DA112B

REVISION B

DATE PRINTED 24/02/2021 11:39:38 AM

FILE NAME BIM 360://Botany Aquatic Centre/100239_Botany Aquatic Centre_R19_360.rvt

Appendix C

Site Photographs

Photo 1: Facing east

Photo 2: Facing west towards pool area

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	201489.01
	Botany Aquatic Centre – Stage 1	PLATE No:	1
	2 Myrtle Street, Botany	REV:	0
	CLIENT: CO-OP Studio Pty Ltd	DATE	16/02/2021

Photo 3: Facing west towards the site from the eastern part of the lot

Photo 4: General site surface conditions

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	201489.01
	Botany Aquatic Centre – Stage 1	PLATE No:	2
	2 Myrtle Street, Botany	REV:	0
	CLIENT: CO-OP Studio Pty Ltd	DATE	16/02/2021

Photo 5: General site surface conditions

Photo 6: General site surface conditions

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	201489.01
	Botany Aquatic Centre – Stage 1	PLATE No:	3
	2 Myrtle Street, Botany	REV:	0
	CLIENT: CO-OP Studio Pty Ltd	DATE	16/02/2021

Photo 7: Southern edge of site facing south

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	201489.01
	Botany Aquatic Centre – Stage 1	PLATE No:	4
	2 Myrtle Street, Botany	REV:	0
	CLIENT: CO-OP Studio Pty Ltd	DATE	16/02/2021

Appendix D

Site History Information

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 05 May 2020 15:52:22

Reference: LS012204 EP

Address: 2 Myrtle Street, Botany, NSW 2019

Disclaimer:
The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features.
You should obtain independent advice before you make any decision based on the information within the report.
The detailed terms applicable to use of this report are set out at the end of this report.

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Finance, Services & Innovation	02/03/2020	02/03/2020	Quarterly	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	15/04/2020	15/04/2020	Monthly	1000	0	1	6
Contaminated Land Records of Notice	Environment Protection Authority	21/04/2020	21/04/2020	Monthly	1000	0	0	2
Former Gasworks	Environment Protection Authority	21/04/2020	11/10/2017	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	12/02/2020	07/03/2017	Quarterly	1000	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	05/02/2020	13/07/2012	Quarterly	1000	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	22/04/2020	22/04/2020	Monthly	2000	0	0	2
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	12/02/2020	12/02/2020	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	12/02/2020	12/02/2020	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	22/04/2020	22/04/2020	Monthly	2000	0	0	1
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	04/05/2020	04/05/2020	Monthly	2000	0	0	1
EPA Other Sites with Contamination Issues	Environment Protection Authority	04/02/2020	13/12/2018	Annually	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	09/04/2020	09/04/2020	Monthly	1000	0	2	3
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	09/04/2020	09/04/2020	Monthly	1000	0	1	3
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	09/04/2020	09/04/2020	Monthly	1000	1	1	18
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	100	0	248	248
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	100	-	23	23
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	250	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	250	-	0	10
Points of Interest	NSW Department of Finance, Services & Innovation	19/02/2020	19/02/2020	Quarterly	1000	1	1	36
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/02/2020	19/02/2020	Quarterly	1000	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/02/2020	19/02/2020	Quarterly	1000	0	0	0
Major Easements	NSW Department of Finance, Services & Innovation	19/02/2020	19/02/2020	Quarterly	1000	0	1	7
State Forest	Forestry Corporation of NSW	18/01/2018	18/01/2018	As required	1000	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	21/01/2020	30/09/2019	Annually	1000	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	1	1	1
Botany Groundwater Management Zones	NSW Department of Planning, Industry and Environment	15/03/2018	01/10/2005	As required	1000	1	1	2

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	1	7	572
Geological Units 1:100,000	NSW Department of Planning, Industry and Environment	20/08/2014		None planned	1000	1	-	4
Geological Structures 1:100,000	NSW Department of Planning, Industry and Environment	20/08/2014		None planned	1000	0	-	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000	1	1	1
Soil Landscapes	NSW Department of Planning, Industry and Environment	12/08/2014		None planned	1000	2	-	3
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	24/04/2020	28/02/2020	Monthly	500	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	3
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	0	0	0
Dryland Salinity Potential of Western Sydney	NSW Department of Planning, Industry and Environment	12/05/2017	01/01/2002	None planned	1000	-	-	-
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	19/02/2020	19/02/2020	Quarterly	1000	0	0	0
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	24/04/2020	07/12/2018	Monthly	1000	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	24/04/2020	17/04/2020	Monthly	1000	0	0	0
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	04/02/2020	31/07/2018	Quarterly	1000	0	0	2
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	04/02/2020	20/11/2019	Quarterly	1000	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	12/02/2020	09/11/2018	Quarterly	1000	0	1	1
Environmental Planning Instrument Heritage	NSW Department of Planning, Industry and Environment	24/04/2020	17/04/2020	Monthly	1000	0	2	77
Bush Fire Prone Land	NSW Rural Fire Service	04/02/2020	14/12/2019	Quarterly	1000	0	0	0
Native Vegetation of the Sydney Metropolitan Area	NSW Office of Environment & Heritage	01/03/2017	16/12/2016	As required	1000	1	1	9
Ramsar Wetlands of Australia	Department of the Agriculture, Water and the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	4
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	6
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	01/05/2020	01/05/2020	Weekly	10000	-	-	-

Site Diagram

2 Myrtle Street, Botany, NSW 2019

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area:	30240m^2
Total Perimeter:	783m

Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Scale: 0 25 50 100 Meters

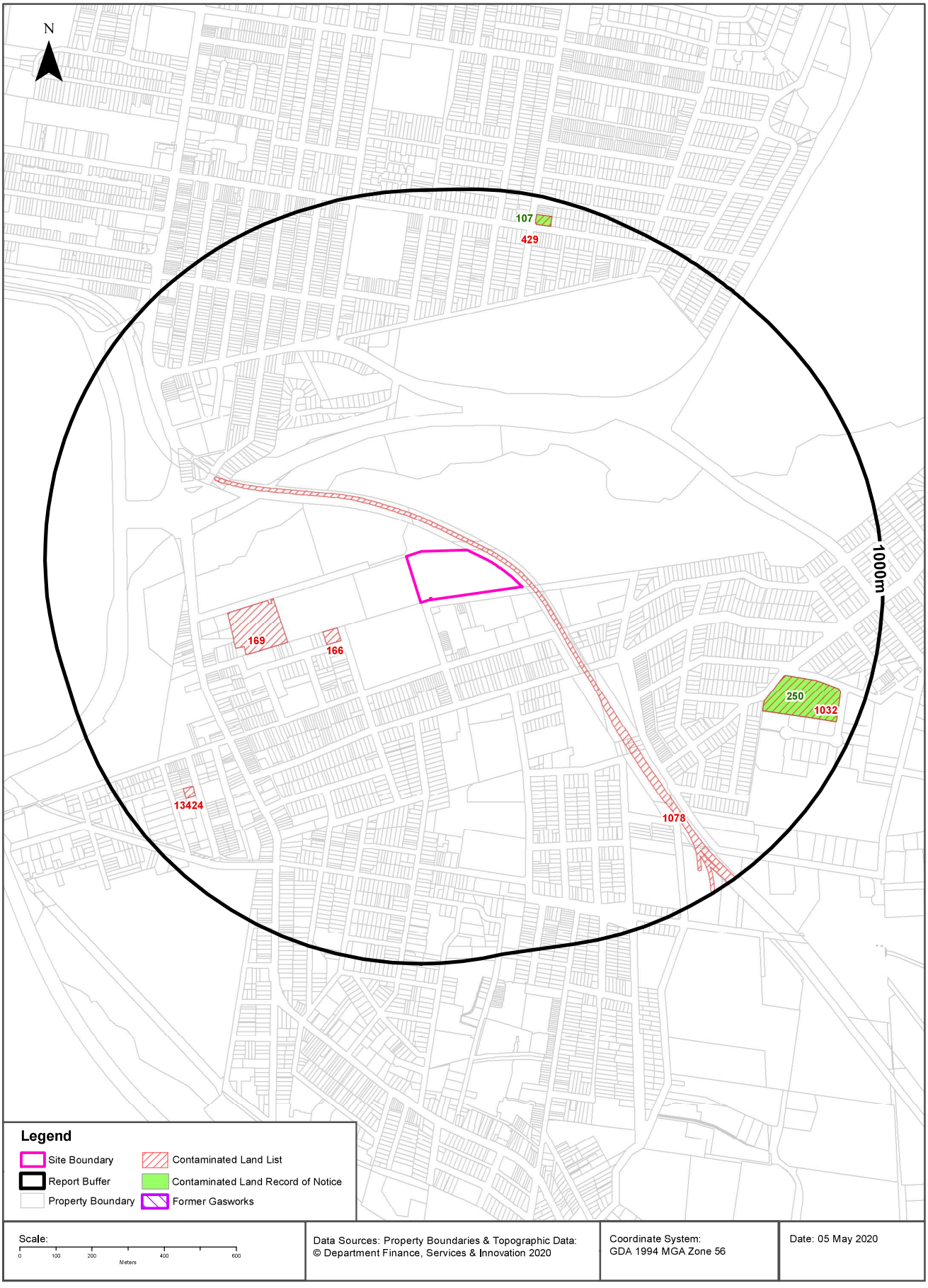
Data Sources: Aerial Imagery: © Aerometrex Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

Date: 05 May 2020

Contaminated Land

2 Myrtle Street, Botany, NSW 2019



Contaminated Land

2 Myrtle Street, Botany, NSW 2019

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist (m)	Direction
1078	Port Botany Railway Corridors	Friendship Road	Port Botany	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	17m	South East
166	Former Tannery	2 Daniel Street	Botany	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	242m	South West
169	Roads and Maritime Service	5 - 9 Lord Street	Botany	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	384m	West
1032	Former Email Site	Corner of Page Street and Holloway Street	Pagewood	Metal Industry	Contamination currently regulated under CLM Act	Current EPA List	Premise Match	739m	East
13424	Botany, Underwood	14a Underwood Avenue	Botany	Unclassified	Contamination being managed via the planning process (EP&A Act)	Current EPA List	Premise Match	809m	South West
429	Budget Petroleum Eastlakes	102 Maloney Street	Eastlakes	Service Station	Contamination formerly regulated under the CLM Act	Current EPA List	Premise Match	923m	North

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.

EPA site management class	Explanation
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Contaminated Land

2 Myrtle Street, Botany, NSW 2019

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
250	Former Email Site	Corner of Page Street and Holloway Street	Pagewood	1 current and 10 former	3211	Premise Match	739m	East
107	Budget Petroleum Eastlakes	102 Maloney Street	Eastlakes	5 former	3371	Premise Match	923m	North

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Waste Management & Liquid Fuel Facilities

2 Myrtle Street, Botany, NSW 2019

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist (m)	Direction
N/A	No records in buffer											

Waste Management Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

National Liquid Fuel Facilities

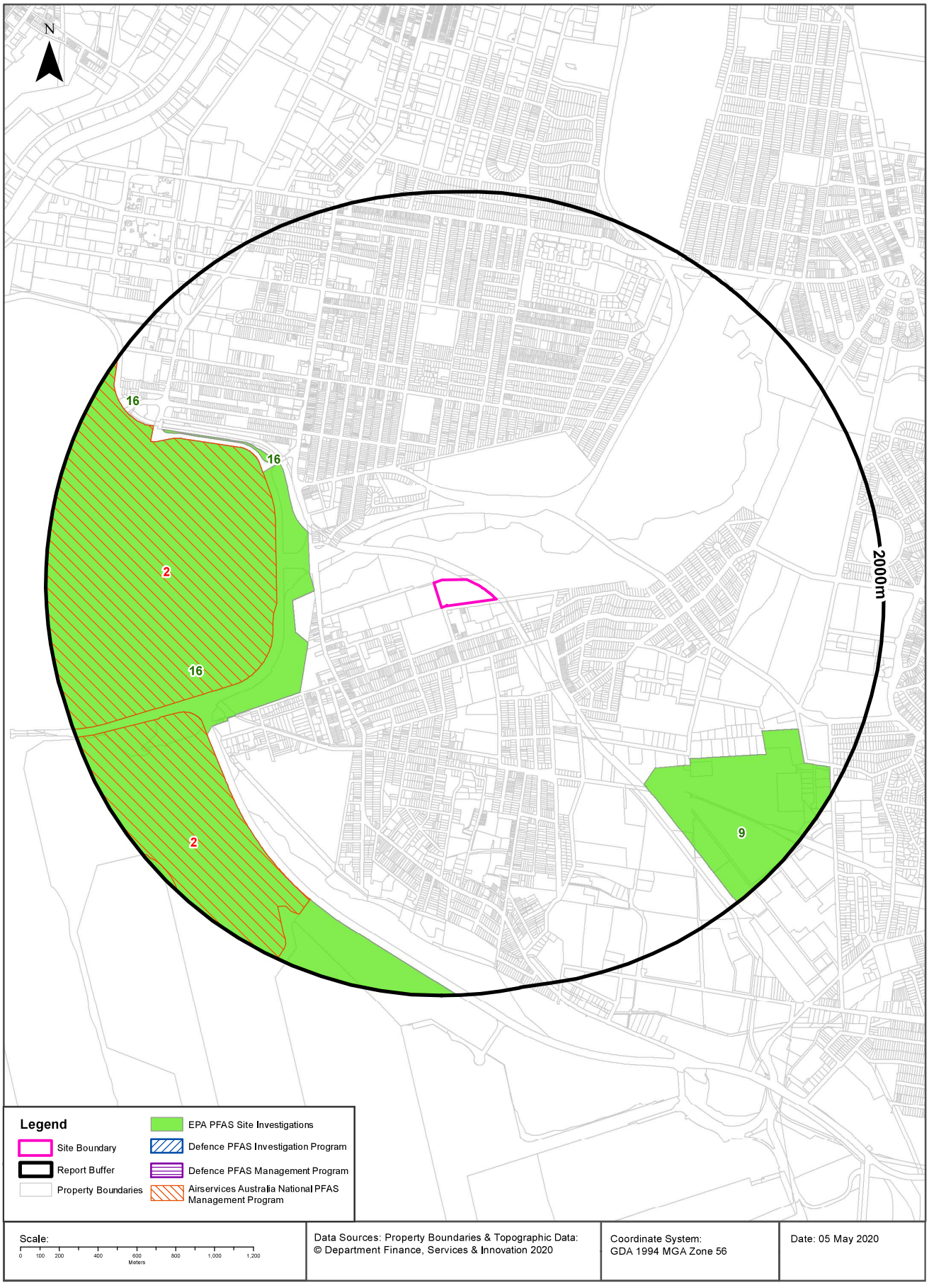
National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist (m)	Direction
N/A	No records in buffer										

National Liquid Fuel Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

PFAS Investigation & Management Programs

2 Myrtle Street, Botany, NSW 2019



PFAS Investigation & Management Programs

2 Myrtle Street, Botany, NSW 2019

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Id	Site	Address	Loc Conf	Dist	Dir
16	Botany Bay area & Georges River		General Area/ Suburb Match	617m	South West
9	Botany Industrial Park	Dent Street, Botany, 2019	General Area/ Suburb Match	1195m	South East

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

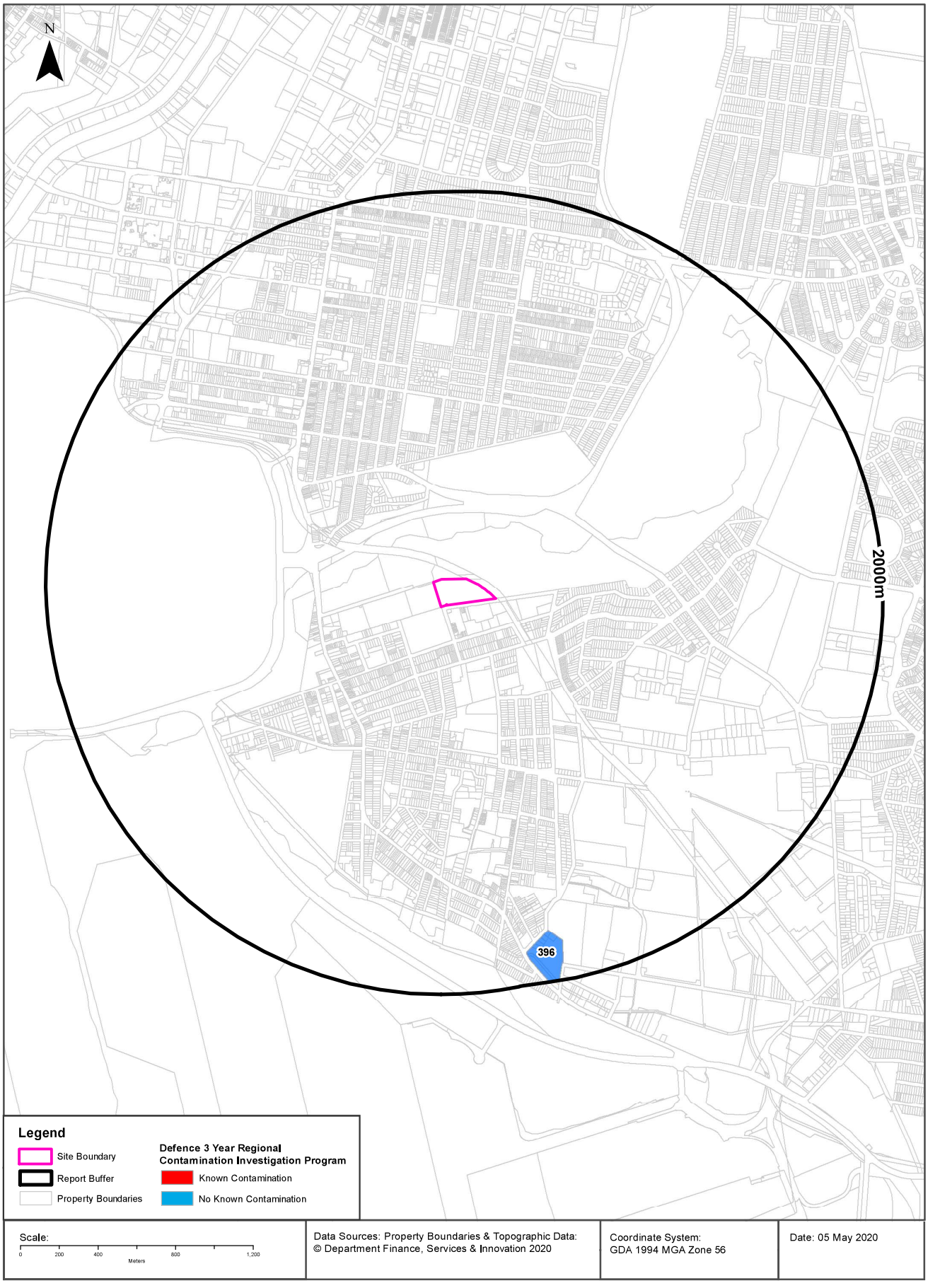
Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
2	Sydney Airport (NSW)	Confirmed at fire station and fire training ground.	Area Match	810m	West

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence 3 Year Regional Contamination Investigation Program

2 Myrtle Street, Botany, NSW 2019



Defence Sites

2 Myrtle Street, Botany, NSW 2019

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
396	Banksmeadow Depot	Banksmeadow, New South Wales	NO	Premise Match	1729m	South

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

2 Myrtle Street, Botany, NSW 2019

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

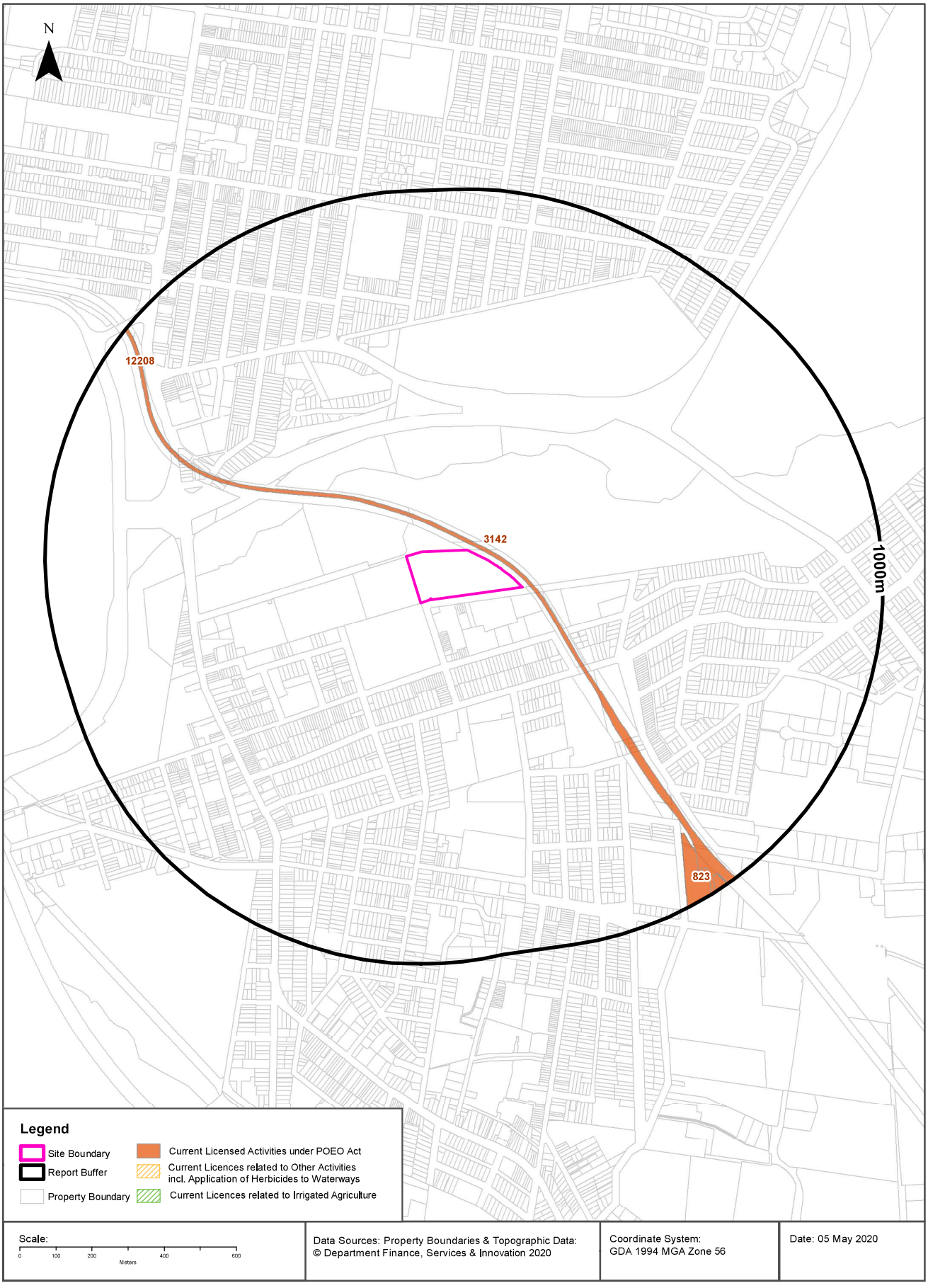
Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Current EPA Licensed Activities

2 Myrtle Street, Botany, NSW 2019



EPA Activities

2 Myrtle Street, Botany, NSW 2019

Licensed Activities under the POEO Act 1997

Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

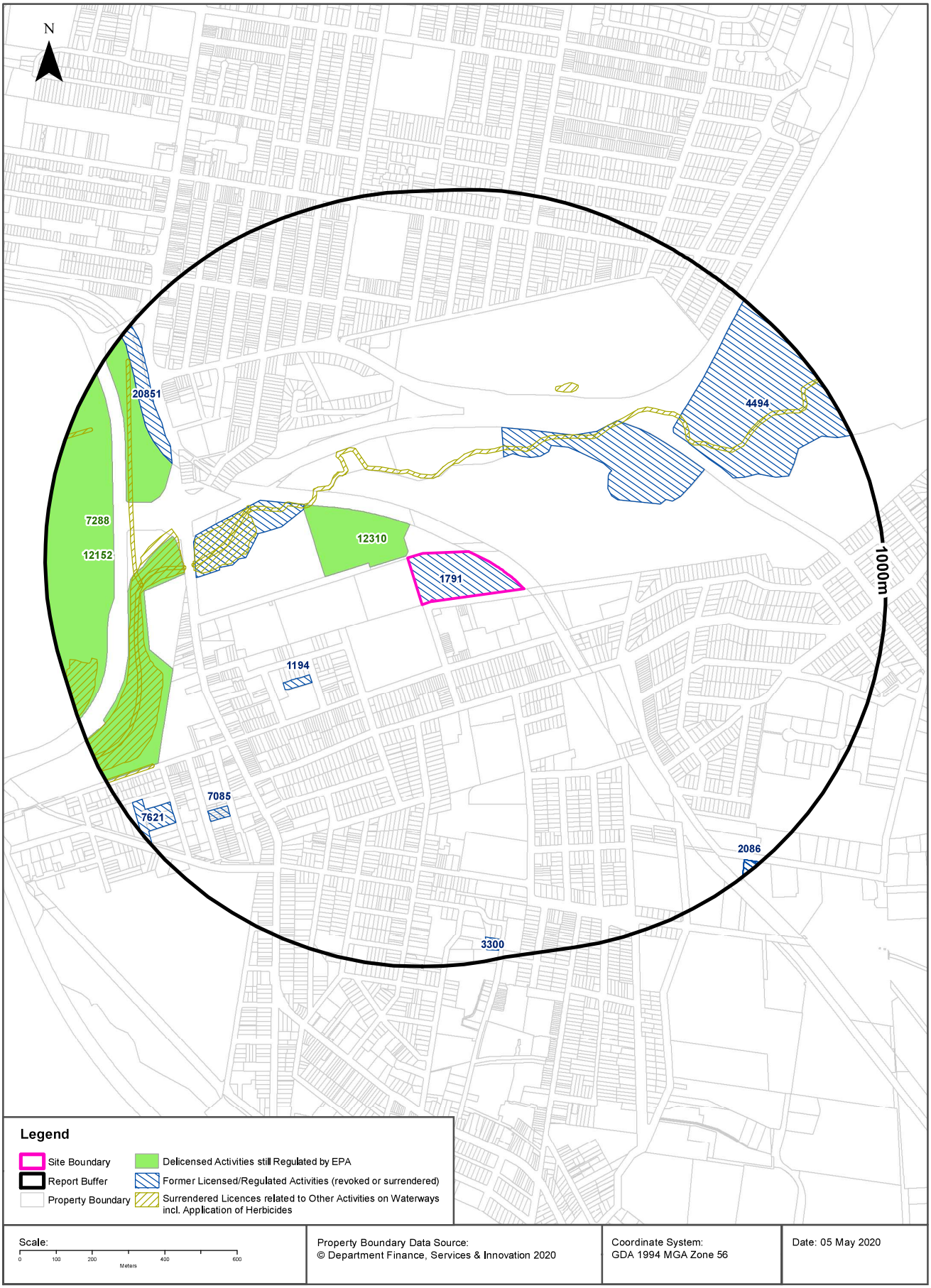
EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
3142	AUSTRALIAN RAIL TRACK CORPORATION LIMITED		Australian Rail Track Corporation (ARTC) network as defined by the ARTC Network Deeds within NSW., SYDNEY, NSW 2001		Railway systems activities	Network of Features	16m	South East
12208	SYDNEY TRAINS		PO BOX K349, HAYMARKET, NSW 1238		Railway systems activities	Network of Features	16m	South East
823	KELLOGG (AUST.) PTY. LTD.	KELLOGG (AUST) PTY LTD	SWINBOURNE STREET	BOTANY	General agricultural processing	Premise Match	811m	South East

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

2 Myrtle Street, Botany, NSW 2019



EPA Activities

2 Myrtle Street, Botany, NSW 2019

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
12310	ABBOTT AUSTRALASIA PTY LTD	Abbott Australasia Pty Ltd	32-34 Lord Street	BOTANY	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	8m	West
7288	SYDNEY AIRPORT CORPORATION LIMITED	SYDNEY AIRPORT	241 O'RIODAN STREET	MASCOT	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	617m	West
12152	QANTAS AIRWAYS LIMITED	Qantas Jet Base	Sydney Airport	MASCOT	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	810m	West

Delicensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
1791	THE COUNCIL OF THE CITY OF BOTANY BAY	CNR JASMINE AND MYRTLE STREETS, BOTANY, NSW 2019	Surrendered	25/09/2000	Miscellaneous licensed discharge to waters (at any time)	Premise Match	0m	Onsite
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	205m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	205m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	205m	-
4494	SYDNEY WATER CORPORATION	., EASTLAKES, NSW 2018	Surrendered	07/09/2000	Other activities - including Application of Herbicide	Premise Match	279m	North East
1194	JAMES HUNTER & SONS PTY LTD	1 IVY STREET, BOTANY, NSW 2019	Surrendered	06/07/2000	Soap and detergents production	Premise Match	367m	South West
20851	JOHN HOLLAND PTY LTD	, Port Botany Freight Rail Corridor at General Holmes Dr, MASCOT, NSW 2020,	Surrendered	03/11/2016	Railway systems activities	Network of Features	699m	North West
7085	JUNCTION PLATING (HOLDINGS) PTY LTD	17 UNDERWOOD AVE, BOTANY, NSW 2019	Surrendered	26/06/2000	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	773m	South West
7621	PASCOL PAINTS AUST PTY LTD	9-17 BYRNES STREET, BOTANY, NSW 2019	Surrendered	20/09/2000	Paints/polishes/adhesives production; Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	884m	South West

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
3300	TALLOW PRODUCTS PTY LTD	55 PEMBERTON STREET, BOTANY, NSW 2019	Surrendered	15/02/2000	Rendering or fat extraction	Premise Match	935m	South
2086	ECOLAB PTY LTD	3-5 ANDERSON STREET, BANKSMEADOW	Surrendered	24/03/2000	Chemical production waste generation	Premise Match	964m	South East
2086	ECOLAB PTY LTD	3-5 ANDERSON STREET, BANKSMEADOW	Surrendered	24/03/2000	Chemical storage waste generation	Premise Match	964m	South East
2086	ECOLAB PTY LTD	3-5 ANDERSON STREET, BANKSMEADOW	Surrendered	24/03/2000	Container reconditioning	Premise Match	964m	South East
2086	ECOLAB PTY LTD	3-5 ANDERSON STREET, BANKSMEADOW	Surrendered	24/03/2000	Dangerous goods production	Premise Match	964m	South East
2086	ECOLAB PTY LTD	3-5 ANDERSON STREET, BANKSMEADOW	Surrendered	24/03/2000	General chemicals storage	Premise Match	964m	South East
2086	ECOLAB PTY LTD	3-5 ANDERSON STREET, BANKSMEADOW	Surrendered	24/03/2000	Non-thermal treatment of liquid waste	Premise Match	964m	South East
2086	ECOLAB PTY LTD	3-5 ANDERSON STREET, BANKSMEADOW	Surrendered	24/03/2000	Toxic substances production	Premise Match	964m	South East
2086	ECOLAB PTY LTD	3-5 ANDERSON STREET, BANKSMEADOW	Surrendered	24/03/2000	Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	Premise Match	964m	South East

Former Licensed Activities Data Source: Environment Protection Authority
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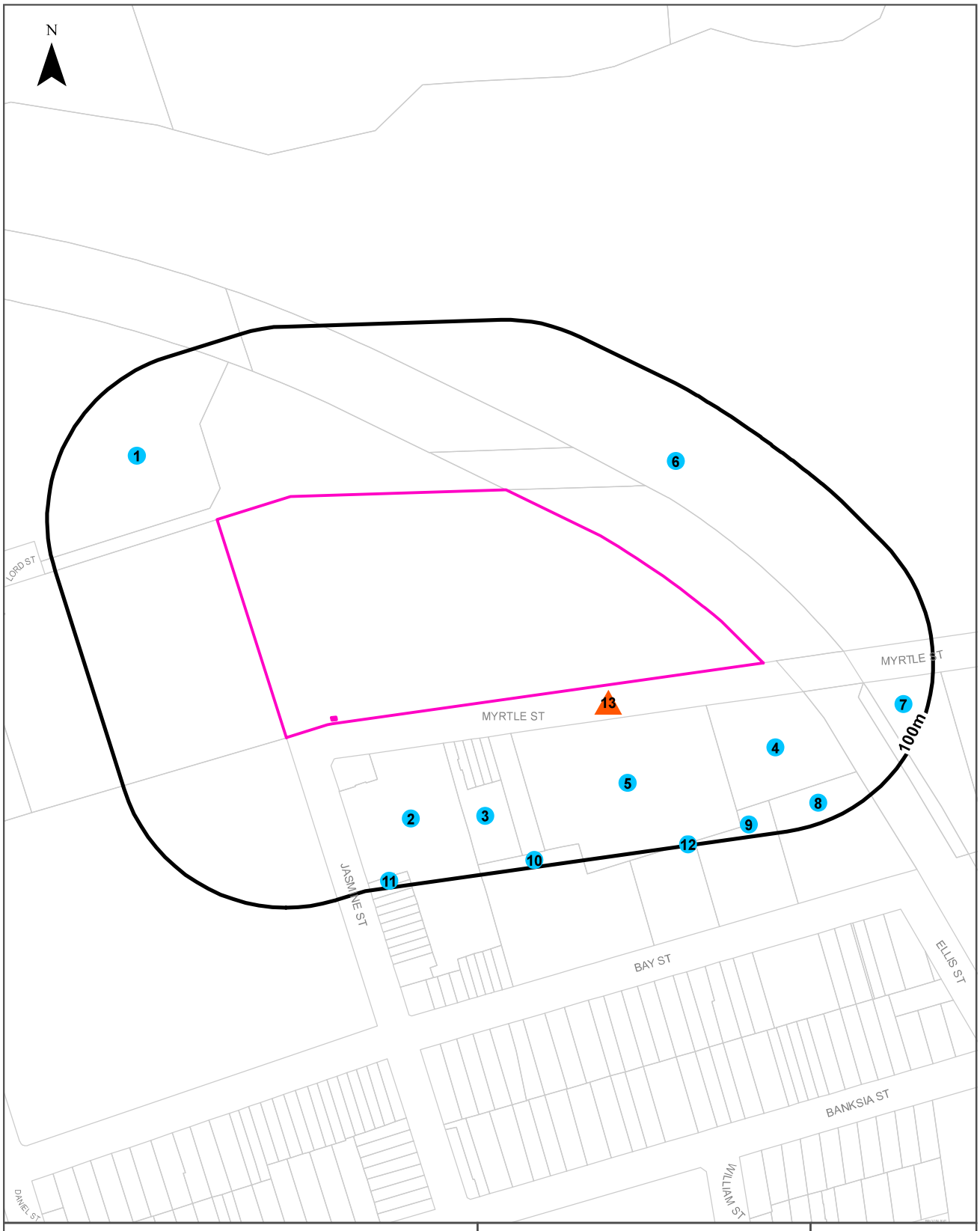
Historical Business Directories

2 Myrtle Street, Botany, NSW 2019



Legend

- Site Boundary
- Buffer 100m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 40 80 120 160 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 05 May 2020

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018
Property Boundaries © NSW Department Finance, Services & Innovation 2020

Historical Business Directories

2 Myrtle Street, Botany, NSW 2019

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1986, 1982, 1978, 1975, 1970, 1965, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	Inspection &/or Testing Services	AE Meta Sonic Pty Ltd, 28 Lord St., Botany. 2019	49129	1991	Premise Match	8m	North West
	Inspection &/or Testing Services	AE meta-Sonic Pty Ltd, 28 Lord St., Botany. 2019	49130	1991	Premise Match	8m	North West
	Furniture Mfrs &/or W/salers Custom Built	Littlefield & Rosenthal Pty Ltd, 28 Lord St., Botany. 2019	46985	1991	Premise Match	8m	North West
	Manufacturers Agents	Parkinson & Mann (Inc. Leather House), 28 Lord St., Botany 2019	51233	1991	Premise Match	8m	North West
	FURNITURE-CUSTOM BUILT-MFRS. &/OR W/SALERS.	Black., Henry Pty Ltd., 28 Lord St., Botany 2019	36923	1986	Premise Match	8m	North West
	FURNITURE-CUSTOM BUILT-MFRS. &/OR W/SALERS.	Jamie Kuta Pty Ltd, 28 Lord St., Botany 2019	36949	1986	Premise Match	8m	North West
	FURNITURE-CUSTOM BUILT-MFRS. &/OR W/SALERS.	Littlefield & Rosenthal Pty Ltd., 28 Lord St., Botany 2019	36956	1986	Premise Match	8m	North West
	PLASTIC MFRS. &/OR MOULDERS.(P6080)	Australian Hostess Industries, 28 Lord St., Botany. 2019.	64860	1982	Premise Match	8m	North West
	TANNERS &/OR LEATHER MFRS.(T0600)	Etherdon, C. F. Pty. Ltd., 28 Lord St, Botany. 2019.	79059	1982	Premise Match	8m	North West
	SKIN & HIDE MERCHANTS &/OR EXPORTERS. (S3820)	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany. 2019.	75032	1982	Premise Match	8m	North West
	WOOL BUYERS &/OR MERCHANTS. (W8120)	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany. 2019.	85356	1982	Premise Match	8m	North West
	WOOL COMBERS &CARBONIZERS. (W8240)	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany. 2019.	85374	1982	Premise Match	8m	North West
	WOOL SCOURERS. (W8640)	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany. 2019.	85383	1982	Premise Match	8m	North West
	PLASTIC GOODS IMPS. &/OR DISTS. (P5840)	Michaelis Bayley Plastics, 28 Lord St., Botany. 2019.	64684	1982	Premise Match	8m	North West
	SKIN & HIDE MERCHANTS &/OR EXPORTERS.	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany. 2019	66451	1978	Premise Match	8m	North West
	WOOL BUYERS &/OR MERCHANTS.	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany. 2019	75228	1978	Premise Match	8m	North West
	WOOL COMBERS & CARBONIZERS.	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany. 2019	75247	1978	Premise Match	8m	North West
	WOOL SCOURERS.	Hughes. F. W. Pty. Ltd., 30 Lord St., Botany. 2019	75262	1978	Premise Match	8m	North West
	WOOL BUYERS &/OR MERCHANTS.	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany. 2019	87806	1975	Premise Match	8m	North West
	WOOL SCOURERS.	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany. 2019	87860	1975	Premise Match	8m	North West
	WOOL COMBERS & CARBONIZERS.	Hughes. F. W. Pty. Ltd., 30 Lord St., Botany. 2019	87832	1975	Premise Match	8m	North West
	BUTCHERS-WHOLESALE (B868)	Colonial Wholesale Meat Co. Pty. Ltd. (The)., 30 Lord St., Botany	274901	1970	Premise Match	8m	North West
	WOOL COMBERS/CARBONIZERS (W465)	Hughes, F.W. Pty, Ltd., 30 Lord St, Botany	375290	1970	Premise Match	8m	North West
	WOOL BROKERS (W450)	Hughes, F.W. Pty. Ltd., 30 Lord St., Botany	375172	1970	Premise Match	8m	North West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	FELLMONGERS (F080)	Hughes, F.W.Pty. Ltd., 30 Lord St., Botany	302195	1970	Premise Match	8m	North West
	WOOL BUYERS &/OR MERCHANTS(W455)	Hughes, F.W.Pty. Ltd., 30 Lord St., Botany	375234	1970	Premise Match	8m	North West
	WOOL SCOURERS (W500)	Hughes, F.W.Pty. Ltd., 30 Lord St., Botany	375338	1970	Premise Match	8m	North West
	Butchers' - Wholesale	Colonial Wholesale Meat Co. Pty. Ltd. (The), 30 Lord St., Botany	59661	1965	Premise Match	8m	North West
	Meat Exporters	Colonial Wholesale Meat Co. Pty. Ltd. (The), 30 Lord St., Botany	110524	1965	Premise Match	8m	North West
	Fellmongers	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany	85585	1965	Premise Match	8m	North West
	Pastoral Companies	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany	131798	1965	Premise Match	8m	North West
	Wool Brokers	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany	158011	1965	Premise Match	8m	North West
	Wool Buyers &/or Merchants	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany	158105	1965	Premise Match	8m	North West
	Wool Combers/Carbonizers	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany	158182	1965	Premise Match	8m	North West
	Wool Scourers	Hughes, F. W. Pty. Ltd., 30 Lord St., Botany	158239	1965	Premise Match	8m	North West
2	Wine Makers &/or Distillers	Continental Distillers Co Pty Ltd, 32 Jasmine St Botany 2019	66372	1991	Premise Match	20m	South
	DISTILLERIES.	Continental Distillers Co. Pty. Ltd., 24 Jasmine St., Botany. 2019	75485	1978	Premise Match	20m	South
	WINE &/OR SPIRIT MERCHANTS- W/SALE.	Continental Distillers Co. Pty. Ltd., 24-32 Jasmine St., Botany. 2019	87388	1975	Premise Match	20m	South
	Wine/Spirit Merchants - Wholesale	Continental Liqueurs Pty. Ltd, 32 Jasmine St, Botany	157406	1965	Premise Match	20m	South
	Liqeur Distillers/Mfrs.	Continental Liqueurs Pty. Ltd., 32 Jasmine St., Botany	108290	1965	Premise Match	20m	South
	WINE/SPIRIT MERCHANTS-WHOLESALE	Continental Liqueurs Pty Ltd 32 Jasmine St., Botany	263164	1961	Premise Match	20m	South
	LIQUEUR DISTILLERS/MFRS.	Continental Liqueurs Pty. Ltd., 32 Jasmine St., Botany	332088	1961	Premise Match	20m	South
	WINE/SPIRIT MERCHANTS-WHOLESALE	Continental Liqueurs Pty. Ltd., 32 Jasmine St., Botany	263165	1961	Premise Match	20m	South
	ASBESTOS MFRS. &/OR SUPPLIERS	Fire Fighting Enterprises Pty. Ltd., 32 Jasmine St., Botany	268927	1961	Premise Match	20m	South
	ROOFING MATERIAL MFRS. &/OR DISTRIBUTORS	Fire Fighting Enterprises Pty. Ltd., 32 Jasmine St., Botany	246689	1961	Premise Match	20m	South
	SPRAYING EQUIPMENT MFRS. &/OR DISTRIBUTORS	Spray Engineering Co., 32 Jasmine St., Botany	252452	1961	Premise Match	20m	South
3	Bathroom Equipment &/or Fittings Mfrs &/or Dists	Marbilized Products Pty Ltd, 1 Myrtle St, Botany 2019	35721	1991	Premise Match	20m	South
	VANITY UNIT MFRS.	Marblized Products Pty. Ltd. 1 Myrtle St. Botany. 2019	97042	1986	Premise Match	20m	South
	BATHROOM EQUIPMENT MFRS. &/OR DISTS.	Marblized Products Pty. Ltd., 1 Myrtle St., Botany. 2019	5420	1986	Premise Match	20m	South
	BATHROOM EQUIPMENT MFRS.&/OR DISTS. (B1440)	Marblized Products Pty. Ltd., 1 Myrtle St., Botany. 2019.	4904	1982	Premise Match	20m	South
	VANITY UNIT MFRS. (V1200)	Marblized Products Pty. Ltd., 1 Myrtle St., Botany. 2019.	83221	1982	Premise Match	20m	South
	BATHROOM EQUIPMENT MFRS. &/OR DISTS.	Marblized Products Pty. Ltd., 1 Myrtle St., Botany. 2019	4457	1978	Premise Match	20m	South
	VANITY UNIT MFRS.	Marblized Products Pty. Ltd., 1 Myrtle St., Botany.2019	73367	1978	Premise Match	20m	South
	FOOTWEAR MFRS.-BOOTS &/OR SHOES.	Brucebilt Shoes Pty. Ltd. 1-3 Myrtle St., Botany 2019	33728	1975	Premise Match	20m	South
	FOOTWEAR MFRS. - CHILDRENS &/OR INFANTS.	Brucebilt Shoes Pty. Ltd., 1 Myrtle St, Botany. 2019.	33793	1975	Premise Match	20m	South
	FOOTWEAR MFRS.-BOOTS &/OR SHOES.	Brucebilt Shoes Pty. Ltd., 1 Myrtle St, Botany. 2019.	33737	1975	Premise Match	20m	South
4	Adhesive Mfrs &/or Imps &/or Dists	Metchem Pty. Ltd., 21 Myrtle St., Botany 2019	33425	1991	Premise Match	20m	South East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
5	Freight Forwarders	Simpac Customs & Forwarding Pty Ltd, 17 Myrtle St., Botany 2019	46522	1991	Premise Match	20m	South East
	AIR CARGO AGENTS.	Simpac Customs Forwarding Pty. Ltd., 17 Myrtle St., Botany. 2019	1882	1986	Premise Match	20m	South East
	CUSTOMS AGENTS.	Simpac Customs Forwarding Pty. Ltd., 17 Myrtle St., Botany. 2019	21028	1986	Premise Match	20m	South East
6	CLUBS & SPORTING BODIES (C487)	Eastlakes Golf Club., Gardeners Rd., Kingsford	284216	1970	Premise Match	39m	North East
	CLUBS & SPORTING BODIES (C487)	Lakes Golf Club Ltd., Gardeners Rd., Kingsford	284349	1970	Premise Match	39m	North East
	Clubs & Sporting Bodies	Eastlakes Golf Club, Gardeners Rd., Kingsford	68904	1965	Premise Match	39m	North East
	Clubs & Sporting Bodies	Lakes Golf Club Ltd., Gardeners Rd., Kingsford	69028	1965	Premise Match	39m	North East
	CLUBS & SPORTS BODIES	Eastlakes Golf Club, Gardeners Rd., Kingsford	291480	1961	Premise Match	39m	North East
	CLUBS & SPORTS BODIES	Lakes Golf Club Ltd., Gardeners Rd., Kingsford	291574	1961	Premise Match	39m	North East
7	Brewers &/or Maltsters	Coopers Ales & Stout Distributor., 104 Bay st. Botany 2019	36581	1991	Premise Match	60m	East
	Wine &/or Spirit Merchants Wholesale	Thomas Hardy & Sons Pty Ltd, 104 Bay St Botany 2019	66365	1991	Premise Match	60m	East
	WINE &/OR SPIRIT MERCHANTS WHOLESALE.	Coopers Ales & Stout Distributors, 104 Bay St., Botany. 2019	99643	1986	Premise Match	60m	East
	WINE &/OR SPIRIT MERCHANTS WHOLESALE.	Thomas Hardy & Sons Pty. Ltd., 104 Bay St., Botany. 2019	99684	1986	Premise Match	60m	East
8	MOTOR PANEL BEATERS &/OR SPRAY PAINTERS.	David Yates Smash Repairs, 96A Bay St., Botany. 2019	66243	1986	Premise Match	78m	South East
	MOTOR PANEL BEATERS &/OR SPRAY PAINTERS. (M7360)	David Yates Smash Repairs, 96A Bay St., Botany. 2019.	58239	1982	Premise Match	78m	South East
9	MOTOR PANEL BEATERS &/OR PAINTERS SUPPLIES.	Autosave 90 Bay St., Botany	66958	1986	Premise Match	80m	South East
	MOTOR PANEL BEATERS &/OR PAINTERS SUPPLIES.	Autosave Paint & Equipment Centres, 90 Bay St., Botany. 2019	66929	1986	Premise Match	80m	South East
	PAINT – INDUSTRIAL PROTECTIVE COATING.	Autosave Paint & Equipment Centres, 90 Bay St., Botany. 2019	71561	1986	Premise Match	80m	South East
	PAINT - PLASTIC - MFRS. &/OR DISTS.	Autosave Paint & Equipment Centres, 90 Bay St., Botany. 2019	71648	1986	Premise Match	80m	South East
	PAINT, ENAMEL, VARNISH, STAIN MFRS. &/OR DISTS.	Autosave Paint & Equipment Centres, 90 Bay St., Botany. 2019	71478	1986	Premise Match	80m	South East
	BUILDERS SUPPLIERS.	Glaskraft Laminates (Aust) Pty. Ltd., 90 Bay St, Botany. 2019	9246	1975	Premise Match	80m	South East
	INSULATING MATERIALS MFRS. &/OR DISTS. &/OR SUPPLIERS.	Glaskraft Laminates (Aust) Pty. Ltd., 90 Bay St, Botany. 2019	44723	1975	Premise Match	80m	South East
	LAMINATED MATERIALS &/OR PRODUCTS MFRS.	Glaskraft Laminates (Aust) Pty. Ltd., 90 Bay St., Botany. 2019	46676	1975	Premise Match	80m	South East
	PACKAGING &/OR PACKING SPECIALISTS	Glaskraft Laminates (Aust) Pty. Ltd., 90 Bay St., Botany. 2019	65128	1975	Premise Match	80m	South East
	PACKING & PACKAGING MATERIALS MFRS. &/OR SUPPLIERS.	Glaskraft Laminates (Aust) Pty. Ltd., 90 Bay St., Botany. 2019	65262	1975	Premise Match	80m	South East
	PAPER CONVERTERS.	Glaskraft Laminates (Aust) Pty. Ltd., 90 Bay St., Botany. 2019	65917	1975	Premise Match	80m	South East
	INSULATING MATERIALS MFRS. &/OR DISTS. &/OR SUPPLIERS.	Glaskraft Laminates (Aust.) Pty. Ltd., 90 Bay St., Botany. 2019	44696	1975	Premise Match	80m	South East
10	Boilermakers	Goliath Engineering Pty. Ltd., 72 Bay St, Botany 2019	36315	1991	Premise Match	90m	South
	Engineers General	Proquip Pty Ltd, 72 Bay St., Botany 2019	44283	1991	Premise Match	90m	South
	Glass Bevellers Cutters &/or Silverers	Valiant Glass Service Pty. Ltd., 78 Bay St., Botany. 2019	47668	1991	Premise Match	90m	South
	VALVES &/OR COCKS - STEAM, FLUID, ETC. - MFRS. &/OR DISTS.	Proquip Engineering Co. 72 Bay St. Botany. 2019	96993	1986	Premise Match	90m	South

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
10	ENGINEERS – FABRICATING.	Proquip Engineering Co., 72 Bay St., Botany. 2019	29512	1986	Premise Match	90m	South
	ENGINEERS – FACTORY MAINTENANCE.	Proquip Engineering Co., 72 Bay St., Botany. 2019	29600	1986	Premise Match	90m	South
	ENGINEERS – GENERAL &/ OR MANUFACTURING &/ OR MECHANICAL.	Proquip Engineering Co., 72 Bay St., Botany. 2019	30268	1986	Premise Match	90m	South
	ENGINEERS-CHEMICAL.	Proquip Engineering Co., 72 Bay St., Botany. 2019	28603	1986	Premise Match	90m	South
	PROFILE CUTTING SPECIALISTS.	Proquip Engineering Co., 72 Bay St., Botany. 2019	77326	1986	Premise Match	90m	South
	WELDERS - ELECTRIC &/OR OXY.	Proquip Engineering Co., 72 Bay St., Botany. 2019	98710	1986	Premise Match	90m	South
	GLASS BEVELLERS &/OR CUTTERS.	Valiant Glass Service Pty. Ltd., 78 Bay St., Botany. 2019	39725	1986	Premise Match	90m	South
	GLASS MERCHANTS &/OR GLAZIERS.	Valiant Glass Service Pty. Ltd., 78 Bay St., Botany. 2019	39885	1986	Premise Match	90m	South
	GLASS-DECORATORS EMBOSSERS, ENGRAVERS, ETCHERS.	Valiant Glass Service Pty. Ltd., 78 Bay St., Botany. 2019	39744	1986	Premise Match	90m	South
	HEAT EXCHANGER MFRS. &/OR DISTS. (H3150)	Goliath Engineering Co., 72 Bay St., Botany. 2019.	39831	1982	Premise Match	90m	South
	PRESSURE VESSEL MFRS. (P8180)	Goliath Engineering Co., 72 Bay St., Botany. 2019.	65835	1982	Premise Match	90m	South
	VALVES &/ OR COCKS - STEAM, FLUID ETC., - MRFS &/ OR DISTS (V0900)	Goliath Engineering Co., 72 Bay St., Botany. 2019.	83151	1982	Premise Match	90m	South
	STRAINER MFRS. * (S7487)	Goliath Engineering Co., 72 Bay Street, Botany. 2019	77535	1982	Premise Match	90m	South
	ENGINEERS-CHEMICAL (E6360)	Gollath Engineering Co., 72 Bay St, Botany. 2019.	26772	1982	Premise Match	90m	South
	ENGINEERS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL. (E7140)	Gollath Engineering Pty. Ltd., 72 Bay St, Botany 2019.	28035	1982	Premise Match	90m	South
	ENGINEERS - FABRICATING (E6870)	Proquip Engineering Co., 72 Bay St, Botany. 2019.	27610	1982	Premise Match	90m	South
	ENGINEERS - FACTORY MAINTENANCE. (E6900)	Proquip Engineering Co., 72 Bay St, Botany. 2019.	27696	1982	Premise Match	90m	South
	VALVES &/ OR COCKS - STEAM, FLUID ETC., - MRFS &/ OR DISTS (V0900)	Proquip Engineering Co., 72 Bay St, Botany. 2019.	83175	1982	Premise Match	90m	South
	WELDERS - ELECTRIC &/OR OXY.(W3160)	Proquip Engineering Co., 72 Bay St, Botany. 2019.	84228	1982	Premise Match	90m	South
	PRESSURE VESSEL MFRS. (P8180)	Proquip Engineering Co., 72 Bay St., Botany. 2019	65847	1982	Premise Match	90m	South
	BOILERMAKERS. (B4080)	Proquip Engineering Co., 72 Bay St., Botany. 2019.	7492	1982	Premise Match	90m	South
	ENGINEERS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL. (E7140)	Proquip Engineering Co., 72 Bay St., Botany. 2019.	28308	1982	Premise Match	90m	South
	HEAT EXCHANGER MFRS. &/OR DISTS. (H3150)	Proquip Engineering Co., 72 Bay St., Botany. 2019.	39845	1982	Premise Match	90m	South
	PROFILE CUTTING SPECIALISTS.(P9000)	Proquip Engineering Co., 72 Bay St., Botany. 2019.	67068	1982	Premise Match	90m	South
	TANNING MACHINERY MFRS.. (T0725)	Proquip Engineering Co., 72 Bay St., Botany. 2019.	79082	1982	Premise Match	90m	South
	ENGINEERS-CHEMICAL (E6360)	Proqulp Engineering Co., 72 Bay St, Botany. 2019.	26780	1982	Premise Match	90m	South
	ENGINEERS- GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Goliath Eng. Co. Pty. Ltd. Steel Strainers 72 Bay Street, Botany. 2019.	24829	1978	Premise Match	90m	South
	STRAINER MFRS.	Goliath Engineering Co. 72 Bay Street, Botany. 2019	68725	1978	Premise Match	90m	South
	HEAT EXCHANGER MFRS. &/OR DISTS.	Goliath Engineering Co., 72 Bay St, Botany. 2019.	35452	1978	Premise Match	90m	South
	PRESSURE VESSEL MFRS.	Goliath Engineering Co., 72 Bay St., Botany. 2019	58749	1978	Premise Match	90m	South

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
10	VALVES &/OR COCKS - STEAM, FLUID, ETC. - MFRS. &/OR DISTS.	Goliath Engineering Co., 72 Bay St., Botany.2019	73318	1978	Premise Match	90m	South
	ENGINEERS-CHEMICAL.	Gollath Engineering Co., 72 Bay St, Botany. 2019.	23801	1978	Premise Match	90m	South
	BOILERMAKERS.	Proquip Engineering Co., 72 Bay St, Botany. 2019	6518	1978	Premise Match	90m	South
	ENGINEERS-CHEMICAL.	Proquip Engineering Co., 72 Bay St, Botany. 2019.	23808	1978	Premise Match	90m	South
	ENGINEERS-FABRICATING.	Proquip Engineering Co., 72 Bay St, Botany. 2019.	24656	1978	Premise Match	90m	South
	ENGINEERS-FACTORY MAINTENANCE.	Proquip Engineering Co., 72 Bay St, Botany. 2019.	24735	1978	Premise Match	90m	South
	HEAT EXCHANGER MFRS. &/OR DISTS.	Proquip Engineering Co., 72 Bay St, Botany. 2019.	35466	1978	Premise Match	90m	South
	PRESSURE VESSEL MFRS.	Proquip Engineering Co., 72 Bay St., Botany. 2019	58760	1978	Premise Match	90m	South
	PROFILE CUTTING SPECIALISTS.	Proquip Engineering Co., 72 Bay St., Botany. 2019	59990	1978	Premise Match	90m	South
	WELDERS-ELECTRIC &/OR OXY.	Proquip Engineering Co., 72 Bay St., Botany. 2019	74313	1978	Premise Match	90m	South
	ENGINEERS- GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Proquip Engineering Co., 72 Bay St., Botany. 2019.	25365	1978	Premise Match	90m	South
	TANNING MACHINERY MFRS.	Proqulp Engineering Co., 72 Bay St., Botany. 2019	69635	1978	Premise Match	90m	South
	VALVES &/OR COCKS - STEAM, FLUID, ETC. - MFRS. &/OR DISTS.	Proqulp Engineering Co., 72 Bay St., Botany.2019	73343	1978	Premise Match	90m	South
	HEAT EXCHANGER MFRS. &/OR DISTS.	Goliath Engineering Co., 72 Bay St., Botany. 2019	41950	1975	Premise Match	90m	South
	PRESSURE VESSEL MFRS.	Goliath Engineering Co., 72 Bay St., Botany. 2019	69137	1975	Premise Match	90m	South
	VALVES &/OR COCKS.,STEAM, FLUID, ETC..,MFRS. &/OR DISTS.	Goliath Engineering Co., 72 Bay St., Botany. 2019	85994	1975	Premise Match	90m	South
	ENGINEERS-CHEMICAL	Goliath Engineering Co., 72 Bay St., Botany. 2019.	27533	1975	Premise Match	90m	South
	FRUIT CASE MFRS. &/OR DEALERS.	Moore, J., 78 Bay St., Botany. 2019.	34582	1975	Premise Match	90m	South
	HEAT EXCHANGER MFRS. &/OR DISTS.	Proquip Engineering Ca., 72 Bay St., Botany. 2019	41962	1975	Premise Match	90m	South
	ENGINEERS - GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Proquip Engineering Co. Pty. Ltd. 72 Bay St., Botany. 2019	28727	1975	Premise Match	90m	South
	ENGINEERS - FABRICATING	Proquip Engineering Co., 72 Bay St, Botany. 2019.	28526	1975	Premise Match	90m	South
	ENGINEERS-CHEMICAL	Proquip Engineering Co., 72 Bay St, Botany. 2019.	27542	1975	Premise Match	90m	South
	ENGINEERS-FACTORY MAINTENANCE	Proquip Engineering Co., 72 Bay St, Botany. 2019.	28612	1975	Premise Match	90m	South
	PRESSURE VESSEL MFRS.	Proquip Engineering Co., 72 Bay St., Botany. 2019	69148	1975	Premise Match	90m	South
	PROFILE CUTTING SPECIALISTS.	Proquip Engineering Co., 72 Bay St., Botany. 2019	70493	1975	Premise Match	90m	South
	TANNING MACHINERY MFRS.	Proquip Engineering Co., 72 Bay St., Botany. 2019	82172	1975	Premise Match	90m	South
	ENGINEERS - GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Proquip Engineering Co., 72 Bay St., Botany. 2019.	29326	1975	Premise Match	90m	South
	BOILER REPAIRERS &/OR SERVICEMEN.	Proqulp Engineering Co., 72 Bay St, Botany. 2019	6938	1975	Premise Match	90m	South
	VALVES &/OR COCKS.,STEAM, FLUID, ETC..,MFRS. &/OR DISTS.	Proqulp Engineering Co., 72 Bay St., Botany. 2019	86017	1975	Premise Match	90m	South
	WELDERS., Electric &/OR OXY.	proqulp Engineering Co., 72 Bay St., Botany. 2019	87049	1975	Premise Match	90m	South

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
10	FRUIT CASE MANUFACTURERS &/OR DEALERS (F615)	Moore, J., 78 Bay St., Botany	306304	1970	Premise Match	90m	South
	VALVES & STRAINERS	PROQUIP ENGINEERING CO, 72 BAY ST. BOTANY,	372327	1970	Premise Match	90m	South
	BOILERMAKERS (B510)	Proquip Engineering Co., 72 Bay St., Botany	267967	1970	Premise Match	90m	South
	ENGINEERS-CHEMICAL (E520)	Proquip Engineering Co., 72 Bay St., Botany	297495	1970	Premise Match	90m	South
	ENGINEERS-FABRICATING (E580)	Proquip Engineering Co., 72 Bay St., Botany	298599	1970	Premise Match	90m	South
	ENGINEERS-FACTORY MAINTENANCE (E585)	Proquip Engineering Co., 72 Bay St., Botany	298702	1970	Premise Match	90m	South
	ENGINEERS-GENERAL &/OR MFRG.&/OR MECHANICAL (E615)	Proquip Engineering Co., 72 Bay St., Botany	299538	1970	Premise Match	90m	South
	HEAT EXCHANGER MANUFACTURERS &/OR DISTRIBUTORS	Proquip Engineering Co., 72 Bay St., Botany	316135	1970	Premise Match	90m	South
	PIPE FLANGES & HINGED CLOSURES	PROQUIP ENGINEERING CO., 72 BAY St., BOTANY	348979	1970	Premise Match	90m	South
	PRESSURE VESSEL MFRS. (P776)	Proquip Engineering Co., 72 Bay St., Botany	351575	1970	Premise Match	90m	South
	PROFILE CUTTING SPECIALISTS (P862)	Proquip Engineering Co., 72 Bay St., Botany	353122	1970	Premise Match	90m	South
	TANNING MACHINERY MFRS. (T065)	Proquip Engineering Co., 72 Bay St., Botany	367189	1970	Premise Match	90m	South
	VALVES/COCKS (STEAM/LIQUID,Etc.) MFRS./DISTS.(V065)	Proquip Engineering Co., 72 Bay St., Botany	372403	1970	Premise Match	90m	South
	WELDERS-ELECTRIC &/OR OXY	Proquip Engineering Co., 72 Bay St., Botany	373917	1970	Premise Match	90m	South
	ENGINEERS-MACHINING & TURNING	PROQUIP ENGINEERING CO., 72 BAY St., BOTANY, 2019	300134	1970	Premise Match	90m	South
	Fruit Case Manufacturers	Moore, J., 78 Bay St., Botany	90405	1965	Premise Match	90m	South
11	DISTILLERIES.	Continental Distillers Co. Pty. Ltd., 24 Jasmine St., Botany. 2019	24438	1986	Premise Match	92m	South
	WINE &/OR SPIRIT MERCHANTS WHOLESALE.	Continental Distillers Co. Pty. Ltd., 24 Jasmine St., Botany. 2019	99641	1986	Premise Match	92m	South
	WINE &/OR SPIRIT MERCHANTS - WHOLESALE. (W6000)	Continental Distillers Co. Pty. Ltd., 24 Jasmine St, Botany. 2019.	85029	1982	Premise Match	92m	South
	DISTILLERIES. (D4700)	Continental Distillers Co. Pty. Ltd., 24 Jasmine St., Botany. 2019.	21830	1982	Premise Match	92m	South
	WINE &/OR SPIRIT MERCHANTS- WHOLESALE.	Continental Distillers Co. Pty. Ltd., 24 Jasmine St., Botany. 2019	74901	1978	Premise Match	92m	South
	WINE &/OR SPIRIT MERCHANTS- W/SALE.	Continental Distillers Co. Pty. Ltd., 24 Jasmine St., Botany. 2019	87412	1975	Premise Match	92m	South
	DISTILLERIES.	Continental DIstIltera Co. Pty. Ltd., 24 Jasmine St., Botany. 2019	22212	1975	Premise Match	92m	South
	WINE/SPIRIT MERCHANTS-WHOLESALE	Continental Distillers Co. Pty. Ltd., 24 Jasmine St, Botany.	374656	1970	Premise Match	92m	South
	DISTILLERS (D410)	Continental Distillers Co. Pty. Ltd., 24-32 Jasmine St., Botany	289949	1970	Premise Match	92m	South
12	Paint ,Enamel, Varnish &/or Stain Mfrs &/or Imps &/or Dists	Feast Watson & Co Pty. Ltd., 82 Bay St., Botany. 2019	56541	1991	Premise Match	98m	South East
	Paint Marine Mfrs &/or Imps &/or Dists	Feast Watson & Co Pty. Ltd., 82 Bay St., Botany. 2019	56628	1991	Premise Match	98m	South East
	Paint Anti Corrosive Mfrs &/or Imps &/or Dists	Feast Watson & Co. Pty. Ltd., 82 Bay St., Botany. 2019	56594	1991	Premise Match	98m	South East
	PACKAGING &/OR PACKING SPECIALISTS.	Glaskraft Pty. Ltd. 84 Bay St., Botany. 2019	55222	1978	Premise Match	98m	South East
	INSULATING MATERIALS MFRS. &/OR DISTS. &/OR SUPPLIERS.	Glaskraft Pty. Ltd. 84 Bay Street, Botany. 2019.	37784	1978	Premise Match	98m	South East
	LAMINATED MATERIALS &/OR PRODUCTS MFRS.	Glaskraft Pty. Ltd., 84 Bay St, Botany. 2019.	39566	1978	Premise Match	98m	South East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
12	PACKING & PACKAGING MATERIALS MFRS. &/OR SUPPLIERS.	Glaskraft Pty. Ltd., 84 Bay St., Botany. 2019	55353	1978	Premise Match	98m	South East
	ROOFING MATERIAL MFRS.&/OR DISTS.	Glaskraft Pty. Ltd., 84 Bay St., Botany. 2019	63922	1978	Premise Match	98m	South East
	WATERPROOFING MATERIALS MFRS. &/OR DISTS.	Glaskraft Pty. Ltd., 84 Bay St., Botany.2019	74025	1978	Premise Match	98m	South East
	ROOFING MATERIAL MFRS.&/OR DISTS.	Glaskraft Pty. Ltd., 84 Bay Street, Botany. 2019	63905	1978	Premise Match	98m	South East
	CLEANSER &/OR CLEANING PREPARATIONS MFRS. &./OR DISTS.	Spartan Chemical Co., 84 Bay St., Botany. 2019.	14452	1978	Premise Match	98m	South East
	FLOOR MATERIAL SPECIALISTS.	Spartan Chemical Co., 84 Bay St., Botany. 2019.	28315	1978	Premise Match	98m	South East
	FLOOR POLISHING MACHINE MFRS. &/OR DISTS	Spartan Chemical Co., 84 Bay St., Botany. 2019.	28336	1978	Premise Match	98m	South East
	FLOOR TREATMENT SPECIALISTS.	Spartan Chemical Co., 84 Bay St., Botany. 2019.	28390	1978	Premise Match	98m	South East
	PAINT-INDUSTRIAL PROTECTIVE COATING.	Spartan Paints Pty. Ltd. 84 Bay St., Botany. 2019	55486	1978	Premise Match	98m	South East
	PAINT SOLVENT THINNER MFRS. &/OR W/SALERS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	55588	1978	Premise Match	98m	South East
	PAINT VARNISH COLOURS MFRS. SUPPLIES.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	55603	1978	Premise Match	98m	South East
	PAINT VARNISH STAIN REMOVER MFRS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	55723	1978	Premise Match	98m	South East
	PAINT, ENAMEL, VARNISH/STAIN MFRS. &/OR DISTS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	55434	1978	Premise Match	98m	South East
	PAINT-LACQUER MFRS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	55521	1978	Premise Match	98m	South East
	PAINT-PLASTIC MFRS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	55570	1978	Premise Match	98m	South East
	POLISH MFRS. &/OR DISTS	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	58538	1978	Premise Match	98m	South East
	PAINT VARNISH OILS &/OR COLOUR MERCHANTS.	Spartan PaintsPty. Ltd., 84 Bay St., Botany. 2019	55696	1978	Premise Match	98m	South East
	PAINT-MARINE-MFRS. &/OR DISTS	Transocean Marine Paint, 82 Bay St., Botany. 2019	55551	1978	Premise Match	98m	South East
	PAINT VARNISH STAIN REMOVER MFRS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany 2019	65667	1975	Premise Match	98m	South East
	CLEANSER &/OR CLEANING PREPARATIONS MFRS. &/OR DISTS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	16620	1975	Premise Match	98m	South East
	MOTOR PAINTERS SUPPLIES.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	60535	1975	Premise Match	98m	South East
	PAINT SOLVENT THINNER MFRS. &/OR W/SALERS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	65474	1975	Premise Match	98m	South East
	PAINT VARNISH COLOURS MFRS. SUPPLIES.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	65493	1975	Premise Match	98m	South East
	PAINT VARNISH OILS &/OR COLOUR MERCHANTS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	65616	1975	Premise Match	98m	South East
	PAINT, ENAMEL, VARNISH/STAIN MFRS. &/OR DISTS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	65333	1975	Premise Match	98m	South East
	PAINT-INDUSTRIAL PROTECTIVE COATING.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	65374	1975	Premise Match	98m	South East
	PAINT-LACQUER MFRS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	65407	1975	Premise Match	98m	South East
	PAINT-PLASTIC MFRS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	65457	1975	Premise Match	98m	South East
	POLISH MFRS. &/OR DISTS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019	68899	1975	Premise Match	98m	South East
	FLOOR MATERIAL SPECIALISTS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019.	32864	1975	Premise Match	98m	South East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
12	FLOOR POLISHING MACHINE MFRS. &/OR DISTS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019.	32889	1975	Premise Match	98m	South East
	FLOOR TREATMENT SPECIALISTS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany. 2019.	32953	1975	Premise Match	98m	South East
	PAINT-MARINE-MFRS. &/OR DISTS.	Transocean Marine Paint., 82 Bay St., Botany. 2019	65436	1975	Premise Match	98m	South East
	CLEANSER & CLEANING PREPARATION MFRS. &/OR DISTS.(C392)	Spartan Paints Pty. Limited., 82-86 Bay St., Botany	281990	1970	Premise Match	98m	South East
	FLOOR MATERIAL SPECIALISTS (F315)	Spartan Paints Pty. Limited., 82-86 Bay St., Botany	304130	1970	Premise Match	98m	South East
	FLOOR TREATMENT SPECIALISTS	Spartan Paints Pty. Limited., 82-86 Bay St., Botany	304218	1970	Premise Match	98m	South East
	PAINT, SOLVENT/THINNER MFRS./WHOLESALERS	Spartan Paints Pty. Limited., 82-86 Bay St., Botany	346072	1970	Premise Match	98m	South East
	PAINT,ENAMEL,VARNISH/STAIN MANUFACTURERS (P024)	Spartan Paints Pty. Limited., 82-86 Bay St., Botany	345999	1970	Premise Match	98m	South East
	PAINT,LACQUER MANUFACTURERS(P034)	Spartan Paints Pty. Limited., 82-86 Bay St., Botany	346048	1970	Premise Match	98m	South East
	PAINT,VARNISH,OILS/COLOUR MERCHANTS (P074)	Spartan Paints Pty. Limited., 82-86 Bay St., Botany	346364	1970	Premise Match	98m	South East
	PAINT,VARNISH/COLOUR MFRS/SUPPLIES (P056)	Spartan Paints Pty. Limited., 82-86 Bay St., Botany	346453	1970	Premise Match	98m	South East
	PAINT,VARNISH/STAIN REMOVER MANUFACTURERS (P070)	Spartan Paints Pty. Limited., 84 Bay St., Botany	346476	1970	Premise Match	98m	South East
	MOTOR PAINTERS' SUPPLIES (M676)	Spartan Paints Pty. Ltd., 82-86 Bay St., Botany	339769	1970	Premise Match	98m	South East
	FLOOR POLISHING MACHINE MFRS. &/OR DISTS.	Spartan Paints Pty. Ltd., 84 Bay St., Botany	304161	1970	Premise Match	98m	South East
	PAINT-PLASTIC-MFRS. (P050)	Spartan Paints Pty. Ltd., 84 Bay St., Botany	346906	1970	Premise Match	98m	South East
	POLISH MFRS./DISTRIBUTORS (P638)	Spartan Paints Pty. Ltd., 84 Bay St., Botany	351080	1970	Premise Match	98m	South East
	Paint, Solvent/Thinner Manufacturers/Wholesalers	Spartan Paints Pty. Limited, 82-86 Bay St, Botany	130639	1965	Premise Match	98m	South East
	Cleaner & Cleaning Preparation Mfrs. &/or Dists.	Spartan Paints Pty. Limited, 82-86 Bay St., Botany	66559	1965	Premise Match	98m	South East
	Floor Material Specialists	Spartan Paints Pty. Limited, 82-86 Bay St., Botany	87459	1965	Premise Match	98m	South East
	Floor Treatment Specialists	Spartan Paints Pty. Limited, 82-86 Bay St., Botany	87567	1965	Premise Match	98m	South East
	Paint - Plastic - Manufacturers	Spartan Paints Pty. Limited, 82-86 Bay St., Botany	130616	1965	Premise Match	98m	South East
	Paint, Enamel, Varnish/Stain Manufacturers	Spartan Paints Pty. Limited, 82-86 Bay St., Botany	130494	1965	Premise Match	98m	South East
	Paint, Lacquer Manufacturers	Spartan Paints Pty. Limited, 82-86 Bay St., Botany	130556	1965	Premise Match	98m	South East
	Paint, Varnish, Oils/Colour Merchants	Spartan Paints Pty. Limited, 82-86 Bay St., Botany	131044	1965	Premise Match	98m	South East
	Paint, Varnish/Colour Manufacturers Supplies	Spartan Paints Pty. Limited, 82-86 Bay St., Botany	130677	1965	Premise Match	98m	South East
	Paint, Varnish/Stain Remover Manufacturers	Spartan Paints Pty. Limited, 84 Bay St., Botany	130701	1965	Premise Match	98m	South East
	Asbestos Paint Mfrs.	Spartan Paints Pty. Ltd., 82-84 Bay St., Botany	47165	1965	Premise Match	98m	South East
	Motor Painters' Supplies	Spartan Paints Pty. Ltd., 82-86 Bay St., Botany	124371	1965	Premise Match	98m	South East
	FLOOR MATERIAL SPECIALISTS	Spartan Paints Pty Limited 84 Bay St., Botany	311577	1961	Premise Match	98m	South East
	POLISH MFRS./DISTRIBUTORS	Spartan Paints Pty Limited 84 Bay St., Botany	361294	1961	Premise Match	98m	South East
	CLEANSER & CLEANING PREPARATION MFRS. &/OR DISTS.	Spartan Paints Pty. Limited, 84 Bay St., Botany	288871	1961	Premise Match	98m	South East
	FLOOR MATERIAL SPECIALISTS	Spartan Paints Pty. Limited, 84 Bay St., Botany	311578	1961	Premise Match	98m	South East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
12	FLOOR TREATMENT SPECIALISTS	Spartan Paints Pty. Limited, 84 Bay St., Botany	311684	1961	Premise Match	98m	South East
	PAINT, LACQUER MANUFACTURERS	Spartan Paints Pty. Limited, 84 Bay St., Botany	355553	1961	Premise Match	98m	South East
	PAINT, SOLVENT/THINNER MFRS./WHOLESALERS	Spartan Paints Pty. Limited, 84 Bay St., Botany	355572	1961	Premise Match	98m	South East
	PAINT, VARNISH, OILS/COLOUR MERCHANTS	Spartan Paints Pty. Limited, 84 Bay St., Botany	355748	1961	Premise Match	98m	South East
	PAINT, VARNISH/STAIN REMOVER MANUFACTURERS	Spartan Paints Pty. Limited, 84 Bay St., Botany	355849	1961	Premise Match	98m	South East
	PAINT—PLASTIC—MFRS.	Spartan Paints Pty. Limited, 84 Bay St., Botany	356658	1961	Premise Match	98m	South East
	POLISH MFRS./DISTRIBUTORS	Spartan Paints Pty. Limited, 84 Bay St., Botany	361295	1961	Premise Match	98m	South East

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Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1986, 1982, 1978, 1975, 1970, 1965, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
13	Builders &/or Building Contractors	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany 2019	36912	1991	Road Match	0m
	BUILDERS &/OR BUILDING CONTRACTORS.	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany. 2019	8228	1986	Road Match	0m
	SHOP &/OR OFFICE FITTERS	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany. 2019	86541	1986	Road Match	0m
	BUILDERS &/OR BUILDING CONTRACTORS. (B6920)	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany. 2019.	9396	1982	Road Match	0m
	SHOP &/OR OFFICE FITTERS. (S3060)	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany. 2019.	74732	1982	Road Match	0m
	BUILDERS &/OR BUILDING CONTRACTORS.	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany. 2019	7864	1978	Road Match	0m
	SHOP &/OR OFFICE FITTERS.	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany. 2019	66176	1978	Road Match	0m
	BUILDERS &/OR BUILDING CONTRACTORS.	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany. 2019	8632	1975	Road Match	0m
	SHOP & OR/OFFICE FITTERS	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany. 2019	77447	1975	Road Match	0m
	SHOP/OFFICE FITTERS (S276)	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany	361388	1970	Road Match	0m
	Builders & Contractors - (M.M.B.A.)	Prerau, J. Pty, Ltd., 51 Myrtle St. Botany	54548	1965	Road Match	0m
	Furniture - General - Mfrs. &/or Wholesalers	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany	93352	1965	Road Match	0m
	SHOP/OFFICE FITTERS	Prerau, J. Pty. Ltd., 51 Myrtle St., Botany	144649	1965	Road Match	0m
	SHOP/OFFICE FITTERS	Repartitioning Pty. Ltd, 51 Myrtle St., Botany	144656	1965	Road Match	0m
	Furniture - General - Mfrs. &/or Wholesalers	Soitesz, Z., Myrtle St., Botany	93377	1965	Road Match	0m
	Furniture - Bedroom - Mfrs. &/or Wholesalers	Soltesz, Z., Myrtle St., Botany	92874	1965	Road Match	0m
	AIR POWER EQUIPMENT MFRS.	Pongrass Bros (Engineering) Pty Ltd Myrtle St., Botany	267305	1961	Road Match	0m
	MACHINERY MFRS.	Pongrass Bros. (Engineering) Pty. Ltd., Myrtle St., Botany	332686	1961	Road Match	0m
	ENGINEERS-GENERAL/MFRG./ MECHANICAL	Pongrass Bros. Pty. Ltd, Myrtle St., Botany	306926	1961	Road Match	0m
	FURNITURE-TUBULAR STEEL-MFRS. &/OR W'SALERS	Pongrass Bros. Pty. Ltd., Myrtle St., Botany	318327	1961	Road Match	0m
	SHOP/OFFICE FITTERS	Soltesz, Z., 51 Myrtle St., Botany	250133	1961	Road Match	0m
	FURNITURE-BEDROOM-MFRS. &/OR WHOLESALERS	Soltesz, Z., Myrtle St., Botany	317292	1961	Road Match	0m
	FURNITURE-GENERAL-MFRS. &/OR WHOLESALERS	Soltesz, Z., Myrtle St., Botany	317626	1961	Road Match	0m

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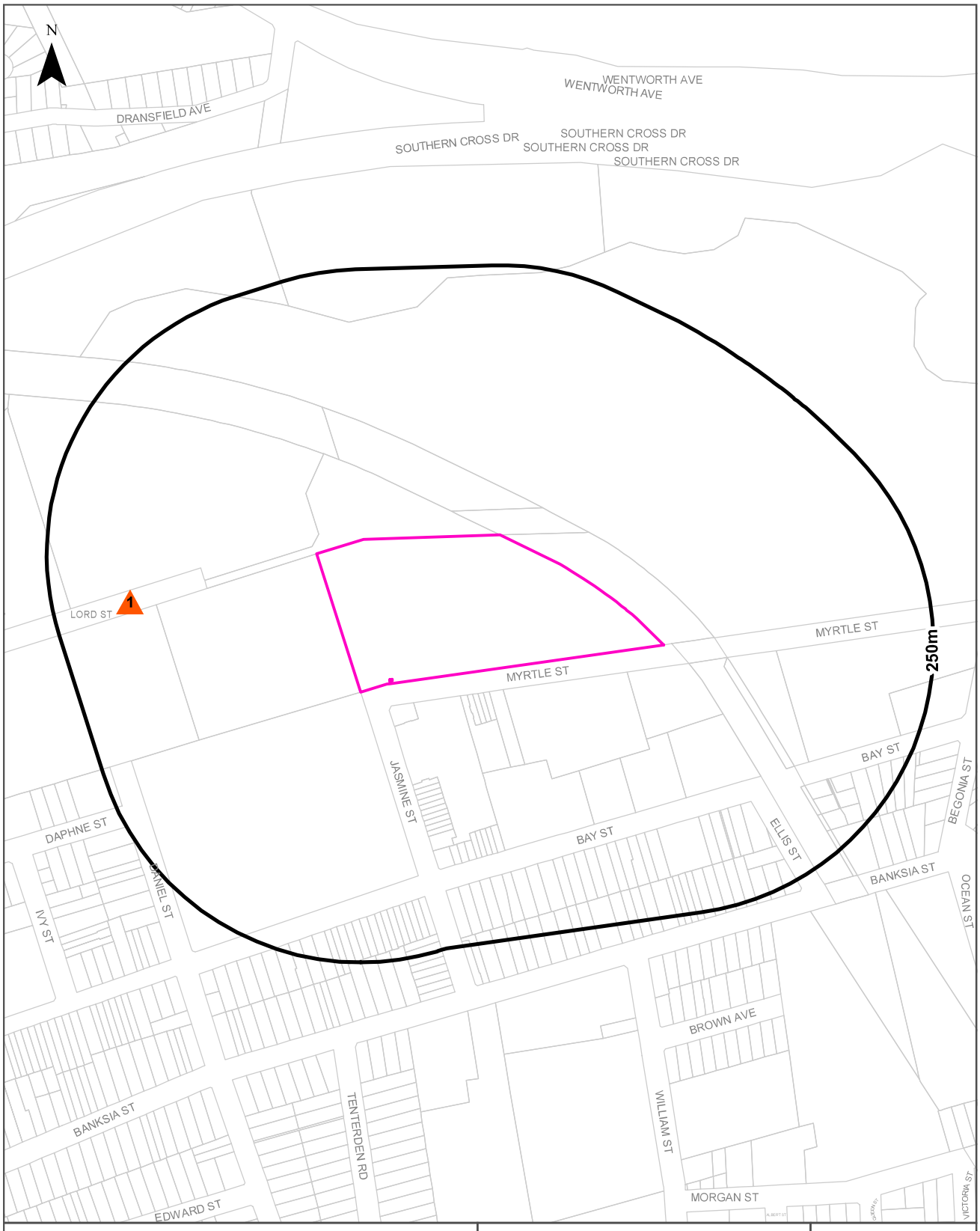
Dry Cleaners, Motor Garages & Service Stations

2 Myrtle Street, Botany, NSW 2019



Legend

- Site Boundary
- Buffer 250m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 60 120 180 240 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 05 May 2020

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018
Property Boundaries © NSW Department Finance, Services & Innovation 2020

Historical Business Directories

2 Myrtle Street, Botany, NSW 2019

Dry Cleaners, Motor Garages & Service Stations 1948-1993 Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer						

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Dry Cleaners, Motor Garages & Service Stations 1948-1993 Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
1	MOTOR GARAGES & ENGINEERS.	Hughes F. W. Pty. Ltd., Lord St Botany	28986	1962	Road Match	106m
	MOTOR GARAGES & ENGINEERS	Hughes, F. W. Pty. Ltd., Lord St. BOTANY	347406	1961	Road Match	106m
	MOTOR GARAGES & ENGINEERS	Hughes, F. W. Pty. Ltd., Lord St. Botany	13704	1959	Road Match	106m
	MOTOR GARAGE/ENGINEERS.	Hughes F. W. Pty. Ltd., Lord St Botany	4314	1958	Road Match	106m
	MOTOR GARAGES &/OR ENGINEERS.	Hughes F. W. Pty. Ltd., Lord St Botany	57840	1956	Road Match	106m
	MOTOR GARAGES &/OR ENGINEERS.	Hughes F. W. Pty. Ltd., Lord St Botany	49440	1954	Road Match	106m
	MOTOR GARAGES &/OR ENGINEERS.	Hughes F. W. Pty. Ltd., Lord St Botany	40154	1953	Road Match	106m
	MOTOR GARAGES &/OR ENGINEERS.	Hughes F. W. Pty. Ltd., Lord St Botany	31773	1952	Road Match	106m
	MOTOR GARAGES &/OR ENGINEERS	Hughes, F. W. Pty. Ltd., Lord St., Botany	83895	1950	Road Match	106m
	MOTOR GARAGES &/OR ENGINEERS.	Hughes F. W. Pty. Ltd., Lord St Botany	22475	1948-49	Road Match	106m

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Aerial Imagery 2019

2 Myrtle Street, Botany, NSW 2019

Aerial Imagery 2014

2 Myrtle Street, Botany, NSW 2019

Aerial Imagery 2007

2 Myrtle Street, Botany, NSW 2019

Aerial Imagery 2000

2 Myrtle Street, Botany, NSW 2019

Aerial Imagery 1994

2 Myrtle Street, Botany, NSW 2019

Aerial Imagery 1991

2 Myrtle Street, Botany, NSW 2019

Aerial Imagery 1986

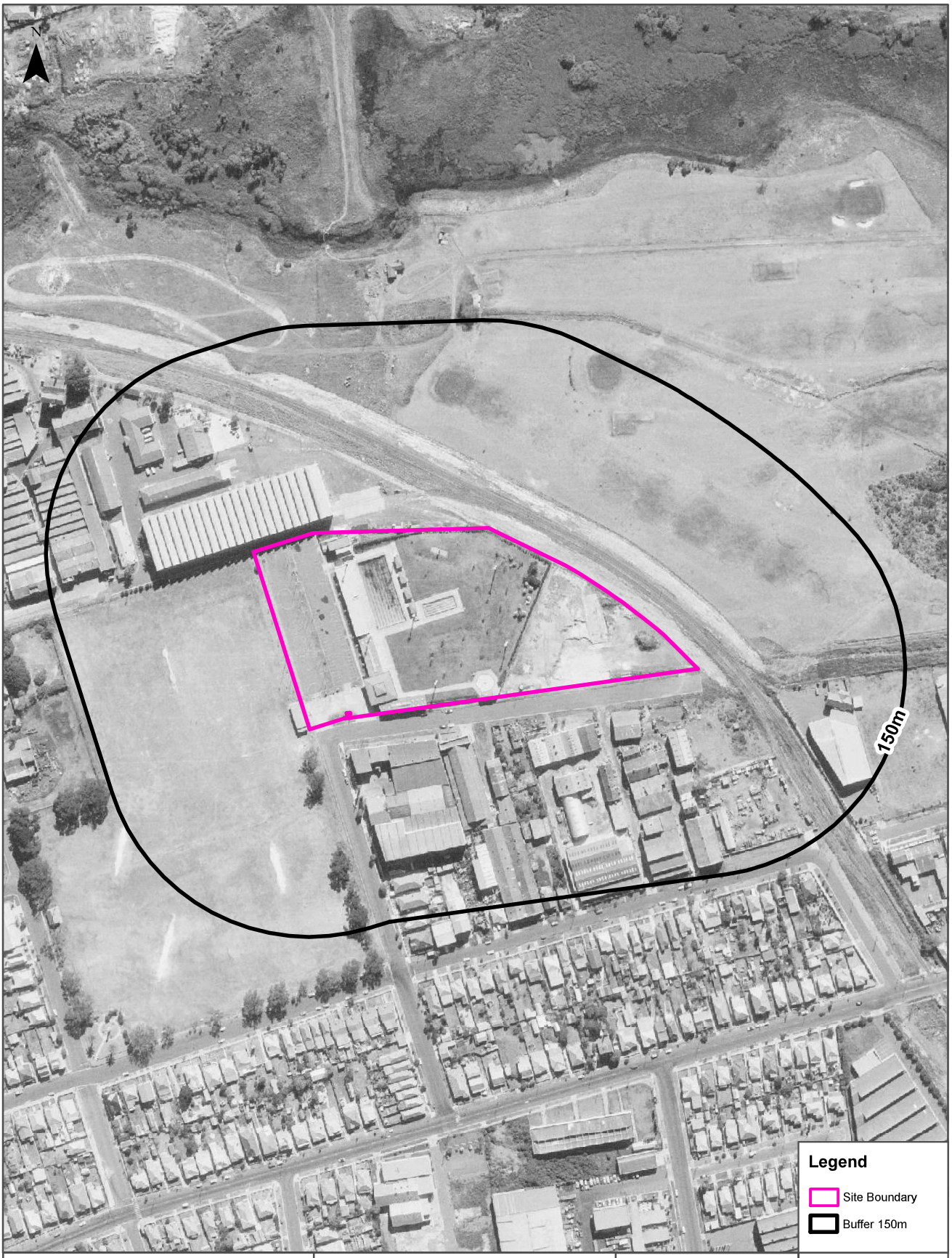
2 Myrtle Street, Botany, NSW 2019

Aerial Imagery 1982

2 Myrtle Street, Botany, NSW 2019

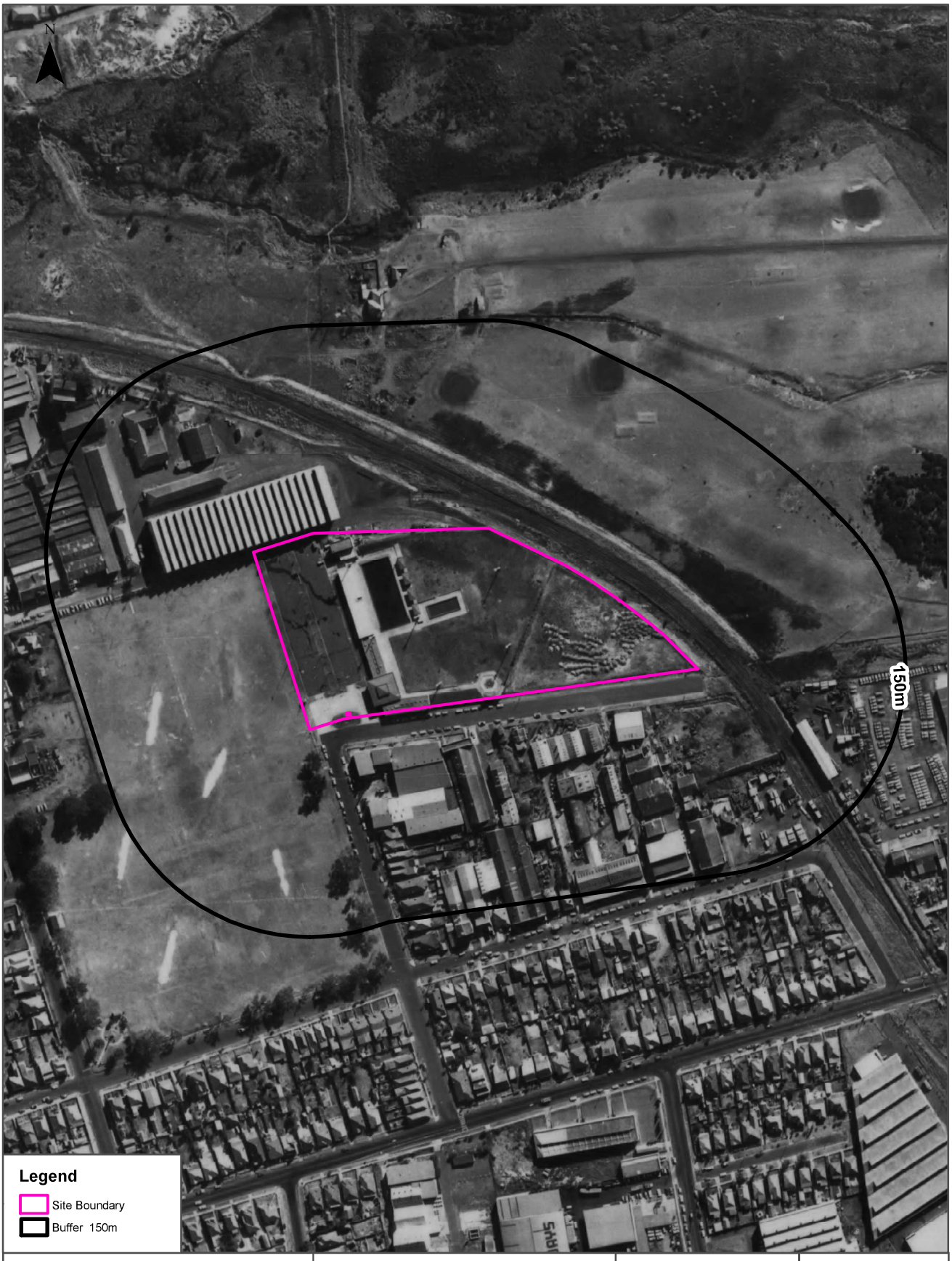
Aerial Imagery 1978

2 Myrtle Street, Botany, NSW 2019



Aerial Imagery 1970

2 Myrtle Street, Botany, NSW 2019

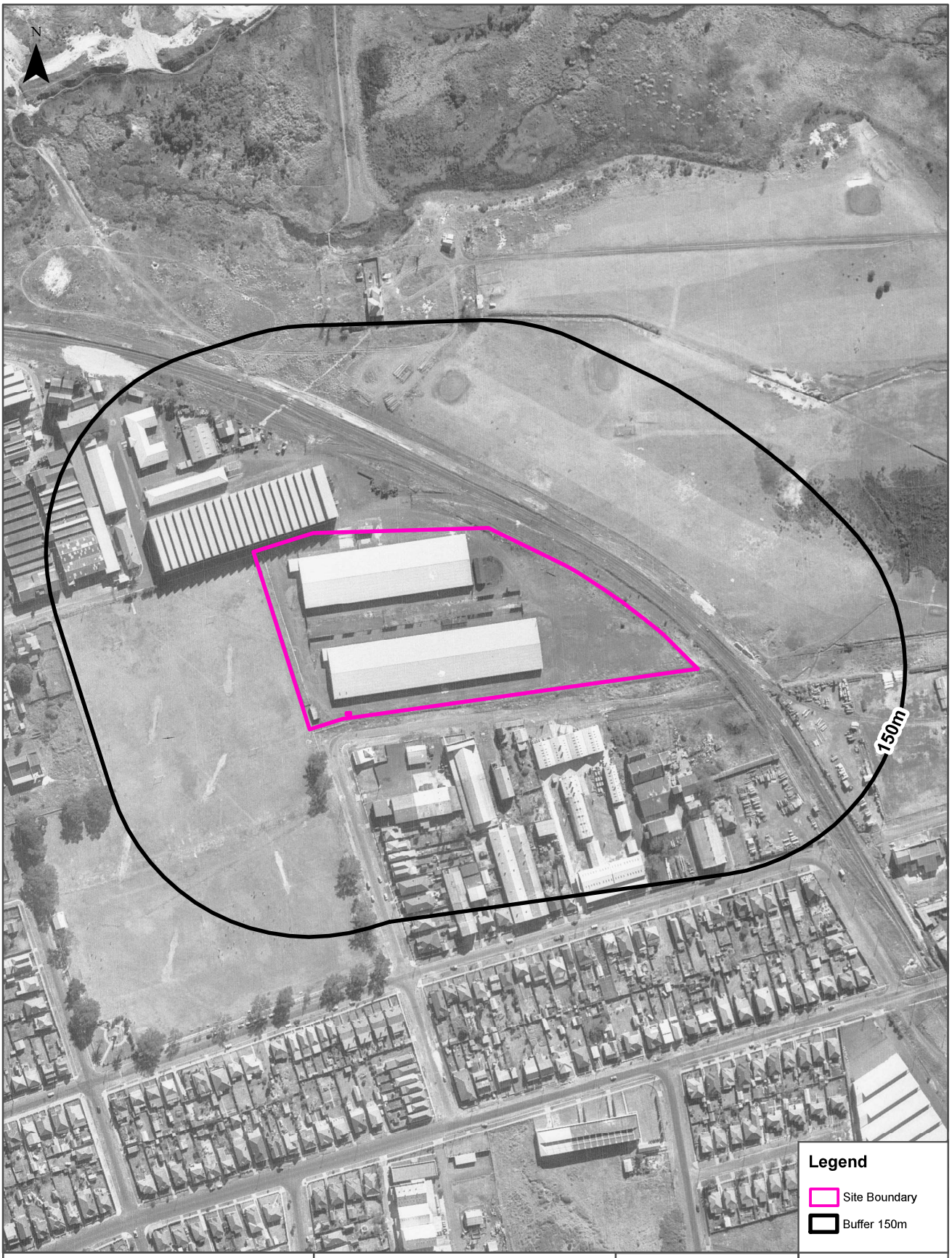


Aerial Imagery 1965

2 Myrtle Street, Botany, NSW 2019

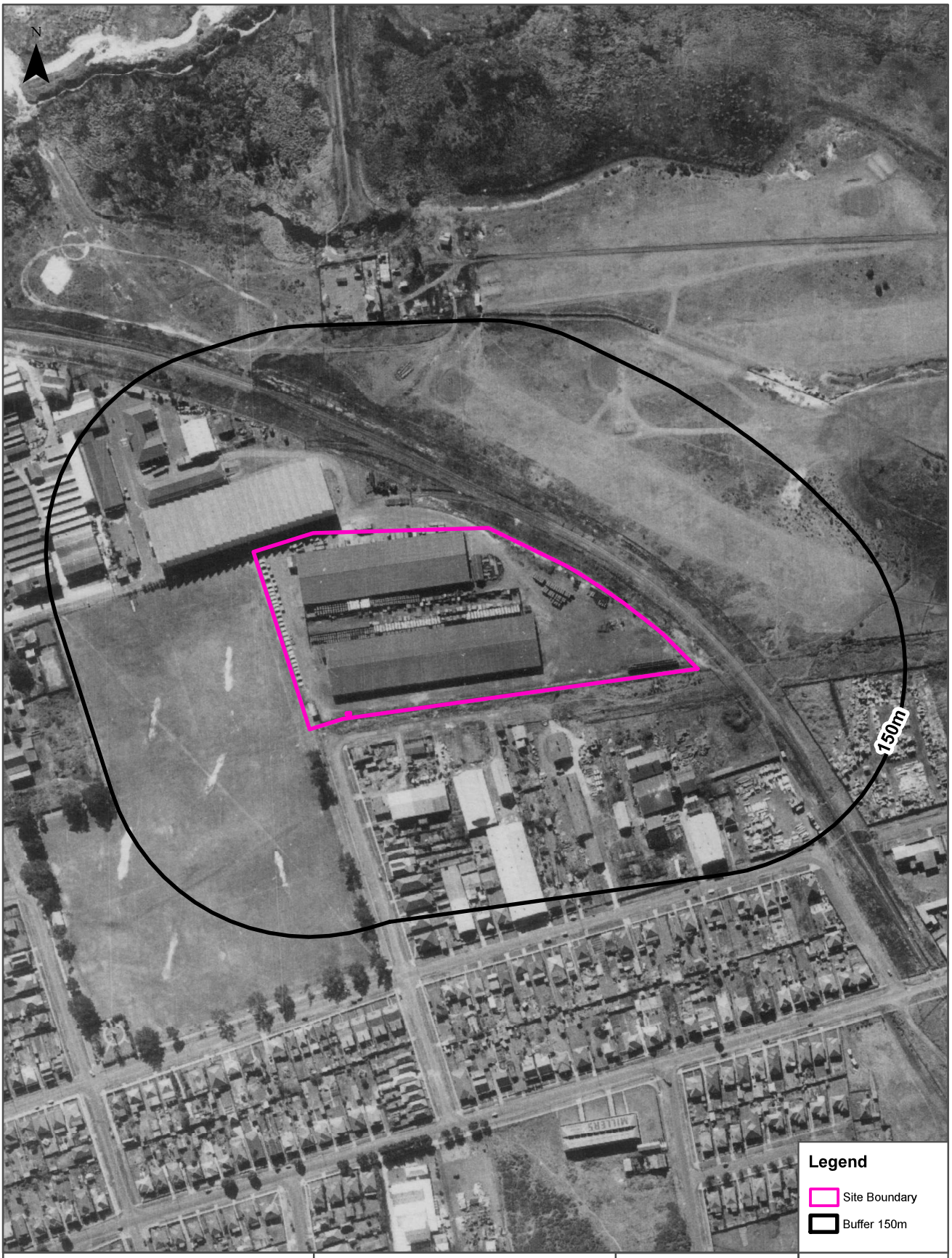
Aerial Imagery 1961

2 Myrtle Street, Botany, NSW 2019



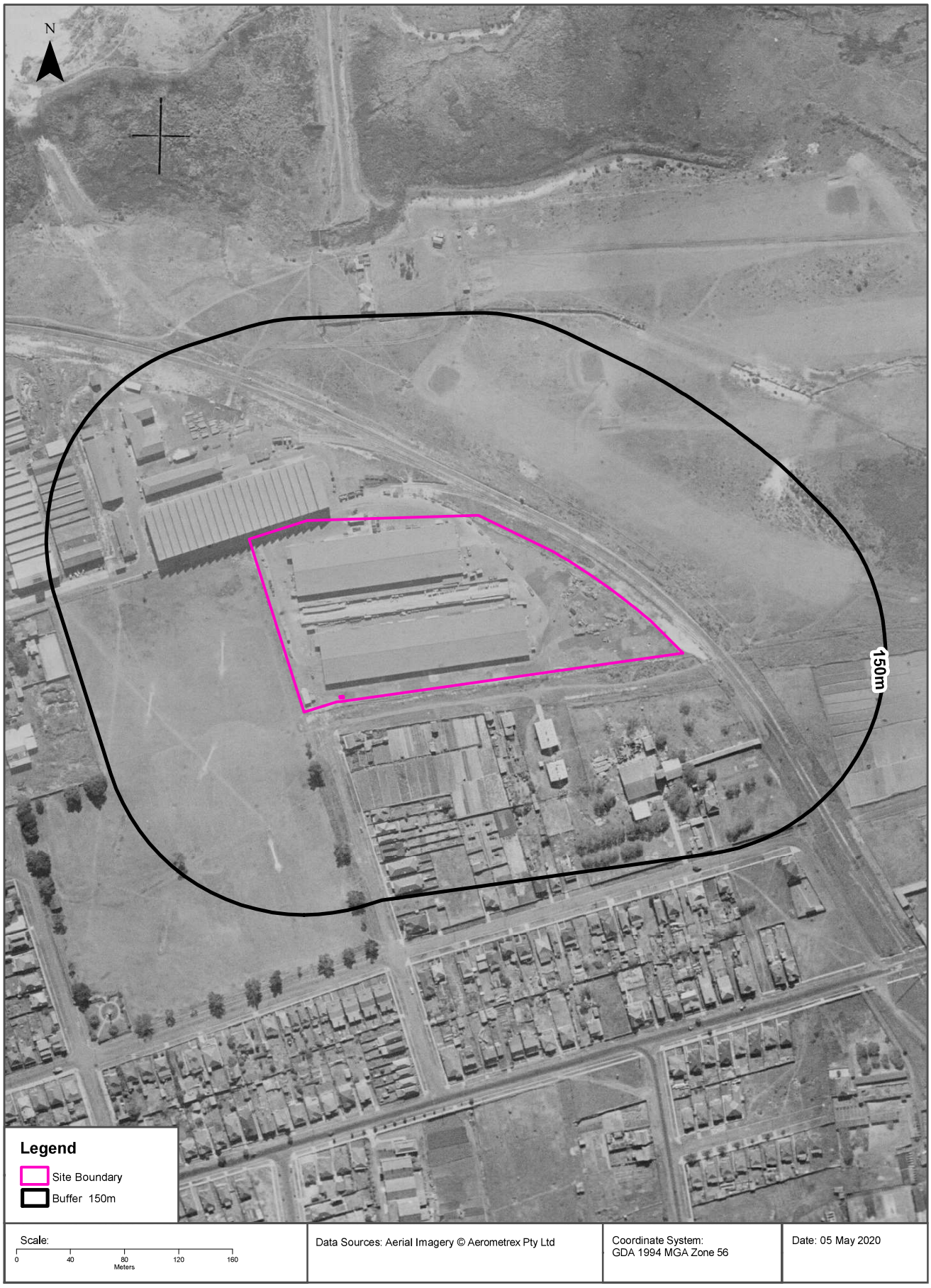
Aerial Imagery 1955

2 Myrtle Street, Botany, NSW 2019



Aerial Imagery 1943

2 Myrtle Street, Botany, NSW 2019



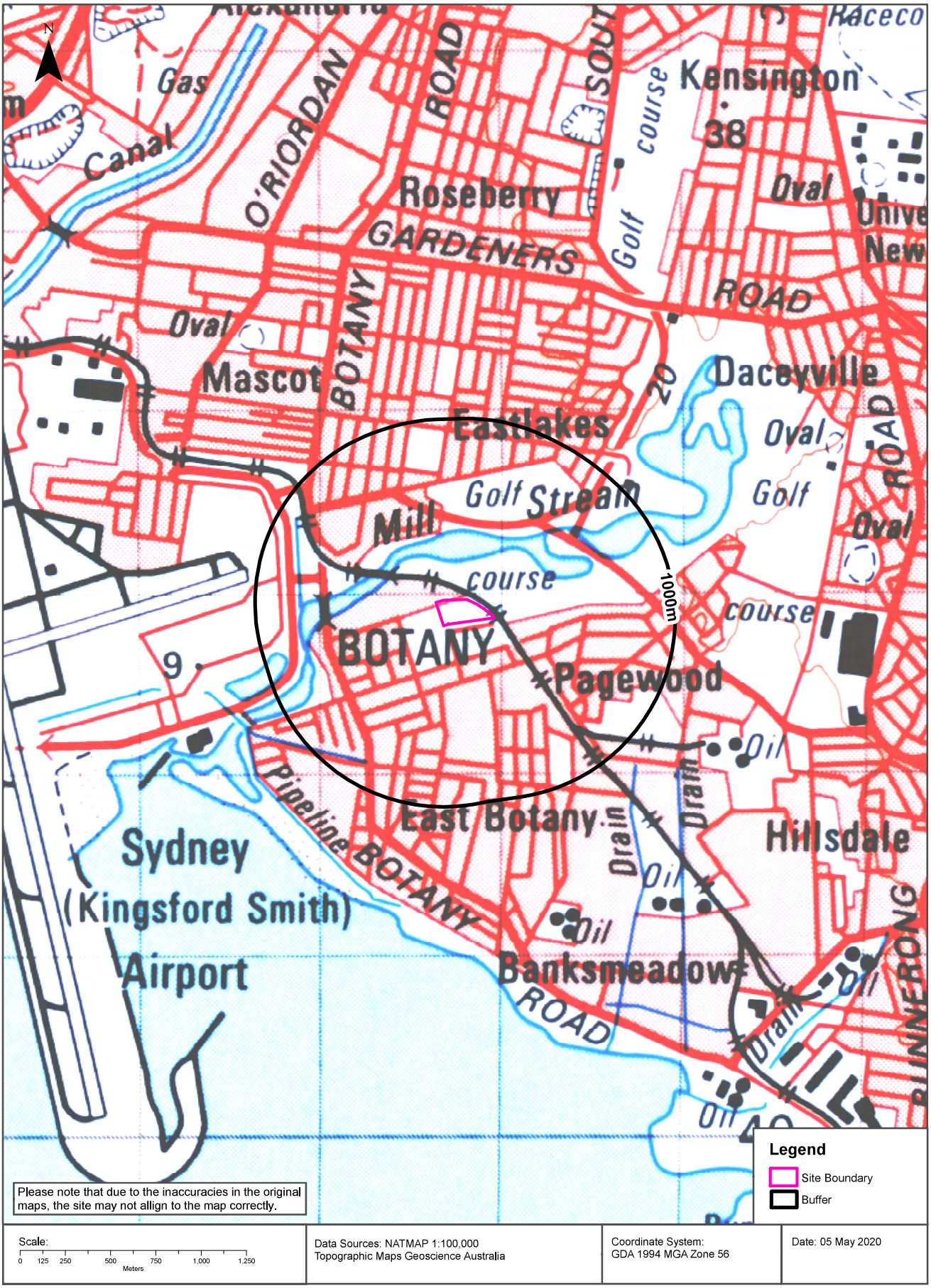
Topographic Map 2015

2 Myrtle Street, Botany, NSW 2019

Scale: 0 100 200 400 600 Meters	Data Sources: Topographic Map Data © NSW Land and Property Information	Coordinate System: GDA 1994 MGA Zone 56	Date: 05 May 2020

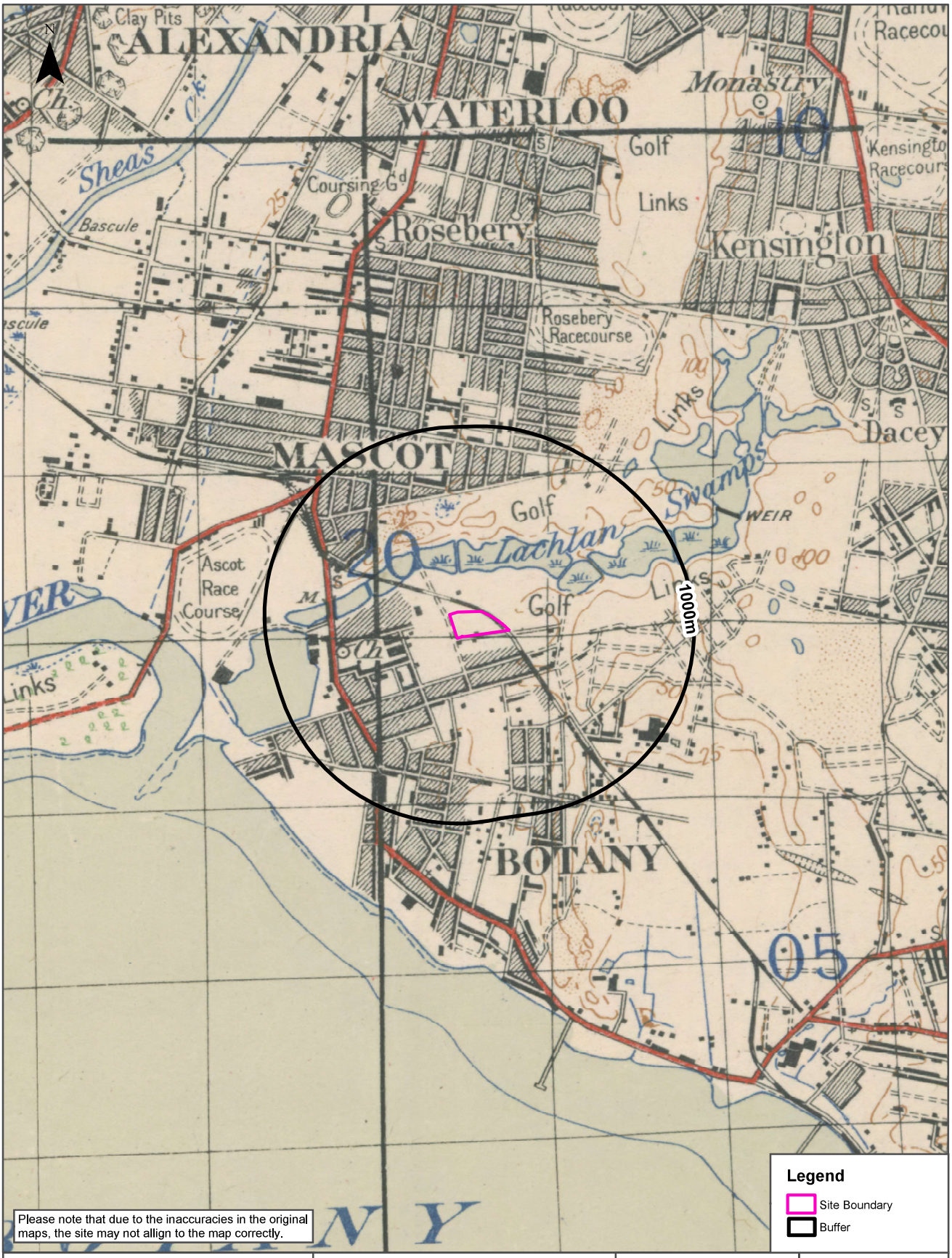
Historical Map 1975

2 Myrtle Street, Botany, NSW 2019



Historical Map c.1936

2 Myrtle Street, Botany, NSW 2019



Historical Map c.1917

2 Myrtle Street, Botany, NSW 2019

Topographic Features

2 Myrtle Street, Botany, NSW 2019

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2020

Coordinate System: GDA 1994 MGA Zone 56

Date: 05 May 2020

Topographic Features

2 Myrtle Street, Botany, NSW 2019

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
1551728	Swimming Pool	BOTANY AQUATIC CENTRE	0m	Onsite
1551689	Park	BOORALEE PARK	131m	South West
1551783	Golf Course	EASTLAKES GOLF COURSE	210m	East
1551694	Park	GAIARINE GARDENS	373m	South East
1551831	Park	DRANSFIELD AVENUE RESERVE	413m	North
1551780	Swamp	LACHLAN SWAMPS	472m	North East
1551732	Park	MORGAN STREET RESERVE	500m	South
1551712	Embassy	CONSULATE OF THE SLOVAK REPUBLIC	540m	West
1551842	Park	TODD RESERVE	551m	North West
1551724	Place Of Worship	ST MATTHEW'S ANGLICAN CHURCH	567m	West
1551713	Primary School	ST BERNARD'S CATHOLIC PRIMARY SCHOOL	581m	South
1551883	Golf Course	THE LAKES GOLF COURSE	583m	North
1551834	Park	SPARKS STREET RESERVE	597m	North
1551723	Preschool	JOHN BROTCHIE NURSERY SCHOOL PRESCHOOL	600m	South West
1551725	Place Of Worship	ST BERNARD'S CATHOLIC CHURCH	613m	South
1551727	Place Of Worship	BOTANY CITY CHURCH	618m	South West
1551677	Post Office	BOTANY POST OFFICE	622m	South West
1551675	Fire Station	BOTANY FIRE STATION	624m	South West
1551672	Club	BOTANY RSL CLUB	666m	South West
1551833	Park	MCBURNEY AVENUE RESERVE	674m	North West
1551756	Community Facility	BOTANY SENIOR CITIZENS CENTRE	675m	South West
1551738	Child Care Centre	HIPPOS FRIENDS	680m	South West
1551706	Primary School	BOTANY PUBLIC SCHOOL	693m	South West
1551807	Park	GLENN MCENALLAY RESERVE	750m	North
1551705	Suburb	BOTANY	771m	South
1551857	Park	BECKENHAM RESERVE	790m	North West
1551830	Place Of Worship	BECKENHAM MEMORIAL CHURCH	792m	North West
1551734	Park	WALL RESERVE	797m	South
1551854	Natural Waterbody	MILL POND	799m	West
1551686	Park	GARNET JACKSON RESERVE	839m	South East
1551790	Park	L'ESTRANGE PARK	877m	North

Map Id	Feature Type	Label	Distance	Direction
1551708	Primary School	PAGEWOOD PUBLIC SCHOOL	886m	East
1551704	Suburb	PAGEWOOD	904m	East
1551879	Club	MASCOT RSL CLUB	922m	North West
1551881	Place Of Worship	BOTANY BAY COMMUNITY CHURCH	937m	North East
1551735	Park	WENTWORTH AVENUE RESERVE	975m	East

Topographic Data Source: © Land and Property Information (2015)
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Topographic Features

2 Myrtle Street, Botany, NSW 2019

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
	No records in buffer					

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
	No records in buffer					

Tanks Data Source: © Land and Property Information (2015)
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Major Easements

What Major Easements exist within the dataset buffer?
Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120112200	Primary	Undefined		34m	West
120121784	Primary	Undefined		468m	South West
120109591	Primary	Undefined		610m	East
120117734	Primary	Undefined		633m	South
120114236	Primary	Undefined		682m	East
120119980	Primary	Undefined		708m	West
120119970	Primary	Undefined		718m	North West

Easements Data Source: © Land and Property Information (2015)
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Topographic Features

2 Myrtle Street, Botany, NSW 2019

State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)
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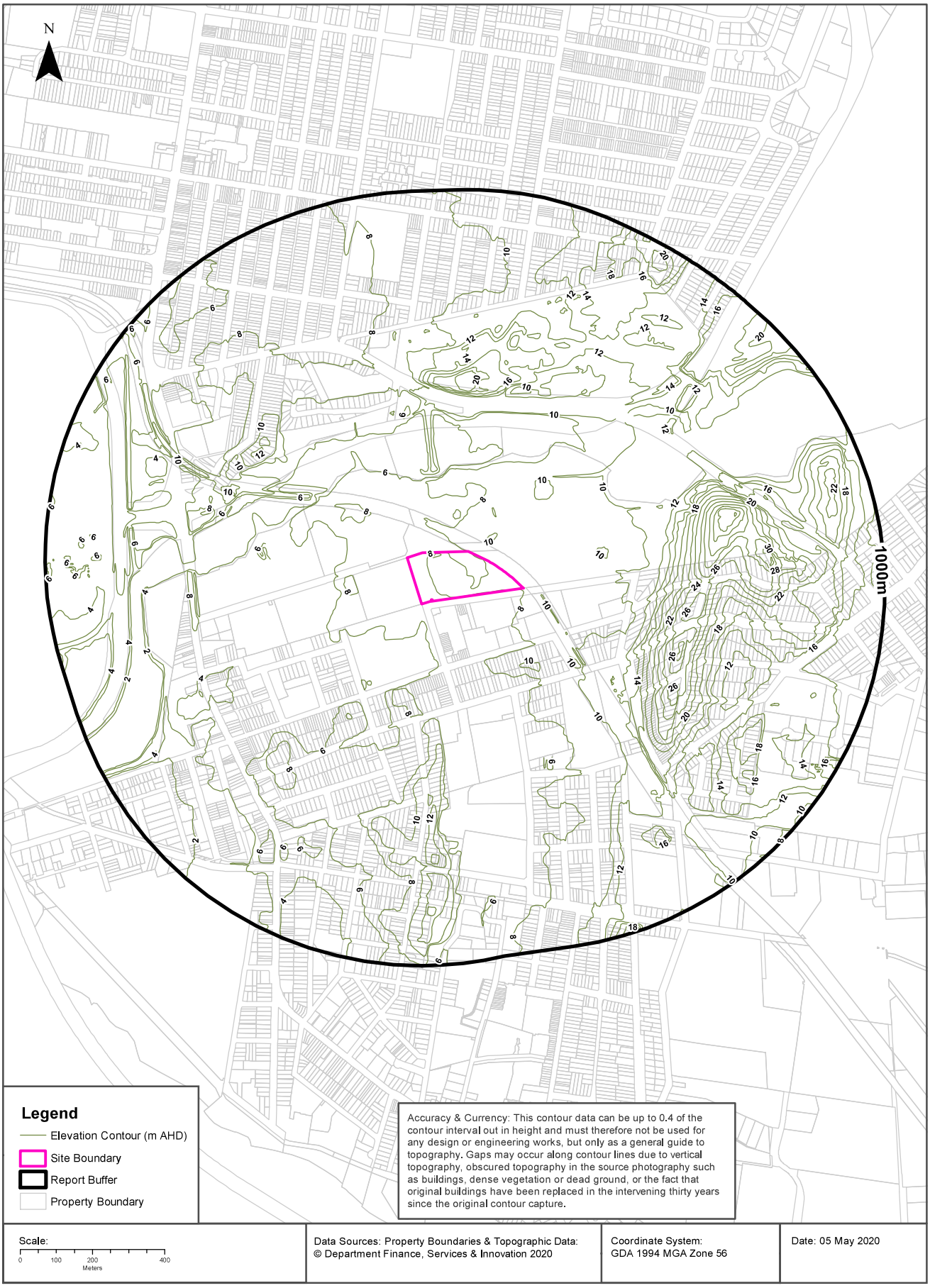
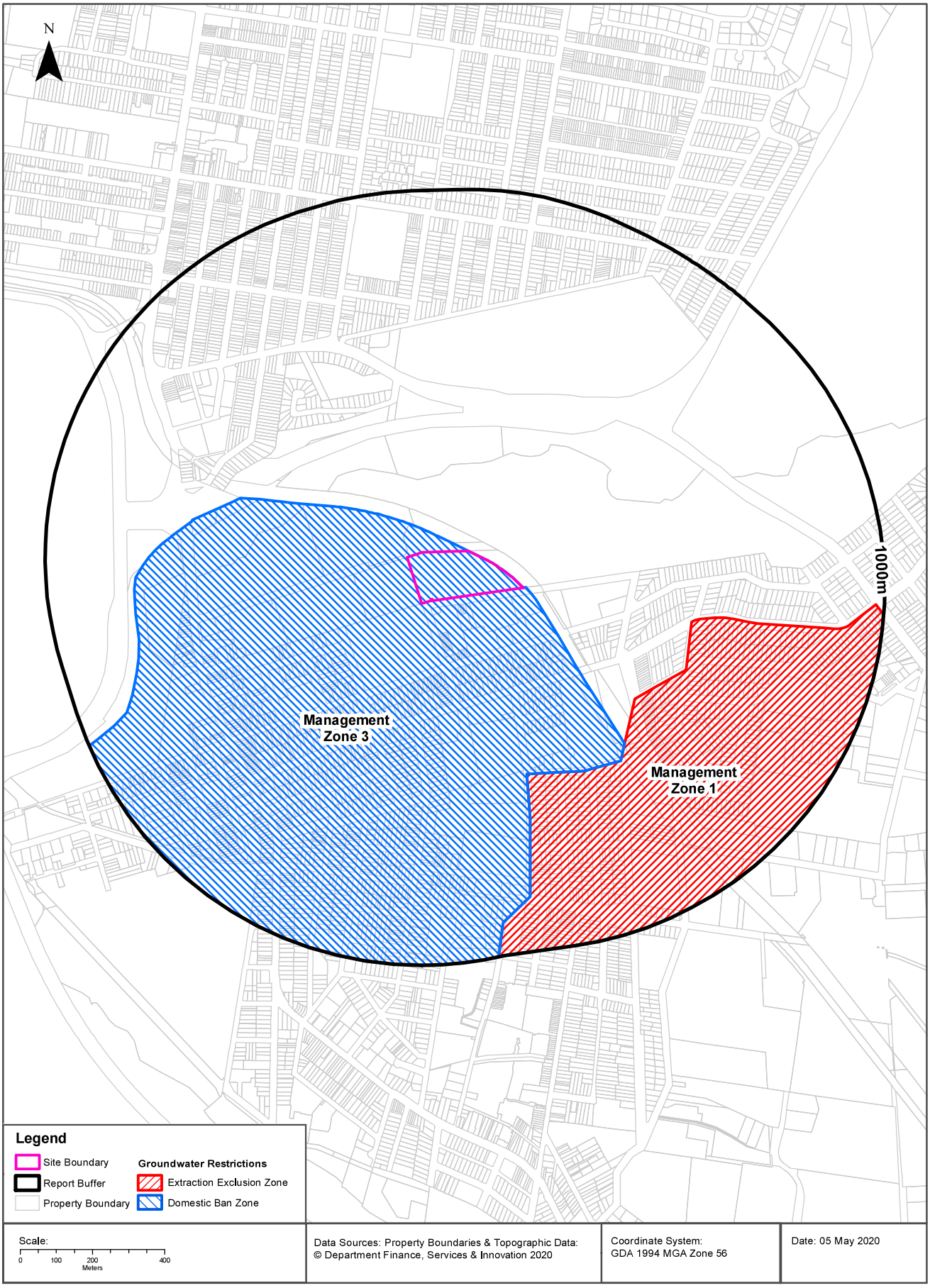
Elevation Contours (m AHD)

2 Myrtle Street, Botany, NSW 2019



Botany Groundwater Management Zones

2 Myrtle Street, Botany, NSW 2019



Hydrogeology & Groundwater

2 Myrtle Street, Botany, NSW 2019

Hydrogeology

Description of aquifers on-site:

Description
Porous, extensive highly productive aquifers

Description of aquifers within the dataset buffer:

Description
Porous, extensive highly productive aquifers

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)
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Botany Groundwater Management Zones

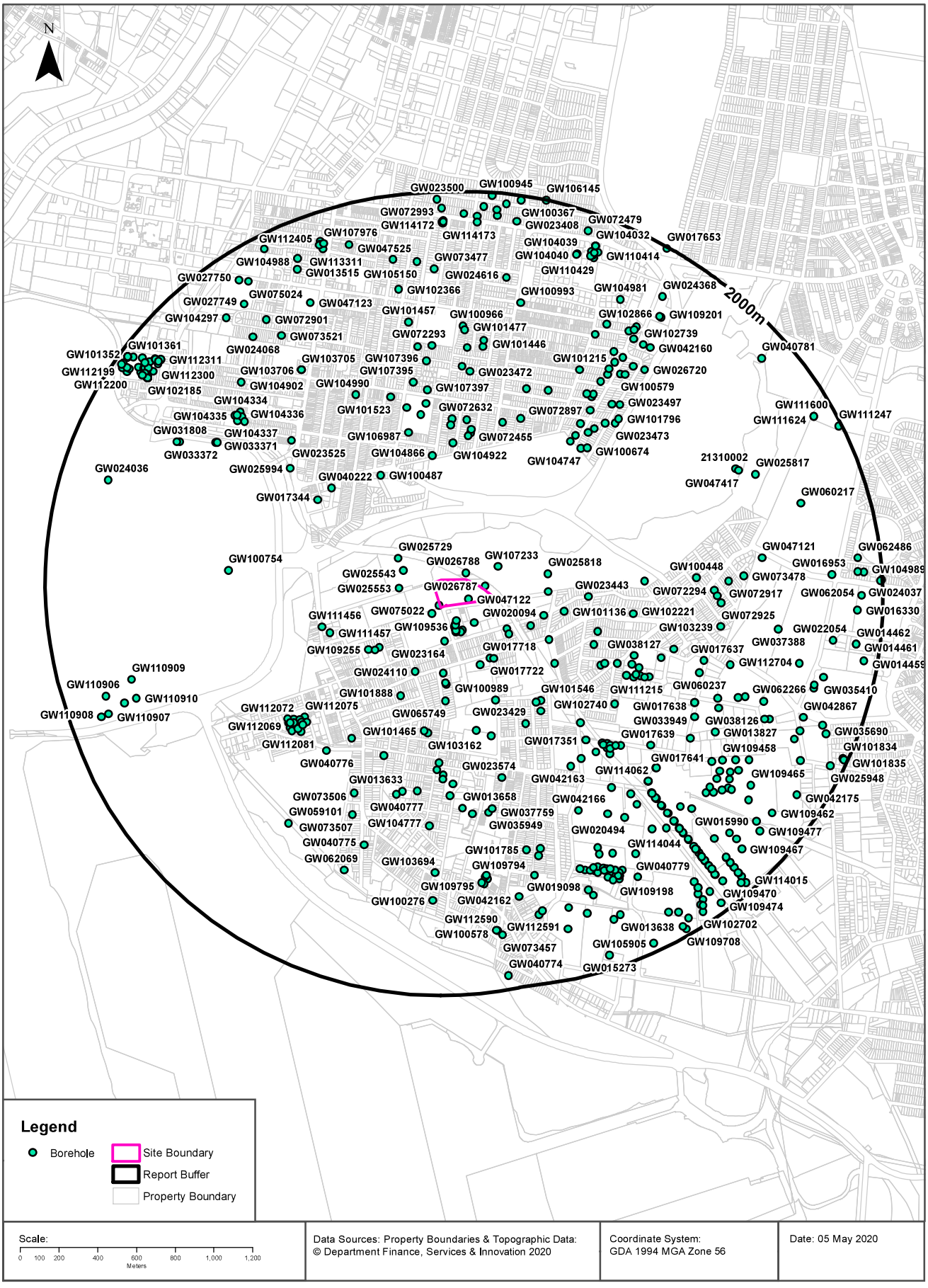
Groundwater management zones relating to the Botany Sand Beds aquifer within the dataset buffer:

Management Zone No.	Restriction	Distance	Direction
3	Domestic ban	0m	Onsite
1	Extraction exclusion	435m	South East

Botany Groundwater Management Zones Data Source : NSW Department of Primary Industries

Groundwater Boreholes

2 Myrtle Street, Botany, NSW 2019



Hydrogeology & Groundwater

2 Myrtle Street, Botany, NSW 2019

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW047122	10BL105636, 10WA114677	Bore	Local Govt	Recreation (groundwater)	Recreation (groundwater)		01/11/1970	19.50	19.50					0m	Onsite
GW046837	10BL107198	Bore	Local Govt	Test Bore	Recreation (groundwater)		01/11/1970	14.80	14.80					4m	South West
GW026787	10BL016247	Spear	Private	Industrial	Industrial		01/10/1965	24.80	24.80					19m	East
GW026788	10BL016246	Spear	Private	Industrial	Industrial		01/11/1965	20.40	20.40					32m	North
GW075022		Bore	NSW Office of Water		Monitoring Bore	BOTANY BOREFIELD AT BORALEE PARK	14/07/1998	15.75	16.75		1.77		8.45	53m	South West
GW109542	10BL601927	Bore	Private	Monitoring Bore	Monitoring Bore		20/07/2007	6.00						82m	South
GW109541	10BL601927	Bore	Private	Monitoring Bore	Monitoring Bore		20/07/2007	6.00						100m	South
GW017720	10BL008578	Bore	Private	Industrial	Industrial		01/10/1956	20.40	20.40					106m	South East
GW109540	10BL601927	Bore	Private	Monitoring Bore	Monitoring Bore		20/07/2007	6.00						107m	South
GW109538	10BL601927	Bore	Private	Monitoring Bore	Monitoring Bore		20/07/2007	6.00						113m	South
GW109537	10BL601927	Bore	Private	Monitoring Bore	Monitoring Bore		08/02/2006	6.00						120m	South
GW109536	10BL601927	Bore	Private	Monitoring Bore	Monitoring Bore		24/01/2006	6.00						127m	South
GW109535	10BL601927	Bore	Private	Monitoring Bore	Monitoring Bore		25/01/2006	6.00						133m	South
GW109539	10BL601927	Bore	Private	Monitoring Bore	Monitoring Bore		06/11/2008	6.00						135m	South
GW107233	10BL161832, 10CA114693	Bore		Irrigation, Recreation (groundwater)	Irrigation, Recreation (groundwater)		28/06/2005	21.50	21.50		0.37	11.000		137m	North East
GW109534	10BL601927	Bore	Private	Monitoring Bore	Monitoring Bore		27/01/2006	6.00						140m	South
GW109533	10BL601927	Bore	Private	Monitoring Bore	Monitoring Bore		30/01/2006	6.00						143m	South
GW025543	10BL016154	Bore	Private	Industrial	Industrial		01/01/1963	18.50	18.60	Good			7.05	163m	West
GW025574		Bore	Private		General Use		01/10/1965	4.80	4.90	Good				165m	South East
GW023164	10BL016801, 10WA112846	Bore	Private	Domestic	General Use		01/01/1960	3.60	3.70	Good				175m	South
GW025553	10BL016153	(Unknown)	Private	Industrial	Industrial		01/01/1940	17.00						176m	West
GW017718		Bore	Private		Industrial		01/10/1957	21.30	21.40					196m	South East
GW025729	10BL016155	(Unknown)	Private	Industrial	Industrial		01/01/1940	21.30						216m	North West

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW101 034	10BL158 259, 10WA11 3213	Spear	Private	Domestic	Domestic		22/11/1997	5.18	5.19	Good		1.000		232m	South East
GW020 094	10BL012 809	(Unkn own)	Private	Industrial	Industrial		01/10/1962	45.70	45.70					266m	East
GW024 222	10BL018 275	Bore	Private	Industrial	Industrial		01/08/1966	23.70	23.80					278m	East
GW017 722	10BL008 576	Bore	Private	Industrial	Industrial		01/10/1957	18.10	18.20					299m	South East
GW100 003	10BL156 654, 10WA11 3074	Spear	Private	Domestic	Domestic		15/05/1995	5.80	5.80	Good	2.14	1.000		303m	South East
GW025 818	10BL018 475, 10CA11 4693	Bore	Private	Irrigation, Recreation (groundwater)	Recreation (groundwater)		01/10/1966	23.70	23.80					304m	East
GW017 717	10BL008 575	Bore	Private	Industrial	Industrial		01/06/1955	16.10	16.20					324m	South
GW072 461	10BL156 216, 10WA11 3025	Spear	Private	Domestic, Stock	Domestic, Stock		01/11/1994	7.00	7.00					340m	South
GW060 218	10BL132 126	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		01/06/1964	18.30						349m	South East
GW024 110	10BL017 514, 10WA11 2908	Bore	Private	Domestic	General Use			5.40		Good				355m	South West
GW101 136	10BL158 206, 10WA11 3203	Spear	Private	Domestic	Domestic		02/01/1998	7.32	7.32	Good	4.58	1.000		363m	East
GW109 253	10BL602 488	Bore	Private	Monitoring Bore	Monitoring Bore		21/08/2008	10.30	10.30	Fresh	1.42			376m	South West
GW101 199	10BL158 205, 10WA11 3202	Spear	Private	Domestic	Domestic			5.49	5.49			1.000		390m	South
GW100 989	10BL158 172, 10WA11 3200	Spear	Private	Domestic	Domestic		02/10/1997	7.63	7.63		5.18	1.000		400m	South
GW109 254	10BL602 488	Bore	Private	Monitoring Bore	Monitoring Bore		21/08/2008	9.70	9.70	Fresh	1.03			403m	South West
GW109 255	10BL602 488	Bore	Private	Monitoring Bore	Monitoring Bore		21/08/2008	7.30	7.30	Fresh	0.72			431m	South West
GW022 240	10BL014 322, 10WA11 4741	Bore	Private	Recreation (groundwater)	Industrial		01/12/1964	25.20	25.30					452m	South East
GW023 443	10BL017 240, 10WA11 2876	Spear	Private	Domestic	General Use		01/01/1966	7.60	7.60	Good				482m	East
GW065 749		Spear	Private		Domestic, Stock		03/03/1989	7.00		Good				483m	South
GW101 888	10BL158 949, 10WA11 3266	Bore		Domestic	Domestic		21/11/1998	4.88	4.88	Good	1.83	1.000		499m	South West
GW017 352	10BL008 580	Bore	Private	Industrial	Industrial		01/01/1955	18.60	18.70					517m	South
GW100 996	10BL158 171, 10WA11 3199	Spear	Private	Domestic	Domestic		01/10/1997	9.76	9.76	Good	7.01	0.750		558m	East
GW101 335	10BL158 418, 10WA11 3234	Spear	Private	Domestic	Domestic		30/12/1997	10.67	10.67	Good	7.62	1.000		563m	East

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW025544	10BL016968, 10WA112855	Bore	Private	Domestic	General Use		01/10/1965	4.80	4.90	Good				574m	South East
GW101546	10BL158533, 10WA113253	Bore		Domestic	Domestic		16/03/1998	4.58	4.58	Good	1.83	1.000		574m	South East
GW111457	10BL604566	Bore	Private	Monitoring Bore	Monitoring Bore		14/04/2011	6.20	6.20		2.77			582m	West
GW111456	10BL604566	Bore	Private	Monitoring Bore	Monitoring Bore		14/04/2011	5.20	6.20		2.77			614m	West
GW100487	10BL157229	Bore		Domestic			01/01/1996	5.00			4.00			615m	North West
GW102616	10BL159382, 10WA113285	Bore		Domestic	Domestic		27/09/1999	6.00	6.00					625m	South East
GW101465	10BL158466, 10WA113245	Spear	Private	Domestic	Domestic		07/02/1998	7.63	7.63	Good	5.80	1.000		642m	South
GW104866	10BL161625, 10WA113339	Bore	Private	Domestic	Domestic		17/03/2003	6.71	6.71		3.66	1.190		643m	North
GW101721	10BL157138, 10WA113117	Bore		Domestic	Domestic		07/10/1995	6.00	6.00					645m	South East
GW103162	10BL159360, 10WA113284	Bore		Domestic	Domestic		17/08/1999	7.32	7.32	Good	4.58	1.000		650m	South
GW101711	10BL158558, 10WA113256	Bore		Domestic	Domestic		07/04/1998	10.00	10.00					655m	South East
GW017721	10BL008574	Bore	Private	Industrial	Industrial		01/08/1956	14.30	14.30					657m	South
GW023429	10BL017287, 10WA112882	Spear	Private	Domestic	General Use		01/01/1966	6.00	6.10	Good				661m	South East
GW017719	10BL008577	Bore	Private	Industrial	Industrial		01/10/1955	18.20	18.30					697m	South
GW104922	10BL160557, 10WA113318	Bore	Private	Domestic	Domestic		09/03/2002	7.00	7.00		3.50	1.000		704m	North
GW040222		Well	Private		Industrial			7.00	7.00				8.69	713m	North West
GW104930	10BL160641, 10WA113320	Bore	Private	Domestic	Domestic		06/06/2002	7.00	7.00		5.50	1.000		714m	South East
GW102221	10BL159073, 10WA113274	Spear	Private	Domestic	Domestic		01/03/1999	9.50	9.50					719m	East
GW017344	10BL008344	Bore	Private	Not Known	Industrial		01/02/1955	13.80	13.80					730m	North West
GW072634		Spear	Private		Domestic		24/10/1994	6.10	6.10					739m	North
GW072455	10BL156142, 10WA113019	Bore		Domestic	Domestic		24/10/1994	5.80	5.80					751m	North
GW100803	10BL156210, 10WA113024	Bore		Domestic			31/12/1994	6.00	6.00		2.00			773m	North

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW032 339		Spear	Private		Industrial		01/02/1970	33.20	33.20					775m	South East
GW038 127	10BL101 579	Bore	Private	Industrial	Industrial		01/10/1974	33.20	33.20	Good				776m	East
GW106 987	10BL161 311, 10WA11 3334	Spear	Private	Domestic	Domestic		10/04/2005	7.00	7.00					778m	North
GW042 161		Bore	NSW Office of Water		Monitoring Bore	BOTANY BOREFIELD AT EASTLAKES GOLF COURSE		33.50	33.50				8.48	779m	East
GW111 220	10BL602 660	Bore	Local Govt	Monitoring Bore	Monitoring Bore		24/08/2008	8.00	8.00					784m	South East
GW103 745	10BL156 773, 10WA11 4633	Bore		Industrial	Industrial		01/01/1961	18.28	18.28					784m	South East
GW101 787	10BL157 379, 10WA11 3154	Bore		Domestic	Domestic		18/12/1995	5.80	5.80	Good	1.83	1.000		796m	North
GW042 866	10BL105 733	Bore	Private	Industrial	Industrial			20.70	23.50					801m	South
GW017 348	10BL008 533	Bore	Private	Industrial	Industrial		01/10/1936	7.60	7.60					816m	South West
GW072 300		Spear	Private		Domestic		05/12/1994	4.60	4.60					817m	South West
GW111 219	10BL602 660	Bore	Local Govt	Monitoring Bore	Monitoring Bore		24/08/2008	16.00	16.30					822m	South East
GW072 633		Bore	Private		Domestic		03/12/1994	5.00	5.00					822m	North
GW102 740	10BL159 438, 10WA11 3289	Bore		Domestic	Domestic		24/10/1999	10.00	10.00					823m	South East
GW017 642	10BL008 064	Bore	Private	Industrial	Industrial		01/04/1957	23.00	23.00					825m	South East
GW111 218	10BL602 660	Bore	Local Govt	Monitoring Bore	Monitoring Bore		24/08/2008	8.00	8.00					826m	South East
GW072 632		Bore	Private		Domestic		02/12/1994	5.00	5.00					828m	North
GW102 800	10BL159 567, 10WA11 3293	Bore		Domestic	Domestic		12/01/2000	6.10	6.10	Good				832m	North
GW034 125	10BL030 153	Bore	Private	Industrial	Industrial		01/10/1971	17.80	17.80					839m	South
GW111 217	10BL602 660	Bore	Local Govt	Monitoring Bore	Monitoring Bore		24/08/2008	16.00	16.30					849m	South East
GW023 605	10BL017 288, 10WA11 2883	Spear	Private	Domestic	General Use		01/01/1966	4.50	4.60	Good				859m	North
GW034 063	10BL030 116	Bore	Private	Industrial	Industrial		01/08/1972	19.80	19.80					864m	South
GW017 351	10BL008 541	Bore	Private	Industrial	Industrial		01/07/1957	22.50	22.60					867m	South East
GW065 549		Bore	Private		Industrial		01/07/1980	22.50						867m	South East
GW111 216	10BL602 660	Bore	Local Govt	Monitoring Bore	Monitoring Bore		09/11/2010	8.00	8.00					873m	South East
GW023 600	10BL017 286, 10WA11 2881	Spear	Private	Domestic	General Use		01/01/1966	7.30	7.30	Good				875m	North
GW017 195	10BL008 550, 10WA11 2795	Spear	Private	Domestic	General Use		01/12/1957	3.30	3.40	Good				881m	North East

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW104747	10BL156760, 10WA113076	Bore	Private	Domestic	Domestic		01/01/1995	5.49	5.48					882m	North East
GW101935	10BL158104, 10WA113196	Bore		Domestic	Domestic		13/10/1998	10.00	10.00					886m	South
GW111215	10BL602660	Bore	Private	Monitoring Bore	Monitoring Bore		24/08/2008	16.00	16.30					892m	South East
GW112075	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		28/08/2001	3.20	3.20					900m	South West
GW100674	10BL156858, 10WA113079	Spear	Private	Domestic	Domestic		21/08/1995	5.49	5.49	Good		1.000		903m	North East
GW075023		Bore	NSW Office of Water		Monitoring Bore	BOTANY BOREFIELD AT LESTRANGE PARK	15/07/1998	18.50	26.00				8.44	905m	North
GW112077	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		29/08/2001	3.20	3.20					908m	South West
GW103746	10BL156772, 10WA114633	Bore		Industrial	Industrial		01/01/1961	18.28	18.28					910m	East
GW042164		Bore	NSW Office of Water		Monitoring Bore, Stock		17/01/1975						7.11	912m	South
GW105117	10BL160666, 10WA114711	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		12/12/2012	14.00	14.00	220	1.30	5.000		914m	North
GW112078	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		29/08/2001	3.20	3.20					917m	South West
GW023574	10BL017494, 10WA112902	Spear	Private	Domestic	General Use		01/01/1966	6.00	6.10	Good				917m	South
GW102741	10BL159434, 10WA113288	Bore		Domestic	Domestic		28/10/1999	7.00	7.00					921m	North East
GW106493	10BL160829	Bore		Monitoring Bore	Monitoring Bore		19/07/2002	1.10	1.10					927m	South East
GW112074	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		28/08/2001	3.20	3.20					928m	South West
GW112076	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		29/08/2001	5.20	5.20					930m	South West
GW112079	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		30/08/2001	3.20	3.20					933m	South West
GW065547		Bore	Private		Industrial		01/04/1981	34.00						934m	South East
GW106494	10BL160829	Bore		Monitoring Bore	Monitoring Bore		19/07/2002	7.30	7.30					937m	South East
GW025994	10BL016721	Bore	Private	Not Known	General Use		01/03/1966	13.20	13.30	Good				939m	North West
GW106492	10BL160829	Bore		Monitoring Bore	Monitoring Bore		19/07/2002	6.30	6.30					944m	South East
GW040776		Bore	Private					8.08						944m	South West
GW065548		Bore	Private		Industrial		01/05/1989	26.50		7001-10000 ppm				946m	South East
GW042163		Bore	NSW Office of Water		Monitoring Bore			24.00	24.00				13.14	948m	South East
GW112072	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		28/08/2001	3.20	3.20					952m	South West

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW013833	10BL009008	Bore	Private	Industrial	Industrial		01/07/1958	18.80	18.90					954m	South
GW106498	10BL160829	Bore		Monitoring Bore	Monitoring Bore		18/07/2002	1.25	1.25					957m	South East
GW022239	10BL030429	Bore	Private	Industrial	Industrial		01/06/1964	33.80	33.80	Good				959m	East
GW106499	10BL160829	Bore		Monitoring Bore	Monitoring Bore		18/07/2002	0.60	0.60					960m	South East
GW112073	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		28/08/2001	3.20	3.20					962m	South West
GW112081	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		17/10/2001	3.00	3.00					962m	South West
GW106495	10BL160829	Bore		Monitoring Bore	Monitoring Bore		19/07/2002	1.30	1.30					963m	South East
GW112080	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		17/10/2001	3.13	3.13					964m	South West
GW013633	10BL009000, 10WA112800	Bore	Private	Domestic	Industrial		01/08/1949	13.20	13.30					968m	South
GW024694	10BL018847, 10WA112970	Bore	Private	Domestic	General Use		01/08/1966	3.00	3.00	Good				969m	North East
GW065482	10BL144055, 10WA114647	Bore	Private	Industrial	Industrial		05/11/1990	18.00						970m	South
GW106497	10BL160829	Bore		Monitoring Bore	Monitoring Bore		18/07/2002	1.20	1.20					974m	South East
GW112068	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		11/07/2001	3.10	3.10					974m	South West
GW112067	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		11/07/2001	3.10	3.10					975m	South West
GW101523	10BL158689, 10WA113260	Bore	Private	Domestic	Domestic		01/06/1998	6.10	6.10	Good	1.52	1.000		978m	North
GW062073	10BL136096	Bore	Private	Industrial	Industrial		01/09/1986	29.00	31.00	Good				981m	South East
GW107397	10BL163147	Bore		Monitoring Bore	Monitoring Bore		27/07/2003	3.60	3.60					982m	North
GW112069	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		28/08/2001	5.10	5.10					983m	South West
GW024377	10BL018538, 10WA112954	(Unknown)	Private	Domestic	General Use		01/07/1966	4.50	4.60					987m	North East
GW040777		Bore	Private					2.22						991m	South
GW112071	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		28/08/2001	3.20	3.20					992m	South West
GW106496	10BL160829	Bore		Monitoring Bore	Monitoring Bore		19/07/2002	6.20	6.20					993m	South East
GW112070	10BL160239	Bore	Private	Monitoring Bore	Monitoring Bore		28/08/2001	3.20	3.20					996m	South West
GW017639	10BL008063	Bore	Private	Industrial	Industrial		01/08/1955	27.40	27.40					997m	South East
GW104936	10BL160700, 10WA113322	Bore	Private	Domestic	Domestic		15/08/2002	7.00	7.00		3.50	1.000		1005m	North East
GW107395	10BL163147	Bore		Monitoring Bore	Monitoring Bore		22/07/2003	3.60	3.60					1029m	North
GW023525	10BL016753	Spear	Private	Domestic	General Use		01/11/1965	5.90	5.90					1031m	North West
GW072214		Bore	Private		Domestic		01/03/1995	5.00	5.00					1032m	North
GW013658	10BL009001	Bore	Private	Industrial	Industrial		01/04/1941	18.80	18.90					1041m	South

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW100448	10BL157815, 10WA113180	Spear	Private	Domestic	Domestic		24/03/1997	9.15	9.15	6000	5.80	0.670		1044m	East
GW104990	10BL160430, 10WA113313	Bore	Private	Domestic	Domestic		22/01/2002	6.00	6.00		3.50	1.000		1046m	North West
GW100754	10BL156761, 10WA114629	Bore	Private	Industrial	Industrial		21/06/1995	148.00	148.00	560	6.00	8.200		1055m	West
GW073506	10BL157302, 10WA113136	Spear	Private	Domestic	Domestic		08/11/1995	6.00	6.00					1056m	South West
GW024106	10BL017284, 10WA112880	Spear	Private	Domestic	General Use			2.70		S.Brackish				1061m	North East
GW073515	10BL157331, 10WA113143	Spear	Private	Domestic	Domestic		23/11/1995	7.00	7.00					1064m	North East
GW037759	10BL030092	Bore	Private	Industrial	Industrial		01/02/1971	19.80	19.80					1070m	South
GW023472	10BL017260, 10WA112877	Spear	Private	Domestic	General Use		01/03/1966	3.60	3.70	Good				1070m	North
GW072897		Spear	Private		Domestic		10/12/1994	5.80	5.80	Good				1073m	North East
GW013659	10BL008999	Bore	Private	Industrial	Industrial		01/07/1955	19.90	20.00					1078m	South
GW035949	10BL030093, 10WA114617	Bore	Private	Industrial	Industrial		01/11/1969	19.60	19.70					1086m	South
GW023473	10BL017261, 10WA112878	Spear	Private	Domestic	General Use		01/03/1966	7.30	7.30	Good				1092m	North East
GW026070	10BL017804, 10WA112932	Spear	Private	Domestic	Domestic		01/01/1966	3.60	3.70					1098m	North
GW017641	10BL008062	Bore	Private	Industrial	Industrial		01/12/1957	27.10	27.10					1102m	South East
GW060237	10BL132337	Bore	Private	Industrial	Industrial		01/01/1965	30.50		0-500 ppm				1120m	East
GW101796	10BL157237, 10WA113129	Bore		Domestic	Domestic		24/10/1995	5.49	5.49	Good	1.83	1.000		1121m	North East
GW017637	10BL008059	Bore	Private	Industrial	Industrial		01/10/1952	37.10	37.20					1124m	East
GW104777	10BL161312, 10WA113335	Bore	Private	Domestic	Domestic		25/02/2003	7.00	7.00					1128m	South
GW072294		Bore	Private		Domestic		16/01/1995	8.00	8.00					1132m	East
GW107396	10BL163147	Bore		Monitoring Bore	Monitoring Bore		22/07/2003	3.50	3.50					1132m	North
GW101445	10BL158450, 10WA113242	Spear	Private	Domestic	Domestic		08/01/1998	6.00	6.00					1134m	North East
GW072958		Bore	Private		Domestic		14/08/1995	5.00	5.00					1135m	North East
GW032273	10BL103884	Bore	Private	Industrial	Industrial		01/01/1970	31.30	31.40					1144m	South East

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GW072287		Bore	Private		Domestic		14/01/1995	8.00	8.00					1146m	East
GW104570	10BL161119, 10WA113327	Bore		Domestic	Domestic		09/12/2002	6.50	6.50					1153m	North East
GW101095	10BL158153, 10WA113198	Spear	Private	Domestic	Domestic		18/09/1997	5.18	5.19	Good	1.93	1.000		1160m	North East
GW073507	10BL157303, 10WA113137	Spear	Private	Domestic	Domestic		08/11/1995	6.00	6.00					1161m	South West
GW017638	10BL008060	Bore	Private	Industrial	Industrial		01/08/1956	33.20	33.20					1161m	South East
GW037821	10BL030427	Bore	Private	Industrial	Industrial		01/05/1970	34.10	34.10					1161m	South East
GW072925		Spear	Private		Domestic		18/02/1995	12.00	12.00					1166m	East
GW042166		Spear	NSW Office of Water		Monitoring Bore, Stock		13/02/1975		11.50				10.79	1172m	South East
GW103239	10BL157239, 10WA113131	Bore		Domestic	Domestic		24/10/1995	17.08	17.08	Good				1173m	East
GW023497	10BL017605, 10WA112917	Spear	Private	Domestic	General Use		01/01/1966	6.40	6.40	Good				1181m	North East
GW101475	10BL158448, 10WA113240	Spear	Private	Domestic	Domestic		04/02/1998	6.00	6.00					1193m	North
GW033949	10BL026423	(Unknown)		Test Bore	Industrial			30.50	30.50					1197m	South East
GW105152	10BL157076, 10WA113110	Bore	Private	Domestic	Domestic		20/09/1995	5.00	5.00					1201m	North
GW114064	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	27.00	27.00					1204m	South East
GW114065	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	13.00	13.00					1205m	South East
GW072413	10BL156159, 10WA113021	Spear	Private	Domestic	Domestic		31/10/1994	6.00	6.00					1208m	North
GW072293		Spear	Private		Domestic		29/11/1994	6.60						1209m	North
GW072917		Bore	Private		Domestic		18/02/1995	18.00	18.00					1210m	East
GW042168		Bore	NSW Office of Water		Monitoring Bore		13/02/1975		13.00				6.56	1224m	South East
GW101215	10BL158280, 10WA113217	Spear	Private	Domestic	Domestic		24/11/1997	7.62	7.62	Good		1.000		1227m	North East
GW105897	10BL162078, 10WA113346	Bore		Domestic			12/05/2005							1227m	North East
GW114061	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	32.80	32.80					1228m	South East

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GW114063	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	13.00	13.00					1230m	South East
GW114062	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	25.00	25.00					1230m	South East
GW101446	10BL158458, 10WA113243	Spear	Private	Domestic	Domestic		04/01/1998	6.00	6.00					1235m	North
GW017640	10BL008061	Bore	Private	Industrial	Industrial		01/03/1956	29.40	29.50					1238m	South East
GW042167		Spear	NSW Office of Water		Monitoring Bore			13.01	13.01				7.68	1252m	South East
GW112703	10BL602988	Bore	Private	Monitoring Bore	Monitoring Bore	Amcor	13/10/2008	9.00	9.00					1257m	East
GW112704	10BL602988	Bore	Private	Monitoring Bore	Monitoring Bore	Amcor	13/10/2008	9.00	9.00					1262m	East
GW100872	10BL157704, 10WA113173	Bore	Private	Domestic	Domestic		30/07/1996	5.80	5.80	Good	3.97	3.700		1276m	North East
GW104338	10BL160591	Bore	Private	Monitoring Bore	Monitoring Bore		05/04/2002	3.50	3.50		1.20			1277m	North West
GW038126	10BL031387, 10BL156895	Bore	Private	Industrial	Industrial		01/05/1971	39.00	40.20	0-500 ppm		25.258		1283m	South East
GW114060	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	14.00	14.00					1284m	South East
GW040775		Bore	Private					3.39						1286m	South
GW101477	10BL158449, 10WA113241	Spear	Private	Domestic	Domestic		05/01/1998	6.00	6.00					1286m	North
GW103707	10BL160099	Bore		Monitoring Bore	Monitoring Bore		03/11/2000	4.20	4.20					1287m	North West
GW103705	10BL160099	Bore		Monitoring Bore	Monitoring Bore		02/11/2000	4.70	4.70					1287m	North West
GW103706	10BL160099	Bore		Monitoring Bore	Monitoring Bore		02/11/2000	4.30	4.30					1287m	North West
GW114059	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	23.50	23.50					1288m	South East
GW028592	10BL017316	Bore	Private	Industrial	Industrial		01/03/1966	28.00	28.00	Good				1288m	South East
GW073478	10BL157227, 10WA113128	Bore		Domestic	Domestic		19/10/1995	10.00						1289m	East
GW104336	10BL160591	Bore	Private	Monitoring Bore	Monitoring Bore		05/04/2002	3.50	3.50		1.00			1302m	North West
GW067576		Spear	Private		Domestic		31/12/1991	5.00						1303m	North East
GW101785	10BL157377, 10WA113153	Bore		Domestic	Domestic		22/02/1999	6.00	6.00		4.00	0.400		1303m	South
GW100966	10BL156935, 10WA113086	Spear	Private	Domestic	Domestic		23/08/1995	5.50	5.50	Good	1.83	1.000		1306m	North

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GW100586	10BL157340, 10WA113145	Bore		Domestic	Domestic		31/12/1996	15.00	15.00					1307m	South
GW104337	10BL160591	Bore	Private	Monitoring Bore	Monitoring Bore		05/04/2002	3.50	3.50		1.40			1308m	North West
GW020494	10BL013506	Bore	Private	Industrial	Industrial		01/06/1963	30.90	31.00					1310m	South East
GW100579	10BL157962, 10WA113188	Spear	Private	Domestic	Domestic		20/03/1997	5.00	5.00					1313m	North East
GW114058	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	33.00	33.00					1318m	South East
GW114057	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	12.00	12.00					1318m	South East
GW114056	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	24.50	24.50					1323m	South East
GW105607	10BL160340, 10WA113308	Bore	Private	Domestic	Domestic		15/10/2003	7.00	7.00					1324m	North East
GW104334	10BL160591	Bore	Private	Monitoring Bore	Monitoring Bore		05/04/2002	3.50	3.50		0.90			1324m	North West
GW033372	10BL024741	Bore	Federal Govt	Industrial	Industrial		01/03/1970	11.80	11.90					1324m	North West
GW013827	10BL009112	Bore	Private	Industrial	Industrial		01/08/1958	38.80	38.90					1327m	South East
GW104333	10BL160591	Bore	Private	Monitoring Bore	Monitoring Bore		05/04/2002	3.50	3.50		1.20			1328m	North West
GW033371	10BL024740	Bore	Federal Govt	Industrial	Industrial		01/03/1970	11.80	11.90					1331m	North West
GW104335	10BL160591	Bore	Private	Monitoring Bore	Monitoring Bore		05/04/2002	3.50	3.50		1.40			1334m	North West
GW101457	10BL158490, 10WA113250	Spear	Private	Domestic	Domestic		02/03/1998	6.00	6.00					1340m	North
GW101806	10BL157285, 10WA113132	Bore	Private	Domestic	Domestic		04/11/1995	11.89	11.90	Good				1342m	South
GW101033	10BL158260, 10WA113214	Spear	Private	Domestic	Domestic		25/11/1997	7.32	7.32	Good		1.000		1349m	North East
GW112705	10BL602988	Bore	Private	Monitoring Bore	Monitoring Bore	Amcor	14/10/2008	9.00	9.00					1354m	East
GW059101	10BL117592, 10WA114627	Battery Spears	Private	Recreation (groundwater)	Recreation (groundwater)		01/06/1981	6.70	6.70					1361m	South West
GW114055	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	13.00	13.00					1368m	South East
GW103694	10BL160006	Bore	Private	Monitoring Bore	Monitoring Bore		20/02/2001	5.00	5.00		2.80			1369m	South
GW114054	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	26.00	26.00					1373m	South East
GW100991	10BL156956, 10WA113090	Spear	Private	Domestic	Domestic		29/08/1995	6.70	6.70	Good		1.000		1382m	North East

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GW112706	10BL602988	Bore	Private	Monitoring Bore	Monitoring Bore	Amcor	14/10/2008	9.00	9.00					1386m	East
GW013387	10BL006746	Bore	Private	Industrial	Industrial		01/05/1957	34.70	34.80	Good				1388m	South East
GW025715	10BL016421, 10WA112815	Spear	Private	General Use	General Use		01/09/1965	5.40	5.50					1392m	North East
GW047121	10BL105635, 10WA114681	Bore	Local Govt	Recreation (groundwater)	Recreation (groundwater)		01/07/1973	42.70	42.70					1393m	East
GW024205	10BL018629, 10WA112962	Spear	Private	Domestic	General Use		01/08/1966	4.80	4.90	Good				1396m	North East
GW109461	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		10/10/2007	20.00			3.40			1397m	South East
GW109793	10BL601803	Well	Private	Monitoring Bore	Monitoring Bore		18/09/2006	3.60	3.60		0.70			1402m	South
GW026720	10BL017151, 10WA112868	Spear	Private	Domestic	General Use		01/01/1966	6.00	6.10	Good				1404m	North East
GW109794	10BL601803	Well	Private	Monitoring Bore	Monitoring Bore		18/09/2006	3.60	3.60		0.70			1409m	South
21310002					UNK								17.52	1411m	North East
GW114053	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	13.00	13.00					1418m	South East
GW109797	10BL601803	Well	Private	Monitoring Bore	Monitoring Bore		18/09/2006	3.60	3.60		0.70			1419m	South
GW047417	10BL105924, 10BL163817, 10CA114693	Bore	Private	Irrigation, Recreation (groundwater)	Irrigation, Recreation (groundwater)		01/03/1980	23.50	23.50					1420m	North East
GW114052	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	26.00	26.00					1422m	South East
GW110015	10BL601969	Well	Private	Monitoring Bore	Monitoring Bore		09/05/2007	7.00	7.00					1423m	South East
GW100825	10BL157608, 10WA113169	Spear	Private	Domestic	Domestic		23/04/1996	7.01	7.02	Good	4.88	1.000		1427m	North East
GW104902	10BL157111, 10WA113115	Bore	Private	Domestic	Domestic		27/09/1995	7.10	7.10	Good	1.83	1.000		1428m	North West
GW109795	10BL601803	Well	Private	Monitoring Bore	Monitoring Bore		18/09/2006	3.60	3.60		0.80			1435m	South
GW109464	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		27/09/2007	20.00			2.40			1436m	South East
GW017350	10BL008532	Bore	Private	Irrigation	Industrial		01/11/1957	32.30	32.30					1436m	South East
GW109460	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		09/10/2007	20.00			3.00			1438m	South East
GW112592	10BL162488	Bore	Private	Monitoring Bore	Monitoring Bore	Orica - Wiggins St	07/11/2003	20.00	20.00					1441m	South
GW062069	10BL135861	Bore	Private	Industrial	Industrial		01/01/1976	10.00						1442m	South West
GW109796	10BL601803	Well	Private	Monitoring Bore	Monitoring Bore		18/09/2006	3.60	3.60		0.80			1443m	South
GW013383	10BL006747	Bore	Private	Industrial	Industrial		01/01/1958	34.10	34.20	Good				1446m	South East

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW100 993	10BL156 957, 10WA11 3091	Spear	Private	Domestic	Domestic		29/08/1995	5.49	5.49	Good	2.13	1.000		1454m	North
GW110 379	10BL601 968	Well	Private	Monitoring Bore	Monitoring Bore		08/05/2007	7.00	7.00					1460m	South East
GW109 485	10BL600 355	Bore	Private	Monitoring Bore	Monitoring Bore		08/10/2007	13.00			3.30			1462m	South East
GW037 388	10BL030 322	Bore	Private	Industrial - Sand & Gravel	Industrial		01/09/1972	37.70	37.80	0-500 ppm				1469m	East
GW114 051	10BL603 115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	14.00	14.00					1469m	South East
GW109 479	10BL600 355	Bore	Private	Monitoring Bore	Monitoring Bore		26/10/2007	12.40			2.30			1472m	South East
GW114 050	10BL603 115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	26.70	26.70					1472m	South East
GW109 484	10BL600 355	Bore	Private	Monitoring Bore	Monitoring Bore		08/10/2007	13.00			3.30			1473m	South East
GW110 377	10BL601 968	Well	Private	Monitoring Bore	Monitoring Bore		18/11/1999	7.00	7.00					1473m	South East
GW025 710	10BL015 090	Bore	Private	Industrial	Industrial		01/07/1965	29.50	29.70	Good				1475m	South East
GW112 840	10BL604 407	Bore	Private	Monitoring Bore	Monitoring Bore	Nuplex	07/12/2010	8.10	8.10		5.30			1476m	South East
GW109 478	10BL600 355	Bore	Private	Monitoring Bore	Monitoring Bore		23/10/2007	13.00			3.20			1478m	South East
GW109 195	10BL602 391	Bore	Private	Monitoring Bore	Monitoring Bore		11/08/2008	7.80	7.80					1480m	South East
GW109 466	10BL600 355	Bore	Private	Monitoring Bore	Monitoring Bore		17/10/2007	20.00			0.90			1484m	South East
GW100 427	10BL157 376, 10WA11 4659	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		24/03/1997	37.00	37.00		13.50	1.250		1485m	East
GW110 380	10BL601 968	Well	Private	Monitoring Bore	Monitoring Bore		08/05/2007	7.00	7.00					1485m	South East
GW025 817	10BL018 476	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		01/04/1965	22.80	22.90					1490m	East
GW031 808	10BL024 739	(Unknown)	P.W.D.	Test Bore	G/water Xplore		01/06/1969	18.20	18.30					1491m	North West
GW073 521		Spear	Private		Domestic		29/10/1995	3.00	3.00					1491m	North West
GW109 459	10BL600 355	Bore	Private	Monitoring Bore	Monitoring Bore		03/10/2007	20.00			3.40			1492m	South East
GW112 839	10BL604 407	Bore	Private	Monitoring Bore	Monitoring Bore	Nuplex	08/12/2010	8.10	8.10		5.30			1495m	South East
GW112 836	10BL604 407	Bore	Private	Monitoring Bore	Monitoring Bore	Nuplex	08/12/2010	7.80	7.80		5.30			1496m	South East
GW103 708	10BL160 084, 10WA11 3301	Bore		Domestic	Domestic		26/04/2001	6.00	6.00					1500m	North East
GW040 779		Bore	Private					10.66						1500m	South East
GW101 232	10BL158 389, 10WA11 3224	Spear	Private	Domestic	Domestic		03/01/1998	6.00	6.00					1503m	North East
GW109 480	10BL600 355	Bore	Private	Monitoring Bore	Monitoring Bore		23/10/2007	13.00			2.30			1504m	South East
GW024 655	10BL018 264	Bore	Private	Industrial	General Use		01/06/1966	9.10	9.10					1505m	North West

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GW102739	10BL159450, 10WA113291	Bore		Domestic	Domestic		09/11/1999	7.00	7.00					1506m	North East
GW112842	10BL604407	Bore	Private	Monitoring Bore	Monitoring Bore	Nuplex	08/12/2010	8.10	8.10		5.30			1507m	South East
GW109486	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		05/10/2007	11.00			3.00			1508m	South East
GW112844	10BL604407	Bore	Private	Monitoring Bore	Monitoring Bore	Nuplex	10/12/2010	8.10	8.10		5.30			1508m	South East
GW109197	10BL602391	Bore	Private	Monitoring Bore	Monitoring Bore		11/08/2008	7.00	7.00					1511m	South East
GW100276	10BL153564, 10WA113008	Spear	Private	Domestic	Domestic		15/01/1994	6.00	6.00					1512m	South
GW042160		Bore	NSW Office of Water		Monitoring Bore			32.00					22.15	1513m	North East
GW102366	10BL159184, 10WA113281	Bore		Domestic	Domestic		23/05/1999	7.00	7.00					1514m	North
GW112843	10BL604407	Bore	Private	Monitoring Bore	Monitoring Bore	Nuplex	10/12/2010	8.10	8.10		5.30			1514m	South East
GW114047	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	29.50	29.50					1515m	South East
GW114049	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	14.00	14.00					1519m	South East
GW114048	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	03/03/2014	24.50	24.50					1523m	South East
GW029072		Bore	Private		Industrial		01/11/1967	40.90	41.00					1524m	South East
GW023982	10BL018271, 10WA112941	Spear	Private	Domestic	General Use		01/02/1966	6.00	6.10	Good				1526m	North East
GW109483	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		24/10/2007	13.00						1526m	South East
GW112838	10BL604407	Bore	Private	Monitoring Bore	Monitoring Bore	Nuplex	08/12/2010	8.05	8.05		5.30			1529m	South East
GW112835	10BL604407	Bore	Private	Monitoring Bore	Monitoring Bore	Nuplex	08/12/2010	7.70	7.70		5.30			1529m	South East
GW109482	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		24/10/2007	13.00			3.50			1530m	South East
GW109487	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		04/10/2007	13.00			3.40			1537m	South East
GW042162		Bore	NSW Office of Water		Monitoring Bore			24.00					6.62	1538m	South
GW104165	10BL159953, 10WA113299	Bore		Domestic	Domestic		13/12/1999	8.40	8.40	Good				1544m	North East
GW109194	10BL602391	Bore	Private	Monitoring Bore	Monitoring Bore		11/08/2008	7.00	7.00					1546m	South East
GW024757	10BL019729	Bore	Private	Industrial	Industrial		01/01/1982	42.00						1547m	East
GW114045	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	27.00	27.00					1548m	South East

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GW107047	10BL164394	Spear	Private	Dewatering (groundwater)	Dewatering (groundwater)		08/11/2004	4.00	4.00		1.50			1549m	South East
GW022536	10BL015199	Bore	Private	Industrial	Industrial		01/01/1958	27.80	27.80					1550m	South East
GW112837	10BL604407	Bore	Private	Monitoring Bore	Monitoring Bore	Nuplex	08/12/2010	8.10	8.10		5.30			1551m	South East
GW109458	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		02/10/2007	20.00			3.50			1552m	South East
GW114046	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	22.00	22.00					1552m	South East
GW110378	10BL601968	Well	Private	Monitoring Bore	Monitoring Bore		16/04/2004	7.00	7.00					1555m	South East
GW109196	10BL602391	Bore	Private	Monitoring Bore	Monitoring Bore		11/08/2008	4.00	4.00					1563m	South East
GW025549	10BL016301, 10WA112806	Spear	Private	Domestic	General Use		01/11/1965	5.70	5.80					1565m	North East
GW112841	10BL604407	Bore	Private	Monitoring Bore	Monitoring Bore	Nuplex	08/12/2010	8.10	8.10		5.30			1566m	South East
GW024068	10BL017315, 10WA112890	Spear	Private	Domestic	Domestic		01/05/1966	4.20	4.30					1568m	North West
GW109481	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		24/10/2007	13.00			2.50			1569m	South East
GW024616	10BL019001, 10WA112979	Spear	Private	Domestic	Domestic		01/09/1966	5.60	5.60					1569m	North
GW110376	10BL601968	Well	Private	Monitoring Bore	Monitoring Bore		18/11/1999	7.50	7.50					1572m	South East
GW047123	10BL105637, 10WA114669	Bore	Local Govt	Recreation (groundwater)	Recreation (groundwater)		01/07/1973	18.90	18.90					1574m	North West
GW019098	10BL011647	Bore	Private	Industrial	Industrial		01/01/1959	27.40	27.40	Poor				1575m	South East
GW109198	10BL602391	Bore	Private	Monitoring Bore	Monitoring Bore		11/08/2008	4.00	4.00					1579m	South East
GW114043	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	29.00	29.00					1590m	South East
GW114044	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	24.00	24.00					1593m	South East
GW072901		Bore	Private		Domestic		15/11/1994	7.00	7.00					1605m	North West
GW073477	10BL157226, 10WA113127	Bore		Domestic	Domestic		20/10/1995	5.00						1605m	North
GW101594	10BL156491, 10CA114685	Bore		Irrigation, Recreation (groundwater)	Recreation (groundwater)		16/02/1995	31.00	38.00		15.40			1605m	East
GW018547	10BL012043	Bore	Private	Industrial	Industrial		01/10/1961	32.30	32.30					1612m	South East
GW022471	10BL015198	Bore	Private	Industrial	Industrial		01/01/1960	33.00	33.10					1612m	South East
GW040778		Bore	Private					39.65			0.00			1627m	South
GW110909	10BL603566	Well	Private	Monitoring Bore	Monitoring Bore		19/01/2010	5.80	5.80		2.50			1631m	West
GW109465	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		11/10/2007	20.00			3.30			1633m	South East

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GW110910	10BL603566	Well	Private	Monitoring Bore	Monitoring Bore		19/01/2010	6.00	6.00		3.00			1636m	West
GW114041	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	29.30	29.30					1637m	South East
GW013433	10BL006755	Bore	Private	Industrial	Industrial		01/12/1954	31.60	31.70					1638m	South
GW047124	10BL105639	Spear	Local Govt	Recreation (groundwater)	Recreation (groundwater)		01/05/1975	37.80	37.80					1642m	South
GW105150	10BL157080, 10WA113111	Bore	Private	Domestic	Domestic		20/09/1995	5.00	5.00					1646m	North
GW104981	10BL160365, 10WA113309	Bore	Private	Domestic	Domestic		05/12/2001	6.00	6.00		3.00			1647m	North East
GW114039	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	29.00	29.00					1652m	South East
GW060217	10BL132125, 10CA114685	Bore	Private	Irrigation, Recreation (groundwater)	Recreation (groundwater)		01/01/1958	19.80						1653m	East
GW114040	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	22.50	22.50					1657m	South East
GW109463	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		11/10/2007	20.00			4.00			1670m	South East
GW024244	10BL018810, 10WA112967	Spear	Private	Domestic	General Use		01/11/1965	3.00	3.00	Fair				1670m	North
GW102866	10BL157354	Bore		Recreation (groundwater)	Recreation (groundwater)		01/01/1992	5.00	5.00					1673m	North East
GW109201	10BL162437, 10WA114661	Spear	Other Govt	Recreation (groundwater)	Recreation (groundwater)		12/08/2008	5.00						1673m	North East
GW109471	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		25/09/2007	20.00			3.20			1676m	South East
GW114038	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	22.00	22.00					1678m	South East
GW013435	10BL006754	(Unknown)	Private	Industrial	Industrial		01/10/1948	53.60	53.60					1688m	South
GW100578	10BL157970, 10WA113189	Spear	Private	Domestic	Domestic		19/03/1997	5.00	5.00					1690m	South
GW112590	10BL162487	Bore	Private	Monitoring Bore	Monitoring Bore	Orica - Fremlin Rd	03/12/2003	20.00	20.00					1693m	South
GW114037	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	12.50	12.50					1702m	South East
GW110911	10BL603566	Well	Private	Monitoring Bore	Monitoring Bore		19/01/2010	6.00	6.00		3.20			1702m	West
GW114035	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	26.00	26.00					1704m	South East
GW032150	10BL024964	Bore	Private	Industrial	Industrial		01/10/1962	38.70	38.70					1705m	South East

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GW042867	10BL105903, 10BL112762, 10WA114619	Bore	Private	Industrial, Recreation (groundwater)	Industrial, Recreation (groundwater)			36.60	36.60					1705m	East
GW103500	10BL159710, 10WA114687	Bore		Recreation (groundwater)	Recreation (groundwater)		01/05/2000	41.00	41.00					1706m	East
GW114036	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	22.00	22.00					1709m	South East
GW062266	10BL137026	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		01/08/1987	31.00	31.00	Good				1709m	East
GW109468	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		19/09/2007	20.00			4.30			1710m	South East
GW047872	10BL112763	Bore	Private	Industrial	Industrial		01/11/1980	41.50	41.50	0-500 ppm				1713m	East
GW073457	10BL157194, 10WA113121	Spear	Private	Domestic	Domestic		10/10/1995	5.80	5.80	Good				1720m	South
GW114032	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	27.00	27.00					1730m	South East
GW114033	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	21.00	21.00					1730m	South East
GW104297	10BL156208, 10WA113023	Bore	Private	Domestic	Domestic		20/12/1994		42.00		4.00	0.400		1731m	North West
GW114034	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	13.50	13.50					1732m	South East
GW027749	10BL021267	Bore	Local Govt	Irrigation	Recreation (groundwater)		01/12/1965	16.40	16.50					1733m	North West
GW035410	10BL030306	Bore open thru rock	Private	Industrial	Industrial		01/12/1972	39.90	39.90					1742m	East
GW016953	10BL007582, 10BL600163, 10BL600999, 10CA114685	Bore	Private	Irrigation, Recreation (groundwater), Test Bore	Irrigation, Recreation (groundwater)		01/01/1958	30.00	30.00		11.50			1743m	East
GW112591	10BL162486	Bore	Private	Monitoring Bore	Monitoring Bore	Orica - McPherson St	05/11/2003	20.00	20.00					1744m	South
GW013638	10BL006759	Bore	Private	Industrial	Industrial		01/11/1956	20.40	20.40					1752m	South East
GW024036	10BL017949	Spear	Private	Industrial	General Use		01/01/1966	6.00	6.10					1755m	West
GW109469	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		22/10/2007	20.00			3.20			1757m	South East
GW022054	10BL014285	Bore	Private	Industrial	Industrial		01/06/1964	40.80	40.90					1757m	East
GW013515	10BL008626, 10WA112796	Spear	Private	Domestic	Domestic		01/01/1958	8.20	8.20					1759m	North West
GW060219	10BL132709	Bore	Private	Industrial	Industrial		01/01/1970	25.00						1761m	South East

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GW114031	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	14.00	14.00					1761m	South East
GW114030	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	22.00	22.00					1764m	South East
GW024368	10BL018351	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		01/02/1966	12.90	13.00				20.50	1767m	North East
GW104040	10BL159958	Bore		Monitoring Bore	Monitoring Bore		10/11/2000	7.00	7.00		2.80			1768m	North
GW015990	10BL007096	Bore	Private	Industrial	Industrial		01/02/1957	28.80	28.80					1770m	South East
GW104039	10BL159958	Bore		Monitoring Bore	Monitoring Bore		10/11/2000	7.00	7.00		2.80			1773m	North
GW025947	10BL019508	Bore	Private	Industrial	Industrial		01/02/1967	30.10	30.20					1782m	South East
GW110906	10BL603567	Well	Private	Monitoring Bore	Monitoring Bore		19/01/2010	5.80	5.80		3.50			1783m	West
GW114042	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	28/02/2014	23.00	23.00					1785m	South East
GW110429	10BL160571	Bore	Private	Monitoring Bore	Monitoring Bore		12/02/2002	4.00	4.00					1786m	North
GW114024	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	22.00	22.00					1786m	South East
GW114028	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	27.00	27.00					1786m	South East
GW110427	10BL160571	Bore	Private	Monitoring Bore	Monitoring Bore		13/02/2002	7.00	7.00					1787m	North
GW114025	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	13.00	13.00					1789m	South East
GW114029	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	13.00	13.00					1790m	South East
GW047525	10BL105640, 10WA114683	Bore	Local Govt	Recreation (groundwater)	Recreation (groundwater)		01/05/1975	17.10	19.40					1792m	North
GW110430	10BL160571	Bore	Private	Monitoring Bore	Monitoring Bore		12/02/2002	4.00	4.00					1795m	North
GW110907	10BL603567	Well	Private	Monitoring Bore	Monitoring Bore		19/01/2010	5.80	5.80		3.80			1797m	West
GW112300	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		21/01/2002	4.00	4.00					1805m	North West
GW109462	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		18/10/2007	20.00			3.50			1808m	South East
GW102171	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		07/01/1999	6.00	6.00					1809m	North West
GW102173	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		06/01/1999	4.50	4.50					1809m	North West
GW102189	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	4.00	4.00					1809m	North West
GW102203	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		18/03/1999	3.50	3.50					1809m	North West
GW102188	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	4.00	4.00					1809m	North West
GW102194	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	3.70	3.70					1809m	North West
GW102190	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		18/03/1999	4.00	4.00					1809m	North West

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GW102172	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		06/01/1999	4.50	4.50					1809m	North West
GW102205	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	3.30	3.30					1809m	North West
GW102164	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		07/01/1999	5.00	5.00					1809m	North West
GW110431	10BL160571	Bore	Private	Monitoring Bore	Monitoring Bore		12/02/2002	5.00	5.00					1809m	North
GW102198	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	3.50	3.50					1809m	North West
GW102191	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		18/03/1999	4.00	4.00					1809m	North West
GW102201	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		18/03/1999	3.50	3.50					1809m	North West
GW102165	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		07/01/1999	5.00	5.00					1809m	North West
GW102197	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	3.60	3.60					1809m	North West
GW102162	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		07/01/1999	5.00	5.00					1809m	North West
GW102185	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		18/03/1999	4.20	4.20					1809m	North West
GW102195	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	3.60	3.60					1809m	North West
GW102204	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	3.30	3.30					1809m	North West
GW102187	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	4.20	4.20					1809m	North West
GW102176	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		06/01/1999	4.50	4.50					1809m	North West
GW102186	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	4.20	4.20					1809m	North West
GW102199	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	3.50	3.50					1809m	North West
GW102200	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		19/03/1999	3.50	3.50					1809m	North West
GW102192	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		19/03/1999	4.00	4.00					1809m	North West
GW110428	10BL160571	Bore	Private	Monitoring Bore	Monitoring Bore		12/02/2002	4.00	4.00					1809m	North
GW102169	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		07/01/1999	4.50	4.50					1809m	North West
GW102178	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	4.40	4.40					1809m	North West
GW102196	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	3.60	3.60					1810m	North West
GW102193	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/1999	3.90	3.90					1810m	North West
GW112299	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		21/01/2002	4.00	4.00					1810m	North West
GW102184	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		18/03/1999	4.20	4.20					1810m	North West
GW102160	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		07/01/1999	5.00	5.00					1810m	North West
GW102168	10BL159044	Bore	Private	Monitoring Bore	Monitoring Bore		07/01/1999	5.00	5.00					1810m	North West
GW104988	10BL160392, 10WA113311	Bore	Private	Domestic	Domestic		15/12/2001	7.00	7.00		4.00	1.000		1810m	North West
GW113311	10BL160868	Bore	Private	Monitoring Bore	Monitoring Bore	Shell	01/01/2002	4.00	4.00		1.78			1810m	North
GW042174		Spear	NSW Office of Water		Monitoring Bore		17/01/1975						20.92	1810m	East

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GW109467	10BL600355	Battery Spears, Filter Pac	Private	Monitoring Bore	Monitoring Bore		20/09/2007	20.00			4.40			1812m	South East
GW112311	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		24/01/2002	4.00	4.00					1813m	North West
GW112310	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		23/01/2002	6.00	6.00					1814m	North West
GW112298	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		21/01/2002	4.00	4.00					1817m	North West
GW109477	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		19/10/2007	20.00			2.40			1817m	South East
GW114026	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	26.00	26.00					1818m	South East
GW110414	10BL160571	Bore	Private	Monitoring Bore	Monitoring Bore		13/02/2002	4.00	4.00					1818m	North
GW102698	10BL159422	Bore		Monitoring Bore	Test Bore		22/11/1999	4.50	4.50					1820m	South East
GW102697	10BL159422	Bore		Monitoring Bore	Test Bore		22/11/1999	4.50	4.50					1820m	South East
GW075024		Bore	NSW Office of Water		Monitoring Bore	BOTANY BOREFIELD AT MASCOT OVAL	16/07/1998	19.50	20.50		0.76		8.48	1820m	North West
GW114027	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	13.00	13.00					1821m	South East
GW114022	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	22.00	22.00					1822m	South East
GW114023	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	13.00	13.00					1824m	South East
GW112293	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		21/01/2002	4.00	4.00					1830m	North West
GW112292	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		21/01/2002	4.00	4.00					1831m	North West
GW112403	10BL602019, 10WA114432	Well	Private	Groundwater Remediation	Groundwater Remediation		29/11/2007	0.90	0.90					1834m	North
GW107976	10BL164933	Spear	Private	Dewatering (groundwater)	Dewatering (groundwater)		05/10/2004	3.50	3.50					1835m	North
GW112295	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		21/01/2001	4.00	4.00					1835m	North West
GW112308	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		23/01/2002	6.00	6.00					1836m	North West
GW112302	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		22/01/2002	4.00	4.00					1836m	North West
GW114174	10BL604101	Bore	Private	Monitoring Bore	Monitoring Bore		05/10/2010	4.00	4.00					1837m	North
GW112294	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		21/01/2002	4.00	4.00					1837m	North West
GW112296	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		21/01/2002	6.00	6.00					1838m	North West
GW112307	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		22/01/2002	4.00	4.00					1838m	North West
GW110908	10BL603567	Well	Private	Monitoring Bore	Monitoring Bore		19/01/2010	6.00	6.00		4.00			1838m	West
GW112309	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		22/01/2002	4.00	4.00					1838m	North West

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GW112404	10BL602019, 10WA114432	Well	Private	Groundwater Remediation	Groundwater Remediation		29/11/2007	1.30	1.30					1838m	North
GW112297	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		21/01/2002	6.00	6.00					1838m	North West
GW114173	10BL604101	Bore	Private	Monitoring Bore	Monitoring Bore		05/10/2010	4.00	4.00					1840m	North
GW023561	10BL017493, 10WA112901	Spear	Private	Domestic	General Use		01/01/1966	5.40	5.50	Good				1841m	North
GW104036	10BL159958	Bore		Monitoring Bore	Monitoring Bore		09/11/2000	7.00	7.00		2.00			1843m	North
GW104033	10BL159958	Bore		Monitoring Bore	Monitoring Bore		08/11/2000	4.00	4.00		2.00			1843m	North
GW104034	10BL159958	Bore		Monitoring Bore	Monitoring Bore		09/11/2000	7.00	7.00		2.00			1843m	North
GW104038	10BL159958	Bore		Monitoring Bore	Monitoring Bore		10/11/2000	4.00	4.00		2.00			1843m	North
GW104031	10BL159958	Bore		Monitoring Bore	Monitoring Bore		08/11/2000	7.00	7.00		2.00			1843m	North
GW104035	10BL159958	Bore		Monitoring Bore	Monitoring Bore		09/11/2000	7.00	7.00		2.00			1843m	North
GW104032	10BL159958	Bore		Monitoring Bore	Monitoring Bore		08/11/2000	7.00	7.00		2.00			1843m	North
GW104037	10BL159958	Bore		Monitoring Bore	Monitoring Bore		09/11/2000	4.00	4.00		2.00			1843m	North
GW035690	10BL030245, 10WA114619	Bore	Private	Recreation (groundwater)	Industrial		01/02/1971	38.70	38.70	0-500 ppm				1844m	East
GW114171	10BL604101	Bore	Private	Monitoring Bore	Monitoring Bore		05/10/2010	4.00	4.00					1845m	North
GW102699	10BL159422	Bore		Monitoring Bore	Test Bore		22/11/1999	4.50	4.50					1846m	South East
GW114172	10BL604101	Bore	Private	Monitoring Bore	Monitoring Bore		05/10/2010	4.00	4.00					1846m	North
GW062282	10BL135459	Bore	Private	Industrial	Fire Fighting		01/03/1987	21.00	22.50	Good				1847m	South East
GW112291	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		14/01/2002	6.00	6.00					1850m	North West
GW112303	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		22/01/2001	4.00	4.00					1850m	North West
GW112304	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		22/01/2002	4.00	4.00					1851m	North West
GW112305	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		21/01/2002	4.00	4.00					1851m	North West
GW027750	10BL021266, 10WA114789	Bore	Local Govt	Recreation (groundwater)	Recreation (groundwater)		01/12/1965	17.30	17.40					1851m	North West
GW114170	10BL604101	Bore	Private	Monitoring Bore	Monitoring Bore		05/10/2010	4.00	4.00					1852m	North
GW040781		Bore	Private					3.29			0.00			1852m	North East
GW112405	10BL602019, 10WA114432	Well	Private	Groundwater Remediation	Groundwater Remediation		29/11/2007	1.30	1.30					1852m	North
GW114020	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	21.00	21.00					1853m	South East
GW112201	10BL156771	Bore	Private	Monitoring Bore	Monitoring Bore		27/05/1996	5.60	5.60					1855m	North West
GW114021	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	13.00	13.00					1855m	South East

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GW112301	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		22/01/2002	6.00	6.00					1855m	North West
GW042175		Bore	NSW Office of Water		Monitoring Bore		13/02/1975						16.23	1856m	South East
GW023408	10BL016677	Spear	Private	Domestic	General Use		01/12/1965	7.00	7.00					1863m	North
GW112306	10BL160586	Bore	Private	Monitoring Bore	Monitoring Bore		22/01/2002	4.00	4.00					1868m	North West
GW109470	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		24/09/2007	20.00			3.10			1870m	South East
GW062281	10BL135458	Bore	Private	Industrial	Fire Fighting		01/02/1987	21.00	22.00	Good				1871m	South East
GW109475	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		20/03/2007	15.00			1.00			1871m	South East
GW016330	10BL011315	Bore	Private	Industrial	Industrial		01/02/1961	26.20	26.20	Fresh				1871m	East
GW023968		Spear	Private		General Use		01/01/1966	4.50	4.60	Good				1872m	North
GW014461	10BL008491	Bore	Private	Industrial	Industrial		01/11/1954	26.20	26.20					1877m	East
GW014462		Bore	Private		Industrial		01/11/1960	29.50	29.60	Fresh				1877m	East
GW101680	10BL158812, 10WA113261	Bore		Domestic	Domestic		23/09/1998	7.93	7.93	Good		1.000		1879m	East
GW101231	10BL158390, 10WA113225	Spear	Private	Domestic	Domestic		21/12/1997	7.00	7.00					1880m	North
GW112196	10BL156771	Bore	Private	Monitoring Bore	Monitoring Bore		27/07/1996	5.05	5.05					1881m	North West
GW062486	10BL105638, 10WA114679	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		01/01/1919	20.00						1884m	East
GW023162	10BL016979	Spear	Private	Domestic	General Use		01/01/1966	4.80	4.90	Good				1885m	North
GW102700	10BL159422	Bore		Monitoring Bore	Test Bore		22/11/1999	4.50	4.50					1886m	South East
GW114018	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	19.00	19.00					1889m	South East
GW112202	10BL156771	Bore	Private	Monitoring Bore	Monitoring Bore		27/05/1996	5.90	5.90					1892m	North West
GW114019	10BL603115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	13.00	13.00					1892m	South East
GW062054	10BL133716, 10BL602467, 10WA114755	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		01/12/1985	37.40	40.00	Good	10.00	10.110		1893m	East
GW111600	10BL604978	Bore	Private	Monitoring Bore	Monitoring Bore		29/09/2011	20.00	20.00		5.00			1896m	North East
GW111624	10BL165365	Bore	Private	Monitoring Bore	Monitoring Bore		05/08/2005	36.00	36.00		5.00			1896m	North East
GW109476	10BL600355	Bore	Private	Monitoring Bore	Monitoring Bore		22/03/2007	13.00			1.10			1902m	South East
GW072479	10BL156278, 10WA113028	Bore	Private	Domestic	Domestic		21/11/1994	5.80	5.80		2.60	1.000		1903m	North
GW104989	10BL160416, 10WA113312	Bore	Private	Domestic	Domestic		11/11/2002	10.00	10.00		7.00	1.000		1907m	East

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GW101 161	10BL157 031, 10WA11 3100	Spear	Private	Domestic	Domestic		06/09/1995	6.10	6.10	Good	3.50	1.000		1911m	North
GW102 701	10BL159 422	Bore		Monitoring Bore	Test Bore		22/11/1999	4.50	4.50					1912m	South East
GW112 197	10BL156 771	Bore	Private	Monitoring Bore	Monitoring Bore		27/05/1996	5.70	5.70					1912m	North West
GW112 200	10BL156 771	Bore	Private	Monitoring Bore	Monitoring Bore		27/05/1996	6.00	6.00					1913m	North West
GW114 017	10BL603 115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	12.00	12.00					1915m	South East
GW072 993	10BL156 242, 10WA11 3026	Bore		Domestic			01/01/1995	48.77	48.76			0.667		1915m	North
GW100 575	10BL158 007, 10WA11 3192	Spear	Private	Domestic	Domestic		20/04/1997	5.00	5.00					1923m	North
GW062 280	10BL135 457	Bore	Private	Industrial	Fire Fighting		01/02/1987	21.00	21.00	Good				1923m	South East
GW103 588	10BL160 017, 10WA11 3300	Bore		Domestic	Domestic		18/02/2001	7.00	7.00					1925m	North West
GW112 195	10BL156 771	Bore	Private	Monitoring Bore	Monitoring Bore		27/05/1996	5.90						1926m	North West
GW015 273	10BL006 743	Bore	Private	Not Known	Industrial		01/03/1957	22.50	22.60					1929m	South
GW040 774		Spear	Private					3.30						1929m	South
GW014 459	10BL008 490	Bore	Private	Industrial	Industrial		01/12/1956	29.20	29.30					1929m	East
GW025 948	10BL019 507, 10WA11 4675	Bore	Private	Industrial	Industrial		01/02/1967	35.00	35.10					1932m	South East
GW112 203	10BL156 771	Bore	Private	Monitoring Bore	Monitoring Bore		27/05/1996	6.00	6.00					1932m	North West
GW102 702	10BL159 422	Bore		Monitoring Bore	Test Bore		22/11/1999	4.50	4.50					1937m	South East
GW114 016	10BL603 115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	17.00	17.00					1937m	South East
GW112 199	10BL156 771	Bore	Private	Monitoring Bore	Monitoring Bore		27/05/1996	6.00	6.00					1944m	North West
GW023 967	10BL017 821, 10WA11 2935	Spear	Private	Domestic	General Use		01/05/1966	2.70	2.70	Good				1947m	North
GW109 711	10BL161 997	Bore	Private	Monitoring Bore	Test Bore		02/12/2003	11.00	11.00		1.50			1949m	South East
GW114 014	10BL603 115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	16.20	16.20					1953m	South East
GW114 015	10BL603 115	Bore	Private	Groundwater Remediation	Groundwater Remediation	Botany Industrial Park	27/02/2014	12.00	12.00					1955m	South East
GW112 204	10BL156 771	Bore	Private	Monitoring Bore	Monitoring Bore		27/05/1996	6.00	6.00					1955m	North West
GW101 359	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	6.00	6.00					1956m	North West
GW101 361	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	4.30	4.30					1956m	North West
GW101 354	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	6.00	6.00					1956m	North West

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW101 352	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	5.70	5.70					1956m	North West
GW101 350	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	5.90	5.90					1956m	North West
GW105 905	10BL161 996	Bore		Monitoring Bore	Test Bore		15/01/2004	21.00	21.00		1.00			1956m	South East
GW101 357	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	5.90	5.90					1956m	North West
GW109 474	10BL600 355	Bore	Private	Monitoring Bore	Monitoring Bore		21/03/2007	13.00			2.40			1956m	South East
GW101 353	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	6.00	6.00					1956m	North West
GW101 351	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	5.05	5.05					1956m	North West
GW101 362	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	5.90	5.90					1956m	North West
GW101 360	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	6.00	6.00					1956m	North West
GW101 358	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	6.00	6.00					1956m	North West
GW101 355	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	6.00	6.00					1956m	North West
GW101 356	10BL157 307	Bore	Private	Monitoring Bore	Monitoring Bore		22/11/1995	5.60	5.60					1956m	North West
GW112 198	10BL156 771	Bore	Private	Monitoring Bore	Monitoring Bore		27/05/1996	6.00	6.00					1960m	North West
GW023 500	10BL017 646, 10WA11 2923	Spear	Private	Domestic	General Use		01/01/1966	5.40	5.50	Good				1964m	North
GW109 708	10BL161 997	Bore	Private	Monitoring Bore	Test Bore		12/03/2004	11.00	11.00		1.50			1969m	South East
GW101 834	10BL157 450, 10WA11 3157	Bore		Domestic	Domestic		16/01/1996	10.00	10.00					1974m	South East
GW100 367	10BL157 662, 10WA11 3172	Spear	Private	Domestic	Domestic		30/05/1995	6.00	6.00	Good	2.90	0.500		1976m	North
GW101 835	10BL157 451, 10WA11 3158	Bore		Domestic	Domestic		16/01/1996	10.00	10.00					1983m	South East
GW100 945	10BL156 905, 10WA11 3083	Spear	Private	Domestic	Domestic		14/08/1995	7.10	7.10	Good	2.13	1.000		1983m	North
GW111 247	10BL162 151, 10BL601 856, 10WA11 4799	Bore	Private	Recreation (groundwater), Test Bore	Recreation (groundwater)		14/04/2004	36.00	36.00		7.00			1986m	North East
GW017 653	10BL008 545, 10CA11 4657	Bore	Private	Irrigation, Recreation (groundwater)	Recreation (groundwater)		01/11/1957	25.60	25.60					1990m	North East
GW072 238	10BL154 339, 10WA11 3010	Bore	Private	Domestic	Domestic		29/03/1994	10.00	10.00					1992m	East
GW106 145	10BL157 073, 10WA11 3108	Spear	Private	Domestic	Domestic		14/09/1995	5.79	5.79	Good		0.800		1998m	North
GW024 037	10BL017 510, 10WA11 2904	Spear	Private	Domestic	General Use		01/03/1966	7.10	7.20	Good				1998m	East

Borehole Data Source : NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation for all bores prefixed with GW. All other bores © Commonwealth of Australia (Bureau of Meteorology) 2015. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Hydrogeology & Groundwater

2 Myrtle Street, Botany, NSW 2019

Driller's Logs

Drill log data relevant to the boreholes within the dataset buffer:

Groundwater No	Drillers Log	Distance	Direction
GW047122	0.00m-1.52m Made Ground 1.52m-4.57m Sand Dirty 4.57m-8.23m Sand 8.23m-8.53m Peat 8.53m-9.14m Sand 9.14m-9.45m Peat 9.45m-12.19m Sand Peaty 12.19m-16.46m Sand Water Supply 16.46m-17.68m Sand Peaty Wood Water Supply 17.68m-18.29m Sand Dirty Water Supply 18.29m-19.51m Sand Grey Clay Bands 19.51m-19.52m Clay Stiff Peaty	0m	Onsite
GW046837	0.00m-2.44m Sand Dark Brown 2.44m-5.79m Sand 5.79m-7.01m Sand Peaty 7.01m-7.62m Peat 7.62m-9.14m Sand Dirty 9.14m-9.30m Clay 9.30m-12.19m Sand Dirty 12.19m-12.50m Sand Soak 12.50m-12.80m Sand Water Bearing Water Supply 12.80m-14.02m Peat 14.02m-14.78m Sandstone	4m	South West
GW026787	0.00m-3.96m Sand Dry 3.96m-6.09m Sand Clean Water Supply 6.09m-8.53m Sand Peaty 8.53m-9.44m Sand Clean Peaty 9.44m-16.45m Sand Peaty 16.45m-18.59m Sand Clean Water Supply 18.59m-21.03m Sand Water Supply 21.03m-21.33m Sand Grey Clayey 21.33m-22.55m Sand Peaty 22.55m-24.84m Clay Dark Grey Stiff	19m	East
GW026788	0.00m-1.21m Sand White 1.21m-10.36m Sand 10.36m-10.97m Peat 10.97m-12.19m Sand 12.19m-12.49m Peat 12.49m-13.72m Sand Dirty Pete 13.72m-15.84m Sand Dirty 15.84m-17.67m Sand Yellow 17.67m-18.89m Sand Grey Clayey 18.89m-20.42m Clay Grey Pete	32m	North
GW075022	0.00m-2.00m SILTY SAND 2.00m-5.00m SAND,YELLOW BROWN 5.00m-6.00m PEATY SAND 6.00m-6.50m SAND,YELLOW 6.50m-8.00m PEATY SAND,GREY 8.00m-9.00m PEAT,FIRM,BLACK 9.00m-13.00m SAND,FINE TO MED GRAINED,BROWN 13.00m-14.00m PEATY SAND.BROWN 14.00m-14.50m PEAT,MED,BLACK 14.50m-15.00m CLAY,GREY 15.00m-15.75m SANDY CLAY,WHITE GREY 15.75m-16.75m BED ROCK	53m	South West

Groundwater No	Drillers Log	Distance	Direction
GW017720	0.00m-0.76m Topsoil 0.76m-1.06m Sand White 1.06m-1.37m Sand Peaty Water Supply 1.37m-3.65m Sand Water Supply 3.65m-7.92m Sand Light Brown Water Supply 7.92m-8.07m Peat 8.07m-17.06m Sand Dirty Water Supply 17.06m-17.37m Peat 17.37m-18.89m Clay Grey 18.89m-20.42m Sand Grey Fossils:shell Fragments Water Supply 20.42m-20.43m Clay Grey	106m	South East
GW107233	0.00m-0.30m TOPSOIL 0.30m-1.50m GREY SAND 1.50m-6.50m YELLOW SAND 6.50m-12.20m BROWN SILTY SAND 12.20m-12.60m BLACK PEAT 12.60m-13.10m BLACK PEATY SAND 13.10m-16.70m BROWN PEATY SAND 16.70m-16.90m BLACK PEAT 16.90m-18.40m BROWN SAND 18.40m-18.80m BLACK PEAT 18.80m-21.30m BROWN SAND 21.30m-21.50m BLACK PEAT	137m	North East
GW025543	0.00m-0.09m Made Ground 0.09m-2.74m Sand Coarse 2.74m-7.62m Sand 7.62m-7.77m Clay Grey 7.77m-9.44m Sand 9.44m-12.49m Sand Grey Water Supply 12.49m-12.80m Wood Peat 12.80m-14.02m Sand Water Supply 14.02m-14.63m Clay Peaty 14.63m-18.28m Sand Water Supply 18.28m-18.59m Clay Peaty	163m	West
GW025574	0.00m-4.87m Sand Water Supply	165m	South East
GW023164	0.00m-3.65m Sand Water Supply	175m	South
GW017718	0.00m-4.87m Sand 4.87m-8.53m Sand Grey 8.53m-8.83m Peat 8.83m-9.75m Sand Peaty 9.75m-10.66m Sand Dirty Water Supply 10.66m-13.41m Sand Peaty 13.41m-15.24m Sand Dirty Water Supply 15.24m-15.84m Peat Sandy 15.84m-18.59m Sand Light Brown Water Supply 18.59m-21.33m Sand Light Brown Peat 21.33m-21.35m Peat	196m	South East
GW101034	0.00m-5.18m UNCONSOLIDATED. ALL SAND	232m	South East
GW020094	0.00m-0.91m Sand Humus 0.91m-1.52m Peat Hard 1.52m-3.04m Sand Peat 3.04m-8.53m Sand White Water Supply 8.53m-12.19m Sand Very Peaty Water Supply 12.19m-12.80m Peat Sandy Water Supply 12.80m-13.71m Peat 13.71m-14.63m Peat Sandy Water Supply 14.63m-16.15m Sand Peaty Water Supply 16.15m-16.45m Sand Slightly Peaty Water Supply 16.45m-22.25m Sand White Water Supply 22.25m-23.16m Sand Slightly Peaty Water Supply 23.16m-23.46m Sand Peaty Water Supply 23.46m-24.07m Peat 24.07m-34.13m Clay Stiff 34.13m-35.05m Clay Grey 35.05m-42.67m Clay Slightly Sandy 42.67m-43.28m Sand 43.28m-45.72m Sandstone Soft	266m	East

Groundwater No	Drillers Log	Distance	Direction
GW024222	0.00m-1.52m Made Ground 1.52m-3.65m Sand 3.65m-6.70m Sand White 6.70m-7.77m Sand 7.77m-8.38m Peat 8.38m-9.14m Sand Peaty Wet 9.14m-13.71m Sand Dirty Slightly Water Supply 13.71m-15.24m Sand Dirty Water Supply 15.24m-16.76m Sand Water Supply 16.76m-21.94m Sand White Water Supply 21.94m-23.46m Sand White Slightly Water Supply 23.46m-23.77m Peat Black	278m	East
GW017722	0.00m-0.91m Sand Grey 0.91m-1.21m Sand 1.21m-8.22m Sand Light Brown Water Supply 8.22m-9.14m Peat 9.14m-9.75m Sand Dirty 9.75m-11.27m Sand Water Supply 11.27m-11.58m Peat 11.58m-18.19m Sand Grey Water Supply 18.19m-18.21m Clay Black	299m	South East
GW100003	0.00m-5.80m UNCONSOLIDATED ALL SAND	303m	South East
GW025818	0.00m-1.21m Topsoil Black Sand 1.21m-1.82m Sand 1.82m-2.59m Peat 2.59m-5.94m Sand Yellow Clean Water Supply 5.94m-7.01m Sand White Water Supply 7.01m-7.31m Peat 7.31m-9.75m Sand Peaty Water Supply 9.75m-10.05m Peat 10.05m-14.02m Sand Peaty Water Supply 14.02m-14.93m Sand Black Peaty Water Supply 14.93m-17.37m Sand Peaty Water Supply 17.37m-23.16m Sand Clean Water Supply 23.16m-23.56m Sand Peaty Water Supply 23.56m-23.77m Peat Water Supply	304m	East
GW017717	0.00m-0.91m Ash 0.00m-0.91m Sand Peaty 0.91m-1.82m Sand Peaty 1.82m-6.40m Sand 6.40m-7.01m Sand Peaty 7.01m-8.22m Clay Peaty 8.22m-10.36m Sand Peaty 10.36m-11.58m Clay Peaty 11.58m-12.19m Sand Peaty 12.19m-16.15m Sand	324m	South
GW072461	0.00m-7.00m SAND	340m	South
GW101136	0.00m-7.32m Unconsolidated - all sand	363m	East
GW109253	0.00m-0.60m FILL, SAND 0.60m-2.80m SILTY SAND 2.80m-10.30m SAND WET BELOW 1.4 m	376m	South West
GW101199	0.00m-5.49m unconsolidated - all sand.	390m	South
GW100989	0.00m-7.63m ALL SAND (UNCONSOLIDATED)	400m	South
GW109254	0.00m-0.30m FILL, SAND AND GRAVEL 0.30m-2.60m SILTY SAND WET @ 1.0 m 2.60m-9.70m SAND	403m	South West
GW109255	0.00m-0.30m FILL, SAND AND GRAVEL 0.30m-2.90m SILTY SAND,WET @ 1.55m BGL 2.90m-7.30m SAND	431m	South West

Groundwater No	Drillers Log	Distance	Direction
GW022240	0.00m-0.30m Made Ground 0.30m-4.57m Sand 4.57m-8.83m Sand White 8.83m-9.75m Sand Peat 9.75m-13.10m Sand Peaty Water Supply 13.10m-14.02m Peat 14.02m-14.63m Sand Peaty Water Supply 14.63m-15.24m Peat 15.24m-16.45m Sand Peaty Water Supply 16.45m-21.64m Sand Clean Water Supply 21.64m-24.99m Sand Slightly Peaty Water Supply 24.99m-25.29m Peat 25.29m-25.31m Clay	452m	South East
GW023443	0.00m-0.60m Sand Grey 0.60m-7.62m Sand Yellow Water Supply	482m	East
GW101888	0.00m-4.88m Unconsolidated Sand	499m	South West
GW017352	0.00m-0.76m Sand Black 0.76m-3.96m Sand 0.76m-3.96m Peat Wet 3.96m-5.48m Sand Grey Water Supply 5.48m-5.63m Peat 5.63m-9.14m Sand Grey Water Supply 9.14m-9.60m Clay Black 9.60m-10.36m Sand Peat Seams 10.36m-17.67m Sand Grey Water Supply 17.67m-18.68m Sand Grey Peat Water Supply 18.68m-18.69m Clay	517m	South
GW100996	0.00m-9.76m UNCONSOLIDATED SAND	558m	East
GW101335	0.00m-10.67m unconsolidated - all sand.	563m	East
GW025544	0.00m-1.21m Grey 1.21m-1.82m White 1.82m-2.28m Yellow Water Supply 2.28m-4.87m Sand Cream Cryptocrystalline Water Supply	574m	South East
GW101546	0.00m-4.58m SAND, UNCONSOLIDATED	574m	South East
GW111457	0.00m-0.09m ASPHALT 0.09m-0.20m BASE COURSE 0.20m-0.60m SAND FILLING 0.60m-1.30m SAND 1.30m-2.00m COFFEE ROCK 2.00m-6.20m SAND	582m	West
GW111456	0.00m-0.60m SAND SILTY 0.60m-6.20m SAND	614m	West
GW102616	0.00m-6.00m SAND	625m	South East
GW101465	0.00m-7.63m SAND	642m	South
GW104866	0.00m-6.71m UNCONSOLIDATED ALL SAND	643m	North
GW101721	0.00m-6.00m SAND	645m	South East
GW103162	0.00m-7.32m UNCONSOLIDATED ALL SANDS	650m	South
GW101711	0.00m-10.00m SAND	655m	South East
GW017721	0.00m-0.45m Made Ground 0.45m-1.06m Loam Black Sandy 1.06m-2.13m Sand Dark Brown Water Supply 2.13m-5.79m Sand Light Brown Water Supply 5.79m-7.31m Clay Peaty 7.31m-10.05m Sand 10.05m-10.36m Clay Black Peaty 10.36m-12.19m Sand Dirty Water Supply 12.19m-13.71m Sand Water Supply 13.71m-14.32m Sand Fine Water Supply 14.32m-14.34m Clay Grey	657m	South
GW023429	0.00m-0.60m Sand Grey 0.60m-6.09m Sand Yellow Water Supply	661m	South East

Groundwater No	Drillers Log	Distance	Direction
GW017719	0.00m-0.30m Ash 0.30m-0.76m Sand Black 0.76m-3.35m Sand 3.35m-4.87m Sand Grey 4.87m-5.33m Peat 5.33m-8.83m Sand 8.83m-9.29m Clay Black 9.29m-10.66m Sand Peat 10.66m-11.58m Clay Peat 11.58m-15.84m Sand Grey 15.84m-18.28m Clay	697m	South
GW104922	0.00m-7.00m SAND	704m	North
GW104930	0.00m-7.00m SANDS	714m	South East
GW102221	0.00m-9.50m Sand	719m	East
GW017344	0.00m-0.76m Made Ground 0.76m-2.43m Sand Grey 2.43m-3.65m Sand Water Supply 3.65m-4.87m Sand Grey 4.87m-7.01m Sand Greasy 7.01m-7.92m Sand Water Supply 7.92m-8.53m Sand Grey Peaty 8.53m-9.29m Sand Clay 9.29m-10.05m Sand Peat Clay 10.05m-10.36m Sand Water Supply 10.36m-11.58m Sand Peaty 11.58m-11.88m Sand 11.88m-12.34m Clay Grey Peaty 12.34m-13.71m Sand Grey Peaty Water Supply 13.71m-13.80m Peat	730m	North West
GW072634	0.00m-6.10m Unconsolidated Sand	739m	North
GW072455	0.00m-5.80m UNCONSOLIDATED ALL SAND	751m	North
GW032339	0.00m-0.60m Made Ground 0.60m-10.05m Sand 10.05m-13.10m Clay Sandy 13.10m-16.15m Sand Dark Brown 16.15m-21.33m Sand Water Supply 21.33m-21.94m Sand Peat Bands Water Supply 21.94m-27.12m Clay Peaty 27.12m-28.95m Clay Dirty Water Supply 28.95m-30.48m Clay Peaty 30.48m-32.00m Peat Clay 32.00m-33.22m Clay Grey Sandstone	775m	South East
GW038127	0.00m-11.89m Sand White 11.89m-14.02m Sand 14.02m-23.77m Sand Water Supply 23.77m-26.21m Peat 26.21m-29.87m Clay 29.87m-31.39m Sand Peaty 29.87m-31.39m Clay 31.39m-33.22m Sand Grey Clay 33.22m-33.24m Clay	776m	East
GW106987	0.00m-7.00m Sand	778m	North
GW101787	0.00m-5.79m Unconsolidated Sand	796m	North
GW042866	0.00m-10.97m Sand Yellow 10.97m-11.28m Peat 11.28m-11.89m Sand Peaty 11.89m-15.24m Sand Grey 15.24m-16.46m Sand Grey Peaty 16.46m-17.07m Peat Soft 17.07m-20.73m Sand Peaty 20.73m-21.34m Peat 21.34m-22.25m Clay Grey Soft Silty 22.25m-23.47m Clay Grey Stiff	801m	South
GW017348	0.00m-2.74m Sand Grey 2.74m-3.65m Sand 3.65m-5.79m Sand White 5.79m-6.40m Clay Sandy Water Supply 6.40m-7.62m Clay Grey Water Supply	816m	South West

Groundwater No	Drillers Log	Distance	Direction
GW072300	0.00m-4.57m Unconsoliated Sand	817m	South West
GW072633		822m	North
GW111219	0.00m-0.05m BITUMEN 0.05m-0.60m FILL SAND GRAVEL 0.60m-2.30m DARK GREY FINE SAND 2.30m-5.00m LIGHT GREY YELLOW SAND 5.00m-9.10m YELLOW WHITE SAND 9.10m-11.80m DARK GREY FINE SAND 11.80m-13.60m DENSE FINE SAND 13.60m-14.00m COFFEY ROCK 14.00m-16.30m FINE SAND DARK GREY	822m	South East
GW102740	0.00m-10.00m SAND	823m	South East
GW017642	0.00m-0.30m Ash 0.30m-4.57m Sand Dry 4.57m-8.22m Sand 8.22m-10.66m Sand Wet Peaty 10.66m-12.19m Sand Dark Brown Water Supply 12.19m-15.24m Sand Peaty 15.24m-17.37m Sand Water Supply 17.37m-19.75m Sand Dirty Water Supply 19.75m-20.11m Clay Peaty 20.11m-21.33m Sand Dark Brown Water Supply 21.33m-23.01m Sand Dirty Water Supply 23.01m-23.02m Clay Peaty	825m	South East
GW072632		828m	North
GW102800	0.00m-6.10m CONSOLIDATED ALL SANDS	832m	North
GW034125	0.00m-1.21m Rubble 1.21m-3.04m Sand 3.04m-4.57m Sand Dark Brown 4.57m-6.09m Sand Dirty 6.09m-7.62m Sand Peaty 7.62m-8.83m Sand Dirty 8.83m-10.05m Sand Peaty 10.05m-10.36m Clay Peaty 10.36m-11.27m Sand Peaty 11.27m-13.71m Sand Dirty 13.71m-17.06m Sand 17.06m-17.22m Peat 17.22m-17.83m Clay Peaty	839m	South
GW111217	0.00m-0.05m BITUMEN 0.05m-0.60m FILL,SAND, GRAVEL 0.60m-2.30m DARK GREY FINE SAND 2.30m-5.00m LIGHT GREY YELLOW SAND 5.00m-9.10m YELLOW WHITE SAND 9.10m-11.80m DARK GREY FINE SAND 11.80m-13.60m DENSE FINE SAND 13.60m-14.00m COFFEY ROCK 14.00m-16.30m FINE SAND DARK GREY	849m	South East
GW023605	0.00m-0.60m Sand Grey 0.60m-4.57m Sand White Water Supply	859m	North
GW034063	0.00m-0.30m Rubble 0.30m-1.52m Sand 1.52m-5.48m Sand Yellow 5.48m-8.53m Sand 8.53m-10.05m Sand Silty 10.05m-12.19m Sand Grey Peaty 12.19m-14.63m Sand Dark Brown Peaty Water Supply 14.63m-19.20m Sand Grey Peaty Water Supply 19.20m-19.81m Sand Grey Clayey	864m	South

Groundwater No	Drillers Log	Distance	Direction
GW017351	0.00m-0.54m Made Ground 0.54m-1.67m Ash 1.67m-4.57m Sand Grey 4.57m-5.79m Sand 5.79m-6.40m Sand Light Grey 6.40m-7.62m Sand Grey Dirty 7.62m-8.83m Sand White Water Supply 8.83m-9.44m Sand Yellow 9.44m-9.84m Sand White 9.84m-10.21m Clay Peaty 10.21m-13.80m Sand Dark Brown Water Supply 13.80m-14.63m Peat 14.63m-18.53m Sand Water Supply 18.53m-19.20m Peat 19.20m-22.25m Sand Water Supply 22.25m-22.55m Sand Grey 22.55m-22.57m Peat	867m	South East
GW023600	0.00m-0.60m Sand Grey 0.60m-7.31m Sand Yellow Water Supply	875m	North
GW017195	0.00m-3.35m Sand Water Supply	881m	North East
GW101935	0.00m-10.00m Sand	886m	South
GW111215	0.00m-0.05m BITUMEN 0.05m-0.60m FILL,SAND,GRAVEL , BRICK 0.60m-2.30m SAND DARK GREY FINE 2.30m-5.00m LIGHT GREY YELLOW SAND 5.00m-9.10m YELLOW WHITE SAND 9.10m-11.80m DARK GREY FINE SAND 11.80m-13.60m DENSE FINE SAND 13.60m-14.00m COFFEY ROCK 14.00m-16.30m FINE SAND DARK GREY	892m	South East
GW100674	0.00m-5.49m SAND	903m	North East
GW075023	0.00m-2.00m PEATY SAND 2.00m-8.00m SAND,FINE GRAINED,YELLOW 8.00m-9.50m SAND,DENSE,FINE,OLIVE GREY 9.50m-11.00m PEATY SAND,DARK BROWN 11.00m-12.00m SAND.GREY 12.00m-14.00m PEATY SAND,DARK BROWN 14.00m-15.00m SANDY PEAT,BLACK 15.00m-19.00m CLAYEY SAND,BROWN 19.00m-26.00m CLAY,DARK GREY	905m	North
GW105117	0.00m-0.60m GREY SAND 0.60m-0.80m ROCK 0.80m-3.50m SAND LIGHT BROWN 3.50m-6.30m YELLOW SAND 6.30m-9.80m WHITE SAND 9.80m-9.90m GREY CLAY 9.90m-13.30m GREY SAND 13.30m-14.00m PEATY SAND	914m	North
GW023574	0.00m-1.21m Sand Grey 1.21m-6.09m Sand Yellow Water Supply	917m	South
GW102741	0.00m-7.00m SAND	921m	North East
GW106493	0.10m-0.25m FILL,SAND GREY MOTTLED WHITES,BLACKS 0.25m-0.70m COFFE ROCK PEAT 0.70m-1.10m NATURAL SAND,ORANGE/YELLOW,M/G	927m	South East
GW106494	0.00m-0.45m FILL,DARK GREY TO BLACK SAND 0.45m-0.90m SAND/BROWN/ORANGE 0.90m-2.50m COFFEE ROCK,BROWN/ORANGE,HARD 2.50m-7.30m SAND WHITE,PALE GREY M/G	937m	South East
GW025994	0.00m-0.30m Made Ground 0.30m-4.41m Sand Yellow Moist 4.41m-10.51m Sand Grey Water Supply 10.51m-13.25m Sand Grey White Water Supply	939m	North West
GW106492	0.00m-0.45m FILL, DARK BROWN SAND 0.45m-4.50m NATURAL SAND PAL ORANGE,WHITE,M/G 4.50m-6.30m WATER,SAND SATURATED	944m	South East

Groundwater No	Drillers Log	Distance	Direction
GW013833	0.00m-1.21m Sand White 1.21m-2.43m Sand Hard Cemented 2.43m-7.62m Sand White 7.62m-17.37m Sand Pete Water Supply 17.37m-18.90m Sand White Pete Water Supply	954m	South
GW106498	0.00m-0.40m CONCRETE,FILL SAND,DARK GREY 0.40m-0.75m NATURAL SAND,WHITE PALE GREY 0.75m-1.25m COFFEE ROCK	957m	South East
GW022239	0.00m-0.30m Loam Sandy 0.30m-0.91m Sand 0.91m-1.82m Sand Grey 1.82m-2.13m Sand Hard Cemented 2.13m-3.04m Sand Dark Brown 3.04m-7.62m Sand 7.62m-8.53m Sand Peaty 8.53m-11.27m Sand 11.27m-12.19m Clay Peaty 12.19m-13.71m Sand Dirty 13.71m-14.02m Clay Grey 14.02m-14.63m Sand Clean 14.63m-15.24m Peat 15.24m-16.76m Sand Dirty Water Supply 16.76m-22.55m Sand Water Supply 22.55m-24.07m Peat Water Supply 24.07m-24.99m Sand Dirty Water Supply 24.99m-27.12m Clay Grey Water Supply 27.12m-30.41m Sand Grey Dirty Water Supply 30.41m-33.68m Sand Grey Water Supply 33.68m-33.83m Peat Water Supply	959m	East
GW106499	0.00m-0.60m CONCRETE,BROWN SAND,ROCK FRAG.	960m	South East
GW106495	0.00m-0.45m FILL BLACK TO DARK GREY SAND 0.45m-1.30m SAND GREY	963m	South East
GW013633	0.00m-1.21m Sand Made Ground 1.21m-1.52m Peat 1.52m-3.35m Sand Dry 3.35m-5.79m Sand Water Supply 5.79m-8.68m Sand Hard Cemented 8.68m-10.05m Sand Water Supply 10.05m-12.19m Sand Water Supply 12.19m-12.80m Sand Grey Water Supply 12.80m-13.25m Clay Grey	968m	South
GW024694	0.00m-3.04m Sand Water Supply	969m	North East
GW106497	0.00m-0.35m CONCRETE 0.35m-0.80m SAND DARK GREY, M/GREY 0.80m-1.20m SAND MOTTLED WHITES,BRICK FRAG.	974m	South East
GW101523	0.00m-6.10m UNCONSOLIDATED SAND	978m	North
GW062073	0.00m-1.00m Sand 1.00m-5.00m Sand White Peaty 5.00m-6.00m Peat Water Supply 6.00m-12.60m Sand Water Supply 12.60m-13.00m Peat Water Supply 13.00m-15.20m Sand Peaty Water Supply 15.20m-16.40m Sand Water Supply 16.40m-17.00m Peat Water Supply 17.00m-18.20m Sand Peaty Water Supply 18.20m-21.40m Sand Grey Silty Water Supply 21.40m-29.00m Sand Light Brown Peaty Water Supply 29.00m-31.00m Clay Grey	981m	South East
GW107397	0.00m-0.50m SILTY SAND 0.50m-2.50m SILTY SAND,MEDIUM DENSITY 2.50m-3.60m GRADES TO YELLO/GREY	982m	North
GW024377	0.00m-4.57m Sand Water Supply	987m	North East
GW106496	0.00m-0.35m CONCRETE 0.35m-0.80m SAND ORANGE, M/G 0.80m-1.20m SAND DARK GREY 1.20m-1.60m PEAT COFFEE ROCK 1.60m-3.00m SAND YELLOW/ORANGEY M/G 3.00m-6.20m SAND WHITE/PALE GREY,M/G	993m	South East

Groundwater No	Drillers Log	Distance	Direction
GW017639	0.00m-0.91m Sand Peaty 0.91m-1.52m Sand Light Brown 1.52m-4.57m Sand Yellow 4.57m-5.63m Sand Peaty 5.63m-8.22m Sand Dark Brown 8.22m-9.14m Clay Dark Grey Sandy 9.14m-9.44m Sand Wood 9.44m-12.19m Sand Dirty 12.19m-12.80m Sand 12.80m-15.54m Sand Dirty 15.54m-16.45m Peat 16.45m-17.06m Sand Peaty 17.06m-18.28m Clay Grey Sandy 18.28m-19.51m Clay Grey Pete 19.51m-27.43m Sand Coarse Water Supply	997m	South East
GW104936	0.00m-7.00m SAND	1005m	North East
GW107395	0.00m-0.40m MOSTLY ASH 0.40m-1.00m SILTY SAND 1.00m-3.60m GRADES TO PALE GREY	1029m	North
GW023525	0.00m-2.43m Sand 2.43m-3.04m Sand Hard Cemented 3.04m-5.94m Sand Water Supply	1031m	North West
GW072214		1032m	North
GW013658	0.00m-3.65m Peat 3.65m-5.48m Sand White Water Supply 5.48m-6.09m Peat 6.09m-8.53m Sand Water Supply 8.53m-8.68m Peat 8.68m-10.36m Sand Light Brown Water Supply 10.36m-10.66m Peat Wood 10.66m-13.41m Sand Water Supply 13.41m-16.45m Clay 16.45m-18.59m Mud Black Fossils:shell Fragments 18.59m-18.89m Sandstone	1041m	South
GW100448	0.00m-9.15m UNCONSOLIDATED - ALL SAND	1044m	East
GW104990	0.00m-6.00m SAND	1046m	North West
GW100754	0.00m-1.30m FILL 1.30m-13.90m LAYERED SANDS 13.90m-15.40m PEAT 15.40m-18.60m LAYERED SANDS 18.60m-24.80m GREY MARINE CLAY 24.80m-38.20m GREY F/G SANDSTONE CLAY MATRIX 38.20m-47.30m MOIST WHITE F/G S/STONE 47.30m-51.70m YELLOW M/G S/S- CLAY MATRIX 51.70m-54.90m FRACTURE WHITE S/STONE 54.90m-63.70m SHALE 63.70m-66.80m SHALE/QUARTZ/S/S CROSS BED 66.80m-93.20m WHITE M/G S/STONE 93.20m-96.50m SILSTONE 96.50m-101.80m WHITE M/G S/STONE 101.80m-117.20m DARK GREY SHALE 117.20m-130.10m WHITE M/G S/STONE 130.10m-135.00m WHITE M/G S-S QUARTZ MATRIX 135.00m-136.30m SHALE 136.30m-139.50m WHITE M/G S/STONE 139.50m-142.00m FRACTURED GREY S/STONE 142.00m-148.00m GREY M/G S/STONE	1055m	West
GW073506	0.00m-6.00m Sand	1056m	South West
GW073515	0.00m-7.00m SAND	1064m	North East
GW023472	0.00m-0.60m Sand Grey 0.60m-1.52m Sand White 1.52m-1.82m Sand Hard Cemented 1.82m-3.65m Sand Yellow Water Supply	1070m	North

Groundwater No	Drillers Log	Distance	Direction
GW037759	0.00m-2.13m Made Ground 2.13m-4.27m Sand White 4.27m-5.79m Sand 5.79m-6.40m Clay Sandy Peat Bands 6.40m-7.32m Peat Sand Hard Cemented Bands 7.32m-9.14m Clay Peaty Sand Peaty 9.14m-10.06m Clay Sandy Peaty 10.06m-11.89m Sand Peat Bands 11.89m-12.80m Sand Water Supply 12.80m-17.98m Sand Dirty Water Supply 17.98m-19.51m Sand Grey Water Supply 19.51m-19.81m Clay Grey	1070m	South
GW072897	0.00m-5.80m Unconsolidated Sand	1073m	North East
GW013659	0.00m-1.52m Sand Grey 1.52m-3.35m Sand 3.35m-4.57m Sand Light Brown 4.57m-5.48m Sand Grey Wet 5.48m-6.85m Sand Peaty Wet 6.85m-7.16m Clay Peaty 7.16m-12.19m Sand Peaty 12.19m-12.49m Soil Peaty 12.49m-13.71m Wood Peaty 13.71m-17.06m Sand Water Supply 17.06m-17.67m Peat 17.67m-18.28m Clay Stiff Peaty 18.28m-19.50m Clay Dark Grey Stiff 19.50m-19.96m Silt Marine Clay	1078m	South
GW035949	0.00m-0.91m Sand Grey 0.91m-1.21m Sand Peaty 1.21m-7.31m Sand Light Brown Some Peat 7.31m-8.22m Peat 8.22m-9.75m Sand Peat 9.75m-10.05m Peat 10.05m-12.49m Sand Peaty Water Supply 12.49m-17.06m Sand Grey Water Supply 17.06m-18.59m Sand Light Grey Water Supply 18.59m-19.65m Clay Peat	1086m	South
GW023473	0.00m-0.91m Sand Grey 0.91m-7.32m Sand Yellow Water Supply	1092m	North East
GW026070	0.00m-3.65m Sand	1098m	North
GW017641	0.00m-1.37m Peat 1.37m-5.18m Sand Peaty 5.18m-14.23m Sand Water Supply 14.23m-21.33m Wood Peat 21.33m-22.86m Sand Peaty Peat 22.86m-24.38m Sand Peaty Wood Water Supply 24.38m-27.12m Sand Water Supply	1102m	South East
GW101796	0.00m-5.49m UNCONSOLIDATED SAND	1121m	North East
GW017637	0.00m-7.62m Sand 7.62m-9.14m Sand Dark Brown Water Supply 9.14m-10.97m Sand Hard Cemented 10.97m-11.58m Sand Water Supply 11.58m-12.19m Sand White Water Supply 12.19m-15.24m Sand Water Supply 15.24m-16.45m Sand Hard Cemented 15.24m-16.45m Peat 16.45m-23.16m Sand Water Supply 23.16m-23.77m Peat Sand 23.77m-24.38m Sand 24.38m-25.90m Peat 25.90m-27.43m Clay 27.43m-28.34m Peat 28.34m-31.39m Sand Water Supply 31.39m-35.35m Sand Grey Water Supply 35.35m-37.18m Clay	1124m	East
GW104777	0.00m-7.00m SAND	1128m	South
GW072294		1132m	East
GW107396	0.00m-0.30m SILTY SAND 0.30m-1.00m SILTY SAND,MEDIUM DENSITY 1.00m-3.50m GRADES TO PALE GREY BROWN SAT.	1132m	North
GW101445	0.00m-6.00m SAND	1134m	North East

Groundwater No	Drillers Log	Distance	Direction
GW072958		1135m	North East
GW032273	0.00m-1.61m Sand 1.61m-2.46m Sand Some Hard Cemented 2.46m-7.31m Sand 7.31m-8.22m Peat 8.22m-9.14m Sand Peaty 9.14m-9.75m Sand Clayey 9.75m-10.66m Sand 10.66m-12.19m Peat Wood 12.19m-19.20m Sand Water Supply 19.20m-19.50m Peat 19.50m-21.03m Sand Grey Water Supply 21.03m-23.46m Clay Grey Sandy 23.46m-27.12m Sand Grey Dirty 27.12m-28.34m Peat 28.34m-31.39m Clay Grey 28.34m-31.39m Sand Grey Water Supply	1144m	South East
GW072287		1146m	East
GW104570	0.00m-6.50m SAND	1153m	North East
GW101095	0.00m-5.18m Unconsolidated - all sand.	1160m	North East
GW017638	0.00m-0.30m Sand Dark Grey 0.30m-0.99m Sand White 0.99m-1.21m Sand Hard Cemented 1.21m-2.43m Clay Sandy 2.43m-3.65m Sand 3.65m-3.96m Sand Some Hard Cemented 3.96m-6.09m Sand 6.09m-7.01m Clay Sandy 7.01m-7.62m Sand Peaty 7.62m-10.66m Sand Coloured 10.66m-12.19m Peat Wood Water Supply 12.19m-14.02m Sand Dark Brown Water Supply 14.02m-14.63m Clay Peaty 14.63m-16.61m Sand Dark Brown Water Supply 16.61m-16.76m Clay Peaty 16.76m-18.89m Sand Dark Brown Water Supply 18.89m-19.20m Sand Dirty 19.20m-20.42m Peat Wood 20.42m-22.55m Sand Dirty Water Supply 22.55m-25.29m Clay Sandy Water Supply 25.29m-25.60m Wood Clay Water Supply 25.60m-27.12m Peat 27.12m-32.91m Sand Water Supply 32.91m-33.22m Sand Grey Dirty	1161m	South East
GW037821	0.00m-0.91m Sand Dry 0.91m-1.21m Sand Hard Cemented 1.21m-6.09m Sand 6.09m-10.66m Sand Peaty 10.66m-14.02m Sand 14.02m-16.76m Sand Peaty 16.76m-19.20m Sand 19.20m-19.81m Sand Peat 19.81m-21.33m Peat Wood 21.33m-22.55m Sand Peaty 22.55m-24.38m Sand 22.55m-24.38m Clay Peaty 24.38m-24.68m Peat 24.68m-28.04m Sand Dirty Water Supply 28.04m-32.91m Sand Grey Water Supply 32.91m-34.13m Clay Peaty	1161m	South East
GW073507	0.00m-6.00m Sand	1161m	South West
GW072925		1166m	East
GW103239	0.00m-17.08m UNCONSOLIDATED ALL SAND	1173m	East
GW023497	0.00m-0.91m Sand Grey 0.91m-6.40m Sand Yellow Water Supply	1181m	North East
GW101475	0.00m-6.00m SAND	1193m	North

Groundwater No	Drillers Log	Distance	Direction
GW033949	0.00m-0.91m Made Ground 0.91m-3.65m Sand 3.65m-3.81m Sand Hard Cemented 3.81m-7.92m Sand 7.92m-11.88m Sand Peaty Coarse 11.88m-12.19m Peat 12.19m-14.93m Sand Grey 14.93m-15.84m Peat 15.84m-21.03m Sand Peaty 21.03m-22.86m Peat 22.86m-23.77m Peat Black Sand Fossils:wood Water Supply 23.77m-25.75m Clay Peaty Fossils:wood 25.75m-27.73m Sand Grey Dirty Clay Seams Water Supply 27.73m-29.26m Peat 29.26m-30.48m Clay Grey Peaty	1197m	South East
GW105152	0.00m-5.00m SAND	1201m	North
GW072413	0.00m-6.00m SAND	1208m	North
GW072917		1210m	East
GW101215	0.00m-7.62m Unconsolidated - all sand.	1227m	North East
GW101446	0.00m-6.00m SAND	1235m	North
GW017640	0.00m-11.58m Sand Peaty Clay 11.58m-12.19m Wood Peaty 12.19m-14.02m Sand Peaty Water Supply 14.02m-16.15m Sand Pete Water Supply 16.15m-19.20m Wood Peat Solid 19.20m-21.33m Sand Dirty Water Supply 21.33m-21.64m Peat 21.64m-22.86m Sand Clay Coarse Water Supply 22.86m-24.08m Sand Grey Pete Water Supply 24.08m-29.44m Sand Grey Water Supply 29.44m-29.45m Clay Grey Bands	1238m	South East
GW100872	0.00m-5.79m UNCONSOLIDATED ALL SANDS	1276m	North East
GW104338	0.00m-0.10m PAVEMENT:CONCRETE 0.10m-0.80m FILL:GRAVELLY SAND 0.80m-1.60m BOTANY SAND:SAND 1.60m-3.50m BOTANY SAND:CLAYEY PEATY SAND	1277m	North West
GW038126	0.00m-5.48m Sand White 5.48m-8.53m Sand 8.53m-8.83m Peat 8.83m-14.63m Sand 14.63m-17.06m Sand Dirty 17.06m-17.37m Peat 17.37m-19.81m Sand Peaty 19.81m-21.94m Peat Wood Decomposed 21.94m-28.65m Sand Peaty Water Supply 28.65m-36.27m Sand White Water Supply 36.27m-36.42m Peat 36.42m-39.31m Sand White Water Supply 39.31m-40.23m Clay Grey	1283m	South East
GW101477	0.00m-6.00m SAND	1286m	North
GW103705	0.00m-0.15m CONCRETE PAVEMENT 0.15m-0.70m SAND:MEDIUM BROWN /ROCKS AND GLASS 0.70m-1.60m SAND:WHITE,NATURAL MATERIAL 1.60m-4.70m SAND:VERY DARK BROWN	1287m	North West
GW103706	0.00m-0.11m CONCRETE SLAB 0.11m-0.26m FILL 0.26m-0.36m CONCRETE SLAB 0.36m-0.50m SAND:BROWN 0.50m-1.60m SAND:YELLOW-BROWN 1.60m-2.40m LOAMY SAND:DARK BROWN 2.40m-3.40m SANDY LOAM:VERY DARK BROWN 3.40m-4.30m SANDY LOAM:DARK GREY	1287m	North West
GW103707	0.00m-0.90m SAND:ORANGE-BROWN 0.90m-1.20m SAND:RED 1.20m-1.50m SAND:SHARP BOUNDARY,PALE IN COLOUR 1.50m-1.70m SAND:GREY 1.70m-2.10m SAND:WHITE 2.10m-2.30m LOAMY SAND 2.30m-2.80m LOAMY SAND:PALER RED-BROWN 2.80m-4.20m SAND:YELLOW-GREY	1287m	North West

Groundwater No	Drillers Log	Distance	Direction
GW028592	0.00m-0.76m Loam Sandy 0.76m-1.06m Sand 1.06m-2.13m Sand Peaty 2.13m-2.43m Peat 2.43m-2.59m Sand 2.59m-3.04m Clay Sandy 3.04m-3.65m Clay Grey Soft 3.65m-4.26m Clay Sandy 4.26m-4.87m Sand Gravel Small 4.87m-5.48m Clay Sandy 5.48m-8.83m Sand 8.83m-10.66m Sand Clay 10.66m-14.63m Sand Peaty 14.63m-15.84m Wood Decomposed Peaty 15.84m-27.43m Sand Dirty Water Supply 27.43m-28.04m Peat	1288m	South East
GW104336	0.00m-0.10m PAVEMENT: CONCRETE 0.10m-0.60m FILL:GRAVELLY CLAYEY SAND 0.60m-1.00m BOTANY SAND: SAND 1.00m-2.80m BOTANY SAND:CLAY/PEAT 2.80m-3.50m BOTANY SAND :SAND	1302m	North West
GW101785	0.00m-6.00m Brown Sand	1303m	South
GW100966	0.00m-5.50m UNCONSOLIDATEDALL SANDS	1306m	North
GW104337	0.00m-0.10m PAVEMENT:CONCRETE AND BRICK 0.10m-3.50m BOTANY SAND:SAND	1308m	North West
GW020494	0.00m-2.74m Sand 2.74m-2.89m Peat 2.89m-6.09m Sand Dirty 6.09m-10.66m Sand Dirty 10.66m-11.58m Sand Peaty 11.58m-13.71m Sand Dirty Water Supply 13.71m-14.63m Sand Clean Water Supply 14.63m-15.24m Peat 15.24m-16.76m Sand Dirty Peaty Water Supply 16.76m-18.59m Sand Peaty Water Supply 18.59m-24.38m Sand Clean Water Supply 24.38m-24.99m Wood Peaty 24.99m-26.21m Sand Dirty Water Supply 26.21m-26.82m Peat 26.82m-28.04m Sand Clean Water Supply 28.04m-28.65m Clay Peaty 28.65m-29.87m Sand Water Supply 29.87m-30.93m Sand Dirty Water Supply 30.93m-30.96m Clay Peaty	1310m	South East
GW100579	0.00m-5.00m SAND	1313m	North East
GW033372	0.00m-0.91m Made Ground 0.91m-3.04m Sand 3.04m-4.57m Sand Wet 4.57m-5.18m Peat 5.18m-5.79m Sand Peaty Water Supply 5.79m-6.70m Sand Grey Clay Seams 6.70m-9.14m Sand Peat 9.14m-9.60m Sand Water Supply 9.60m-11.58m Sand Peat Water Supply 11.58m-11.88m Clay Stiff Peaty	1324m	North West
GW104334	0.00m-0.30m TOPSOIL:SILTY SAND 0.30m-3.50m SAND	1324m	North West
GW105607	0.00m-7.00m sand	1324m	North East

Groundwater No	Drillers Log	Distance	Direction
GW013827	0.00m-1.52m Sand Grey 1.52m-4.57m Sand Cream 4.57m-4.72m Sand Hard Cemented 4.72m-7.62m Clay Peaty 7.62m-10.36m Sand Water Supply 10.36m-10.97m Clay Peaty 10.97m-11.58m Sand Peaty 11.58m-12.49m Sand Dirty 12.49m-13.71m Peat 13.71m-14.32m Sand Peaty 14.32m-17.06m Sand Dirty Water Supply 17.06m-18.89m Clay Peaty 18.89m-19.20m Sand Peaty 19.20m-19.81m Sand White Wood 19.81m-24.38m Sand White Water Supply 24.38m-26.51m Sand Water Supply 26.51m-27.43m Sand White Water Supply 27.43m-27.58m Clay Peaty 27.58m-32.76m Sand White Water Supply 32.76m-33.07m Clay Peaty 33.07m-33.52m Sand Water Supply 33.52m-38.40m Sand White Water Supply 38.40m-38.86m Clay Peaty Wood	1327m	South East
GW104333	0.00m-0.20m TOPSOIL/SILTY SAND 0.20m-0.90m FILL:GRAVELLY SAND 0.90m-3.50m SAND: CLAYEY PEATY SAND	1328m	North West
GW033371	0.00m-0.91m Made Ground 0.91m-4.26m Sand 4.26m-4.41m Sand Peat Water Supply 4.41m-5.02m Clay Peaty 5.02m-6.09m Sand Peat Water Supply 6.09m-8.83m Sand Water Supply 8.83m-9.75m Clay Yellow Sandy 9.75m-10.97m Sand Water Supply Peat Fine 10.97m-11.58m Peat Sandy 11.58m-11.88m Clay Peaty	1331m	North West
GW104335	0.00m-0.10m PAVEMENT: CONCRETE 0.10m-0.80m FILL:SILKTY SAND 0.80m-1.80m BOTANY SAND:SILTY SAND 1.80m-3.50m BOTANY SAND:SAND	1334m	North West
GW101457	0.00m-6.00m sand	1340m	North
GW101806	0.00m-11.89m UNCONSOLIDATED SAND	1342m	South
GW101033	0.00m-7.32m UNCONSOLIDATED. ALL SAND	1349m	North East
GW059101	0.00m-6.70m Sand	1361m	South West
GW103694	0.00m-5.00m SAND	1369m	South
GW100991	0.00m-6.70m UNCONSOLIDATED ALL SANDS	1382m	North East
GW013387	0.00m-1.82m Sand 1.82m-9.14m Sand Dry 9.14m-11.58m Sand Black 9.14m-11.58m Peat Some 11.58m-12.34m Clay Black 12.34m-16.15m Sand Grey Water Supply 16.15m-16.76m Sand Hard Cemented 16.76m-18.28m Sand Dry 18.28m-19.65m Clay 19.65m-24.99m Sand Grey Water Supply 24.99m-26.82m Sand Water Supply 26.82m-28.65m Sand Pete Water Supply 28.65m-34.75m Sand Grey Pete Water Supply	1388m	South East
GW025715	0.00m-5.48m Sand Water Supply	1392m	North East

Groundwater No	Drillers Log	Distance	Direction
GW047121	0.00m-8.53m Sand Light Brown 8.53m-20.73m Sand Peaty Water Supply 20.73m-24.38m Sand Light Brown Water Supply 24.38m-26.82m Sand Peaty Water Supply 26.82m-32.00m Sand Water Supply 32.00m-33.83m Sand White Water Supply 33.83m-34.44m Peat 34.44m-35.97m Sand Water Supply 35.97m-41.76m Sand White Water Supply 41.76m-42.37m Peat Sand 42.37m-42.67m Clay Grey	1393m	East
GW024205	0.00m-4.87m Sand Yellow Water Supply	1396m	North East
GW109793	0.00m-0.20m CONCRETE 0.20m-0.50m SAND,NATURAL,DARK GREY,FINE TO MEDIUM GRAINED 0.50m-1.60m SAND, NATURAL,RED/BROWN,FINE TO MEDIUM GRAINED 1.60m-3.60m SAND NATURAL,LIGHT GREY,FINE TO MEDIUM GRAINED	1402m	South
GW026720	0.00m-6.09m Sand Yellow Water Supply	1404m	North East
GW109794	0.00m-0.20m CONCRETE 0.20m-0.90m SAND,NATURAL,BLACK,FINE TO MEDIUM GRAINED 0.90m-2.50m SAND,NATURAL,RED/BROWN,FINE TO MEDIUM GRAINED 2.50m-3.60m SAND,NATURAL,LIGHT GREY,FINE TO MEDIUM GRAINED	1409m	South
GW109797	0.00m-0.20m CONCRETE 0.20m-1.50m SAND,NATURAL,DARK,RED/BROWN,FINE TO MEDIUM GRAINED 1.50m-3.60m SAND,NATURAL,LIGHT GREY,FINE TO MEDIUM GRAINED	1419m	South
GW047417	0.00m-0.20m Sand Black Peat 0.20m-7.20m Sand Yellow Water Supply 7.20m-7.50m Clay Yellow Sandy Water Supply 7.50m-8.20m Peat Sandy Water Supply 8.20m-12.60m Peat Water Supply 12.60m-18.10m Sand Peat Water Supply 18.10m-18.40m Sand Dirty Silty Water Supply 18.40m-19.00m Peat Water Supply 19.00m-19.20m Sand Yellow Water Supply 19.20m-20.30m Sand Water Supply 20.30m-23.34m Clay Yellow Water Supply 20.30m-23.34m Sand Small Bands 23.34m-23.50m Sandstone	1420m	North East
GW110015	0.00m-0.20m CONCRETE 0.20m-0.50m SAND,FINE GRAINED,BROWN,FEW GRAVEL 0.50m-7.00m SAND,BROWN,FINE GRAINED,WHITE,WET,STRONG HYDROCARBON ODOUR	1423m	South East
GW100825	0.00m-7.01m UNCONSOLIDATED ALL SANDS	1427m	North East
GW104902	0.00m-7.10m UNCONSOLIDATED ALL SANDS	1428m	North West
GW109795	0.00m-0.20m CONCRETE 0.20m-0.70m SAND,NATURAL,DARK GREY,FINE TO MEDIUM GRAINED 0.70m-1.80m SAND,NATURAL,LIGHT GREY,FINE TO MEDIUM GRAINED 1.80m-3.60m SAND,NATURAL,DARK BROWN, FINE TO MEDIUM GRAINED	1435m	South
GW017350	0.00m-0.76m Soil Black Sandy Made Ground 0.76m-2.43m Sand Light Brown 2.43m-3.65m Sand Grey Dirty 3.65m-11.36m Sand Light Brown Water Supply 11.36m-12.58m Peat 12.58m-15.24m Sand Dark Brown Water Supply 15.24m-26.82m Sand Grey Clean 26.82m-26.97m Peat 26.97m-28.19m Sand Dark Grey 28.19m-28.28m Peat 28.28m-31.85m Sand 31.85m-32.30m Clay Grey Sandy	1436m	South East
GW112592	0.00m-0.30m FILL 0.30m-1.70m PEAT BLACK 1.70m-3.00m PEATY SAND DARK BROWN 3.00m-7.80m SAND BROWN M/GRAINED 7.80m-8.30m SANDY PEAT ,PEATY SAND 8.30m-9.20m SAND YELLOW 9.20m-12.00m SAND LIGHT YELLOW 12.00m-12.60m SANDY PEAT 12.60m-15.50m SAND 15.50m-16.40m SANDY PEAT 16.40m-20.00m SAND L/YELLOW,L/BROWN	1441m	South

Groundwater No	Drillers Log	Distance	Direction
GW109796	0.00m-0.17m CONCRETE 0.17m-0.40m FILL,GRAVELLY SAND 0.40m-1.50m SAND,NATURAL.BROWN,FINE 1.50m-3.60m SAND,NATURAL,LIGHT GREY,FINE	1443m	South
GW013383	0.00m-7.31m Sand White Dry 7.31m-9.14m Sand Dark Grey Water Supply 9.14m-10.36m Sand Dark Brown Water Supply 10.36m-16.61m Sand Water Supply 16.61m-18.28m Peat Wood Dry 18.28m-21.33m Sand Grey Clean Water Supply 21.33m-24.99m Sand Light Brown Water Supply 24.99m-26.21m Sand Dark Brown Water Supply 26.21m-28.04m Sand Dark Grey Water Supply 28.04m-34.13m Sand Dark Brown Peat Water Supply 34.13m-34.15m Clay Peaty	1446m	South East
GW100993	0.00m-5.49m UNCONSOLIDATED ALL SANDS	1454m	North
GW110379	0.00m-0.20m CONCRETE 0.20m-0.30m GRAVELLY SAND DARK BROWN 0.30m-7.00m SAND,DARK,BROWN,WET,WHITE,MOIST	1460m	South East
GW037388	0.00m-2.13m Sand Cemented 2.13m-4.57m Sand 4.57m-8.53m Sand Peaty 8.53m-15.24m Sand Grey 15.24m-16.76m Peat 16.76m-19.51m Sand Grey Water Supply 19.51m-22.56m Peat 22.56m-25.60m Sand White Water Supply 25.60m-26.52m Sand Peaty Some Clayey Water Supply 26.52m-27.43m Sand Grey Dirty Water Supply 27.43m-37.49m Sand White Water Supply 37.49m-37.80m Clay Grey	1469m	East
GW110377	0.00m-0.15m CONCRETE 0.15m-0.40m FILL,GRAVELLY SAND,FINE TO COARSE,GRAVEL FINE TO MEDIUM GRAINED 0.40m-2.20m SAND,FINE TO COARSE GRAINED,L/BROWN 2.20m-2.60m SAND,FINE TO MEDIUM GRAINED DARK BROWN 2.60m-3.40m SAND,FINE TO MEDIUM GRAINED,ORANGE BROWN 3.40m-5.10m SAND,FINE TO COARSE GRAINED,YELLOW L/BROWN 5.10m-7.00m SAND	1473m	South East
GW025710	0.00m-0.91m Made Ground 0.91m-4.57m Sand Dirty 4.57m-9.44m Sand Peaty 9.44m-14.02m Sand Peaty Peat Wood Water Supply 14.02m-17.06m Sand Yellow Peat Water Supply 17.06m-17.67m Peat Wood Water Supply 17.67m-19.50m Sand Peaty Water Supply 19.50m-22.55m Sand Yellow Clean Water Supply 22.55m-26.21m Sand Yellow Peat Water Supply 26.21m-29.56m Sand White Peat Bands Water Supply 29.56m-29.71m Clay Grey	1475m	South East
GW109195	0.00m-0.20m CONCRETE 0.20m-0.40m FILL,ROADBASE 0.40m-2.00m SAND,L/GREY/BROWN,TAN,MOIST 2.00m-3.50m SAND,ORANGE/BROWN,MOIST 3.50m-5.50m SAND,LIGHT,ORANGE,TAN 5.50m-7.80m SAND,L/TAN,FINE TO MED.	1480m	South East
GW100427	0.00m-1.50m SANDSTONE FILL 1.50m-9.00m WHITE SAND 9.00m-11.50m BROWN SAND WITH SEAMS OF PEAT 11.50m-15.50m WHITE SAND 15.50m-21.50m PEATY BROWN SAND 21.50m-31.00m BROWN SAND 31.00m-37.00m WHITE SAND	1485m	East
GW110380	0.00m-0.20m CONCRETE 0.20m-0.40m GRAVELLY SAND,WELL GRADED 0.40m-0.90m SAND, DARK BROWN 0.90m-1.30m SAND,FINE GRAINED 1.30m-2.20m SAND,BROWN, FINE GRAINED 2.20m-7.00m SAND,YELLOW,WHITE,VERY MOIST	1485m	South East

Groundwater No	Drillers Log	Distance	Direction
GW025817	0.00m-4.87m Sand Yellow 4.87m-8.22m Sand Clean 8.22m-8.99m Peat Water Supply 8.99m-10.05m Sand Peaty Water Supply 10.05m-10.54m Peat Water Supply 10.54m-14.32m Sand Peaty Water Supply 14.32m-16.45m Sand 16.45m-17.98m Sand Bands 17.98m-19.50m Peat Fossils:wood 19.50m-22.86m Sand Clay Bands 22.86m-22.87m Clay	1490m	East
GW031808	0.00m-0.15m Sand Dark Brown Light Brown 0.15m-5.63m Sand Yellow Fine 0.15m-5.63m Clay Yellow 5.63m-6.55m Sand 5.63m-6.55m Clay Black Silty 6.55m-6.85m Sand Black 6.55m-6.85m Clay Black 6.85m-8.38m Sand 8.38m-9.14m Clay 9.14m-9.90m Sand Yellow Fine Water Supply 9.90m-11.12m Sand Grey 9.90m-11.12m Clay Grey Fossils:wood Water Supply 11.12m-11.43m Sand Black 11.12m-11.43m Clay Black 11.43m-11.58m Clay Black 11.58m-11.88m Sand Grey Clayey 11.88m-12.80m Sand 11.88m-12.80m Clay Water Supply 12.80m-12.95m Clay Grey Dry 12.80m-12.95m Sand Grey 12.95m-14.17m Clay White Light Grey Sandy 14.17m-16.15m Clay Grey Yellow Red 16.15m-18.28m Clay Dark Grey Stiff	1491m	North West
GW103708	0.00m-6.00m SAND	1500m	North East
GW101232	0.00m-6.00m Sand	1503m	North East
GW024655	0.00m-1.21m Ash Rubble 1.21m-2.43m Sand Peaty 2.43m-5.48m Peat Black 5.48m-7.92m Sand Peaty 5.48m-7.92m Clay Seams Water Supply 7.92m-9.14m Sand Grey Clean Water Supply	1505m	North West
GW102739	0.00m-7.00m SAND	1506m	North East
GW109197	0.00m-0.20m CONCRETE 0.20m-0.40m FILL,ROADBASE 0.40m-2.00m SAND,FINE TO MEDIUM,GRAINED,L/GREY 2.00m-2.20m SAND,FINE TO MED. GRAINED 2.20m-3.50m SAND,FINE TO MED GR. MOIST 3.50m-5.00m SAND FINE TO MED. L/GREY 5.00m-7.00m SAND.FINE TO MED GR. WET,SWEET ODOUR	1511m	South East
GW100276	0.00m-6.00m BOTANY SAND	1512m	South
GW102366	0.00m-7.00m SAND	1514m	North
GW029072	0.00m-0.91m Made Ground 0.91m-1.29m Sand Hard Cemented 1.29m-2.13m Sand Yellow 2.13m-8.53m Sand Grey 8.53m-8.76m Peat 8.76m-14.02m Sand Peaty Water Supply 14.02m-14.70m Peat 14.70m-16.45m Sand Peaty Water Supply 16.45m-24.38m Sand Slightly Clay Water Supply 24.38m-36.57m Sand Grey Water Supply 36.57m-39.62m Sand Grey Slightly Clay Water Supply 39.62m-40.84m Sand Orange Grey Sandstone Decomposed Water Supply 40.84m-40.99m Peat Clay	1524m	South East
GW023982	0.00m-6.09m Sand White Water Supply	1526m	North East
GW104165	0.00m-8.40m UNCONSOLIDATED ALL SANDS	1544m	North East

Groundwater No	Drillers Log	Distance	Direction
GW109194	0.00m-0.20m FILL,GRAVEL 0.20m-2.00m SAND,FINE TO MEDIUM GRAINED. 2.00m-3.00m SAND, FINE TO MEDIUM GRAINED,YELLOW 3.00m-3.60m SAND,F/TO MEDIUM GR. L/BROWN.MOIST 3.60m-7.00m SAND,FINE TO MEDIIUM,GR. TAN,MOIST	1546m	South East
GW022536	0.00m-6.70m Sand Grey Dry 6.70m-8.83m Sand Peaty Wet 8.83m-9.14m Sand Hard Cemented 9.14m-12.80m Sand Water Supply 12.80m-15.84m Sand Grey Peat 15.84m-16.45m Peat 16.45m-17.98m Peat Sandy Water Supply 17.98m-24.68m Sand Water Supply 24.68m-25.60m Sand Peaty 25.60m-26.82m Sand Wood 26.82m-27.43m Sand Dirty 26.82m-27.43m Peat 27.43m-27.82m Clay Peaty	1550m	South East
GW110378	0.00m-0.20m CONCRETE 0.20m-0.40m ASPHALT 0.40m-1.40m SAND,FINE GRAINED,BROWN AND ORANGE 1.40m-5.00m SAND,FINE GRAINED,LIGHT BROWN 5.00m-7.00m SAND,FINE GRAIN,LIGHT YELLOW,MOIS	1555m	South East
GW109196	0.00m-0.20m CONCRETE 0.20m-0.30m FILL,ROADBASE,GRAVEL 0.30m-2.20m SAND,FINE TO MEDIUM GRAINED 2.20m-3.50m SAND,FINE TO MEDIUM GR. L/BROWN 3.50m-4.00m SAND,FINE TO MEDIUM,YELLOW,TAN	1563m	South East
GW025549	0.00m-5.79m Sand Water Supply	1565m	North East
GW024068	0.00m-1.52m Loam Light Sandy 1.52m-2.13m Loam Dark Brown 2.13m-2.74m Loam Sandy Water Supply 2.74m-3.35m Loam Dark Brown 3.35m-4.26m Sand	1568m	North West
GW024616	0.00m-5.63m Sand Water Supply	1569m	North
GW110376	0.00m-0.10m CONCRETE 0.10m-0.25m FILL,GRAVELLY SAND,GRAVEL M/GRAINED 0.25m-7.50m SAND,FINE TO COARSE,YELLOW L/BROWN	1572m	South East
GW047123	0.00m-1.52m Soil Black Sandy 1.52m-10.06m Sand Peat Water Supply 10.06m-10.67m Peat Sand 10.67m-14.94m Sand Some Peat Water Supply, Traces Clay 14.94m-15.24m Peat Sand 15.24m-18.29m Sand Some Peat Water Supply 18.29m-18.90m Peat Sand 18.90m-18.91m Clay Grey	1574m	North West
GW019098	0.00m-1.82m Ash Made Ground 1.82m-8.53m Sand Dry 8.53m-10.97m Sand Peaty Hard Cemented 10.97m-12.19m Sand Dark Brown Wet 12.19m-14.32m Sand Hard Cemented Bands 14.32m-15.24m Sand Peaty 15.24m-16.61m Sand Water Supply 16.61m-18.28m Peat Solid 18.28m-20.87m Sand Clean Water Supply 20.87m-23.77m Sand Water Supply 23.77m-24.07m Sand Peat Water Supply 24.07m-27.12m Sand Water Supply 27.12m-27.43m Peat	1575m	South East
GW109198	0.00m-0.20m CONCRETE 0.20m-0.30m FILL, ROADBASE 0.30m-1.60m SAND,FINE TO MED. GRAINED 1.60m-2.50m SAND,FINE TO MED. GRAINED YELLOW,MOIST 2.50m-3.10m SAND, FINE TO MED,GRAINED,YELLOW,TAN 3.10m-4.00m SAND,FINE TO MED GRAINED,YELLOW,TAN,MOIST	1579m	South East
GW072901	0.00m-7.00m Peaty Sand Fine To Medium	1605m	North West

Groundwater No	Drillers Log	Distance	Direction
GW101594	0.00m-1.00m White Sand 1.00m-1.30m Coffee Rock 1.30m-9.50m Light Brown Shale 9.50m-11.50m Light Brown Peaty Sand 11.50m-13.00m Dark Brown Peaty Sand 13.00m-25.50m Light Brown Peaty Sand 25.50m-27.00m Peat 27.00m-31.00m Brown Peaty Sand 31.00m-38.00m Grey/Brown Peaty Clay	1605m	East
GW018547	0.00m-0.60m Made Ground 0.60m-2.74m Sand Clean Dry 2.74m-3.96m Sand Dry Peaty 3.96m-4.87m Sand Dry 4.87m-8.22m Sand White Clean 8.22m-9.75m Sand White Slightly Coloured Pete Water Supply 9.75m-12.80m Sand Very Dirty Pete Water Supply 12.80m-14.32m Sand Peaty Water Supply 14.32m-14.94m Sand Very Dirty Pete Water Supply 14.94m-16.76m Peat Water Supply 16.76m-18.28m Sand Peaty Water Supply 18.28m-21.64m Sand White Clean Water Supply 21.64m-22.25m Sand Water Supply Clay Traces Water Supply 22.25m-25.29m Sand Yellow Clean Water Supply 25.29m-29.57m Sand Grey Slightly Coloured Pete Water Supply 29.57m-32.30m Peat Sand Water Supply	1612m	South East
GW022471	0.00m-1.21m Made Ground 1.21m-3.65m Sand Peaty 3.65m-4.57m Sand Peaty Wet 4.57m-9.14m Sand Dirty 9.14m-10.66m Sand Peaty Water Supply 10.66m-15.24m Sand Dirty 15.24m-19.50m Sand Water Supply 19.50m-20.72m Sand Dirty 20.72m-21.03m Sand Peaty Dirty 21.03m-23.77m Sand Peaty Wood 23.77m-25.90m Sand Peaty 25.90m-27.43m Clay Grey 27.43m-28.95m Sand Dirty Peaty 28.95m-32.91m Sand Dirty 32.91m-33.07m Clay Grey	1612m	South East
GW110909	0.00m-0.30m ROADBASE GREY 0.30m-1.00m SAND WITH GRAVEL,BROWN-GREY 1.00m-2.00m SAND WITH GRAVEL DARK GREY 2.00m-3.80m SAND LIGHT BROWN 3.80m-5.80m SAND GREY	1631m	West
GW110910	0.00m-0.30m ROADBASE,GREY 0.30m-1.00m SAND SILTY WITH GRAVEL,GREY,BROWN 1.00m-3.00m SAND BROWN 3.00m-4.50m SAND WITH SHELLS GREY 4.50m-6.00m SAND WITH GRAVELS BLACK.	1636m	West
GW013433	0.00m-0.30m Ash 0.30m-2.74m Sand Dry 2.74m-3.65m Sand Hard Cemented 3.65m-12.19m Sand 12.19m-14.02m Sand Wet 14.02m-15.54m Clay Sandy 15.54m-17.98m Sand 15.54m-17.98m Clay Waddy 17.98m-18.89m Sand 18.89m-19.81m Peat 19.81m-27.12m Sand Peat Fossils:wood Water Supply 27.12m-30.48m Sand Wood Seams Water Supply 30.48m-31.39m Sand Wood Seams Water Supply 31.39m-31.69m Clay Peaty	1638m	South
GW047124	0.00m-0.61m Topsoil Sandy 0.61m-1.52m Sand Grey 1.52m-12.34m Sand Yellow 12.34m-14.94m Sand Dirty Peaty Water Supply 14.94m-17.68m Sand Water Supply 17.68m-19.20m Peat 19.20m-20.73m Sand Dirty Peaty Water Supply 20.73m-28.04m Sand Peaty Water Supply 28.04m-28.35m Peat 28.35m-32.31m Sand Water Supply 32.31m-33.22m Peat 33.22m-34.75m Sand Grey Water Supply 34.75m-37.80m Clay Dark Grey	1642m	South

Groundwater No	Drillers Log	Distance	Direction
GW105150	0.00m-5.00m SAND	1646m	North
GW104981	0.00m-6.00m SAND	1647m	North East
GW024244	0.00m-1.52m Soil 1.52m-3.04m Water Supply	1670m	North
GW013435	0.00m-1.21m Sand Dry 1.21m-1.52m Sand Hard Cemented 1.52m-6.70m Sand White 6.70m-6.85m Sand Hard Cemented 6.85m-9.29m Sand White Water Supply 9.29m-9.75m Peat 9.75m-10.97m Sand Dark Grey 10.97m-12.19m Sand Hard Cemented Peaty 12.19m-16.76m Sand Grey Water Supply 16.76m-29.71m Sand Yellow Water Supply 29.71m-30.17m Peat 30.17m-31.08m Sand Light Grey Water Supply 31.08m-31.24m Peat Clay 31.24m-33.98m Sand Grey Water Supply 33.98m-34.74m Peat Hard Fossils:wood 34.74m-35.96m Clay Dark Grey 35.96m-37.33m Sand Dark Grey Clay Seams Water Supply 37.33m-38.55m Clay Grey Shaley 38.55m-39.01m Sand Dark Grey Water Supply 39.01m-43.73m Sand Dark Grey Water Supply 39.01m-43.73m Clay Peat Bands 43.73m-44.50m Clay Light Grey Sandy 44.50m-45.72m Clay Black Stiff 45.72m-47.24m Clay Grey Stiff 47.24m-49.68m Clay Grey Shaley 49.68m-53.34m Sand Grey Coarse Water Supply 53.34m-53.64m Clay Grey	1688m	South
GW100578	0.00m-5.00m sand	1690m	South
GW112590	0.00m-1.50m SAND 1.50m-1.80m CLAYEY SAND, DARK GREY 1.80m-2.80m PEAT 2.80m-3.90m SAN DARK BROWN 3.90m-4.30m PEAT 4.30m-8.30m SAND YELLOW, M/GRAIN 8.30m-8.70m PEATY SAND 8.70m-9.70m SAND L/BROWN 9.70m-10.00m PEATY SAND 10.00m-20.00m SAND L/BROWN	1693m	South
GW110911	0.00m-0.30m ROADBASE GREY 0.30m-2.20m SAND SILTY WITH GRAVEL GREY 2.20m-3.50m SAND WITH SHELLS GREY 3.50m-6.00m SAND WITH SHELLS DARK GREY/BLACK	1702m	West
GW032150	0.00m-1.52m Sand White 1.52m-5.18m Sand 5.18m-6.40m Sand Peaty Very Dirty 6.40m-7.31m Sand Peaty 7.31m-8.83m Sand Clean 8.83m-10.66m Peat Hard 10.66m-10.97m Sand Peaty 10.97m-13.71m Sand Wet 13.71m-16.15m Sand Clean 16.15m-16.76m Sand Peaty Water Supply 16.76m-17.37m Peat Hard 17.37m-17.67m Peat Sandy Water Supply 17.67m-18.28m Sand Peaty Very Dirty 18.28m-18.89m Sand Peaty 18.89m-22.86m Sand 22.86m-30.48m Sand Slightly Clayey 30.48m-31.39m Sand 31.39m-31.54m Sand Slightly Peaty 31.54m-33.52m Sand White Water Supply 33.52m-36.27m Sand White 36.27m-36.88m Sand White 36.27m-36.88m Clay Yellow 36.88m-38.70m Sand White	1705m	South East

Groundwater No	Drillers Log	Distance	Direction
GW042867	0.00m-0.61m Topsoil 0.61m-3.05m Sand 3.05m-3.35m Peat 3.35m-15.24m Clay Water Supply 15.24m-16.76m Sand Peaty Water Supply 16.76m-18.29m Sand Grey Dirty Water Supply 18.29m-20.12m Sand Grey Water Supply 20.12m-24.99m Sand Water Supply 24.99m-25.30m Sand Clay Water Supply 25.30m-34.75m Sand White Water Supply 34.75m-35.05m Sandstone 35.05m-36.58m Clay White	1705m	East
GW103500	0.00m-5.00m LT. BROWN MEDIUM GR. SAND 5.00m-10.00m WHITE YELLOW MEDIUM GR. SAND 10.00m-12.00m DARK BROWN SAND / LIGNITE 12.00m-14.00m LIGNITE AND SAND MED. GR. 14.00m-18.00m SAND WITH LIGNITE 18.00m-27.00m DARK SAND WITH LIGNITE 27.00m-41.00m LT. BROWN SAND,MINOR SILT	1706m	East
GW062266	0.00m-1.00m Fill 0.00m-1.00m Sandstone Sand 1.00m-8.00m Sand White 8.00m-17.00m Sand Peaty Water Supply 17.00m-19.00m Peat Water Supply 19.00m-25.00m Sand Water Supply 25.00m-31.00m Sand Grey Water Supply	1709m	East
GW047872	0.00m-0.50m Loam Black Sandy 0.50m-1.20m Sand Yellow 1.20m-9.00m Sand Grey 9.00m-10.20m Sand Yellow 10.20m-16.00m Sand Peaty Water Supply 16.00m-31.00m Sand Yellow Water Supply 31.00m-36.90m Sand White Water Supply 36.90m-38.10m Sand Yellow Water Supply 38.10m-40.30m Sand White Water Supply 40.30m-40.40m Peat Sand Water Supply 40.40m-41.50m Peat Water Supply	1713m	East
GW073457		1720m	South
GW027749	0.00m-2.43m Sand 2.43m-5.18m Sand Peaty 5.18m-5.79m Peat Sandy 5.79m-8.22m Sand Very Dirty Peaty 8.22m-10.97m Peat Small 8.22m-10.97m Clay 10.97m-16.15m Sand White Water Supply 16.15m-16.45m Clay White Puggy	1733m	North West
GW035410	0.00m-10.66m Sand 10.66m-11.88m Sand White Peat Traces 11.88m-14.93m Sand Peaty Dirty 14.93m-17.06m Sand Peaty 17.06m-17.37m Peat 17.37m-19.20m Sand Peaty Dirty 19.20m-19.81m Peat 19.81m-20.42m Peat Sandy Some Clay 20.42m-21.03m Sand Clean Water Supply 21.03m-21.94m Sand Very Dirty Peaty 21.94m-22.86m Sand Peat Traces Water Supply 22.86m-24.38m Sand Clayey 24.38m-29.56m Sand 29.56m-31.69m Sand Slightly Clayey 31.69m-32.91m Sand White 32.91m-37.79m Sand White Clay Traces Water Supply 37.79m-39.92m Sandstone Decomposed Medium	1742m	East
GW016953	0.00m-4.50m LIGHT BROWN SAND 4.50m-5.00m BROWN SAND AND WOOD 5.00m-8.60m LIGHT BROWN SAND 8.60m-9.40m BLACK PEAT 9.40m-16.90m LIGHT BROWN SAND 16.90m-18.50m BLACK PEAT 18.50m-22.70m BROWN SILTY SAND 22.70m-24.00m BLACK PEAT 24.00m-26.50m BROWN PEATY SAND 26.50m-30.00m LIGHT BROWN SAND	1743m	East

Groundwater No	Drillers Log	Distance	Direction
GW112591	0.00m-0.50m GRAVELLY CLAY/SAND 0.50m-2.50m SAND 2.50m-6.50m SAND YELLOW/BROWN 6.50m-7.30m PEATY SAND 7.30m-8.00m SAND 8.00m-8.40m PEATY SAND 8.40m-19.00m SAND 19.00m-20.00m PEAT BLACK FIRM	1744m	South
GW013638	0.00m-0.76m Made Ground 0.76m-1.52m Peat 1.52m-7.62m Sand 7.62m-7.92m Sand Hard Cemented 7.92m-12.98m Sand Water Supply 12.98m-13.28m Wood 13.28m-15.42m Sand 15.42m-15.54m Clay 15.54m-17.67m Sand White 17.67m-19.20m Sand Water Supply 19.20m-20.11m Clay Stiff 20.11m-20.42m Clay Grey 20.42m-20.43m Sandstone	1752m	South East
GW024036	0.00m-6.09m Sand	1755m	West
GW022054	0.00m-0.24m Made Ground 0.24m-0.46m Sand Some Hard Cemented 0.46m-11.73m Sand Light Brown 11.73m-15.85m Sand Water Supply 15.85m-20.88m Sand Peat Seams Water Supply 20.88m-21.03m Sand Hard Cemented 21.03m-24.38m Sand Water Supply 24.38m-28.96m Sand Water Supply Clay Traces Pete 28.96m-30.78m Sand Yellow Grey Water Supply Clay Traces 30.78m-32.00m Sand Grey Water Supply 32.00m-32.31m Sand Reddish Water Supply 32.31m-38.19m Sand White Grey Water Supply 38.19m-38.25m Peat 38.25m-40.84m Sand Grey Clay 40.84m-40.86m Sandstone	1757m	East
GW013515	0.00m-8.22m Sand	1759m	North West
GW024368	0.00m-4.27m Made Ground 4.27m-5.79m Sand Moist 5.79m-12.95m Sand White Wet Water Supply	1767m	North East
GW104040	0.00m-0.10m CONCRETE 0.10m-2.00m FILL,SAND YELLOWISH 2.00m-6.50m SAND,MEDIUM BROWN 6.50m-7.00m SAND,LIGHT BROWN	1768m	North
GW015990	0.00m-0.91m Made Ground Sand 0.91m-1.37m Sand 1.37m-2.74m Peat 2.74m-6.09m Sand Dirty 6.09m-10.66m Sand Wet 10.66m-13.71m Sand Water Supply 13.71m-15.24m Sand Clay Bands 15.24m-21.64m Sand Water Supply 21.64m-23.16m Sand White Water Supply 23.16m-23.40m Sand White 23.40m-23.46m Clay White Bands 23.46m-26.21m Sand White Water Supply 26.21m-28.83m Sand White Clay Bands	1770m	South East
GW104039	0.00m-0.10m CONCRETE 0.10m-2.00m SAND,DARK BROWN 2.00m-7.00m SAND MEDIUM LIGHT BROWN	1773m	North

Groundwater No	Drillers Log	Distance	Direction
GW025947	0.00m-0.60m Made Ground 0.60m-3.04m Sand Yellow 3.04m-5.18m Sand 5.18m-7.62m Sand Slightly Peaty 7.62m-7.92m Peat 7.92m-10.66m Sand Very Dirty Peaty 10.66m-14.63m Sand Grey 14.63m-15.24m Sand Yellow 15.24m-18.59m Sand Yellow Water Supply 18.59m-23.77m Sand Clayey Peaty Water Supply 23.77m-25.90m Sand Grey Water Supply 25.90m-29.26m Sand White Water Supply 29.26m-30.17m Clay Water Supply 30.17m-30.20m Clay	1782m	South East
GW110906	0.00m-1.00m ROADBASE GREY 1.00m-2.80m SAND GREY 2.80m-5.80m SAND BROWN	1783m	West
GW110429	0.00m-0.10m BITUMEN 0.10m-1.00m SAND,GREY/BROWN,FINE,M/GRAINED 1.00m-2.00m SAND AS ABOVE 2.00m-3.00m SAND L/BROWN,M/GRAINED,WET,M/DENSE 3.00m-3.80m SAND AS ABOVE 3.80m-4.00m SAND AS ABOVE ,SATURATED	1786m	North
GW110427	0.00m-0.10m GRASS 0.10m-1.00m SAND,YELLOW ORANGE,M/GRAINED 1.00m-2.00m SAND GREY BROWN,M/GRAINED,DRY 2.00m-3.00m SAND AS ABOVE ,WET 3.00m-4.00m SAND AS ABOVE ,WET 4.00m-5.00m SAND LIGHT BROWN,M/GRAINED,SATURATED 5.00m-6.00m SAND AS ABOVE ,SATURATED 6.00m-7.00m SAND AS ABOVE	1787m	North
GW047525	0.00m-0.61m Peat Sandy 0.61m-1.52m Sand Peaty 1.52m-4.27m Sand Dirty Water Supply 4.27m-6.25m Sand Indurated Water Supply 6.25m-12.65m Sand Dirty Water Supply 12.65m-12.95m Clay Soft Sandy Water Supply 12.95m-13.87m Sand Grey Some Clay Water Supply 13.87m-17.07m Sand Grey Dirty Water Supply Wood Decomposed 17.07m-19.20m Clay Grey Peaty Sandy 19.20m-19.35m Sandstone	1792m	North
GW110430	0.00m-0.10m BITUMEN 0.10m-1.00m SAND, ORANGE/BROWN,FINE M/GRAINED 1.00m-2.00m SAND,WHITE/GREY,WELL SORTED F/M/GRAINED 2.00m-3.00m SAND,BROWN/GREY,WET,M/GRAINED 3.00m-3.80m SAND,AS ABOVE 3.80m-4.00m SAND AS ABOVE ,SATURATED	1795m	North
GW110907	0.00m-0.30m ROADBASE GREY 0.30m-0.90m SILTY SAND 0.90m-1.20m SAND,SILTY GREY BROWN 1.20m-3.50m SAND DARK GREY 3.50m-5.80m SAND LIGHT GREY	1797m	West
GW102162	0.00m-0.15m Concrete 0.15m-2.50m Fill: Dark grey/black Sand, Silt, and Concrete fragments 2.50m-3.70m Dark brown/grey Clayey Sand, with Silt 3.70m-5.00m Dark brown/grey Sand, wet, some Silt and Peat	1809m	North West
GW102164	0.00m-0.15m Concrete 0.15m-2.60m Fill: Dark brown/grey Sand, some metal, rock, brick 2.60m-3.80m Dark brown/grey Clayey Sand, wet, some Silt and Clay 3.80m-5.00m Dark brown/black Sand, wet, some Silt and Peat	1809m	North West
GW102165	0.00m-0.10m Concrete 0.10m-0.70m Fill: Dark brown/grey Sand, moist, glass fragments 0.70m-2.60m Fill: Light brown/red Sand, moist, some Sandstone 2.60m-4.20m Black Peaty Clay, moist, some Sand 4.20m-5.00m Dark brown Sand, wet, some Silt and Peat	1809m	North West
GW102169	0.00m-0.10m Fill: Light brown/red Silty Sand, dry 0.10m-1.80m Fill: Dark brown Clayey Sand, moist, with plastic, wire, steel fragments 1.80m-2.50m Light Grey Clayey Sand, wet 2.50m-3.50m Dark grey Clayey Sand, wet, some Silt and Peat 3.50m-4.50m Dark brown Sand, wet, with Silt and Peat	1809m	North West
GW102171	0.00m-0.30m Fill: Brown/red Sand, some Silt 0.30m-0.80m Fill: Dark brown Sand, some Silt, wire, Clay, pipe and metal fragments 0.80m-1.70m Fill: Grey Clayey Sand, moist 1.70m-3.70m Dark grey/brown Silty Sand, wet, some Clay and Silt 3.70m-6.00m Dark Grey Silty Sand, some Peat	1809m	North West

Groundwater No	Drillers Log	Distance	Direction
GW102172	0.00m-0.70m Fill: Dark brown/grey Sandy Clay, moist, rock fragments 0.70m-1.80m Dark brown/grey Silty Sand, moist 1.80m-2.80m Light brown Sand, some Silt and Peat 2.80m-4.50m Dark grey/brown Sand, wet, some Silt and Peat	1809m	North West
GW102173	0.00m-0.70m Fill: Brown/red Silty Sand, dry, steel, rock and glass fragments 0.70m-1.00m Dark brown Sand, moist, some Silt and Peat 1.00m-2.20m Light brown Sand, moist, some Silt and Peat 2.20m-3.40m Dark grey Clayey Sand, some Silt and Clay 3.40m-4.50m Dark grey Sand, wet, some Silt and Peat	1809m	North West
GW102176	0.00m-0.10m Fill: Light brown/grey Sand, dry, some Silt 0.10m-0.70m Fill: Dark brown Sand, dry, steel, broken concrete 0.70m-2.20m Dark brown Sand, some Silt 2.20m-2.90m Light brown Sand, moist, some Peat 2.90m-3.40m Dark grey Clayey Sand, wet, some Silt and Peat 3.40m-4.50m Dark grey Sand, wet, some Silt and Peat	1809m	North West
GW102178	0.00m-0.17m Concrete 0.17m-2.70m Fill: Dark grey/black Sand, concrete fragments, timber and sandstone fragments 2.70m-3.50m Dark brown/grey Clayey Sand, moist, with Silt and Peat. 3.50m-4.40m Dark brown/grey Sand, wet, some Silt and Peat	1809m	North West
GW102185	0.00m-0.16m Concrete 0.16m-2.70m Fill: Dark grey Sand,moist, rock and brick fragments 2.70m-3.60m Dark grey/black Sand, moist, some Silt and Peat 3.60m-4.20m Light brown Sand, wet, some SIlt and Peat	1809m	North West
GW102186	0.00m-0.19m Concrete 0.19m-2.70m Fill: Dark brown/red Sand, moist, concrete, brick and asbestos fragments 2.70m-3.70m Dark brown/black Sand, wet, some Silt and Peat 3.70m-4.20m Light brown Sand, wet, some Silt and Peat	1809m	North West
GW102187	0.00m-0.22m Concrete 0.22m-2.80m Fill: Grey/brown Sand, moist, Sandstone fragments and timber 2.80m-3.70m Dark brown/black Sand, moist, some Silt and Peat 3.70m-4.20m Light brown Sand, wet, some SIlt and Peat	1809m	North West
GW102188	0.00m-0.20m Concrete 0.20m-2.70m Fill: Dark brown/red Sand, moist, rock fragments 2.70m-4.00m Dark grey/black Sand, moist, some Silt and Peat	1809m	North West
GW102189	0.00m-0.20m Concrete 0.20m-2.70m Fill: Dark brown/red Sand, moist, brick and rock fragments 2.70m-3.50m Dark brown/black Clayey Sand, moist, some Silt and Peat 3.50m-4.00m Dark brown/black Sand, wet, some Silt and Peat.	1809m	North West
GW102190	0.00m-0.17m Concrete 0.17m-2.70m Fill: Dark brown/grey Sand, moist, glass and Sandstone fragments 2.70m-3.60m Black Peaty Clay, moist, some Sand 3.60m-4.00m Dark brown Sand, wet, some Silt and Peat	1809m	North West
GW102191	0.00m-0.22m Concrete 0.22m-2.70m Fill: Dark gre/black Sand, moist, rock and metal fragments 2.70m-4.00m Dark brown/grey Sand, some Silt and Peat	1809m	North West
GW102192	0.00m-0.22m Concrete 0.22m-2.50m Fill: Brown/grey Sand, moist, rocks and steel fragments 2.50m-3.20m Black Peaty Clay, moist, some Sand 3.20m-4.00m Brown/black Sand, wet, some Silt and Peat	1809m	North West
GW102194	0.00m-0.19m Concrete 0.19m-2.40m Fill: Dark brown Sand, rock and concrete fragments 2.40m-3.00m Dark grey/black Clayey Sand, moist, some Silt and Peat 3.00m-3.70m Dark brown Sand, wet, some Silt and Peat	1809m	North West
GW102195	0.00m-0.15m Concrete 0.15m-2.40m Fill: Light and dark brown Sandy Clay, rubble 2.40m-3.60m Dark grey/black Sandy Clay, wet, sheen on soil	1809m	North West
GW102197	0.00m-0.16m Concrete 0.16m-2.30m Fill: Light and dark brown Sand, moist, cocnrete and rock fragments 2.30m-3.60m Dark brown/grey Sand, moist, some Silt and Peat	1809m	North West
GW102198	0.00m-0.15m Concrete 0.15m-2.30m Fill: Dark brown/black Sand, moist, some Clay and rubble 2.30m-3.10m Dark brown/grey Sand, moist, some Silt, Clay and Peat 3.10m-3.50m Black Peaty Clay, moist, some Sand	1809m	North West
GW102199	0.00m-0.15m Concrete 0.15m-2.30m Fill: Dark brown/grey Sand, moist, clay, brick, and rock fragments 2.30m-3.00m Dark brown Clayey Sand, moist, some Silt and Peat 3.00m-3.50m Dark grey/brown Sand, wet, some Silt and Peat	1809m	North West
GW102200	0.00m-0.16m Concrete 0.16m-1.50m Fill: Ripped Sandstone with metal and brick fragments 1.50m-2.30m Dark brown/black Sand, moist, some Silt and Peat 2.30m-3.50m Light brown/grey Sand, wet, some Silt and Peat	1809m	North West

Groundwater No	Drillers Log	Distance	Direction
GW102201	0.00m-1.20m Fill: Dark brown/grey Sandy Clay, moist, rock fragments 1.20m-2.70m Light brown Sand, moist, some Silt and Peat 2.70m-3.50m Brown/grey Sand, wet, some Silt and Peat	1809m	North West
GW102203	0.00m-1.20m Fill: Dark brown Sand, brick and metal fragments 1.20m-2.70m Light brown Sand, moist, some Silt and Peat 2.70m-3.50m Dark brown/grey Sand, wet, some Silt and Peat	1809m	North West
GW102204	0.00m-2.20m Fill: Dark brown/red Sand, moist, metal, wire, and Sandstone fragments 2.20m-3.30m Dark brown/grey Sand, moist, some Silt and Peat	1809m	North West
GW102205	0.00m-2.20m Fill: Dark brown Sand, moist, wire, timber, and metal fragments 2.20m-3.30m Dark brown/grey Sand, moist, some Silt and Peat	1809m	North West
GW110428	0.00m-0.10m BITUMEN 0.10m-0.50m SAND,GREY/BROWN,M/GRAINED,DRY 0.50m-2.00m SAND,YELLOW/ORANGE,M/GRAINED 2.00m-3.00m SAND,L/BROWN, M/GRAINED,DAMP 3.00m-3.80m SAND AS ABOVE ,WET 3.80m-4.00m SAND AS ABOVE ,SATURATED	1809m	North
GW110431	0.00m-0.10m BITUMEN 0.10m-1.00m SAND,GREY BROWN 1.00m-2.00m SAND,GREY BROWN,M/GRAINED,DRY 2.00m-3.00m SAND,L/BROWN,DAMP,WELL SORTED 3.00m-4.00m SAND AS ABOVE,WET 4.00m-4.80m SAND,L/BROWN,WET,M/GRAINED 4.80m-5.00m SAND AS ABOVE	1809m	North
GW102160	0.00m-0.15m Concrete 0.15m-1.50m Fill: dark brown/grey, moist Sand, tile and metal fragments 1.50m-2.60m Fill: Klinker ash, dark grey, moist, loose 2.60m-3.80m Dark brown/grey Sandy Clay, moist, some ash 3.80m-5.00m Dark brown Sand, wet, some peat	1810m	North West
GW102168	0.00m-0.10m Concrete 0.10m-0.80m Fill: Dark brown/grey Sandy Clay, moist, some brick and rock fragments 0.80m-2.40m Fill: Sandstone boulders 2.40m-3.20m Black Peaty Clay, moist 3.20m-5.00m Brown/black Sand, wet, some Silt and Peat	1810m	North West
GW102184	0.00m-2.40m Fill: Dark grey/black Sand, moist, some rock, glass asbestos fragments 2.40m-3.40m Dark brown/red Clayey Sand, moist, some Silt and Peat 3.40m-4.20m Dark grey/black Sand, wet, some Silt and Peat	1810m	North West
GW102193	0.00m-0.17m Concrete 0.17m-2.60m Fill: Dark brown Sand, moist, rocks and concrete fragments 2.60m-3.90m Dark brown/black Sand, moist, some Silt and Peat	1810m	North West
GW102196	0.00m-0.12m Concrete 0.12m-2.40m Fill: Dark brown/grey Sand, moist, brick and concrete fragments 2.40m-3.60m Dark brown Sand, wet, some Clay, Silt and Peat	1810m	North West
GW104988	0.00m-7.00m SAND	1810m	North West
GW110414	0.00m-0.10m GRASS 0.10m-1.00m SAND,ORANGE,BROWN,M/GRAINED,DRY 1.00m-2.00m SAND, AS ABOVE 2.00m-3.00m SAND,LIGHT BROWN,M/GRAINED,WELL SORTED 3.00m-4.00m SAND AS ABOVE,SATURATED	1818m	North
GW075024	0.00m-4.00m PEATY SAND,BLACK 4.00m-9.00m SAND,FINE COFFEE BROWN 9.00m-11.00m PEATY SAND,DARK BROWN 11.00m-15.50m SILTY SAND,MED GRAINED,GREY 15.50m-19.00m SANDY CLAY,DARK GREY	1820m	North West
GW102697	0.00m-1.00m FILL 1.00m-4.50m SAND MED. FINE	1820m	South East
GW102698	0.00m-1.00m fill 1.00m-4.50m sand med. fine	1820m	South East
GW107976	0.00m-0.70m topsoil, fill 0.70m-2.00m sand, loose 2.00m-2.50m sandy, coarse 2.50m-3.50m sand, peaty	1835m	North
GW110908	0.00m-0.30m ROAD BASE GREY 0.30m-1.00m SAND WITH GRAVEL GREY 1.00m-4.00m SAND DARK GREY 4.00m-6.00m SAND LIGHT GREY,BROWN	1838m	West

Groundwater No	Drillers Log	Distance	Direction
GW023561	0.00m-0.91m Sand Black 0.91m-5.48m Sand White Water Supply	1841m	North
GW104031	0.00m-0.10m GRASS 0.10m-2.00m SAND,MEDIUM BROWN 2.00m-3.00m SAND,LIGHT MED. BROWN 3.00m-4.00m SAND:L IGHT BROWN 4.00m-5.00m AS ABOVE 5.00m-6.00m AS ABOVE,SATURED 6.00m-7.00m AS ABOVE	1843m	North
GW104032	0.00m-0.10m GRASS 0.10m-2.00m FILL,SAND,LIGHT ORANGE 2.00m-5.00m SAND,MEDIUM BROWN 5.00m-7.00m SAND,LIGHT BROWN,MED. GRAINED	1843m	North
GW104033	0.00m-2.00m FILL,SAND,DARK BROWN,YELLOW 2.00m-4.00m SAND,MEDIUM BROWN,SATURED	1843m	North
GW104034	0.00m-2.00m FILL,SAND,GREY,DARK ORANGEY BROWN 2.00m-4.00m SAND,MEDIUM BROWN,NO ODOUR 4.00m-5.00m AS ABOVE,DENSE SAND 5.00m-7.00m SAND,LIGHT BROWN	1843m	North
GW104035	0.00m-2.00m FILL,SAND MEDIUM DARK BROWN,GREYISH 2.00m-3.00m SAND,LIGHT BROWN,WET 3.00m-7.00m SAND AS ABOVE,SATURED,GARK BROWN	1843m	North
GW104036	0.00m-1.00m fill 1.00m-2.00m peat 2.00m-7.00m sand	1843m	North
GW104037	0.00m-0.10m GRASS 0.10m-4.00m SAND,MEDIUM GRAINED	1843m	North
GW104038	0.00m-0.10m GRASS 0.10m-4.00m SAND:LIGHT BROWN	1843m	North
GW035690	0.00m-3.04m Made Ground 3.04m-4.57m Sand 4.57m-6.09m Sand Clean 6.09m-9.14m Sand 9.14m-9.75m Peat 9.75m-10.66m Sand Peaty 10.66m-12.19m Sand 12.19m-15.24m Sand Clean 15.24m-15.84m Sand 15.84m-16.15m Peat 16.15m-16.76m Clay Sand 16.76m-19.81m Sand Dark Brown 19.81m-28.65m Sand Water Supply 28.65m-35.96m Sand White Water Supply 35.96m-36.27m Peat Wood 36.27m-38.40m Sand Yellow Grey Water Supply 38.40m-38.70m Clay Grey	1844m	East
GW102699	0.00m-1.00m FILL 1.00m-4.50m SAND MED. FINE	1846m	South East
GW062282	0.00m-4.00m Fill Water Supply 4.00m-13.00m Sand Peaty Water Supply 13.00m-13.50m Peat Water Supply 13.50m-19.00m Sand Peaty Water Supply 19.00m-20.80m Sand Water Supply 20.80m-22.50m Clay Dark Grey Water Supply	1847m	South East
GW027750	0.00m-4.57m Sand Dry 4.57m-10.97m Sand Water Supply 10.97m-11.28m Clay Sandy Pete 11.28m-12.80m Sand Grey Slightly Peaty Water Supply 12.80m-14.63m Sand Very Dirty Pete Water Supply 14.63m-15.84m Sand Peaty Water Supply 15.84m-17.37m Sand Grey Clay Pete Water Supply 17.37m-17.38m Clay Sandy	1851m	North West
GW023408	0.00m-1.52m Soil Black Hard 1.52m-7.01m Sand Water Supply	1863m	North
GW016330	0.00m-25.60m Sand Water Supply 25.60m-26.21m Sandstone	1871m	East
GW062281	0.00m-4.20m Fill Water Supply 4.20m-21.00m Sand Peaty Water Supply 21.00m-22.00m Clay Dark Grey	1871m	South East
GW023968	0.00m-2.43m Sand White 2.43m-4.57m Loam Water Supply	1872m	North

Groundwater No	Drillers Log	Distance	Direction
GW014461	0.00m-3.04m Sand Dirty 3.04m-3.65m Sand Hard Cemented 3.65m-7.62m Sand Yellow 7.62m-9.14m Sand White 9.14m-11.27m Sand White Yellow 11.27m-26.21m Sand White Water Supply	1877m	East
GW014462	0.00m-16.76m Sand Water Supply 16.76m-18.59m Sand Peat Bands Water Supply 18.59m-28.95m Sand Water Supply 28.95m-29.56m Sandstone Soft	1877m	East
GW101680	0.00m-7.93m Unconsolidated Sand	1879m	East
GW101231	0.00m-7.00m Sand	1880m	North
GW023162	0.00m-2.43m Sand White 2.43m-4.87m Loam Water Supply	1885m	North
GW102700	0.00m-1.00m FILL 1.00m-4.50m SAND MED. FINE	1886m	South East
GW062054	0.00m-1.00m Overburden Topsoil 1.00m-40.00m Sand White Some Slightly Peat Water Supply	1893m	East
GW111600	0.00m-20.00m SANDS,FINE,VERY FINE,DK GREY IN COLOUR	1896m	North East
GW111624	0.00m-31.00m BOTANY SANDS 31.00m-36.00m HAWKESBURY SANDSTONE	1896m	North East
GW072479	0.00m-5.80m UNCONSOLIDATED SANDS	1903m	North
GW104989	0.00m-10.00m SAND	1907m	East
GW101161	0.00m-6.10m UNCONSOLIDATED, ALL SAND	1911m	North
GW102701	0.00m-1.00m FILL 1.00m-4.50m SAND MED. FINE	1912m	South East
GW062280	0.00m-1.00m Fill 1.00m-6.40m Sand Peaty Water Supply 6.40m-20.80m Sand Water Supply 20.80m-21.00m Clay Dark Grey	1923m	South East
GW100575	0.00m-5.00m SAND	1923m	North
GW103588	0.00m-7.00m SAND	1925m	North West
GW014459	0.00m-1.52m Sand Dirty 1.52m-6.09m Sand Yellow 6.09m-7.62m Sand Hard Cemented 7.62m-9.14m Sand Wet 9.14m-12.19m Sand Light Yellow Water Supply 12.19m-13.71m Peat Water Supply 13.71m-18.28m Sand Grey Water Supply 18.28m-26.21m Clay Grey Water Supply 26.21m-29.26m Sand White Water Supply	1929m	East
GW015273	0.00m-0.91m Ash 0.91m-1.52m Made Ground 1.52m-4.57m Sand 4.57m-4.87m Peat 4.87m-10.66m Sand 10.66m-21.03m Sand Yellow Water Supply 21.03m-21.33m Peat Water Supply 21.33m-22.55m Sand White Water Supply	1929m	South
GW025948	0.00m-1.82m Sand Grey 1.82m-2.43m Sand Hard Cemented 2.43m-4.57m Sand Yellow 4.57m-6.09m Sand White 6.09m-8.53m Sand White Slightly Clayey 8.53m-11.27m Sand Slightly Peaty 11.27m-14.47m Sand Very Dirty Peaty 14.47m-15.24m Sand Yellow 15.24m-16.45m Sand Slightly Clayey 16.45m-18.28m Sand Yellow Clean 18.28m-19.20m Sand Slightly Clayey 19.20m-22.55m Sand 22.55m-25.29m Sand Peaty 25.29m-25.90m Sand Clean 25.90m-30.17m Sand White 30.17m-31.39m Sand White Slightly Clayey 31.39m-35.05m Sand White 35.05m-35.08m Clay	1932m	South East

Groundwater No	Drillers Log	Distance	Direction
GW102702	0.00m-1.00m FILL 1.00m-4.50m SAND MED. FINE	1937m	South East
GW023967	0.00m-1.82m Sand White 1.82m-2.43m Sand Grey Water Supply 2.43m-2.74m Mud Black	1947m	North
GW109711	0.00m-1.00m FILL,MEDIUM GRAINED SAND,SOME CLAY,GRAVEL,SILT 1.00m-1.50m FILL,FINE TO MEDIUM GRAINED,YELLOS GREY,ASH,SILT,GRAVEL 1.50m-3.60m FILL,BECOMING BLACK/YELLOW,GRAVEL,TRACE SILT 3.60m-4.50m SAND,FINE TO MEDIUM GRAINED,UNIFOR,WELL ROUNDED 4.50m-5.50m SAND.MEDIUM GRAINED,BLACK,YELLOW,CLAY,MINOR PEAT LAYER 5.50m-6.50m SAND,FINE GRAINED,YELLOS\W,GREY,ORGANIC GRAINS 6.50m-7.00m SAND BECOMING FINE TO MEDIUM GRAINED 7.00m-7.50m SAND,FINE GRAINED,YELLOW,GREY,ORGANIC GRAINS 7.50m-8.00m SAND,MEDIUM GRAINED,UNIFORM,YELLOW / WHITE 8.00m-9.00m SAND,FINE GRAINED,YELLOW,GREY,WELL ROUNDED 9.00m-11.00m SAND,MEDIUM GRAINED,UNIFORM,WELL ROUNDED,YELLOW/WHITE	1949m	South East
GW101350	0.00m-5.90m SAND. FINE TO MEDIUM GRAINED	1956m	North West
GW101351	0.00m-5.05m SAND. SILTY,PEATY, WITH TRACES OF CLAY	1956m	North West
GW101352	0.00m-5.70m SAND. SILTY, PEATY	1956m	North West
GW101353	0.00m-6.00m SAND.FINE TO MEDIUM GRAINED, TRACE OF SILT	1956m	North West
GW101354	0.00m-6.00m SAND. FINE TO MEDIUM GRAINED WITH SOME SILT	1956m	North West
GW101355	0.00m-6.00m SAND. SILTY,PEATY WITH TRACE OF CLAY	1956m	North West
GW101356	0.00m-5.60m SAND.silty, peaty with traces of clay and some thin peat lenses	1956m	North West
GW101357	0.00m-5.90m SAND. FINE TO MEDIUM GRAINED, TRACE OF SILT	1956m	North West
GW101358	0.00m-6.00m SAND. FINE TO MEDIUM GRAINED	1956m	North West
GW101359	0.00m-6.00m SAND.FIE TO MEDIUM GRAINED WITH SOME SILT. SOME PEAT LENSES	1956m	North West
GW101360	0.00m-6.00m SAND.FINE TO MEDIUM GRAINED, TRACE OF SILT SOME PEAT LENSES	1956m	North West
GW101361	0.00m-4.30m SAND. FINE TO MEDIUM GRAINED WITH SOME SILT	1956m	North West
GW101362	0.00m-5.90m SAND. FINE TO MEDIUM GRAINED	1956m	North West
GW105905	0.00m-1.70m FILL,GRAVELLY SAND 1.70m-4.00m SAND,MEDIUM GRAINED 4.00m-9.60m SAND,YELLOW,WHITE 9.60m-10.00m PEAT LAYER 10.00m-16.40m SAND,MEDIUM GRAINED,YELLOW,WHITE 16.40m-21.00m SAND,UNIFORM,WELL ROUNDED	1956m	South East
GW023500	0.00m-5.48m Sand Water Supply	1964m	North
GW109708	0.00m-1.00m FILL,MEDIUM GRAINED SAND,SOME CLAY 1.00m-1.50m FILL,FINE TO MEDIUM GRAINED,YELLOW,GREY 1.50m-3.60m FILL,BECOMING BLACK,YELLOW,GRAVEL 3.60m-4.50m SAND,FINE TO MEDIUM GRAINED 4.50m-5.50m SAND,MEDIUM GRAINED,BLACK,YELLOW,TRACE CLAY 5.50m-6.50m SAND,FINE GRAINED YELLOW,GREY,TRACE ORGANIC 6.50m-7.00m SAND BECOMING FINE TO MEDIUM GRAINED 7.00m-7.50m SAND,FINE GRAINED,YELLOW,GREY 7.50m-8.00m SAND,MEDIUM GRAINED,UNIFORM 8.00m-9.00m SAND,FINE GRAINED,YELLOW,GREY,WELL ROUNDED 9.00m-11.00m SAND MEDIUM GRAINED,UNIFORM,WELL ROUNDED,YELOW,WHITE.	1969m	South East
GW101834	0.00m-10.00m SAND	1974m	South East
GW100367	0.00m-6.00m ALL SAND - UNCONSOLIDATED	1976m	North
GW100945	0.00m-7.10m ALL SAND UNCONSOLIDATED	1983m	North
GW101835	0.00m-10.00m SAND	1983m	South East

Groundwater No	Drillers Log	Distance	Direction
GW111247	0.00m-1.00m TOPSOIL 1.00m-3.00m SILT 3.00m-19.00m SAND 19.00m-20.00m PEAT/COAT 20.00m-36.00m SAND	1986m	North East
GW017653	0.00m-0.91m Sand White Dirty 0.91m-1.21m Sand Cemented Hard 1.21m-2.43m Sand Cemented Hard 2.43m-9.14m Sand Clean 9.14m-9.75m Sand Cemented Hard Bands 9.75m-11.27m Sand Clean Wet 11.27m-15.54m Sand Clean Water Supply 15.54m-16.00m Peat 16.00m-18.59m Sand Grey Water Supply 18.59m-18.74m Peat Wood 18.74m-19.20m Clay Peaty 19.20m-19.50m Peat Wood 19.50m-21.94m Sand Dirty Water Supply 21.94m-22.55m Peat Wood 22.55m-22.86m Sand White 22.86m-24.38m Sand Dirty 22.86m-24.38m Clay Grey 24.38m-25.60m Peat 24.38m-25.60m Sand Dirty	1990m	North East
GW072238	0.00m-2.50m SAND 2.50m-3.50m ALLUVIUM 3.50m-10.00m SAND	1992m	East
GW024037	0.00m-0.91m Sand Grey 0.91m-2.13m Sand Yellow 2.13m-2.74m Sand Hard Cemented 2.74m-7.16m Sand Yellow Water Supply	1998m	East
GW106145	0.00m-5.79m sand, unconsolidated	1998m	North

Drill Log Data Source: NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corp
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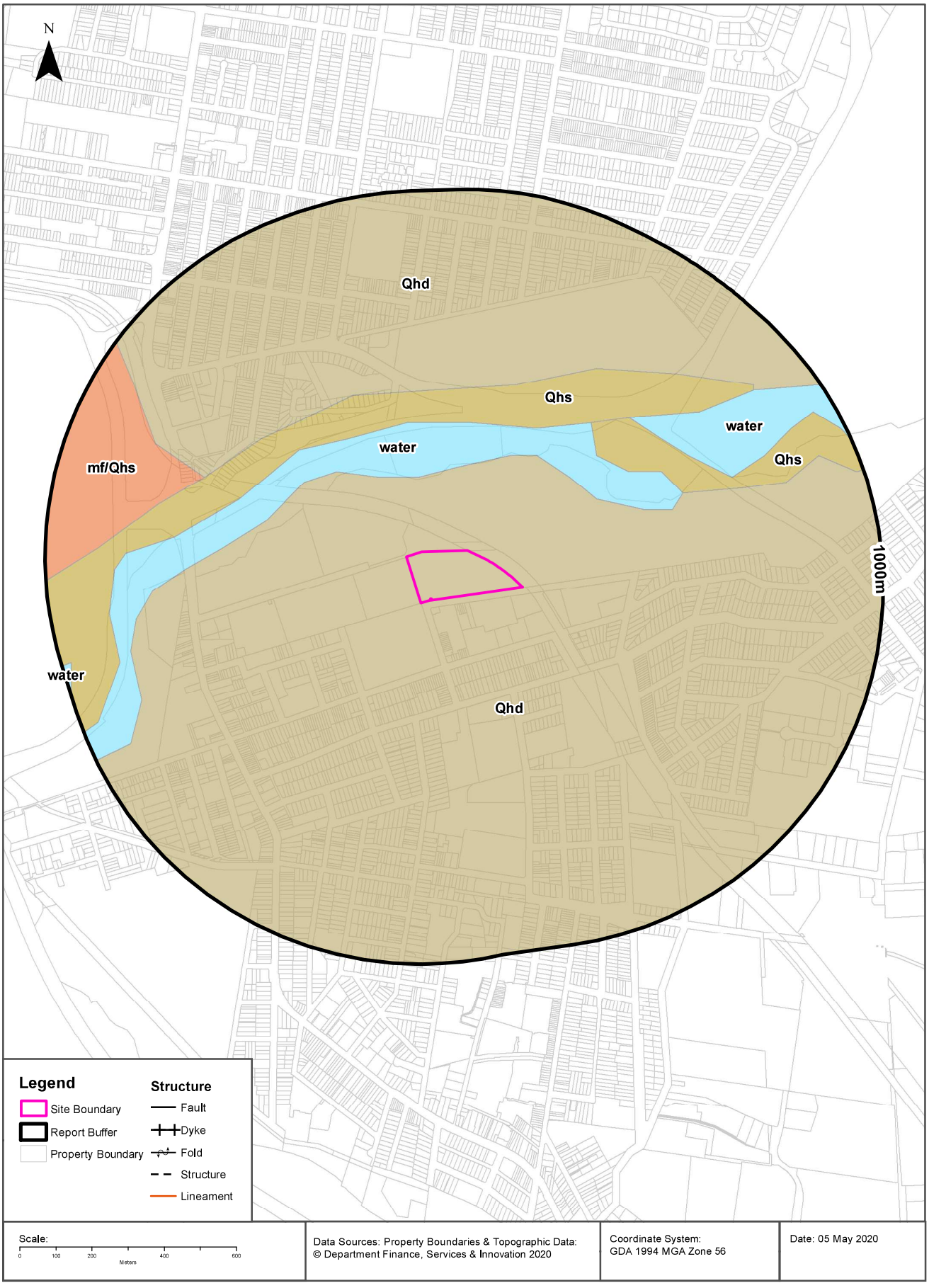
Geology 1:100,000

2 Myrtle Street, Botany, NSW 2019



Geology

2 Myrtle Street, Botany, NSW 2019

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Qhd	Medium to fine-grained marine sand with podsols				Quaternary		Sydney	1:100,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
mf/Qhs							Sydney	1:100,000
Qhd	Medium to fine-grained marine sand with podsols				Quaternary		Sydney	1:100,000
Qhs	Peat, sandy peat, and mud.				Quaternary		Sydney	1:100,000
water							Sydney	1:100,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

Geological Data Source : NSW Department of Industry, Resources & Energy
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Naturally Occurring Asbestos Potential

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Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Mining Subsidence District Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Atlas of Australian Soils

2 Myrtle Street, Botany, NSW 2019

Soils

2 Myrtle Street, Botany, NSW 2019

Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance
Cb27	Podosol	Coastal sand plains and dunes, lagoons, and swampy areas: chief soils are leached sands (Uc2.3 and Uc2.2). Associated are dunes of siliceous sands (Uc1.2) and/or calcareous sands (Uc1.l) fringing the coastline; and swampy areas of (Uf6) soils and (Uc1.2) soils with peaty surfaces. Unit Cb27 has similarities with units Cb28 and Ca6.	0m

Atlas of Australian Soils Data Source: CSIRO
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Soil Landscapes

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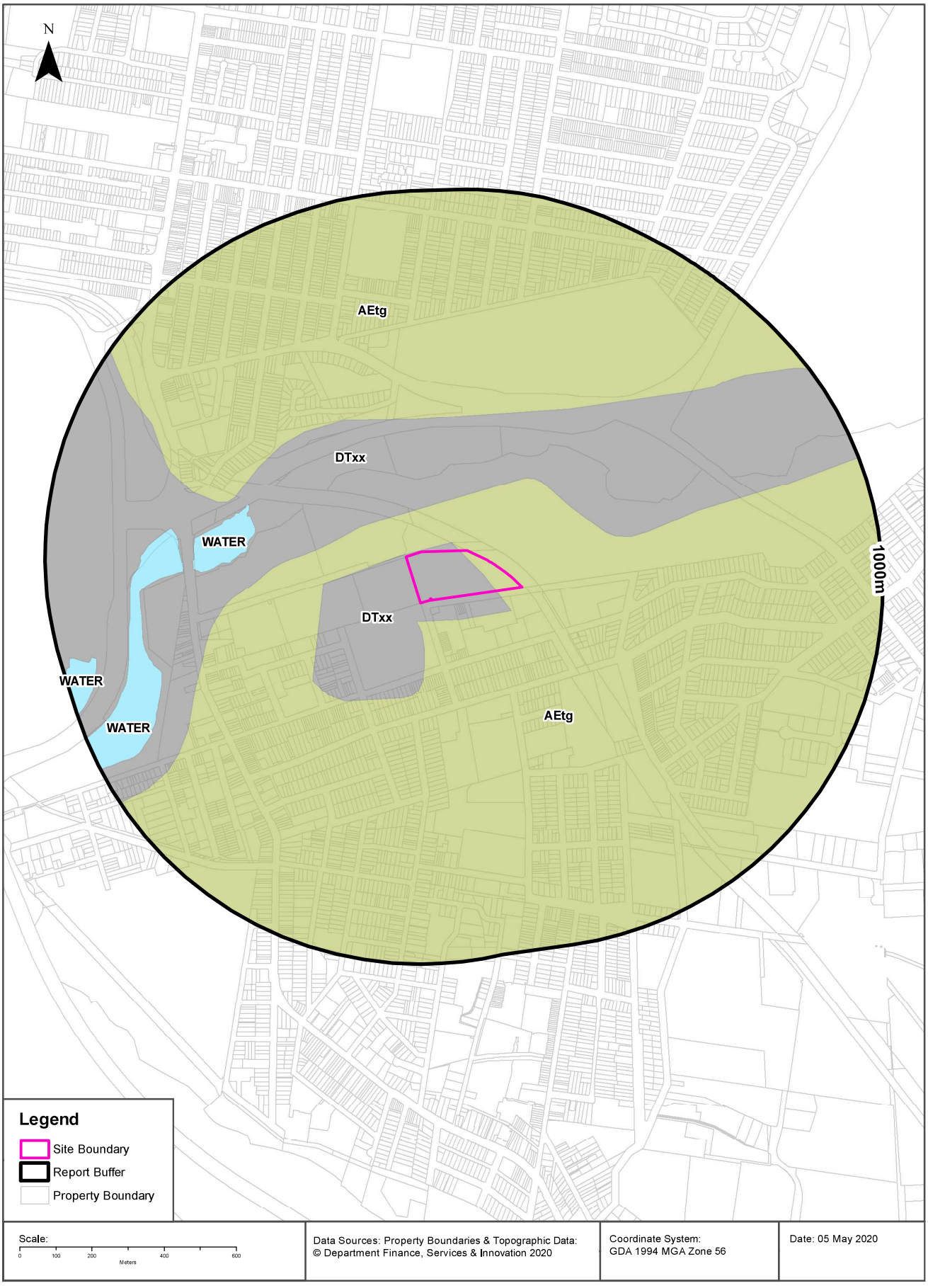

Soils

2 Myrtle Street, Botany, NSW 2019

Soil Landscapes

What are the onsite Soil Landscapes?

Soil Code	Name	Group	Process	Map Sheet	Scale
AEtg	TUGGERAH		AEOLIAN	Sydney	1:100,000
DTxx	DISTURBED TERRAIN		DISTURBED TERRAIN	Sydney	1:100,000

What are the Soil Landscapes within the dataset buffer?

Soil Code	Name	Group	Process	Map Sheet	Scale
AEtg	TUGGERAH		AEOLIAN	Sydney	1:100,000
DTxx	DISTURBED TERRAIN		DISTURBED TERRAIN	Sydney	1:100,000
WATER	WATER		WATER	Sydney	1:100,000

Soils Landscapes Data Source : NSW Office of Environment and Heritage
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Acid Sulfate Soils

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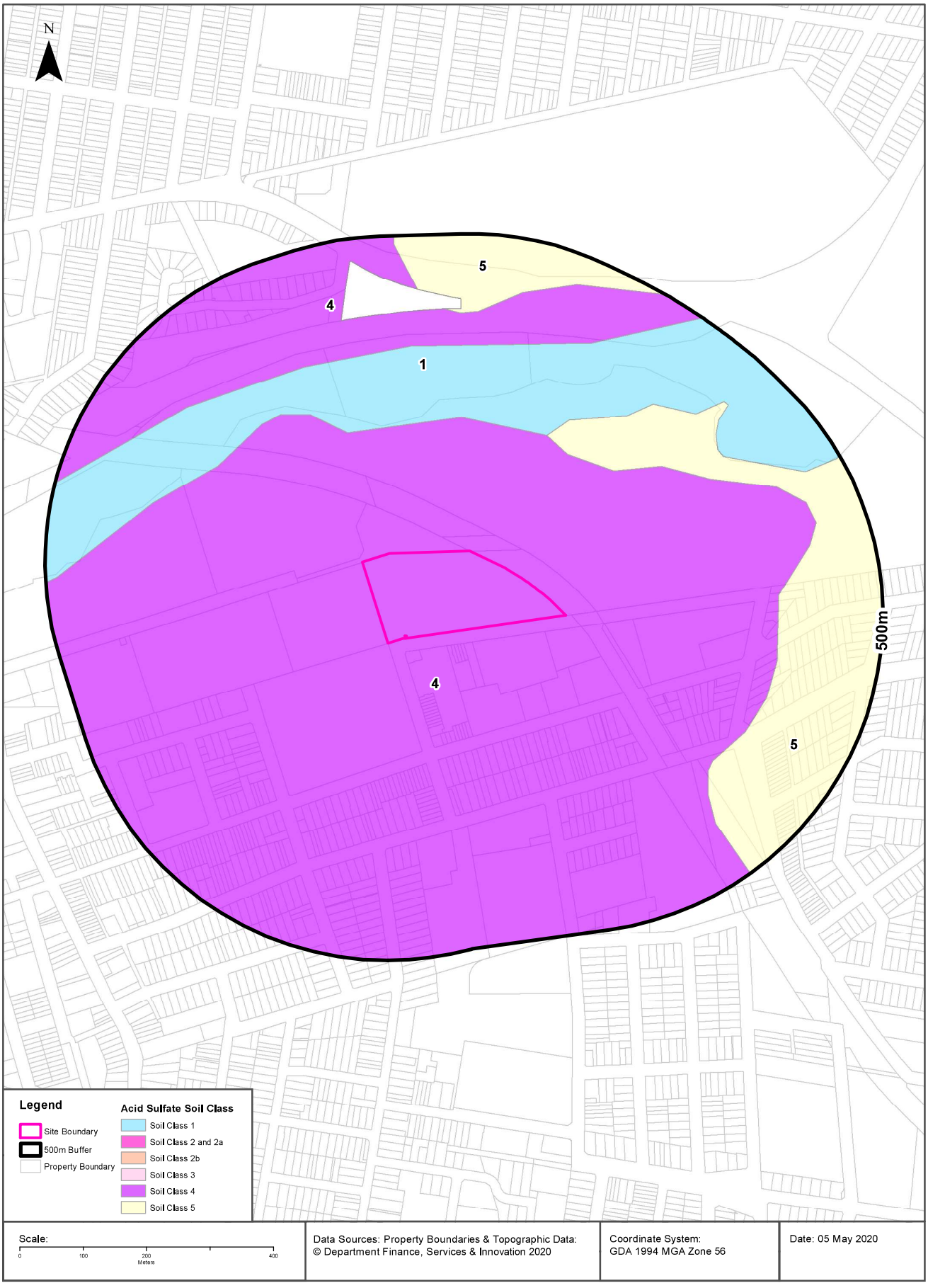

Acid Sulfate Soils

2 Myrtle Street, Botany, NSW 2019

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

Soil Class	Description	EPI Name
4	Works more than 2 metres below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered more than 2 metres below natural ground surface, present an environmental risk	Botany Bay Local Environmental Plan 2013

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

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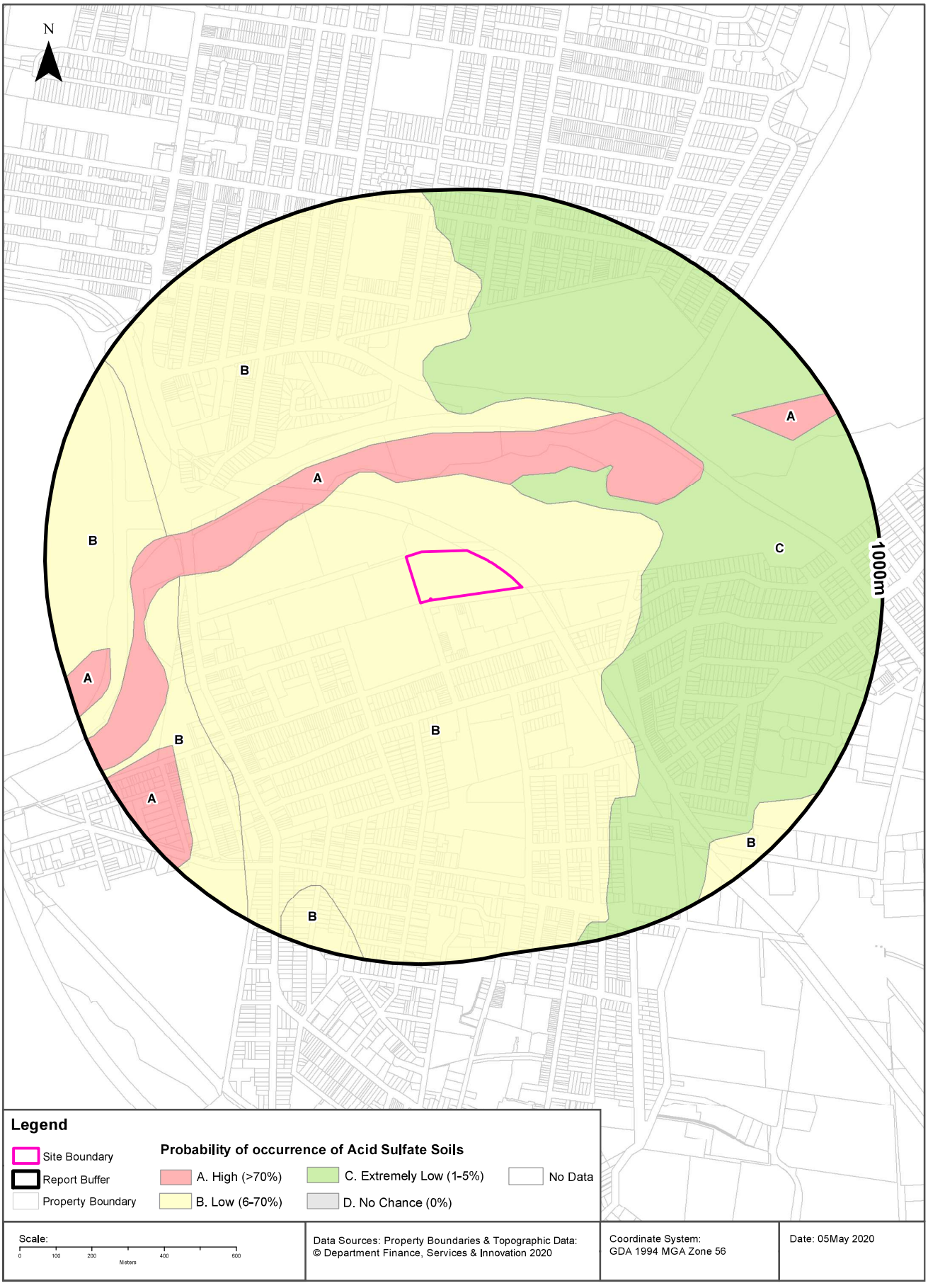
Atlas of Australian Acid Sulfate Soils

2 Myrtle Street, Botany, NSW 2019



Acid Sulfate Soils

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Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m
A	High Probability of occurrence. >70% chance of occurrence.	200m
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	206m

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO
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Dryland Salinity

2 Myrtle Street, Botany, NSW 2019

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

Is there Dryland Salinity - National Assessment data within the dataset buffer?

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A	N/A	N/A

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

Feature Id	Classification	Description	Distance	Direction
N/A	Outside Data Coverage			

Dryland Salinity Potential of Western Sydney Data Source : NSW Office of Environment and Heritage
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Mining Subsidence Districts

2 Myrtle Street, Botany, NSW 2019

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining Subsidence District Data Source: © Land and Property Information (2016)
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State Environmental Planning Policy

2 Myrtle Street, Botany, NSW 2019

State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No Records in Buffer							

State Environment Planning Policy Data Source: NSW Crown Copyright - Planning & Environment
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Environmental Planning Instrument

2 Myrtle Street, Botany, NSW 2019

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No Records in Buffer								

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Heritage Items

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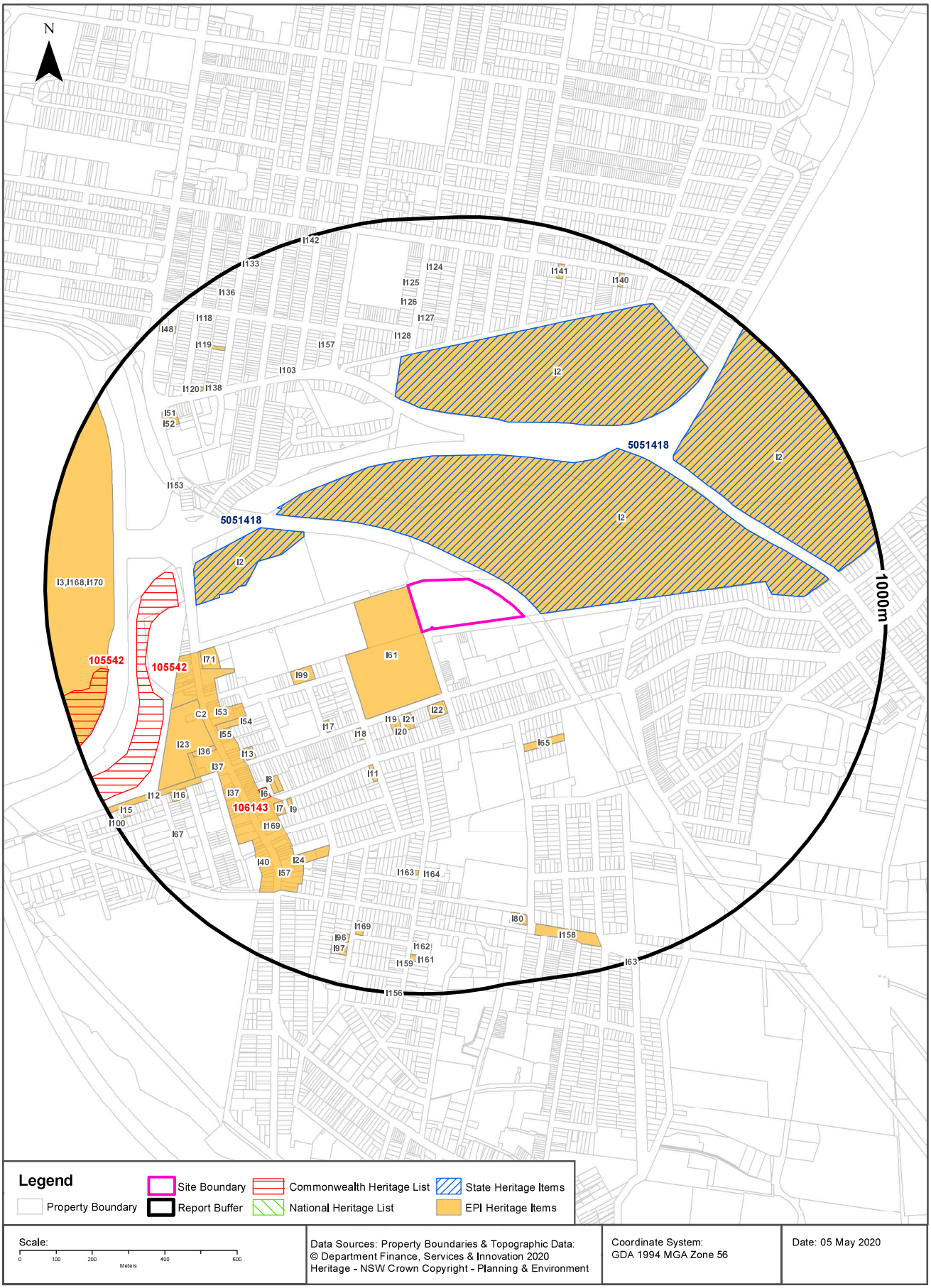

Heritage

2 Myrtle Street, Botany, NSW 2019

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
106143	Botany Post Office	2 Banksia St, Botany NSW	1/16/007/0007	Historic	Listed place	2011-11-08	608m	South West
105542	Sydney (Kingsford Smith) Airport Group	Airport Dr, Sydney Airport NSW	1/16/007/0008	Historic	Indicative Place		634m	West

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
5051418	Botany Water Reserves	1024 Botany Road Mascot	Botany Bay	18/11/1999	01317	2150	39m	North East

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
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Environmental Planning Instrument - Heritage

What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I61	Booralee Park	Item - Landscape	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	0m	South West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I2	Botany Swamps,or Botany Water Reserves, or Botany Wetlands, Mills Stream, Bridge Pond, Lakes Golf Co	Item - Landscape	State	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	39m	North East
I22	House Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	198m	South
I21	House - "The White House"	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	223m	South West
I20	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	242m	South West
I19	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	250m	South West
I18	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	314m	South West
I2	Botany Swamps,or Botany Water Reserves, or Botany Wetlands, Mills Stream, Bridge Pond, Lakes Golf Co	Item - Landscape	State	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	316m	West
I99	Terrace Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	320m	South West
I65	Streetscape - Verge plantings of Canary island date Palms (Phoenix Canariensis)	Item - Landscape	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	340m	South East
I17	Corner Store - "Alto"	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	354m	South West
I11	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	391m	South West
I2	Botany Swamps,or Botany Water Reserves, or Botany Wetlands, Mills Stream, Bridge Pond, Lakes Golf Co	Item - Landscape	State	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	447m	North East
C2	St Albans' Conservation Area	Conservation Area - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	525m	South West
I54	John Brotchie Kindergarten (formerly Botany School of Arts Hall)	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	537m	South West
I71	St. Matthew's Anglican Church (c. 1862)	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	558m	West
I10	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	563m	South West
I53	Botany Uniting Church	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	565m	South West
I14	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	566m	South West
I8	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	575m	South West
I13	House Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	576m	South West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I9	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	584m	South West
I55	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	594m	South West
I2	Botany Swamps,or Botany Water Reserves, or Botany Wetlands, Mills Stream, Bridge Pond, Lakes Golf Co	Item - Landscape	State	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	598m	North East
I7	Fire Station (c. 1906)	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	605m	South West
I6	Post Office (c. 1923)	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	608m	South West
I23	Botany Public School (circa 1869)	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	647m	South West
I169	Botany Town Hall (c. 1898)	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	650m	South West
I36	Hippo's Friends Child Care Centre	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	653m	South West
I164	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	655m	South
I37	Finnies Buildings	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	656m	South West
I163	House Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	656m	South
I103	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	668m	North West
I128	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	670m	North
I24	Police Station (c. 1871)	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	671m	South West
I37	Captain Cook Hotel	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	673m	South West
I153	Railway Bridge over Botany Road	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	684m	North West
I157	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	691m	North West
I127	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	717m	North
I57	Boarding House (front building)	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	717m	South West
I12	Streetscape - Verge plantings of Canary Island Date Palm (Phoenix Canariensis)	Item - Landscape	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	732m	South West
I40	House Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	742m	South West
I58	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	750m	South West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I138	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	754m	North West
I126	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	760m	North
I52	Beckenham Memorial Church	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	772m	North West
I120	House - "Verandale"	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	779m	North West
I16	House Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	781m	South West
I51	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	791m	North West
I50	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	801m	North West
I80	Electricity Substation No. 340	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	805m	South
I3,I168,I170	Commonwealth Water Pumping Station and Sewerage Pumping Station	Item - General	State	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	810m	West
I125	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	813m	North
I169	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	815m	South
I137	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	822m	North West
I158	Streetskape - Verge plantings of Canary Island Date Palm (Phoenix Canariensis)	Item - Landscape	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	845m	South
I119	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	853m	North West
I162	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	854m	South
I124	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	857m	North
I96	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	857m	South
I141	House Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	868m	North
I67	Electricity Substation No. 153	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	869m	South West
I161	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	890m	South
I97	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	894m	South
I159	Sydney Water Corporation Sewer Vent - "MBWSS"	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	904m	South
I140	Christian Fellowship Centre	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	906m	North East

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I98	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	906m	South
I118	Corner Store	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	916m	North West
I136	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	937m	North West
I15	House	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	947m	South West
I48	Single Storey Terrace Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	947m	North West
I133	House Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	975m	North West
I142	House Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	978m	North
I143	Terrace Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	987m	North West
I100	House Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	988m	South West
I156	House Group	Item - General	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	998m	South
I63	Streetscape - Verge plantings of Canary Island Date Palm (Phoenix Canariensis)	Item - Landscape	Local	Botany Bay Local Environmental Plan 2013	21/06/2013	21/06/2013	09/10/2015	999m	South

Heritage Data Source: NSW Crown Copyright - Planning & Environment
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Natural Hazards

2 Myrtle Street, Botany, NSW 2019

Bush Fire Prone Land

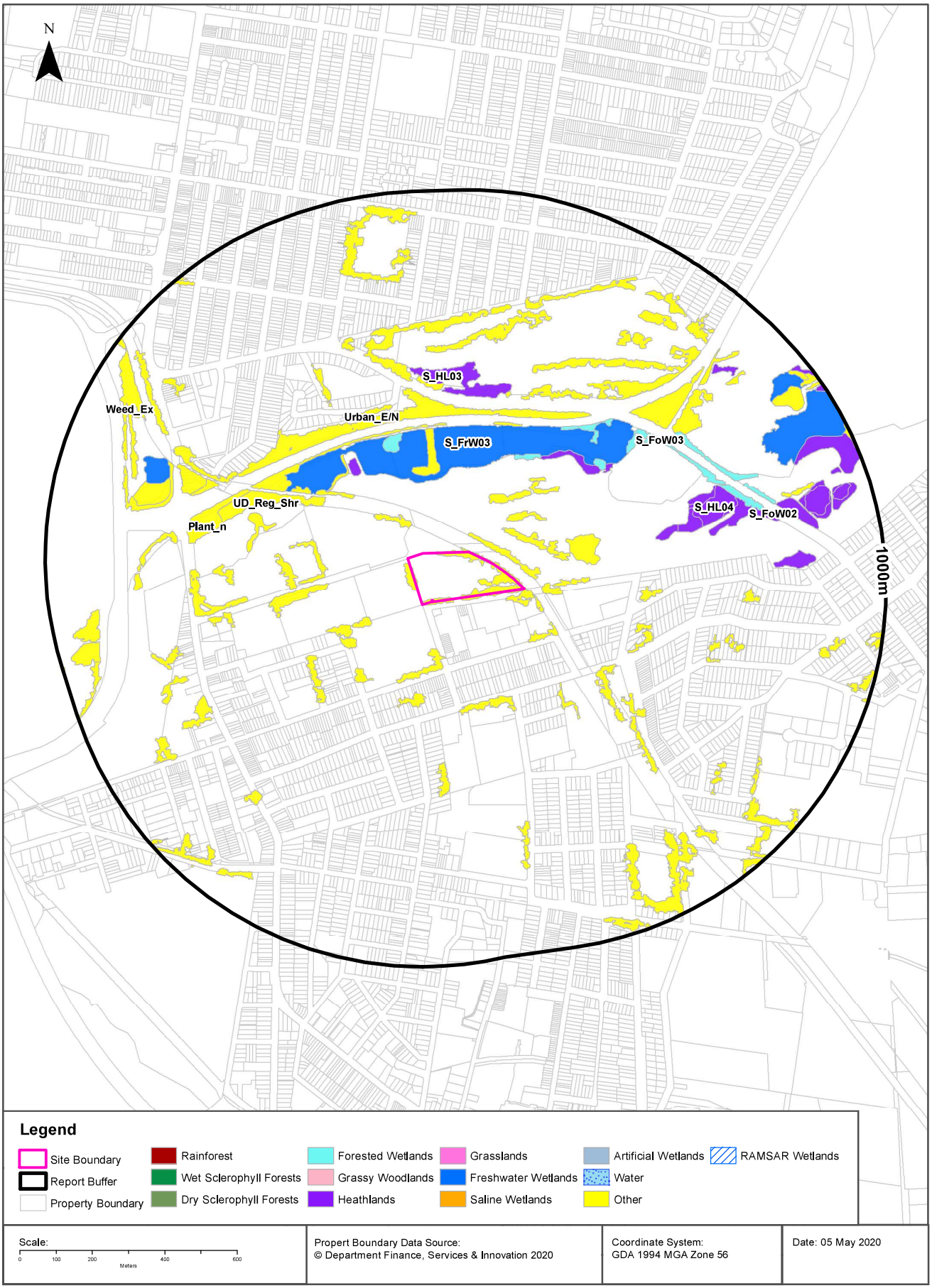
What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
No records within buffer		

NSW Bush Fire Prone Land - © NSW Rural Fire Service under Creative Commons 4.0 International Licence

Ecological Constraints - Native Vegetation & RAMSAR Wetlands

2 Myrtle Street, Botany, NSW 2019



Ecological Constraints

2 Myrtle Street, Botany, NSW 2019

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Map Unit Name	Threatened Ecological Community NSW	Threatened Ecological Community EPBC Act	Understorey	Disturbance	Disturbance Index	Dominant Species	Dist	Direction
Urban_E/N	Urban_E/N: Urban Exotic/Native			00: Not assessed	00: Not assessed	0: Not assessed	Urban Exotic/Native	0m	Onsite
UD_Reg_Shr	UD_Reg_Shr: Undifferentiated Regenerating Shrubs			00: Not assessed	00: Not assessed	0: Not assessed	Undifferentiated Regenerating Scrubs	162m	East
S_FrW03	S_FrW03: Coastal Freshwater Wetland	Sydney Freshwater Wetlands		34: Phragmites	30: Soil disturbance	4: Very high	T.orientalis/P.australis	195m	North
S_HL03	S_HL03: Coastal Sand Mantle Heath	Eastern Suburbs Banksia Scrub	Eastern Suburbs Banksia Scrub (possible)	12: Dry xeric shrubs	28: Bare earth	3: High	L.laviegatum/B.integrifolia/Exotics/urban scrub	266m	North West
S_FoW03	S_FoW03: Coastal Freshwater Swamp Forest			15: Grassy natives and exotics	13: Weeds	3: High	Undifferentiated Regenerating Scrubs	285m	North East
Plant_n	Plant_n: Plantation (native and/or exotic)			00: Not assessed	00: Not assessed	0: Not assessed	Native or Exotic Plantations	318m	North West
S_HL04	S_HL04: Coastal Sandplain Heath	Eastern Suburbs Banksia Scrub	Eastern Suburbs Banksia Scrub (possible)	12: Dry xeric shrubs	13: Weeds	3: High	Banksia spp./A.distyla/L.laevigatum/Acacia spp.	503m	East
Weed_Ex	Weed_Ex: Weeds and Exotics			00: Not assessed	00: Not assessed	0: Not assessed	Exotic Species >90%cover	592m	West
S_FoW02	S_FoW02: Coastal Flats Swamp Mahogany Forest	Swamp Sclerophyll Forest on Coastal Floodplains		12: Dry xeric shrubs	30: Soil disturbance	4: Very high	E.robusta	702m	East

Native Vegetation of the Sydney Metropolitan Area : NSW Office of Environment and Heritage
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Ramsar Wetlands

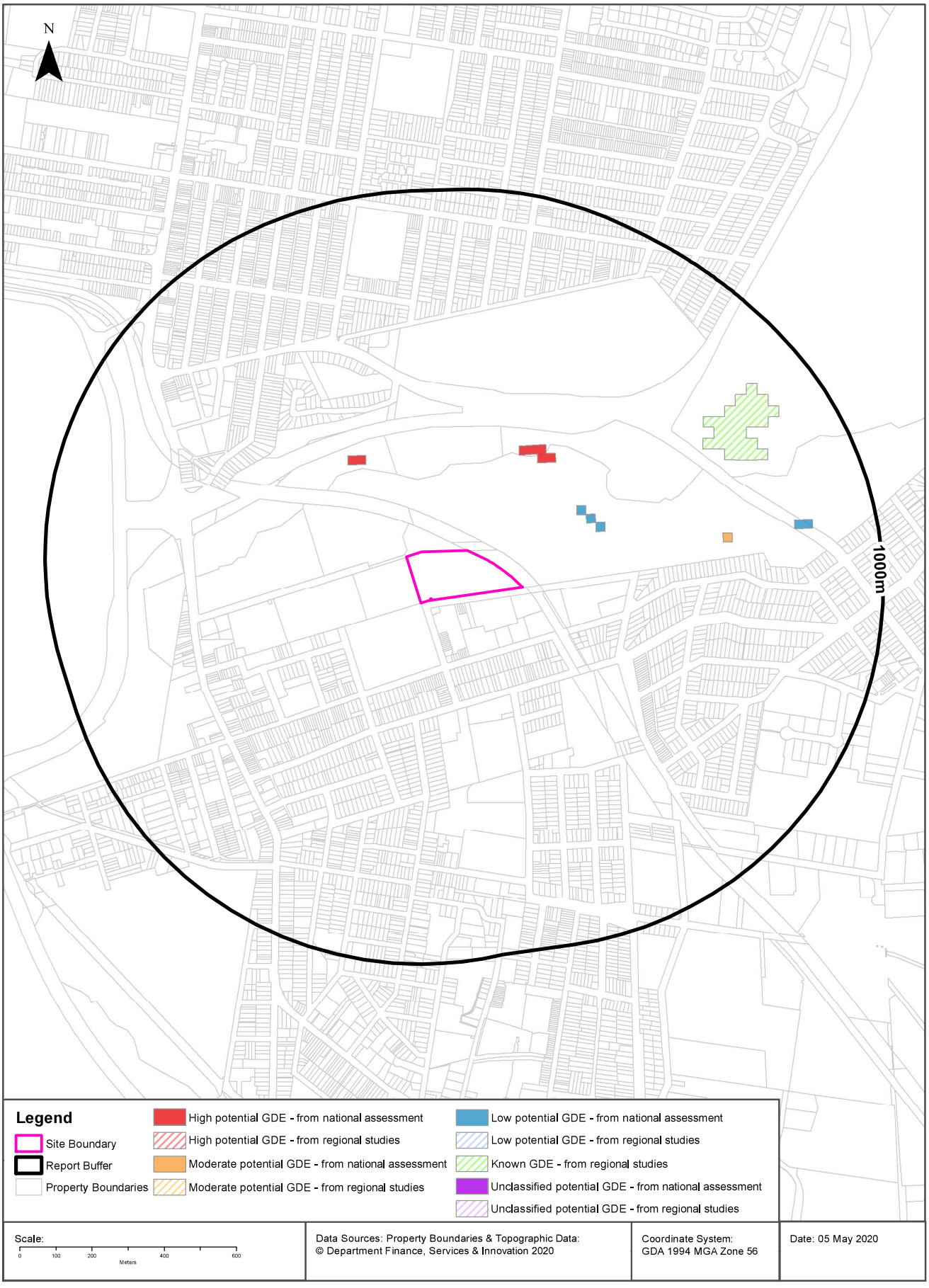
What Ramsar Wetland areas exist within the dataset buffer?

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Environment

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

2 Myrtle Street, Botany, NSW 2019



Ecological Constraints

2 Myrtle Street, Botany, NSW 2019

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	Low potential GDE - from national assessment	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	248m
Terrestrial	High potential GDE - from national assessment	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	280m
Terrestrial	Moderate potential GDE - from national assessment	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	568m
Aquatic	Known GDE - from regional studies	Undulating to low hilly country, mainly on shale.	Wetland		628m

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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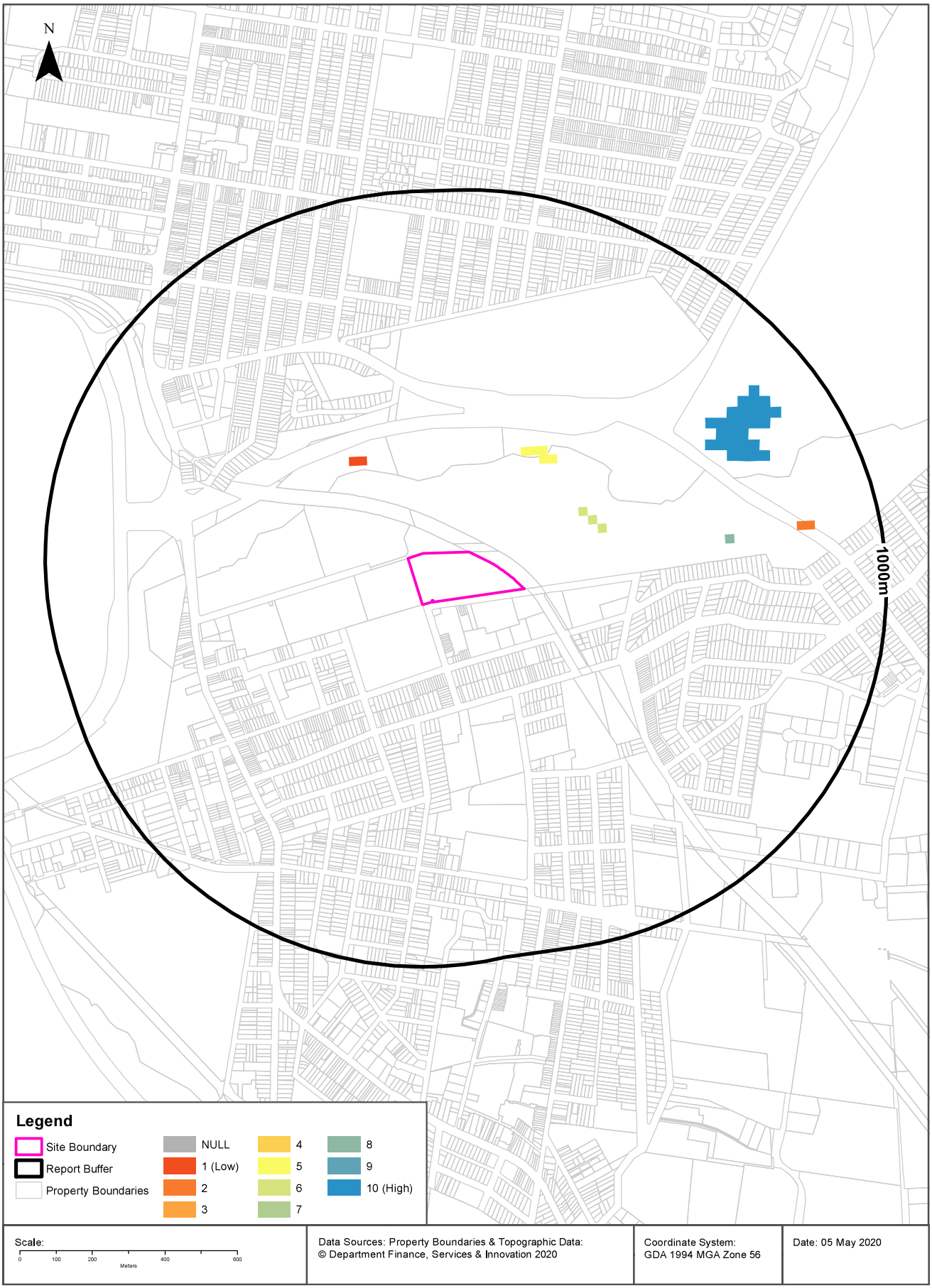
Ecological Constraints - Inflow Dependent Ecosystems Likelihood

2 Myrtle Street, Botany, NSW 2019



Ecological Constraints

2 Myrtle Street, Botany, NSW 2019

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	6	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	248m
Terrestrial	1	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	280m
Terrestrial	5	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	300m
Terrestrial	8	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	568m
Aquatic	10	Undulating to low hilly country, mainly on shale.	Wetland		628m
Terrestrial	2	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	769m

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology
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Ecological Constraints

2 Myrtle Street, Botany, NSW 2019

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Crinia tinnula	Wallum Froglet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Amaurornis moluccana	Pale-vented Bush-hen	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Ardea ibis	Cattle Egret	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Ardenna carneipes	Flesh-footed Shearwater	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Ardenna grisea	Sooty Shearwater	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Ardenna pacificus	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calamanthus fuliginosus	Striated Fieldwren	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Calidris alba	Sanderling	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Calidris bairdii	Baird's Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Calidris canutus	Red Knot	Not Listed	Not Sensitive	Endangered	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Calidris melanotos	Pectoral Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Calidris tenuirostris	Great Knot	Vulnerable	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Calyptorhynchus banksii banksii	Red-tailed Black-Cockatoo (coastal subspecies)	Critically Endangered	Category 2	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Calyptorhynchus banksii samueli	Red-tailed Black-Cockatoo (inland subspecies)	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Certhionyx variegatus	Pied Honeyeater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Charadrius leschenaultii	Greater Sand-plover	Vulnerable	Not Sensitive	Vulnerable	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Charadrius mongolus	Lesser Sand-plover	Vulnerable	Not Sensitive	Endangered	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Charadrius veredus	Oriental Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Chlidonias leucopterus	White-winged Black Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Dasyornis brachypterus	Eastern Bristlebird	Endangered	Category 2	Endangered	
Animalia	Aves	Diomedea exulans	Wandering Albatross	Endangered	Not Sensitive	Endangered	JAMBA
Animalia	Aves	Diomedea gibsoni	Gibson's Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Egretta sacra	Eastern Reef Egret	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Endangered Population, Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Erythrotriorchis radiatus	Red Goshawk	Critically Endangered	Category 2	Vulnerable	
Animalia	Aves	Esacus magnirostris	Beach Stone-curlew	Critically Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Fregata ariel	Lesser Frigatebird	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Gelochelidon nilotica	Gull-billed Tern	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gygis alba	White Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus fuliginosus	Sooty Oystercatcher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus longirostris	Pied Oystercatcher	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Limicola falcinellus	Broad-billed Sandpiper	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Limosa limosa	Black-tailed Godwit	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Macronectes giganteus	Southern Giant Petrel	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Macronectes halli	Northern Giant-Petrel	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Manorina melanotis	Black-eared Miner	Critically Endangered	Not Sensitive	Endangered	
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Merops ornatus	Rainbow Bee-eater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Neochmia ruficauda	Star Finch	Presumed Extinct	Not Sensitive	Endangered	
Animalia	Aves	Neophema chrysogaster	Orange-bellied Parrot	Critically Endangered	Category 3	Critically Endangered	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Neophema splendida	Scarlet-chested Parrot	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius minutus	Little Curlew	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Onychoprion fuscata	Sooty Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pezoporus wallicus wallicus	Eastern Ground Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Phaethon lepturus	White-tailed Tropicbird	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Phaethon rubricauda	Red-tailed Tropicbird	Vulnerable	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Philomachus pugnax	Ruff	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Plegadis falcinellus	Glossy Ibis	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Pluvialis fulva	Pacific Golden Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
Animalia	Aves	Procelsterna cerulea	Grey Ternlet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pterodroma leucoptera leucoptera	Gould's Petrel	Vulnerable	Not Sensitive	Endangered	
Animalia	Aves	Pterodroma neglecta neglecta	Kermadec Petrel (west Pacific subspecies)	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Pterodroma solandri	Providence Petrel	Vulnerable	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ptilinopus regina	Rose-crowned Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Puffinus assimilis	Little Shearwater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stercorarius parasiticus	Arctic Jaeger	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Stercorarius pomarinus	Pomarine Jaeger	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Sula leucogaster	Brown Booby	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Thalassarche cauta	Shy Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Thalassarche chrysostoma	Grey-headed Albatross	Not Listed	Not Sensitive	Endangered	
Animalia	Aves	Thalassarche melanophris	Black-browed Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Thinornis rubricollis	Hooded Plover	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Tringa brevipes	Grey-tailed Tattler	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa glareola	Wood Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa incana	Wandering Tattler	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tryngites subruficollis	Buff-breasted Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Xenus cinereus	Terek Sandpiper	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Insecta	Petalura gigantea	Giant Dragonfly	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Aepyprymnus rufescens	Rufous Bettong	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus forsteri	New Zealand Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus pusillus doriferus	Australian Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Cercartetus nanus	Eastern Pygmy-possum	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Dasyurus viverrinus	Eastern Quoll	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Dugong dugon	Dugong	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Eubalaena australis	Southern Right Whale	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Macrotis lagotis	Bilby	Presumed Extinct	Not Sensitive	Vulnerable	
Animalia	Mammalia	Megaptera novaeangliae	Humpback Whale	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Perameles nasuta	Long-nosed Bandicoot	Endangered Population	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Antaresia stimsoni	Stimson's Python	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Aspidites ramsayi	Woma	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Dermochelys coriacea	Leatherback Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Hoplocephalus stephensii	Stephens' Banded Snake	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Tiliqua occipitalis	Western Blue-tongued Lizard	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Varanus rosenbergi	Rosenberg's Goanna	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia bynoeana	Bynoe's Wattle	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia gordonii		Endangered	Not Sensitive	Endangered	
Plantae	Flora	Acacia prominens	Gosford Wattle	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Acacia pubescens	Downy Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia terminalis subsp. terminalis	Sunshine Wattle	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Amperea xiphoclada var. pedicellata		Presumed Extinct	Not Sensitive	Extinct	
Plantae	Flora	Caladenia tessellata	Thick Lip Spider Orchid	Endangered	Category 2	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Dichanthium setosum	Bluegrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Diuris arenaria	Sand Doubletail	Endangered	Category 2	Not Listed	
Plantae	Flora	Doryanthes palmeri	Giant Spear Lily	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus fracta	Broken Back Ironbark	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus pulverulenta	Silver-leafed Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Genoplesium baueri	Bauer's Midge Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Hibbertia puberula		Endangered	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Macadamia integrifolia	Macadamia Nut	Not Listed	Not Sensitive	Vulnerable	
Plantae	Flora	Maundia triglochinoides		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Melaleuca deanei	Deane's Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Persoonia hirsuta	Hairy Geebung	Endangered	Category 3	Endangered	
Plantae	Flora	Prostanthera marifolia	Seaforth Mintbush	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Pterostylis sp. Botany Bay	Botany Bay Bearded Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Senecio spathulatus	Coast Groundsel	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Senna acclinis	Rainforest Cassia	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Tetratheca juncea	Black-eyed Susan	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Thelymitra atronitida	Black-hooded Sun Orchid	Critically Endangered	Category 2	Not Listed	
Plantae	Flora	Tinospora tinosporoides	Arrow-head Vine	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Wilsonia backhousei	Narrow-leafed Wilsonia	Vulnerable	Not Sensitive	Not Listed	

Data does not include NSW category 1 sensitive species.
NSW BioNet: © State of NSW and Office of Environment and Heritage

Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise match	Georeferenced to the site location / premise or part of site
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

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Bayside Council
Serving Our Community

1 May 2020

Our Ref: Certificate No. 56807
Contact: Customer Service 1300 581 299

Ayla Sorensen
C/- Douglas Partners
96 Hermitage Rd
WEST RYDE NSW 2114

Dear Sir/Madam

Following is your planning certificate issued under section 10.7 (2) and (5) of the Environmental Planning and Assessment Act 1979.

This Section 10.7 Certificate has been issued by Bayside Council. Information contained within this Certificate is based on data from Council's records as they existed at the date of this Certificate.

Should you have any enquiries, please contact the Council's Customer Service Centre on 1300 581 299.

SECTION 10.7 PLANNING CERTIFICATE

(under section 10.7 of the Environmental Planning and Assessment Act 1979)

ISSUED TO:

Ayla Sorensen
C/- Douglas Partners
96 Hermitage Rd
WEST RYDE NSW 2114

		Fee:	133.00
Council:	Bayside	Receipt No:	4455165
County:	Cumberland	Receipt Date:	1 May 2020
Parish:	St George	Your Ref:	99679.01:36263

PROPERTY: 2 MYRTLE STREET, BOTANY NSW 2019

Lot 1 DP 1148910

FI Assessment No: 67680

Date: 1 May 2020

For
Meredith Wallace
General Manager

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Notes: (1) Where this certificate refers to a specific allotment (or allotments) within a strata plan the certificate is issued for the whole of the land within the strata plan, not just the specific allotment or allotments referred to, and any information contained in the certificate may relate to the whole or any part of the strata plan.

1 Names of relevant planning instruments and DCPs

(1) The name of each environmental planning instrument that applies to the carrying out of development on the land.

Botany Bay Local Environmental Plan 2013

State Environmental Planning Policy No 19	Bushland in Urban Areas
State Environmental Planning Policy No 21	Caravan Parks
State Environmental Planning Policy No 33	Hazardous and Offensive Development
State Environmental Planning Policy No 50	Canal Estates Development
State Environmental Planning Policy No 55	Remediation of Land
State Environmental Planning Policy No 64	Advertising and Signage
State Environmental Planning Policy No 65	Design Quality of Residential Apartment Development
State Environmental Planning Policy No 70	Affordable Housing (Revised Schemes)
State Environmental Planning Policy	(Affordable Rental Housing) 2009
State Environmental Planning Policy	(Building Sustainability Index: BASIX) 2004
State Environmental Planning Policy	(Educational Establishments and Child Care Facilities) 2017
State Environmental Planning Policy	(Exempt and Complying Development Codes) 2008
State Environmental Planning Policy	(Housing for Seniors and People with a Disability) 2004 (Only applies to land referred to in clause 4 (1) of the Policy and does not apply to land referred to in clause 4 (2) of the Policy)
State Environmental Planning Policy	(Infrastructure) 2007
State Environmental Planning Policy	(Mining, Petroleum Production and Extractive Industries) 2007
State Environmental Planning Policy	(Miscellaneous Consent Provisions) 2007
State Environmental Planning Policy	(State and Regional Development) 2011
State Environmental Planning Policy	(Vegetation in Non-Rural Areas) 2017
State Environmental Planning Policy	(Coastal Management) 2018
State Environmental Planning Policy	(Arncliffe and Banksia Precincts) 2018
State Environmental Planning Policy	(Primary Production and Rural Development) 2019

Greater Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment (only applies to land within the Georges River Catchment, referred to in Clause 2 of the Plan, being, in the Bayside Council area, certain land within the suburbs of Dolls Point, Ramsgate, Sandringham and Sans Souci).

(2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed

instrument has been deferred indefinitely or has not been approved).

No Planning Proposal applies to the land.

- Draft State Environmental Planning Policy – Remediation of Land
- Draft Amendments to State Environmental Planning Policy (Three Ports) 2013

For more information or to determine whether these policies apply to your property, visit the Department of Planning and Environment website at www.planning.nsw.gov.au.

(3) The name of each development control plan that applies to the carrying out of development on the land.

Botany Bay Development Control Plan 2013

(4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

2 Zoning and land use under relevant local environmental plans

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

2(a) the identity of the zone, whether by reference to a name or by reference to a number;
2(b) the purposes for which the instrument provides that development may be carried out within the zone without the need for development consent;
2(c) the purposes for which the instrument provides that development may not be carried out within the zone except with development consent;
2(d) the purposes for which the instrument provides that development is prohibited within the zone;

The following zone or zones apply under the local environmental plan or deemed environmental planning instrument referred to in question 1 (1):

Zone RE1 Public Recreation

1 Objectives of zone
• To enable land to be used for public open space or recreational purposes.
• To provide a range of recreational settings and activities and compatible land uses.
• To protect and enhance the natural environment for recreational purposes.
2 Permitted without consent
Environmental protection works
3 Permitted with consent
Centre-based child care facilities; Community facilities; Emergency services facilities; Environmental facilities; Flood mitigation works; Information and education facilities; Jetties; Kiosks; Markets; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Respite day care centres; Roads; Signage; Water storage facilities
4 Prohibited
Any development not specified in item 2 or 3

2(e) whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed;

No development standards applies to the land that fixes minimum land dimensions for the erection of a dwelling house.

Note: The above information does not imply that the erection of a dwelling-house is necessarily permissible on the land to which this certificate applies. Refer to the relevant local environmental plan, deemed environmental planning instrument or draft local environmental plan applying to the land to confirm this.

2(f) whether the land includes or comprises critical habitat;

The land does not include or comprise critical habitat.

2(g) whether the land is in a conservation area (however described);

The land is not in a conservation area.

2(h) whether an item of environmental heritage (however described) is situated on the land.

There is no such item situated on the land.

2A Zoning and land use under State Environmental Planning Policy (Sydney Region Growth Centres) 2006

To the extent that the land is within any zone (however described) under:

(a) Part 3 of the State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (the 2006 SEPP); or
(b) a Precinct Plan (within the meaning of the 2006 SEPP); or
(c) a proposed Precinct Plan that is or has been the subject of community consultation or on public exhibition under the Act;

the particulars referred to in clause 2 (a)–(h) in relation to that land (with a reference to "the instrument" in any of those paragraphs being read as a reference to Part 3 of the 2006 SEPP, or the Precinct Plan or proposed Precinct Plan, as the case requires).

Not applicable.

3 Complying development

1 The extent to which the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18(1)(c3) and 1.19 of *State Environmental Planning Policy (Exempt and Complying Development*

***Codes) 2008*;**

2 The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18(1)(c3) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses; and

3 If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Housing Code
Complying development **may** be carried out on the land under the above code.

Inland Code
Complying development **may** be carried out on the land under the above code.

Low Rise Medium Density Code
Complying development **may** be carried out on the land under the above code.

Rural Housing Code
Complying development **may** be carried out on the land under the above code.

Greenfield Housing Code
Complying development **may** be carried out on the land under the above code.

Commercial and Industrial (New Buildings and Additions) Code
Complying development **may** be carried out on the land under the above code.

Housing Alterations Code
Complying development **may** be carried out on the land under the above code.

General Development Code
Complying development **may** be carried out on the land under the above code.

Commercial and Industrial Alterations Code
Complying development **may** be carried out on the land under the above code.

Container Recycling Facilities Code
Complying development **may** be carried out on the land under the above code.

Subdivisions Code
Complying development **may** be carried out on the land under the above code.

Demolition Code
Complying development **may** be carried out on the land under the above code.

Fire Safety Code
Complying development **may** be carried out on the land under the above code.

Notes:
(1) If a reference is made to "part of the land", Complying Development **may** be carried out on the portion of the land not subject to such a restriction.
(2) This certificate only addresses matters raised in Clause 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1)(c3) and 1.19 of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*. It is your responsibility to ensure that you comply with any other general requirements of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.

4B Annual charges under *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works

In relation to a coastal council - whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 496B of the *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

The land is not subject to annual charges.

5 Mine subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act 1961*

The land is not so proclaimed.

6 Road widening and road realignment

Whether or not the land is affected by any road widening or road realignment under:

(a) Division 2 of Part 3 of the *Roads Act 1993*, or
The land **is not** affected by any road widening or road realignment under Division 2 of Part 3 of the *Roads Act 1993.*

(b) Any environmental planning instrument, or
The land **is not** affected by any road widening or road realignment under any environmental planning instrument.

(c) Any resolution of the council
The land **is not** affected by any road widening or road realignment under any resolution of the Council.

7 Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:

(a) adopted by the council; or
(b) adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council;

that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding)

Clause 6.1 of the Botany Bay Local Environmental Plan 2013 - Acid Sulfate Soils.
Botany Bay Development Control Plan 2013 - provisions of Part 3K - Contamination

7A Flood related development control information

(1) Whether or not development on that land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.

Yes – Botany Bay Development Control Plan 2013 applies

(2) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls.

Yes – Botany Bay Development Control Plan 2013 applies

Note:
(1) The answers above do not imply that the development referred to is necessarily permissible on the land to which this certificate applies. Refer to the relevant local environmental plan, deemed environmental planning instrument or draft local environmental plan applying to the land to confirm this.
(2) Council is not in a position to identify whether the information provided under Clause 7A relates to a current or future hazard as defined in Planning Circular PS 14-003.

Note: (1) Further information relating to flooding is provided in the "Advice under Section 10.7 (5)" attached.

(3) Words and expressions in this clause have the same meanings as in the instrument set out in the Schedule to the *Standard Instrument (Local Environmental Plans) Order 2006*.

8 Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 3.15 of the Act.

The land is not affected by any provision in an environmental planning instrument, deemed environmental planning instrument or draft environmental planning instrument that provides for the acquisition of the land by a public authority, as referred to in section 3.15 of the Act.

9 Contributions plans

The name of each contributions plan applying to the land

City of Botany Bay Section 94 Development Contributions Plan 2016.
City of Botany Bay Section 94A Development Contributions Plan 2016.
Note: For a copy of the plans please access Bayside Council's website at www.bayside.nsw.gov.au

Note: If land is within the former Rockdale City local government area, the *Rockdale Section 94*

Contributions Plan (Amendment No 4) and *Rockdale Section 94 Contributions Plan 1998* will continue to apply to all development applications and applications for complying development certificates made prior to 1 June 2004.

9A Biodiversity certified land

If the land is biodiversity certified land (within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*), a statement to that effect.

The land is not biodiversity certified land.

10 Biobanking agreements

If the land is land to which a biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995* relates, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Director-General of the Department of Environment, Climate Change and Water).

The land is not subject to any such agreement.

10A Native vegetation clearing set asides

If the land contains a set aside area under section 60ZC of *the Local Land Services Act 2013*, a statement to that effect (but only if the council has been notified of the existence of the set aside area by Local Land Services or it is registered in the public register under that section).

The land does not contain a set aside area.

11 Bush fire prone land

If any of the land is bush fire prone land (as defined in the Act), a statement that all or, as the case may be, some of the land is bush fire prone land.

If none of the land is bush fire prone land, a statement to that effect.

The land is not bush fire prone land.

12 Property vegetation plans

If the land is land to which a property vegetation plan under the *Native Vegetation Act 2003* applies, a statement to that effect (but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

The land is not land to which a property vegetation plan applies.

13 Orders under *Trees (Disputes Between Neighbours) Act 2006*

Whether an order has been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land (but only if the council has been notified of the order).

The land is not subject to such an order.

14 Directions under Part 3A

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

The land is not subject to any such directions.

15 Site compatibility certificates and conditions for seniors housing

If the land is land to which *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* applies:

(a) a statement of whether there is a current site compatibility certificate (seniors housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(i) the period for which the certificate is current; and
(ii) that a copy may be obtained from the head office of the Department of Planning; and

The land is not subject to any such certificate.

(b) a statement setting out any terms of a kind referred to in clause 18 (2) of that Policy that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.

The land is not subject to any such statement.

16 Site compatibility certificates for infrastructure, schools or TAFE establishments

A statement of whether there is a valid site compatibility certificate (infrastructure), or site compatibility certificate(schools or TAFE establishments) of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(a) the period for which the certificate is valid; and
(b) that a copy may be obtained from the head office of the Department of Planning.

The land is not subject to any such certificate.

17 Site compatibility certificates and conditions for affordable rental housing

(1) A statement of whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(a) the period for which the certificate is current; and
(b) that a copy may be obtained from the head office of the Department of Planning.

The land is not subject to any such certificate.

(2) A statement setting out any terms of a kind referred to in clause 17 (1) or 37 (1)

of *State Environmental Planning Policy (Affordable Rental Housing) 2009* that have been imposed as a condition of consent to a development application in respect of the land.

The land is not subject to any such statement.

18 Paper subdivision information

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot;
(2) The date of any subdivision order that applies to the land; and
(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

The land is not so affected.

19 Site verification certificates

A statement of whether there is a current site verification certificate, of which the council is aware, in respect of the land and, if there is a certificate, the statement is to include:

(a) the matter certified by the certificate; and
(Note. A site verification certificate sets out the Director-General's opinion as to whether the land concerned is or is not biophysical strategic agricultural land or critical industry cluster land—see Division 3 of Part 4AA of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007)
(b) the date on which the certificate ceases to be current (if any); and
(c) that a copy may be obtained from the head office of the Department of Planning and Infrastructure.

The land is not subject to any such certificate.

20 Loose-fill asbestos insulation

If the land includes any residential premises (within the meaning of Division 1A of Part 8 of the Home Building Act 1989) that are listed on the register that is required to be maintained under that Division, a statement to that effect.

The land is not so listed.

21 Affected building notices and building product rectification orders

(1) A statement of whether there is any affected building notice of which the council is aware that is in force in respect of the land.

(2) A statement of:

(a) whether there is any building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with; and
(b) whether any notice of intention to make a building product rectification order of which the council is aware has been given in respect of the land and is outstanding.

(3) In this clause:

affected building notice **has the same meaning as in Part 4 of the *Building Products (Safety) Act 2017*.**
building product rectification order **has the same meaning as in the *Building Products (Safety) Act 2017*.**

Council is not aware of an issue of a notice of intention or order pertaining to building product rectification works (Building Products Safety Act 2017).

Section 59(2) Contaminated Land Management Act 1997

Note: The following matters are prescribed by section 59 (2) of *the Contaminated Land Management Act 1997* as additional matters to be specified in a planning certificate:

(a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act—if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued;

Not applicable.

(b) that the land to which the certificate relates is subject to a management order within the meaning of that Act—if it is subject to such an order at the date when the certificate is issued;

Not applicable.

(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act—if it is the subject of such an approved proposal at the date when the certificate is issued;

Not applicable.

(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act—if it is subject to such an order at the date when the certificate is issued; and

Not applicable.

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act—if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

Not applicable.

[End of information under section 10.7 (2)]

ADVICE UNDER SECTION 10.7 (5)

Note: The Council is under no obligation to furnish any of the information supplied below. Equally, it may be that not every relevant matter relating to the land is provided below. The Council draws your attention to section 10.7 (6) which states that a council shall not incur any liability in respect of any advice provided in good faith under section 10.7 (5).

Further to your application for information under section 10.7 (5), the Council has resolved to supply answers to the following questions:

A Whether or not the Council has information that would indicate that the land is subject to the risk of flooding or tidal inundation for a 1% annual exceedance probability (AEP) (1 in 100 Year) event

The Council is aware of various information that suggests the land may be affected by the 1% AEP flood. The Council is unaware of the accuracy of this information, although further enquiries may be made with the Council's City Services Department in relation to this.

Note: Refer to Question 7A of the preceding certificate under section 10.7 (2) to ascertain whether or not development on the land may be subject to flood related development controls.

B Whether or not the Council has information that would indicate that the land is subject to slip or subsidence

The Council is not aware of any investigations that have been carried out.

C Whether or not the land is in the vicinity of a heritage item or heritage conservation area identified in an environmental planning instrument or a proposed heritage item or proposed heritage conservation area identified in a draft local environmental plan

A building, work, relic, tree or place located on land in the vicinity of this land is identified as a heritage item in schedule 5 to *Botany Bay Local Environmental Plan 2013.* The special provisions of clause 5.10(5) of this plan apply to development on land in the vicinity of heritage items.

D Whether or not a planning agreement entered into under Subdivision 2 of Division 7.1 of Part 7 of the Environmental Planning and Assessment Act 1979 currently applies to the land (but only if, where the Council is not a party to the agreement, information about the agreement has been provided to the Council)

No planning agreement currently applies to the land.

E Details of the Annual Noise Exposure Forecast (ANEF) applying to the land

The property is between the 20 and 25 ANEF (2039) contours.

Note: The ANEF level may restrict the development of the land due to the risk of exposure to aircraft noise.

F Information that indicates whether or not any additional hazards exist for which no policy of council exists to restrict development

Not applicable.

G Restrictions of the use of groundwater contained within the Botany Sands Aquifer

The NSW Department of Industry has published a map showing areas where the use of groundwater is restricted to various degrees including total prohibition of us in certain areas. For further information, please visit www.water.nsw.gov.au/botany-sands-groundwater

H The following policies may be applicable to the land:

Clause 6.8 of the Botany Bay Local Environmental Plan 2013 - Airspace operations

Clause 6.9 of the Botany Bay Local Environmental Plan 2013 - Development in areas subject to aircraft noise

Part 2 of Botany Bay Development Control Plan 2013 - any development application proposing a new structure within 10 metres either side (horizontally or vertically) of the "line of sight" (as detailed in Figures 2 & 3 of Part 2 of the DCP) requires referral to Sydney Ports Corporation for review and comment, to ensure that the proposed development does not impact on the Vessel Traffic Service system. Refer to Part 2 of the DCP for more information.

Part 3M of the Botany Bay Development Control Plan 2013 applies to land that drains into the Botany wetlands or has the potential to adversely affect the wetlands. Refer to Part 3M of the DCP for more information.

Part 3J of the Botany Bay Development Control Plan 2013 applies to the land. This Part provides a means of assessing the effect of aircraft noise on development proposals by utilising an appropriately endorsed Australian Noise Exposure Forecast (ANEF) chart that takes into account long-term operating procedures and air traffic forecasts at Sydney (Kingsford-Smith) Airport. This Part also provides potential applicants with an understanding of the predicted level of the potential height limits due to prescribed airspace on proposed development sites and the potential for proposed developments to cause mechanical windshear.

The property is within the zone of influence of the High Pressure Gas Pipeline that follows the ARTC Rail Corridor to the Qenos Site at the Botany Industrial Park, Denison Street, Banksmeadow. Development Applications, planning proposals and rezoning of land received by Council for land within the Zone of Influence will be referred to the APA Group for consideration and comment. For more information please contact the APA Group on their freecall number 1800 103 452 or alternatively, by email to helm@apa.com.au.

[End of advice under Section 10.7 (5)]

ALTERATIONS AND ADDITIONS TO BUILDINGS

Purchasers are reminded that it is necessary to obtain development consent from the Council prior to carrying out any building alterations or additions, including brick reskinning, replacing windows or internal alterations, or for the demolition of any building, unless the proposed work is specifically exempted by *Rockdale Local Environmental Plan 2011* or *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*. All other building work does require the Council's approval.

Should you require any information or advice for any building work that you propose to undertake please contact the Council's Customer Service Centre on 1300 581 299.

Dangerous Goods Site Detail Report (Summary)

10/11/2006

WorkCover NEW SOUTH WALES

Licencee Details

Application No	62522	Licence No 35/	036892	Received Date	01/10/2004
Applicant Name	BOTANY BAY CITY COUNCIL			ACN	
Address Line 1	LOT 1 DP 622398 MYRTLE ST			Status	CLEARED
Address Line 2				BLAS No	
Address Line 3				Expiry Date	30/12/2005
Locality	BOTANY	State	NSW	Postcode	2019

Application No	62522	Licence No 35/	036892	Received Date	01/10/2004
Applicant Name	BOTANY BAY CITY COUNCIL			ACN	
Address Line 1	141 COWARD ST			Status	CLEARED
Address Line 2				BLAS No	
Address Line 3				Expiry Date	30/12/2005
Locality	MASCOT	State	NSW	Postcode	2020

Licence Contact	Comm. Type	Number	Description
MARTYN PERRY	FAX	02 9366 3777	
MARTYN PERRY	VOICE	02 9366 3501	

Site Details

Trading Name	BOTANY OLYMPIC POOL	Hazard Rating	CATEGORY 4
Address Line 1	LOT 1 DP 622398 MYRTLE ST	Licence Expiry Date	30/12/2005
Address Line 2		Site Name	
Address Line 3		Nature of Site	SPORT AND RECREATION
Suburb	BOTANY	Site Staffing	12 HRS 7 DAYS
Postcode	2019 State NSW		

Supplier Name
TE CHEMICALS

Depot Details

Depot Number	*Depot Type*	*Depot Class*	*Max Qty*	*Used Until*
1A	ABOVE-GROUND TANK	8	2000	Current

UN No	Proper Shipping Name	Common Name	DG Class	Pck Grp	Capacity	UOM
1791	HYPOCHLORITE SOLUTION		8	PGM2	2000	L

Depot Number	*Depot Type*	*Depot Class*	*Max Qty*	*Used Until*
1B	ABOVE-GROUND TANK	8	2000	Current

UN No	Proper Shipping Name	Common Name	DG Class	Pck Grp	Capacity	UOM
1791	HYPOCHLORITE SOLUTION		8	PGM2	2000	L

RECEIVED
SERVICE CENTRE
- 8 MAY 2006
WORKCOVER
NEW SOUTH WALES

DECLARATION

To be completed where notifiable amounts of Dangerous Goods are not stored.

BOTANY AQUATIC CENTRE
PREMISES: LOT 1 DP 622398

I FIONA MORRISON (name), of MYRTLE ST BOTANY (address)
declare that I do not store and handle Dangerous Goods at premises 35/036892,
site LOT 1 DP 622398 MYRTLE ST, BOTANY 2019
in quantities that exceed or are likely to exceed the manifest quantity in the Table to Schedule 5 of the Occupational Health and Safety Regulation 2001.

.....Signature

1 May 2006 .....Date

This declaration is to be returned with your licence to :

WorkCover New South Wales
Dangerous Goods Notification Team
LOCKED BAG 2906, LISAROW NSW 2252

Application for Licence to Keep Dangerous Goods

Application for: New Licence [X] Amendment [ ] Transfer [ ] Renewal of expired licence [ ]

PART A - *Applicant and site information*

1 Name of applicant ACN ABN

BOTANY BAY CITY COUNCIL 686 964 570 75

2 Postal Address of Applicant Suburb/Town Postcode

141 COWARD STREET MASCOT NSW 2020

3 Trading Name or Site Occupier's Name

BOTANY OLYMPIC POOL

4 Contact for Licence Inquiries

Phone Fax Name

(02) 9366 3501 (02) 9366 3777 MR MARTYN PERRY

5 Previous Licence Number (if known) 35/ NOT APPLICABLE

6 Previous Occupier (if known) NOT APPLICABLE

7 Site to be Licensed Lot 1 DP 622398 → 11/10/04

No Street

MYRTLE STREET BOTANY NSW 2019

8 Main Business of Site COUNCIL SWIMMING POOL

9 Site staffing: Hours per day 12 Days per week 7 (SUMMER)

8 5 (WINTER)

10 Site Emergency Contact

Phone Name

(02) 9366 3590 POOL SUPERVISOR

11 Major Supplier of Dangerous Goods ELITE CHEMICALS

12 If a new site or for amendments to depots

Plans Stamped by: Signature of Competent Person Printed Name Date stamped

PHILIP TURNER 24/9/2004

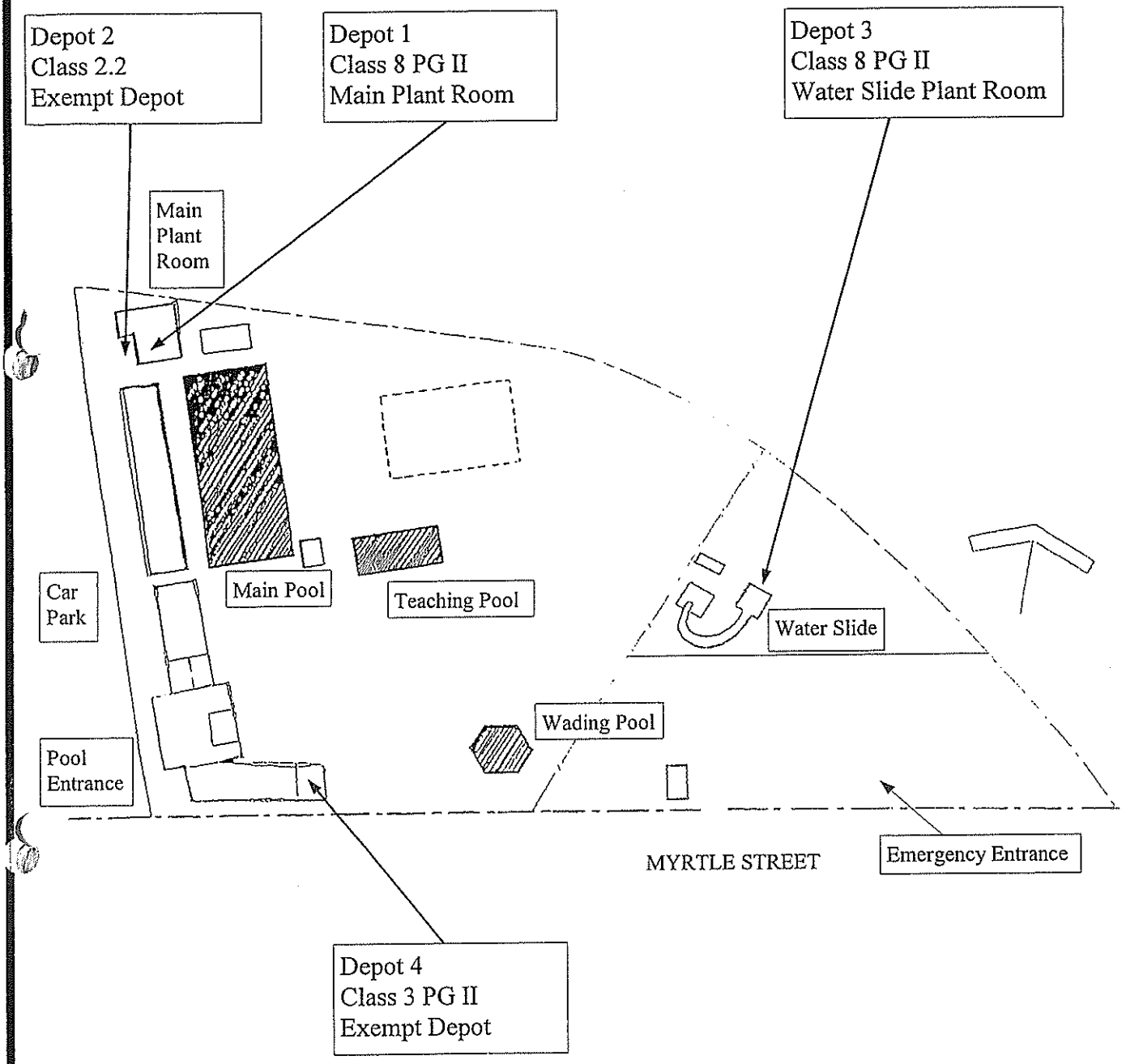
I certify that the details in this application (including any accompanying computer disk) are correct and cover all licensable quantities of dangerous goods kept on the premises.

13 Signature of Applicant Printed Name

Susan Stratton SUSAN STRATTON.

Please send your application marked Confidential, to: Dangerous Goods Licensing,
WorkCover NSW, Locked Bag 2906, LISAROW NSW 2252
Hotline: (02) 4321 5500 - Fax: (02) 9287 5500

036892



DANGEROUS GOODS **Site Sketch**	**SITE DETAILS** Botany Olympic Pool Myrtle Street BOTANY NSW 2019	**DRAWING DETAILS** Drawing 1 of 1

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

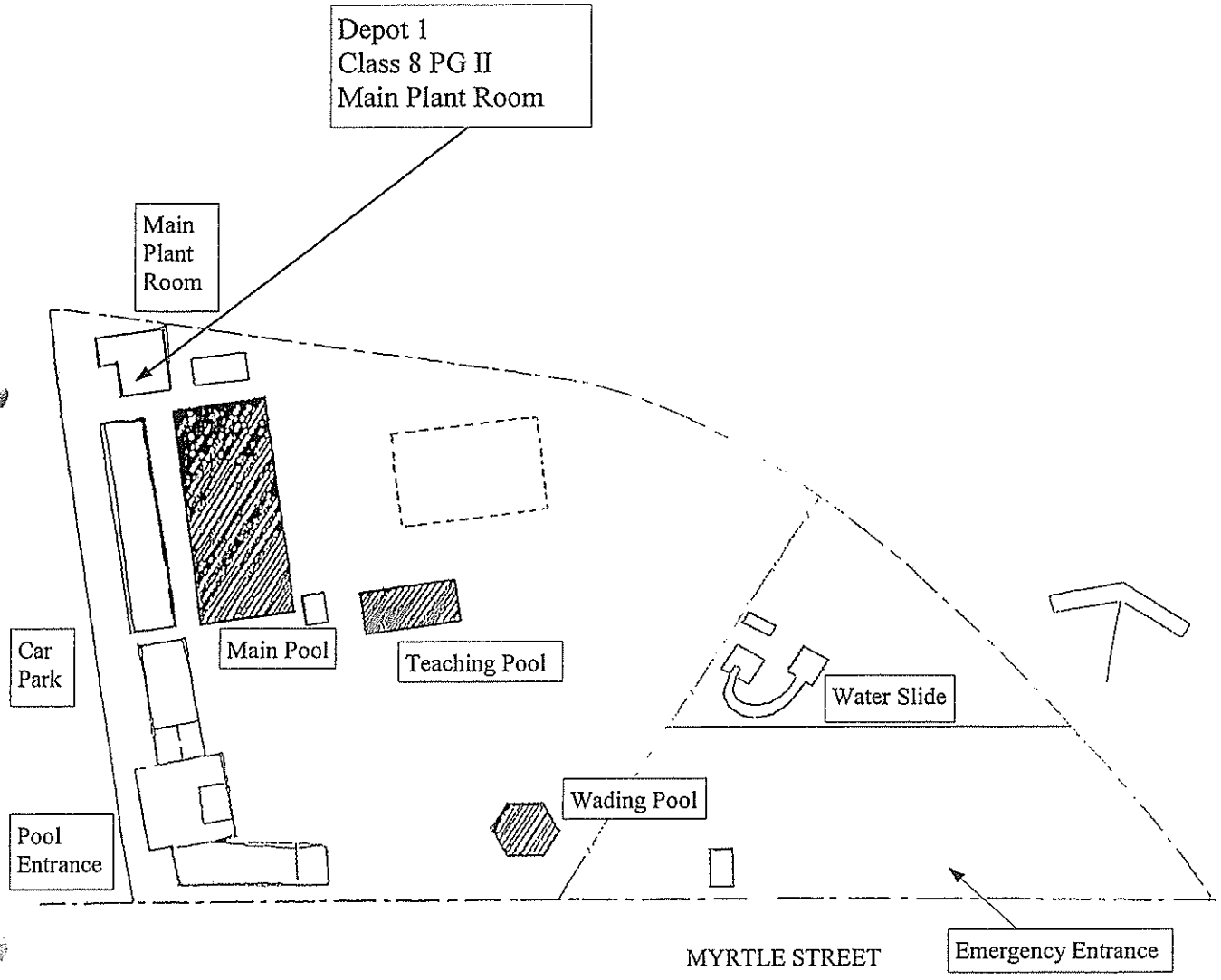
If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
1a	Above-ground Tank	8	2000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1791	HYPOCHLORITE SOLUTION	8	II	liquid pool chlorine	2000	L

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
1b	Above-ground Tank	8	2000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1791	HYPOCHLORITE SOLUTION	8	II	liquid pool chlorine	2000	L



DANGEROUS GOODS **Stamped Plant - Depot 1**	**SITE DETAILS** Botany Olympic Pool Myrtle Street BOTANY NSW 2019	**DRAWING DETAILS** Drawing 1 of 2 Depot Location

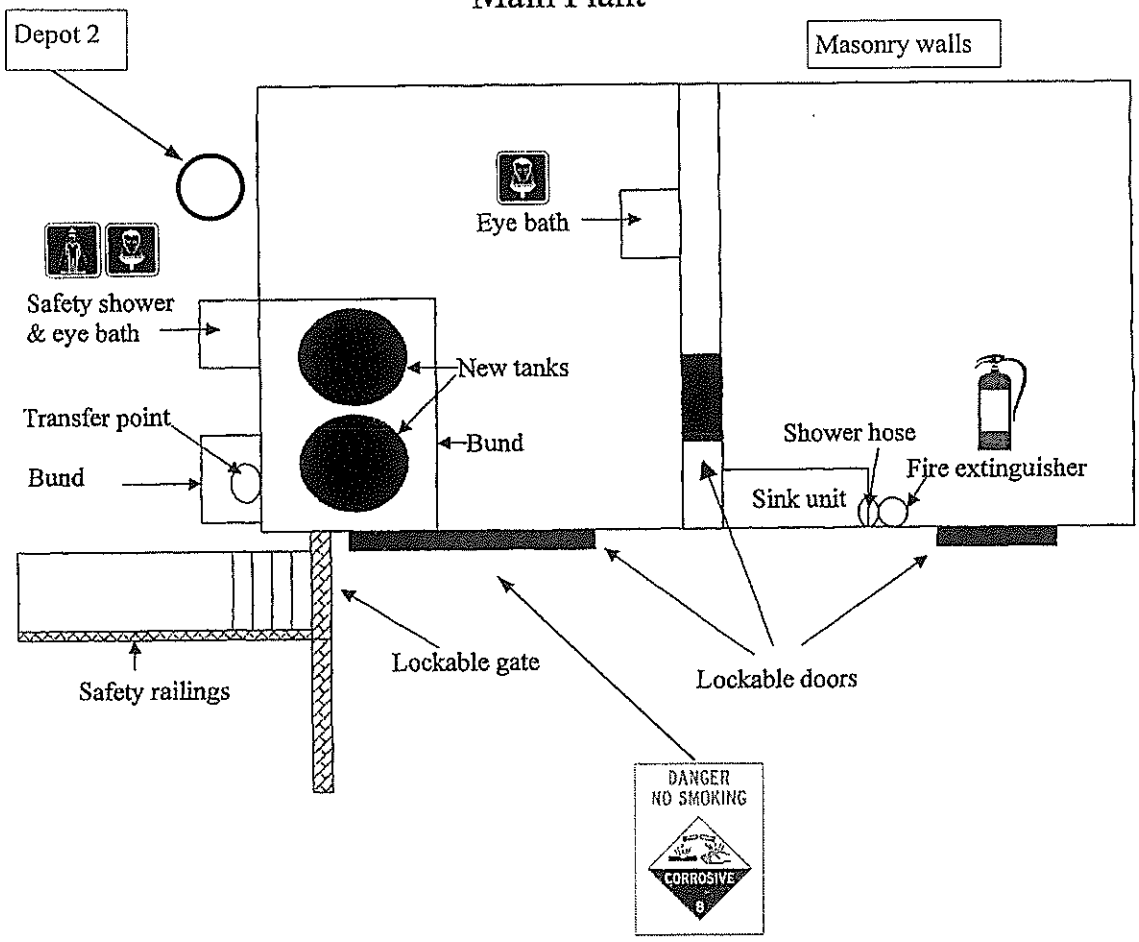
Depot 1.1 for 2000 L of DG Class 8 PG II as shown in this plan complies with the Dangerous Goods Act 1975 and AS 3780-1994.

Signature _____ Date 24/9/2004
Philip Turner, Unisearch Ltd

Depot 1.2 for 2000 L of DG Class 8 PG II as shown in this plan complies with the Dangerous Goods Act 1975 and AS 3780-1994.

Signature _____ Date 24/9/2004
Philip Turner, Unisearch Ltd

Main Plant



Depot greater than 5 m from boundary & protected works.
Depot greater than 5 m from other dangerous goods depots
Bund for 100% of contents
Tanks comply with tan θ
Transfer points within 7 metres of safety shower/eye bath
Signage visible at all approaches as shown
60B (9 kg) dry chemical fire extinguisher installed as shown

DANGEROUS GOODS **Stamped Plant - Depot 1**	**SITE DETAILS** Botany Olympic Pool Myrtle Street BOTANY NSW 2019	**DRAWING DETAILS** Drawing 2 of 2 Depot Detail Not to scale

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
2	Exempt cylinder store	2.2	18 kg

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1013	Carbon Dioxide	2.2	NA	Carbon Dioxide	18	kg

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
3	Above-Ground Tank	8	500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1791	HYPOCHLORITE SOLUTION	8	II	liquid pool chlorine	500	L

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

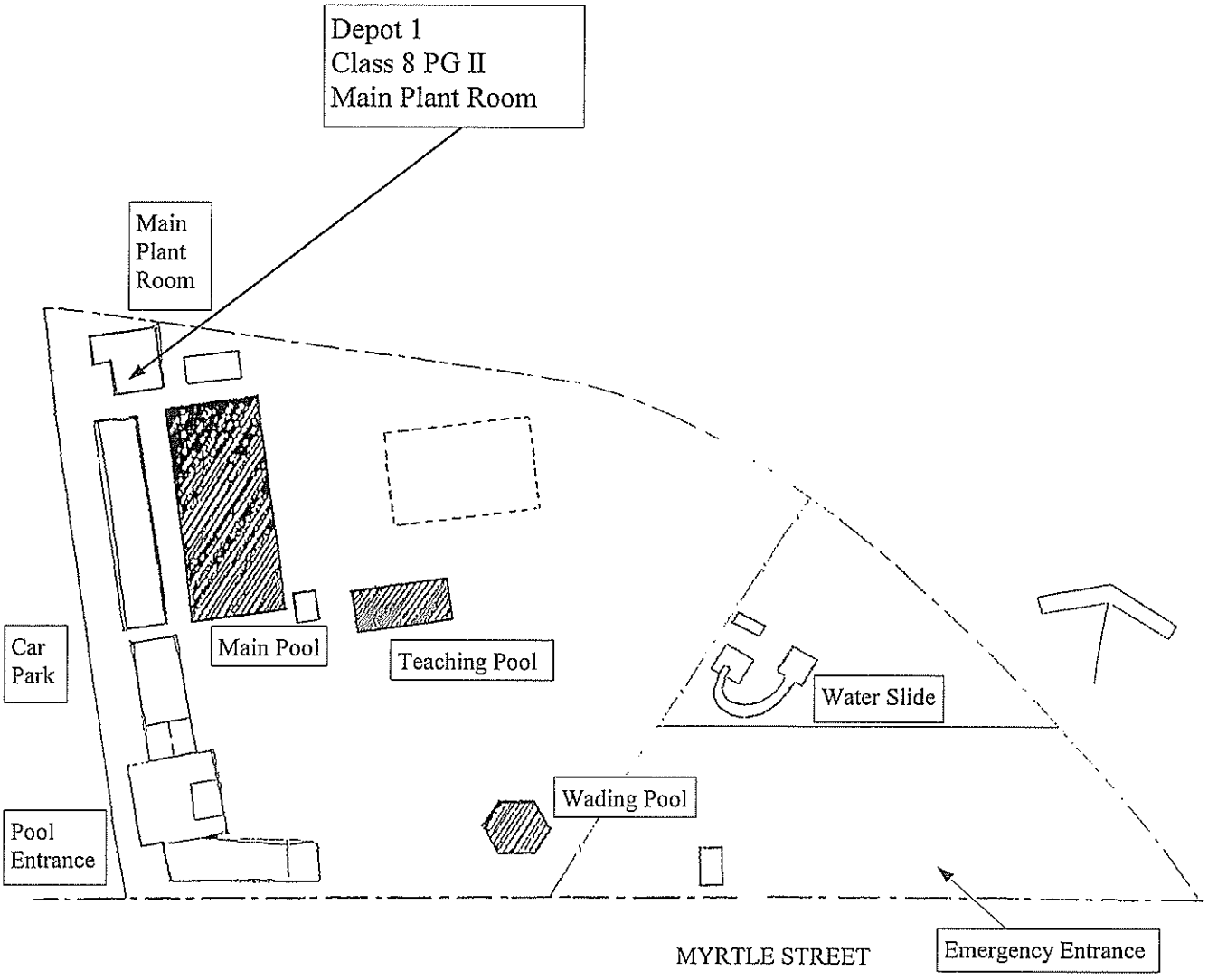
If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
1a	Above-Ground Tank	8	2000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1791	HYPOCHLORITE SOLUTION	8	II	liquid pool chlorine	2000	L

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
1b	Above-Ground Tank	8	2000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1791	HYPOCHLORITE SOLUTION	8	II	liquid pool chlorine	2000	L



DANGEROUS GOODS **Stamped Plant - Depot 1**	**SITE DETAILS** Botany Olympic Pool Myrtle Street BOTANY NSW 2019	**DRAWING DETAILS** Drawing 1 of 2 Depot Location

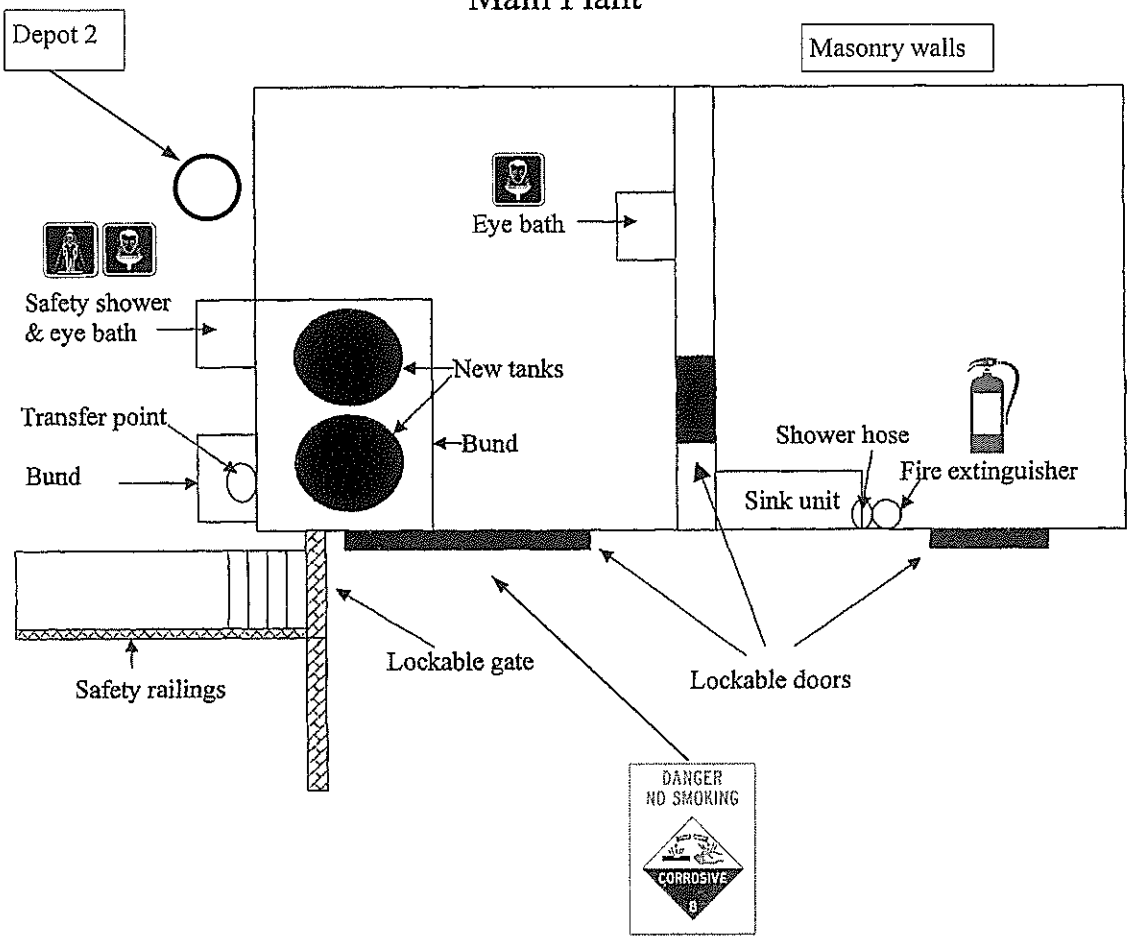
Depot 1.1 for 2000 L of DG Class 8 PG II as shown in this plan complies with the Dangerous Goods Act 1975 and AS 3780-1994.

Signature _____ Date 24/9/2004
Philip Turner, Unisearch Ltd

Depot 1.2 for 2000 L of DG Class 8 PG II as shown in this plan complies with the Dangerous Goods Act 1975 and AS 3780-1994.

Signature _____ Date 24/9/2004
Philip Turner, Unisearch Ltd

Main Plant



Depot greater than 5 m from boundary & protected works.
Depot greater than 5 m from other dangerous goods depots
Bund for 100% of contents
Tanks comply with tan θ
Transfer points within 7 metres of safety shower/eye bath
Signage visible at all approaches as shown
60B (9 kg) dry chemical fire extinguisher installed as shown

DANGEROUS GOODS **Stamped Plant - Depot 1**	**SITE DETAILS** Botany Olympic Pool Myrtle Street BOTANY NSW 2019	**DRAWING DETAILS** Drawing 2 of 2 Depot Detail Not to scale

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
3	Above-Ground Tank	8	500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1791	HYPOCHLORITE SOLUTION	8	II	liquid pool chlorine	500	L

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
2	Exempt cylinder store	2.2	18X kg

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1013	Carbon Dioxide	2.2	NA	Carbon Dioxide	18X	kg

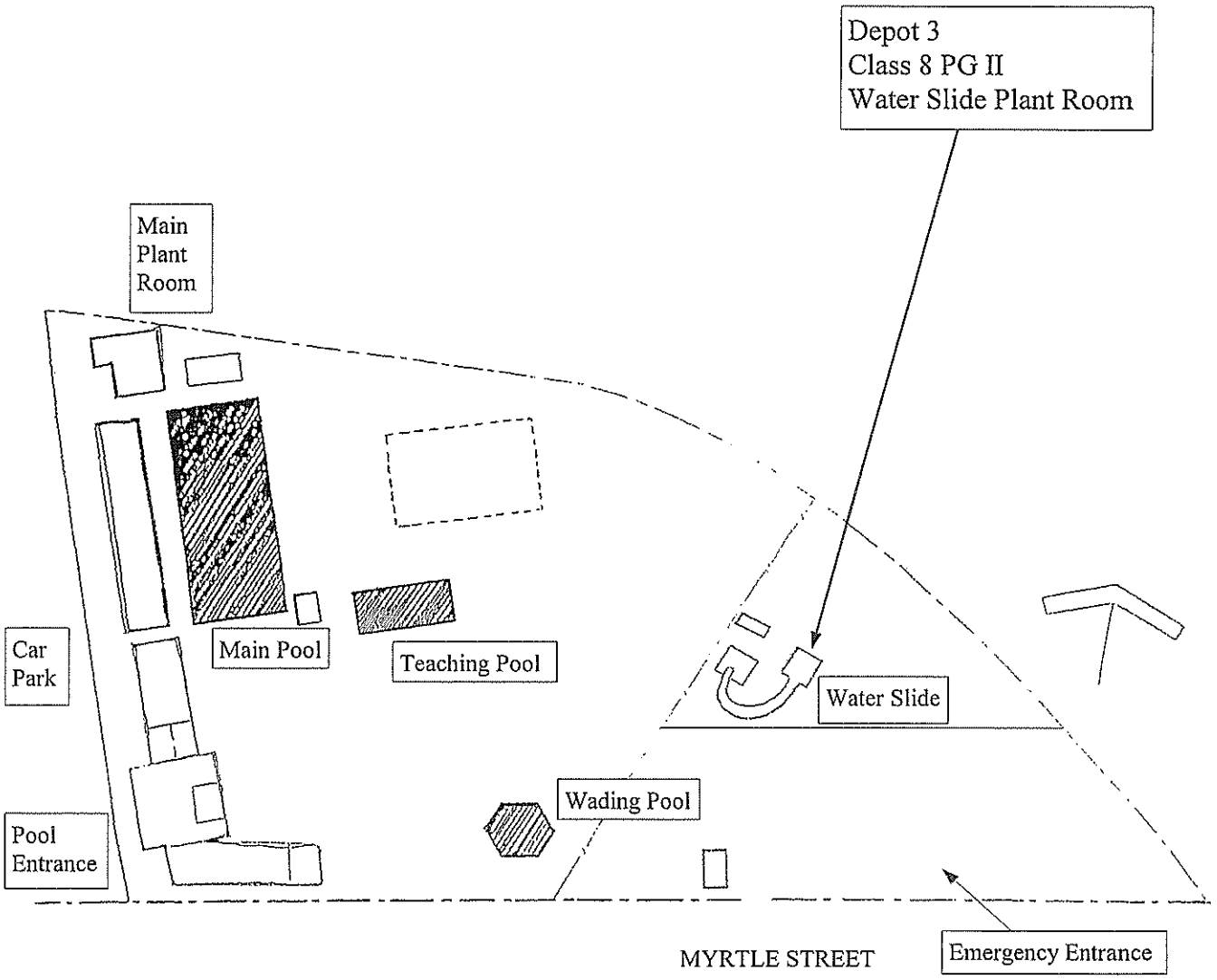
What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
3	Above-Ground Tank	8	500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1791	HYPOCHLORITE SOLUTION	8	II	liquid pool chlorine	500	L



DANGEROUS GOODS **Stamped Plant - Depot 3**	**SITE DETAILS** Botany Olympic Pool Myrtle Street BOTANY NSW 2019	**DRAWING DETAILS** Drawing 1 of 2 Depot Location

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
4	Exempt Depot	3	60 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1270	PETROLEUM & FUEL	3	II	petrol	60	L

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Summary of Owners Report

Address: - Corner Myrtle & Jasmine Streets, Botany (Booralee Park)

Description: - Lot 1 D.P. 1148910 (Excluding Lot 1 D.P. 622398)

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
15.12.1926 (1926 to 1935)	Metropolitan Water Sewerage & Drainage Board	Vol 3947 Fol 232
16.08.1935	# Minister for Public Works (Subject to the provisions of the Public Works Act of 1912) (Vested by Government Gazette 16.08.1935 Folio 3326)	Vol 3947 Fol 232
20.12.1935	Crown Reserve No. 65711 – Reserved from Sale or Lease (Government Gazette 20.12.1935 Folio 4937) Revoked Government Gazette 20.12.1935 Folio 4937	
20.12.1935	Crown Reserve No. 65712 – Reserved for Public Recreation and Resting Place Government Gazette 20.12.1935 Folio 4937 Council of the Municipality of Botany appointed Trustee by Gazette 09.04.1943 Folio 675	
09.04.1943	Council of the Municipality of Botany appointed trustee of Crown Reserve No. 65712.	
13.04.1995	Assigned the corporate name of: - Booralee Park(P.500129), R.59907 & R. 65712) Reserve Trusts by Gazette 13.04.1995 Folio 1979 (Replaces Gazette notice 10.08.1995 Folio 752)	

 # Denotes current registered proprietor

Note: - Council of the Municipality of Botany would need to lodge a Request dealing at the Office of NSW LRS to change the ownership of this land title. Copies of the associated gazettes would also need to be annexed.

Leases: -

- Various leases were found for part of the land in Volume 3947 Folio 232. This title comprises almost 400 acres. These leases have not been investigated.

Easements: -

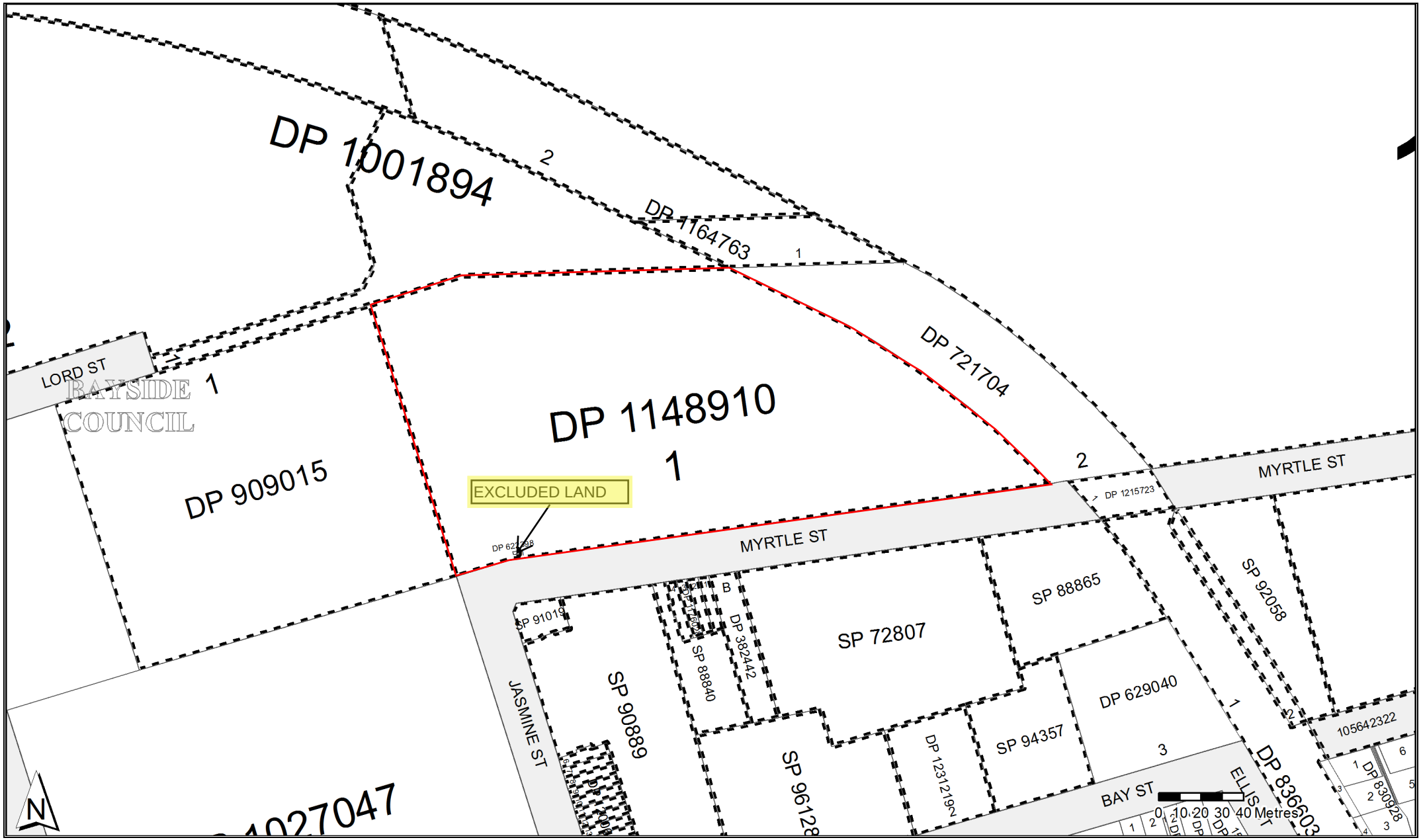
- 06.02.1970 – Easement for Electricity purposes 20.115 wide (Crown Plan 21804-3000)
- 30.04.1982 – Right of Way and Easement for Electricity purposes (D.P. 622398)

Yours Sincerely
Mark Groll
8 May 2020

Cadastral Records Enquiry Report : Lot 1 DP 1148910

Ref : Botany Myrtle St

Locality : BOTANY
Parish : BOTANY
LGA : BAYSIDE
County : CUMBERLAND



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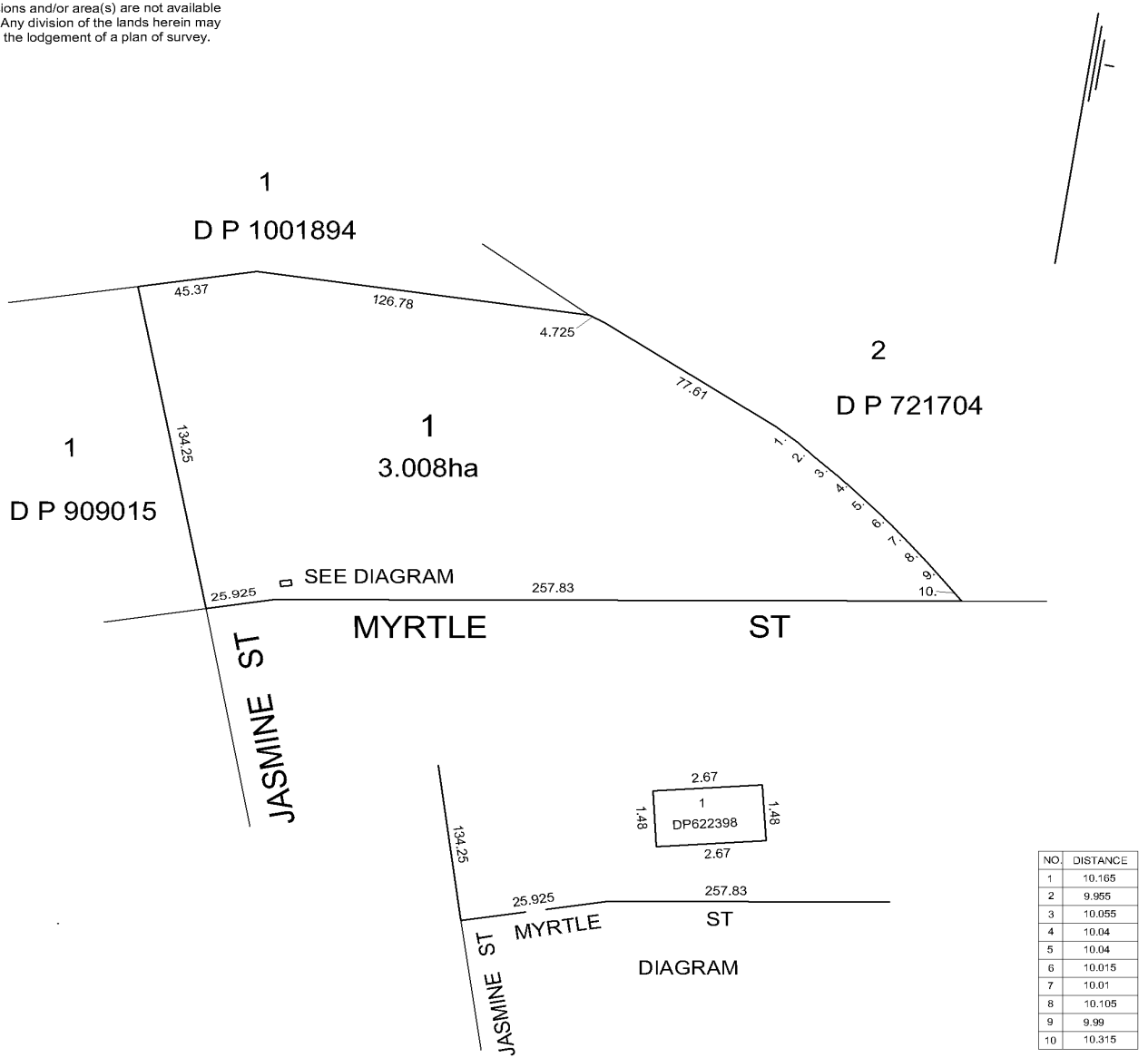
This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

InfoTrack

Req:R027699 /Doc:DP 1148910 P /Rev:24-Feb-2010 /NSW LRS /Pgs:ALL /Prt:07-May-2020 15:14 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:Botany INFOTRACKYyrtle St

e-departmental

Full dimensions and/or area(s) are not available for all lots. Any division of the lands herein may necessitate the lodgement of a plan of survey.



NO.	DISTANCE
1	10.165
2	9.955
3	10.055
4	10.04
5	10.04
6	10.015
7	10.01
8	10.105
9	9.99
10	10.315

DP 1148910

Registered : 18.2.2010

Title System : TORRENS

Purpose : DEPARTMENTAL

Ref. Map : U1837-13

Last Plan : DP187028

PLAN OF PART OF LOT 1 IN DP187028

COMPRISED IN VOL. 3947 FOL. 232

Lengths are in metres. Reduction Ratio - NTS
LPI Ref. : TCB43/50

Sheet 1 of 1 sheets

L.G.A. : BOTANY BAY

LOCALITY: BOTANY

PARISH: BOTANY

COUNTY: CUMBERLAND

LOT	PRIOR IDENTITY

THIS PLAN HAS BEEN PREPARED TO PROVIDE AN UNIQUE IDENTITY FOR THE LAND IN THE CERTIFICATE OF TITLE REFERRED TO ABOVE.

IT IS NOT A CURRENT PLAN IN THE TERMS OF 7A OF THE CONVEYANCING ACT, 1919.

Req:R029436 /Doc:CP 21804-3000 P /Rev:27-Nov-2012 /NSW LRS /Prt:08-May-2020 06:53 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:Botany Myrtle St

Municipality of Botany

LOCALITY: BOTANY

PLAN

NOTATION PLAN
Original not in this Department

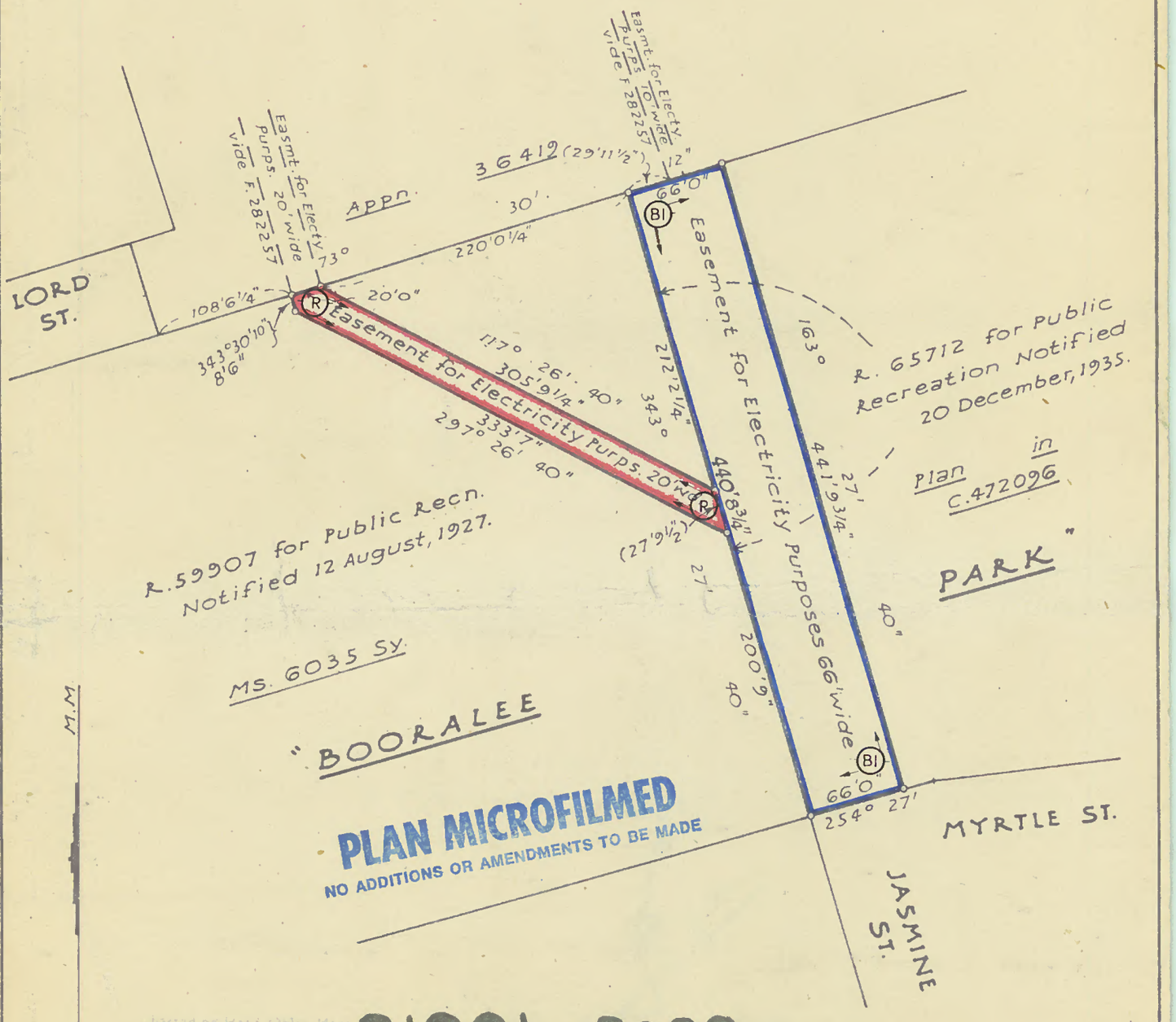
Showing Easement for Electricity Purposes within Booralee Park

Parish of Botany County of Cumberland

Scale: 100 ft. to an inch

(R) Red edge (20' wide) by S.C.C. Gaz. 18.4.69 Pks. 69:974

(BI) Blue edge (66' wide) resumed for underground cables by S.C.C. Gaz 6.2.70 Pks 66/3259



PLAN MICROFILMED
NO ADDITIONS OR AMENDMENTS TO BE MADE

11.7.69

KM 30-7-69.

11 AUGUST, 1967.

21804.3000

REGISTERED SURVEYOR

MS 21804 SY

InfoTrack

Req:R029437 /Doc:DP 0622398 P /Rev:10-Dec-1992 /NSW LRS /Pgs:ALL /Prt:08-May-2020 06:53 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:Botany INFOTRACKyrtle St

PLAN FORM 1

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

*OFFICE USE ONLY

Council Clerk's Certificate

I hereby certify that

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

*(b) the requirements of section 348 of the Metropolitan Water, Sewerage, and Drainage Act, 1924, as amended, the Hunter District Water, Sewerage, and Drainage Act, 1938, as amended,

have been complied with by the applicant in relation to the proposed ..... (Insert "new road", "subdivision" or "consolidated lot") set out herein

Subdivision No. .....

Date .....

(Signature) ..... Council Clerk

*This part of certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan Water, Sewerage and Drainage Board and the Hunter District Water Board. (Delete if inapplicable.

Surveyor's Certificate

I, RAYMOND FRANCIS SMITH

of THE SYDNEY COUNTY COUNCIL

a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan .....

is accurate and has been made *(1) by me ~~*(2) under my immediate supervision~~ in accordance with the Survey Practice Regulation, 1933, and was completed on † 5TH APRIL 1980

Signature R. F. Smith

Surveyor registered under Surveyors Act, 1929, as amended.
Datum Line of Azimuth: A–B
*Strike out either (1) or (2). †Insert date of survey.

PLAN SHOWING LAND, RIGHT OF WAY AND EASEMENT (PROPOSED) FOR ELECTRICITY PURPOSES TO BE RESUMED BEING PART OF R65712 FOR PUBLIC RECREATION NOTIFIED 20·12·1935

Mun./~~Shire~~ ~~City~~ : BOTANY

Locality: BOTANY

Parish: BOTANY

County: CUMBERLAND

Reduction Ratio 1: 100

Lengths are in metres

D. P. 622398*

Registered: 12-2-1982

C.A.: -

Title System: CROWN LAND

Purpose: RESUMPTION

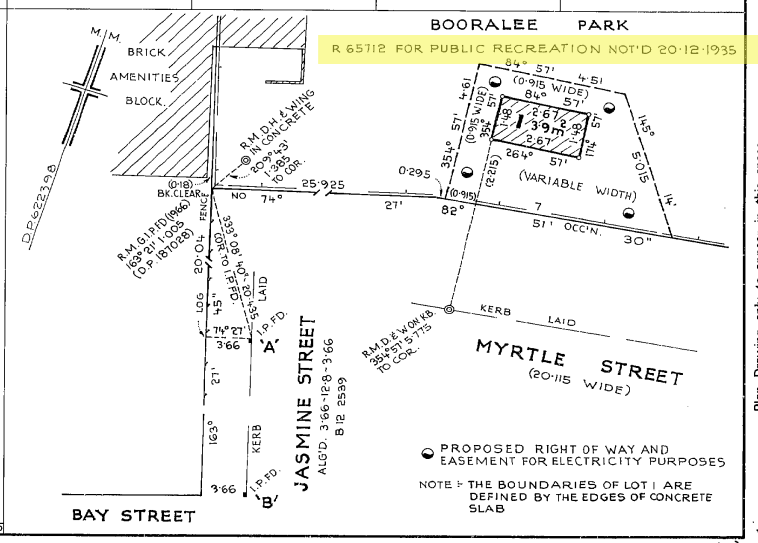
Ref. Map: U1837-13*

Last Plan: -

NOTIFIED

Signatures, seals and statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

IT IS INTENDED TO RESUME LOT 1 TOGETHER WITH APPURTENANT RIGHT OF WAY AND EASEMENT FOR ELECTRICITY PURPOSES.



W.B.S./0003/037/ /F16-24/2438/K.R.S. SURVEYOR'S REFERENCE S6420

M.P.D.

I, Bruce Richard Davies, Under Secretary for Lands and Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this day.

15th February, 1982

Table of mm

Req:R029426 /Doc:DL C472096 /Rev:28-Apr-2014 /NSW LRS /Pgs:ALL /Prt:08-May-2020 06:46 /Seq:1 of 3
© Office of the Registrar-General /Src:INFOTRACK /Ref:Botany INFOTRACKyrtle St

Transfer not liable to stamp duty or payment of registration and other fees.

DEC 20 1 1935

Crown Solicitor.

THE REGISTRAR GENERAL
SYDNEY.

SUBJECT: Botany Water Reserve: Divesting of land from Metropolitan Water Sewerage and Drainage Board to Minister for Public Works.

C472096

By Notification published in the Government Gazette No.148 of 16th August, 1935, folio 3326, His Excellency the Governor with the advice of the Executive Council and in pursuance of the provisions of the Metropolitan Water Sewerage and Drainage Acts, 1924-1935, divested the Metropolitan Water Sewerage and Drainage Board of the land described in the Schedule thereto being that part of the land comprised in Certificate of Title Volume 3947 Folio 232 shown edged red upon the plan hereunto annexed marked "A" to the intent that the said land should revert to and vest in the Minister for Public Works to be held by him under and subject to the provisions of the Public Works Act, 1912 NOW THEREFORE THE MINISTER FOR PUBLIC WORKS of the State of New South Wales in pursuance of Section 14(1) of the Real Property (Amendment) Act 1921 HEREBY REQUESTS you to register him as the proprietor of an estate in fee simple in the said land accordingly, subject nevertheless to the Transfer and Grant registered No.B.768666 noted upon the said Certificate of Title

Attached hereto marked 'B' is a helio of the aforesaid plan with a note endorsed by the Estate Agent for Railways approving of the railway boundaries affected.

DATED this thirteenth day of December one thousand nine hundred and thirty-five

THE OFFICIAL SEAL of THE MINISTER FOR PUBLIC WORKS was hereunto affixed and he signed this request in the presence of:

C. H. Eltrom

SEE FURTHER PLAN NEEDED IN PLAN ROOM AS F.P. 187028

Req:R029426 /Doc:DL C472096 /Rev:28-Apr-2014 /NSW LRS /Pgs:ALL /Prt:08-May-2020 06:46 /Seq:2 of 3
© Office of the Registrar-General /Src:INFOTRACK /Ref:Botany INFOTRACKyrtle St

P.W.D. "B" C472096 Mun. of Botany

BOTANY WATER RESERVE

PLAN

~~C.T. Vol. 201~~

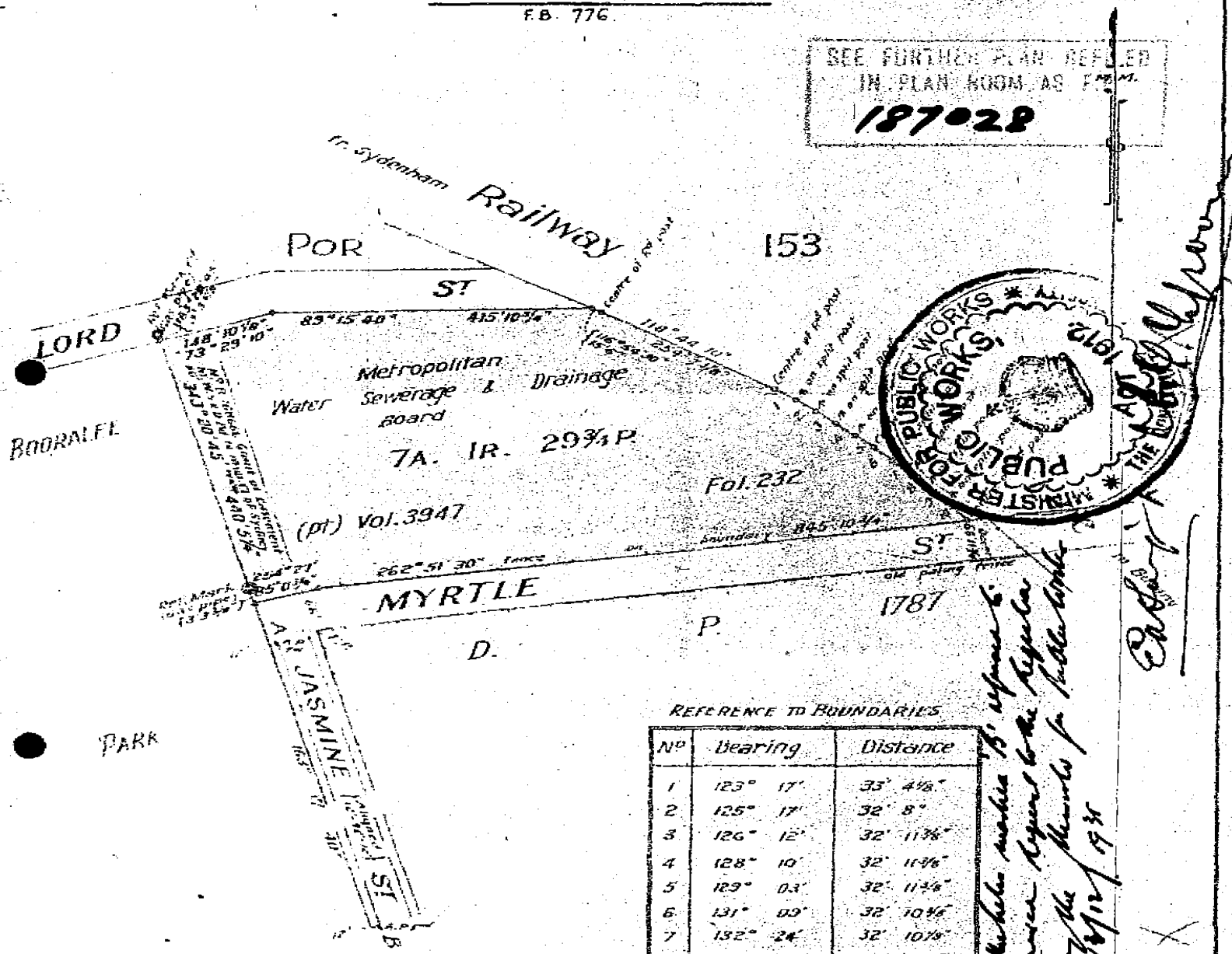
Shewing land proposed to be divested from the Metropolitan Water Sewerage and Drainage Board and to be dedicated for Public Recreation Purposes

Parish of Botany—County of Cumberland

Scale 200 feet to one inch

F.B. 776

SEE FURTHER PLAN REFERRED IN PLAN ROOM AS P.M. 187028



REFERENCE TO BOUNDARIES

No	Bearing	Distance
1	123° 17'	33' 4 1/8"
2	125° 17'	32' 8"
3	126° 12'	32' 11 3/8"
4	128° 10'	32' 10 3/8"
5	129° 03'	32' 11 3/8"
6	131° 09'	32' 10 3/8"
7	132° 24'	32' 10 3/8"
8	133° 58'	33' 1 7/8"
9	135° 47'	32' 9 1/4"
10	135° 58'	33' 10 3/8"

Boundaries approved.

A. McCulloch

Estate Agent for Railways.

Z.7.

Azimuth taken from line A-B

Subscribed and declared before me at Sydney this nineteenth day of June 1935

W. H. Hughes J.P.

Justice of the Peace.

I, James Burton Finney, of Sydney, a Surveyor registered under the Surveyors Act, 1929, do hereby solemnly and sincerely declare that the Survey represented in this plan has been made in accordance with the Survey Practice Regulations, 1933, by me, was completed on the 5th April 1935, and is correct, and a Reference Mark has been placed as shewn hereon

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act, 1900.

J.B. Finney.

Req:R029426 /Doc:DL C472096 /Rev:28-Apr-2014 /NSW LRS /Pgs:ALL /Prt:08-May-2020 06:46 /Seq:3 of 3
© Office of the Registrar-General /Src:INFOTRACK /Ref:Botany INFOTRACKyrtle St

C 472096

Appn under Sec 14.
R.P. (Amendt Act 1921)

1 ac. 1 rd. 29 3/4 p
pt Por 153.
Pk of Botany
Mun: Botany.
Lord St. & Myrtle St

The Minister for
Public Works.

Particulars entered in Register Book, Vol. 3947

Folio 232

the 22nd day of September 1936

at 12 o'clock in the ~~——~~ noon.

Registrar General.

58.

B1503 9,35

(5392) Department of the Attorney-General and of Justice, Sydney, 14th August, 1935.

HIS Excellency the Governor, with the advice of the Executive Council, has been pleased to appoint

Alan Stredwick Lloyd, Esquire, a Barrister-at-Law of more than five years' standing, to act as a District Court Judge and Chairman of Quarter Sessions for the State of New South Wales,—from the 15th August, 1935, to the 26th August, 1935, both dates inclusive, and to authorise him to exercise jurisdiction in the South-Western District during the period mentioned.

H. E. MANNING.

(5391) Department of Labour and Industry, Sydney, 16th August, 1935.

RURAL WORKERS' ACCOMMODATION ACT.

HIS Excellency the Governor, with the advice of the Executive Council, has been pleased to appoint the undermentioned members of the Police Force to be Inspectors to carry out the provisions of the Rural Workers' Accommodation Act, 1926, in the districts specified in connection with their respective names.

H. M. HAWKINS.

Sergeant 3rd Class John Scarff; Station—Cowra; Police District—Cowra.

Constable 1st Class Michael Griffin; Station—Currabubula; Police District—Tamworth.

(5353) Department of Labour and Industry, Sydney, 16th August, 1935.

RURAL WORKERS' ACCOMMODATION ACT.

HIS Excellency the Governor, with the advice of the Executive Council, has been pleased to appoint the undermentioned members of the Police Force to be Inspectors to carry out the provisions of the Rural Workers' Accommodation Act, 1926, in the districts specified in connection with their respectiee names.

H. M. HAWKINS.

Sergeant 2nd Class George Cleaver; Station—Gosford; Police District—Brisbane Water.

Constable Colin Henry Symes; Station—Burraga; Police District—Carcoar.

EUGOWRA SCHOOL OF ARTS.

ELECTION OF TRUSTEES.

Mr. James Hay has been elected a Trustee of the land held for School of Arts purposes at Eugowra in place of Mr. John Niven, deceased.

DAVID HENRY DRUMMOND,
(5421) Minister of Public Instruction.

CONDOBOLIN SCHOOL OF ARTS.

ELECTION OF TRUSTEES.

Messrs. David Henry Tasker, John James Bright, and Charles Patrick McCooe have been elected Trustees of the land held for School of Arts purposes at Condobolin in lieu of the existing Trustees, whose seats have been declared vacant.

DAVID HENRY DRUMMOND,
(5422) Minister of Public Instruction.

BIRDS AND ANIMALS PROTECTION ACT, 1918-1930.

OPEN SEASONS.

OPEN Seasons, in pursuance of the provisions of the Birds and Animals Protection Act, 1918-1930, have been declared for the undermentioned districts and animals, exclusive of State Forests and Timber Reserves, viz.:—

Until 15th October, 1935, inclusive, in respect of kangaroos, for the parishes of Patterson, Barellan North, Oxley, Garoolgan, Tabbita, Tabbita North and Bingar in the county of Cooper, within the Narrandera Pastures Protection District.

Until 31st October, 1935, inclusive, in respect of kangaroos for the Bourke Pastures Protection District.

(5365) FRANK A. CHAFFEY.

METROPOLITAN WATER, SEWERAGE, AND DRAINAGE ACTS, 1924-1935.

BOTANY WATER RESERVE.

(L.S.)
A. HORE-RUTHVEN,
Governor.

I, the Honourable Sir ALEXANDER GORE ARKWRIGHT HORE-RUTHVEN, Governor of the State of New South Wales, with the advice of the Executive Council, and in pursuance of the provisions of the Metropolitan Water, Sewerage, and Drainage Acts, 1924-1935, do hereby divest the Metropolitan Water, Sewerage, and Drainage Board of the land described in the Schedule, to the intent that the said land shall revert to and vest in the Minister for Public Works to be held by him under and subject to the provisions of the Public Works Act, 1912.

(Misc. 1935-3,290)

H. M. HAWKINS,
(for Minister for Public Works).

Department of Public Works,
Sydney, 6th August, 1935.

SCHEDULE.

All that piece or parcel of land situate in the Municipality of Botany, parish of Botany, county of Cumberland, and State of New South Wales, being part of portion 153, comprised in Certificate of Title, registered volume 3,947, folio 232: Commencing on the northern side of Myrtle-street at the intersection of that side of that street with the south-western boundary of the Sydenham to Botany Railway land; and bounded thence on the south by that side of Myrtle-street being lines bearing successively 262 degrees 51 minutes 30 seconds 845 feet 10¾ inches and 254 degrees 27 minutes 85 feet 0¾ inch; on the south-west by part of a north-eastern boundary of Booralee Park bearing 343 degrees 20 minutes 45 seconds 440 feet 5¼ inches; generally on the north by the generally southern side of Lord-street being lines bearing successively 73 degrees 29 minutes 10 seconds 148 feet 10⅛ inches and 89 degrees 15 minutes 40 seconds 415 feet 10¾ inches to the south-western boundary of the Sydenham to Botany Railway land aforesaid; and on the north-east by part of that boundary being lines bearing successively 116 degrees 54 minutes 30 seconds 15 feet 6 inches, 118 degrees 44 minutes 10 seconds 254 feet 7⅜ inches, 123 degrees 17 minutes 33 feet 4⅛ inches, 125 degrees 17 minutes 32 feet 8 inches, 126 degrees 12 minutes 32 feet 11⅞ inches, 128 degrees 10 minutes 32 feet 11⅜ inches, 129 degrees 3 minutes 32 feet 11⅜ inches, 131 degrees 9 minutes 32 feet 10⅜ inches, 132 degrees 24 minutes 32 feet 10⅛ inches, 133 degrees 58 minutes 33 feet 1⅞ inches, 135 degrees 47 minutes 32 feet 9¼ inches and 135 degrees 58 minutes 33 feet 10⅛ inches to the point of commencement,—having an area of 7 acres 1 rood 29¾ perches or thereabouts.

(4851)

NOTIFICATION OF RESUMPTION OF LAND UNDER THE PUBLIC WORKS ACT, 1912.

IT is hereby notified and declared by His Excellency the Governor, acting with the advice of the Executive Council, that so much of the land hereunder described as is Crown land has been appropriated, and so much thereof as is private property has been resumed, under the Public Works Act, 1912, for the following public purpose, namely, a Technical College, at ULTIMO, SYDNEY, and is vested in the Minister of Public Instruction on behalf of His Majesty the King for the purposes of the Public Instruction Act of 1880.

Dated the sixth day of August, one thousand nine hundred and thirty-five.

A. HORE-RUTHVEN, Governor.

By His Excellency's Command,

D. H. DRUMMOND, Minister of Public Instruction.

DESCRIPTION OF LAND REFERRED TO APPENDED.

All that piece or parcel of land situate in the City of Sydney, parish of St. Andrew, county of Cumberland, and State of New South Wales: Commencing at a point in the north-western building line of George street West, being the south-eastern corner of the land comprised in Certificate of Title, volume 3,981, folio 61; and bounded

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RESERVATION FROM SALE OR LEASE GENERALLY.

PROCLAMATION.

IN pursuance of the provisions of section 25A of the Crown Lands Consolidation Act, 1913, I, Sir ALEXANDER GORE ARKWRIGHT HORE-RUTHVEN, Governor of the State of New South Wales, with the advice of the Executive Council, do hereby proclaim the following area of land to be reserved from sale or lease generally, and the same is hereby reserved accordingly:—

LAND DISTRICT—METROPOLITAN; MUNICIPALITY—BOTANY.

No. 65,711. Parish Botany, county Cumberland, 7 acres 1 rood 29¾ perches; bounded by the Sydenham to Botany Railway land, Myrtle-street, Reserve 59,907 for public recreation, notified 12th August, 1927, and Lord-street. P. 35-7,333.

Signed and sealed at Sydney, this 19th day of December, 1935.

A. HORE-RUTHVEN, Governor.

By His Excellency's Command,

E. A. BUTTENSHAW, Minister for Lands.

(7507) GOD SAVE THE KING!

RESERVATION FROM SALE OR LEASE GENERALLY.

PROCLAMATION.

IN pursuance of the provisions of section 25A of the Crown Lands Consolidation Act, 1913, I, Sir ALEXANDER GORE ARKWRIGHT HORE-RUTHVEN, Governor of the State of New South Wales, with the advice of the Executive Council, do hereby proclaim the following area of land to be reserved from sale or lease generally, and the same is hereby reserved accordingly:—

LAND DISTRICT—METROPOLITAN; MUNICIPALITY—SYDNEY.

No. 65,710. Parish Petersham, county Cumberland, containing an area of 54 square feet or thereabouts, being part of lot 6, section B of the Camperdown Estate, and being the land resumed and vested in the Minister for Public Works, in pursuance of the provisions of the Public Works Act, 1912, by Gazette notification dated 27th September, 1935. R. 33-678.

Signed and sealed at Sydney, this 19th day of December, 1935.

A. HORE-RUTHVEN, Governor.

By His Excellency's Command,

E. A. BUTTENSHAW, Minister for Lands.

(8065) GOD SAVE THE KING!

REVOCATION OF RESERVE FROM SALE OR LEASE GENERALLY.

PROCLAMATION.

IN pursuance of the provisions of section 25A of the Crown Lands Consolidation Act, 1913, I, Sir ALEXANDER GORE ARKWRIGHT HORE-RUTHVEN, Governor of the State of New South Wales, with the advice of the Executive Council, do hereby proclaim the reserve from sale or lease generally, particularised in the Schedule hereunder, to be revoked, and the same is hereby revoked accordingly.

LAND DISTRICT—METROPOLITAN; MUNICIPALITY—BOTANY.

No. 65,711. Parish Botany, county Cumberland, 7 acres 1 rood 29¾ perches, notified 20th December, 1935. P. 35-7,333.

Signed and sealed at Sydney, this 19th day of December, 1935.

A. HORE-RUTHVEN, Governor.

By His Excellency's Command,

E. A. BUTTENSHAW, Minister for Lands.

(7506) GOD SAVE THE KING!

REVOCATION OF RESERVE FROM SALE OR LEASE GENERALLY.

PROCLAMATION.

IN pursuance of the provisions of section 25A of the Crown Lands Consolidation Act, 1913, I, Sir ALEXANDER GORE ARKWRIGHT HORE-RUTHVEN, Governor of the State of New South Wales, with the advice of the Executive Council, do hereby proclaim the reserve from sale or lease generally, particularised in the Schedule hereunder, to be revoked, and the same is hereby revoked accordingly.

LAND DISTRICT—METROPOLITAN; MUNICIPALITY—SYDNEY.

No. 65,710. Parish Petersham, county Cumberland, notified 20th December, 1935; about 54 square feet. R. 33-678.

Signed and sealed at Sydney, this 19th day of December, 1935.

A. HORE-RUTHVEN, Governor.

By His Excellency's Command,

E. A. BUTTENSHAW, Minister for Lands.

(7984) GOD SAVE THE KING!

(8083) Sydney, 20th December, 1935.

RESERVES FROM SALE AND LEASE GENERALLY.

IT is hereby notified that, in pursuance of the provisions of sections 28 and 29 of the Crown Lands Consolidation Act, 1913, the Crown Lands hereunder described shall be temporarily reserved from sale for the public purposes hereinafter specified, and temporarily reserved and exempted from lease generally, and they are hereby reserved and exempted accordingly.

E. A. BUTTENSHAW, Minister for Lands.

FOR PUBLIC HALL.

LAND DISTRICT—METROPOLITAN; SHIRE—HORNSBY.

No. 65,693 from sale (65,694 from lease generally). Parish South Colah, county Cumberland, 1 rood; portion 560. C. 3,890-2,030. P. 35-9,909.

FOR QUARANTINE.

LAND DISTRICT—GRAFTON; SHIRE—ORARA.

No. 65,700 from sale (65,701 from lease generally). Parish Elland, county Clarence, 3 roods 25 perches, portion 199. C. 3,578-1,577. P. 35-10,138.

FOR POLICE PURPOSES (POLICE STATION).

LAND DISTRICT—ARMIDALE; SHIRE—GUYRA.

No. 65,702 from sale (65,703 from lease generally). Parish Guy Fawkes, county Clarke, village Ebor, area 1 rood 34½ perches within allotment 1, section 3. Ebor 4. P. 35-10,343.

FOR PUBLIC RECREATION AND RESTING PLACE.

LAND DISTRICT—GRAFTON; SHIRE—HARWOOD.

No. 65,706 from sale (65,707 from lease generally). Parish Nanegai, county Clarence, 2 acres 0 roods 12 perches, section 6, town of Iluka, Iluka 7. P. 35-10,283.

FOR PUBLIC RECREATION.

LAND DISTRICT—PARKES; SHIRE—GOOBANG.

No. 65,708 from sale (65,709 from lease generally). Parish Brolgan, county Ashburnham, 3 acres, portion 60. A. 8,466-1,770. P. 35-9,618.

LAND DISTRICT—METROPOLITAN; MUNICIPALITY—BOTANY.

No. 65,712 from sale (65,713 from lease generally). Parish Botany, county Cumberland, 7 acres 1 rood 29¾ perches bounded by the Sydenham to Botany Railway land, Myrtle-street, Reserve No. 59,907 for Public Recreation, notified 12th August, 1927, and Lord-street. P. 35-7,333.

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by a curved roadway 33 feet wide along the north-western boundary of the area set apart on 7th April, 1866, for Church of England Cemetery; thence by the southern, south-western, western and northern boundaries of the Reserve for Cemetery Ranger to the point of commencement. Ms. 11,185 Sy. C. 876-730 R.

Secondly: The part of railway reserve 100 links wide bounded by the Reserve for Cemetery Ranger, a roadway 50 links wide on the north-western and western boundaries of the Church of England Cemetery, the branch railway line to the Cemetery and by the Roman Catholic Cemetery. C. 926-730 R. C. 876-730 R. (2910)

NOTICE REMOVING A TRUSTEE UNDER THE PUBLIC TRUSTS ACT, 1897.—PROCLAMATION.

IN accordance with the provisions of the Public Trusts Act, 1897, I, the Right Honourable John de Vere, Baron Wakehurst, Governor of the State of New South Wales, with the advice of the Executive Council, do by this notice remove Mr. Alfred Winter, who has left the district, from his position as a Trustee of Reserve No. 55,875 at Weemelah, notified 8th December, 1922, for Public Hall. P. 43-546.

Signed and sealed at Sydney, this 8th day of April, 1943.

(L.S.) WAKEHURST, Governor.

By His Excellency's Command,

J. M. TULLY, Minister for Lands.

(2911) GOD SAVE THE KING!

NOTICE REMOVING TRUSTEES UNDER THE PUBLIC TRUSTS ACT, 1897.—PROCLAMATION.

IN accordanee with the provisions of the Public Trusts Act, 1897, I, the Right Honourable John de Vere, Baron Wakehurst, Governor of the State of New South Wales, with the advice of the Executive Council, do by this notice remove the undermentioned gentlemen, who have left the district, from their positions as Trustees respectively of the portions of land hereinafter particularised.

Signed and sealed at Sydney, this 8th day of April, 1943.

(L.S.) WAKEHURST, Governor.

By His Excellency's Command,

J. M. TULLY, Minister for Lands.

GOD SAVE THE KING!

Reserve No. 46,444 at Bulbudgerie (Wuuluman), notified 29th March, 1911, for Public Recreation:—Michael Patrick Kelly, Esq. P. 43-1,163.

Reserve No. 43,803 at Cangai, notified 7th April, 1909, for Public Recreation:—Messrs. William James Mulligan, Stewart Kerr Maurice, William James Whalan and Duncan McLachlan. P. 43-1,223.

Reserve No. 47,705 at Collie, notified 31st August, 1910, for Public Recreation:—Vincent Moore, Esq. P. 43-1,020.

The portion of Reserve No. 57,365 for Cemetery at Gundaroo, notified 8th August, 1924, set apart for Presbyterian Burial Ground:—Angus Cameron, Esq. P. 43-1,420.

Reserve No. 66,756 at Shelley Beach, notified 28th May, 1937, for Public Recreation and Resting Place:—Frederick Clarence Unwin, Esq. P. 43-1,167.

The portion of Reserve No. 49,261 at Tullamore, notified 17th September, 1913, for Cemetery, set apart for Church of Engand Burial Ground:—Henry Rowland Ellis, Esq. P. 42-7,231. (2908)

NOTICE APPOINTING TRUSTEES UNDER THE PUBLIC TRUSTS ACT, 1897.—PROCLAMATION.

IN accordance with the provisions of the Public Trusts Act, 1897, I, the Right Honourable John de Vere, Baron Wakehurst, Governor of the State of New South Wales, with the advice of the Executive Council, do by this notice appoint the undermentioned gentlemen and bodies as Trustees of the portions of land hereinafter particularised.

Signed and sealed at Sydney, this 8th day of April, 1943.

(L.S.) WAKEHURST, Governor.

By His Excellency's Command,

J. M. TULLY, Minister for Lands.

GOD SAVE THE KING!

Reserve No. 65,712 at Botany, notified 20th December, 1935, for Public Recreation:—The Council of the Municipality of Botany. P. 43-525.

Reserve No. 70,830 at Brooklyn, notified 19th February, 1943, for Public Recreation:—The Council of the Shire of Hornsby. P. 42-7,252.

The portion of the General Cemetery at Moss Vale, dedicated 21st August, 1897, set apart for Roman Catholic Burial Ground:—The Trustees of the Roman Catholic Church for the Archdiocese of Sydney (in the places of the Most Rev. M. Kelly, the Rt. Rev. P. L. Coonan, the Rev. J. Martin, Messrs. W. Hines, S. Whyte, J. Barry and T. Conlon, deceased). P. 43-959.

Reserve No. 70,834 at Warialda, notified 26th February, 1943, for Resting-place:—The Council of the Shire of Yallaroi. P. 43-969.

Reserve No. 55,875 at Weemelah, notified 8th December, 1922, for Public Hall:—Messrs. Joseph Francis Hume, Thomas James Stirton and John Edward Mulligan (in the places of Messrs. J. Houston and F. Morrison, deceased, and A. Winter, removed). P. 43-546. (2909)

NOTICE APPOINTING TRUSTEES UNDER THE PUBLIC TRUSTS ACT, 1897.—PROCLAMATION.

IN accordance with the provisions of the Public Trusts Act, 1897, I, the Right Honourable John de Vere, Baron Wakehurst, Governor of the State of New South Wales, with the advice of the Executive Council, do by this notice appoint the undermentioned gentlemen and bodies as Trustees of the portions of land hereinafter particularised.

Signed and sealed at Sydney, this 8th day of April, 1943.

(L.S.) WAKEHURST, Governor.

By His Excellency's Command,

J. M. TULLY, Minister for Lands.

GOD SAVE THE KING!

Public Recreation Ground at Bookham, area 9 acres 2 roods 13 perches, dedicated 23rd April, 1895:—*The Council of the Shire of Goodradigbee* (in the places of Messrs. R. Julian, P. C. Julian, W. Martin and H. Beacham, retired, and B. Stevens, resigned). P. 43-1,134.

Public Recreation Ground at Bowning, area 12 acres, dedicated 9th March, 1894, and known as Bowning Park:—*The Council of the Shire of Goodradigbee* (in the places of Messrs. H. E. Brown, C. Winter, C. E. Smith, T. B. O'Brien, T. W. Glover and J. J. Grace, resigned). P. 43-1,254.

Reserve No. 46,444 at Bulbudgerie (Wuuluman), notified 29th March, 1911, for Public Recreation:—Messrs. George Edward Johnston and Lawrence Joseph Crawley (in the places of Messrs. J. Welsh, deceased, and M. P. Kelly, removed). P. 43-1,163.

Reserve No. 68,293 at Burragurra, notified 28th April, 1939, for Preservation of Aboriginal Carvings and Drawings, and Reserve No. 61,527 at Yango, notified 8th November, 1929, for Preservation of Aboriginal Carvings:—Edgar Henry Wright, Esq. (in the place of Mr. F. Slater, retired). P. 43-1,277.

Reserve No. 39,614 at Calarie, notified 9th September, 1925, for Public Recreation:—Ivan Baskerville Allison, Esq. (in the place of Mr. J. Murphy, retired). P. 43-881.

Reserve No. 43,803 at Cangai, notified 7th April, 1909, for Public Recreation:—Messrs. Clifford Allan Rupert Fuller, Arthur George Riley, Ernest Yaunsem, Roger James Mathew Stevens, and George Shepherd Boulton (in the places of Messrs. W. Campbell, deceased, W. J. Mulligan, S. K. Maurice, W. J. Whalan and D. McLachlan, removed). P. 43-1,223.

Reserve No. 47,705 at Collie, notified 31st August, 1910, for Public Recreation:—Messrs. William Edmund Barwick, Clarence John Mealey, and John Henry Mulhall (in the places of Messrs. S. K. Murray, retired, P. O'Connor, deceased, and V. Moore, removed). P. 43-1,020.

The portion of the General Cemetery at Dunoon, dedicated 8th August, 1924, set apart for Baptist Burial Ground:—Additional Trustees: Messrs. Charles Herbert Jenner, William Alfred Edwards and Dayal Singh. P. 43-1,139.

The portion of Reserve No. 57,365 for Cemetery at Gundaroo, notified 8th August, 1924, set apart for Presbyterian Burial Ground:—Darcy Robert Vest, Esq. (in the place of Mr. A. Cameron, removed). P. 43-1,420.

The portion of Reserve No. 50,168 at Hargraves, notified 2nd September, 1914, for Cemetery, set apart for Church of England Burial Ground:—Albert Clifford McGrath, Esq. (in the place of Mr. R. G. Bond, deceased). P. 43-1,045.

The portion of the General Cemetery at Maude, dedicated 15th September, 1891, set apart for Roman Catholic Burial Ground:—The Trustees of the Roman Catholic Church for the Diocese of Wilcannia-Forbes (in the places of the Rt. Rev. J. Dunne, the Very Rev. M. J. Treacy, Messrs. G. Allman, H. Prendergast and M. Walsh, deceased). P. 42-5,805.

The portion of the General Cemetery at Moorwatha, dedicated 23rd September, 1881, set apart for Church of England Burial Ground:—The Trustees of Church Property for the Diocese of Riverina (in the places of Messrs. T. H. Mate, R. Maddrell, H. Bromfield, J. J. Vile, deceased, and H. C. Hall, retired). P. 43-1,275.

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Department of Conservation and Land Management

BLACKTOWN OFFICE
Department of Conservation and Land Management
22 Main Street (P.O. Box 878), Blacktown, N.S.W. 2148
Phone: (02) 671 8611; Fax: (02) 671 8858

NOTIFICATION OF CLOSING OF ROADS

IN pursuance of the provisions of the Roads Act 1993, the roads hereunder specified are closed and the roads ceases to be public road and the rights of passage and access that previously existed in relation to the roads are extinguished.

GEORGE SOURIS, M.P.,
Minister for Land and Water Conservation.

Descriptions

Land District — Metropolitan;
City — Fairfield

Lot 200, D.P. 845278 at Fairfield, Parish St Luke (Sheet 4), County Cumberland, (being land in C.T. 648-125). File No.: MN94 H 7.

Note: On closing title for the land in Lot 200 remains vested in the Council of the City of Fairfield as operational land.

Land District — Metropolitan;
Council — Mosman

Lot 1, D.P. 844367 at Mosman, Parish Willoughby, County Cumberland, (being land in C.T. Volume 2497, Folio 137). File No.: MN93 H 244.

Note: On closing title for the land in Lot 1 remains vested in the Council of Mosman as operational land.

ASSIGNMENT OF NAMES TO RESERVE TRUSTS

PURSUANT to Paragraph 4 (3) of Schedule 8 to the Crown Lands Act 1989, the names specified in Column 1 of the Schedules are assigned to the reserve trusts constituted as trustees for the reserves specified in Column 2 of the Schedules. File No.: MN94 R 123.

GEORGE SOURIS, M.P.,
Minister for Land and Water Conservation.

SCHEDULE 1

COLUMN 1	COLUMN 2
Sir Joseph Banks (R.91289, R.100087 and R.100088) Reserve Trust.	Reserve No. 91289 at Banksmeadow, notified for the purpose of public recreation on 5 November 1982. Reserve No. 100087 at Banksmeadow, notified for the purpose of public recreation on 15 May 1987. Reserve No. 100088 at Banksmeadow, notified for the purpose of public recreation on 15 May 1987.

SCHEDULE 2

COLUMN 1	COLUMN 2
Banksmeadow Park (R.91288) Reserve Trust.	Reserve No. 91288 at Banksmeadow, notified for the purpose of public recreation on 5 November 1982.

SCHEDULE 3

COLUMN 1	COLUMN 2
Booralee Park (R.59907 and R.65712) Reserve Trust.	Reserve No. 59907 at Botany, notified for the purpose of public recreation on 12 August 1927. Reserve No. 65712 at Botany, notified for the purpose of public recreation on 20 December 1935.

SCHEDULE 4

COLUMN 1	COLUMN 2
Garnet Jackson (R.76695) Reserve Trust.	Reserve No. 76695 at Banksmeadow, notified for the purpose of public recreation on 30 April 1954.

SCHEDULE 5

COLUMN 1	COLUMN 2
Rowland Park (D.500338) Reserve Trust.	Dedication No. 500338 at Daceyville, notified for the purpose of public recreation on 18 March 1927.

SCHEDULE 6

COLUMN 1	COLUMN 2
Astrolabe Park (R.64985 and R.75054) Reserve Trust.	Reserve No. 64985 at Daceyville, notified for the purpose of public recreation on 14 December 1934. Reserve No. 75054 at Daceyville, notified for the purpose of public recreation on 6 June 1952.

SCHEDULE 7

COLUMN 1	COLUMN 2
Mathewson Street (R.74316) Reserve Trust.	Reserve No. 74316 at Hillsdale, notified for the purpose of children's playground on 20 July 1951.

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SCHEDULE 10

COLUMN 1	COLUMN 2	COLUMN 3
Campbelltown City Council.	Darling Avenue (R.84263) Reserve Trust.	Reserve No. 84263, at Kentlyn, notified for the purpose of public recreation on 5 July 1963. File No.: MN94 R 123.

SCHEDULE 11

COLUMN 1	COLUMN 2	COLUMN 3
Campbelltown City Council.	Peter Meadows (R.88243 and R.97979) Reserve Trust.	Reserve No. 88243, at Kentlyn, notified for the purpose of public recreation on 21 May 1971. Reserve No. 97979, at Kentlyn, notified for the purpose of public recreation on 8 November 1985. File No.: MN94 R 123.

SCHEDULE 12

COLUMN 1	COLUMN 2	COLUMN 3
Campbelltown City Council.	Coronation Park (R.97586) Reserve Trust.	Reserve No. 97586, at Minto, notified for the purpose of public recreation on 16 November 1984. File No.: MN94 R 123.

SCHEDULE 13

COLUMN 1	COLUMN 2	COLUMN 3
Campbelltown City Council.	Georges River Nature (R.23265) Reserve Trust.	Reserve No. 23265, at Kentlyn, notified for the purpose of public recreation on 8 November 1895. File No.: MN94 R 123.

SCHEDULE 14

COLUMN 1	COLUMN 2	COLUMN 3
Campbelltown City Council.	Valinda Crescent (R.87480) Reserve Trust.	Reserve No. 87480, at Campbelltown, notified for the purpose of public recreation on 31 October 1969. File No.: MN94 R 123.

SCHEDULE 15

COLUMN 1	COLUMN 2	COLUMN 3
Campbelltown City Council.	Smiths Creek (R.89426 and 90857) Reserve Trust.	Reserve No. 89426, at Ruse, notified for the purpose of public recreation on 11 April 1975. Reserve No. 90857, at Ruse, notified for the purpose of public recreation on 5 August 1977. File No.: MN94 R 123.

SCHEDULE 16

COLUMN 1	COLUMN 2	COLUMN 3
Campbelltown City Council.	Harrison Road (R.90736) Reserve Trust.	Reserve No. 90736, at Ruse, notified for the purpose of public recreation on 18 March 1977. File No.: MN94 R 123.

SCHEDULE 17

COLUMN 1	COLUMN 2	COLUMN 3
Campbelltown City Council.	Pademelom Avenue (R.23264) Reserve Trust.	Reserve No. 23264, at St Helens Park, notified for the purpose of public recreation on 8 November, 1895. File No.: MN94 R 123.

SCHEDULE 18

COLUMN 1	COLUMN 2	COLUMN 3
Campbelltown City Council.	Lysaght Road (R.89720) Reserve Trust.	Reserve No. 89720, at Wedderburn, notified for the purpose of public recreation on 30 January 1976. File No.: MN94 R 123.

ERRATUM

THIS notice replaces the notice published in the *Government Gazette* of 10th February 1995, Folio 252, in respect of Borralee Park.

ASSIGNMENT OF NAME TO A RESERVE TRUST

PURSUANT to Paragraph 4 (3) of Schedule 8 to the Crown Lands Act 1989, the name specified in Column 1 of the Schedule is assigned to the reserve trust constituted as trustee for the reserve specified in Column 2 of the Schedule. File No.: MN94 R 123.

GEORGE SOURIS, M.P.,
Minister for Land and Water Conservation.

SCHEDULE

COLUMN 1	COLUMN 2
Booralee Park (P.500129, R.59907 and R.65712) Reserve Trusts.	Proclamation 500129, at Botany, notified for the purpose of public recreation on 17 September 1886. Reserve No. 59907, at Botany, notified for the purpose of public recreation on 12 August 1927. Reserve No. 65712, at Botany, notified for the purpose of public recreation on 20 December 1935. File No.: MN94 R 123.

National Library of Australia http://nla.gov.au/nla.news-page14822193

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/1148910

SEARCH DATE	TIME	EDITION NO	DATE
7/5/2020	3:14 PM	-	-

CERTIFICATE OF TITLE HAS NOT ISSUED

LAND

LOT 1 IN DEPOSITED PLAN 1148910
AT BOTANY
LOCAL GOVERNMENT AREA BAYSIDE
PARISH OF BOTANY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1148910

FIRST SCHEDULE

THE MINISTER FOR PUBLIC WORKS (R C472096)

SECOND SCHEDULE (4 NOTIFICATIONS)

* 1 THE LAND ABOVE DESCRIBED IS AFFECTED BY S25A CROWN LANDS CONSOLIDATION ACT, 1913 AND MAY BE DEALT WITH AS CROWN LAND. SEE GOVERNMENT GAZETTE DATED 20-12-1935 FOLIO 4937
* 2 LAND EXCLUDES LOT 1 IN DP622398
* 3 NOTIFICATION IN GOVERNMENT GAZETTE DATED 6-2-1970 FOLIOS 430 & 431 EASEMENT FOR ELECTRICITY PURPOSES AFFECTING PART OF THE LAND ABOVE DESCRIBED SHOWN AS EASEMENT FOR ELECTRICITY PURPOSES 20.115 (66 FEET) WIDE IN CP 21804.3000
* 4 NOTIFICATION IN GOVERNMENT GAZETTE DATED 30-4-1982 FOLIOS 1962 AND 1963: RIGHT OF WAY AND EASEMENT FOR ELECTRICITY PURPOSES AFFECTING THE LAND SHOWN SO BURDENED IN DP622398

NOTATIONS

NOTE: RESERVATION OF CROWN LAND (RESERVE NO 65711) VIDE GOV GAZ 20-12-1935 FOL 4937
NOTE: PRIOR CERTIFICATE OF TITLE VOL 3947 FOL 232 IS PARTIALLY CANCELLED AND IS NOT REQUIRED TO LODGE DEALINGS. PHOTOGRAPHIC IDENTIFICATION MAY BE REQUIRED FROM THE REGISTERED PROPRIETOR WHEN DEALINGS ARE BEING LODGED
DP1189608 NOTE: PLAN OF PROPOSED EASEMENT

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Botany Myrtle St PRINTED ON 7/5/2020

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Received: 07/05/2020 15:14:18

Appendix E

Borehole Logs

and Field Notes

BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 8.4 AHD
EASTING: 333885
NORTHING: 6243022
DIP/AZIMUTH: 90°/--

BORE No: BH4
PROJECT No: 99679.01
DATE: 11/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILL/Silty SAND: fine to medium, dark grey and brown, with rootlets, trace gravel (igneous), moist, variably compacted		A/E	0.05 0.15		PID = 9 ppm		
		Below 0.4m: with gravel (sandstone)		A/E	0.5 0.6		PID = 10 ppm		
				A/E	0.9 1.0		PID = 10 ppm		
				S/E			4,3,2 N = 5 PID = 10 ppm		
	1.5	SAND SP: fine to medium, pale grey, moist, loose, aeolian			1.45				
				A/E	1.9 2.0		PID = 10 ppm		
		Below 2.1m: grading to brown and dark brown, trace silt			2.5				
		Below 2.7m: grading to pale brown		S			4,3,4 N = 7		
	2.95	Bore discontinued at 2.95m Target depth reached			2.95				

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** RB **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger (TC-bit) to 2.5m, SPT to 2.95m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 8.0 AHD
EASTING: 333921
NORTHING: 6243021
DIP/AZIMUTH: 90°/--

BORE No: BH6/GW6
PROJECT No: 99679.01
DATE: 12/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.16	CONCRETE SLAB: 160mm diameter, <20mm aggregate, 10mm reinforcement at 110mm depth							Flush gatic cover and well cap
		FILL/Silty SAND: fine to medium, dark brown, with gravel, bitumen and ceramic fragments, moist, apparently poorly compacted		A/E	0.2 0.25		PID = 3 ppm		Concrete from 0m to 0.2m
				A/E	0.5 0.6		PID = 2 ppm		Sand backfill from 0.2m to 0.5m
	0.7	SAND SP: fine to medium, pale grey, moist, medium dense, aeolian		A/E	0.9 1.0		PID = 3 ppm		Bentonite from 0.5m to 1.2m
9	1			S			10,17,12 N = 29		Plain PVC casing from 0.1m to 2m
		Below 1.45m: grading to brown, trace silt			1.45				
				A	1.9 2.0				
10	2	Below 2.2m: grading to pale grey							
				S	2.5		4,5,6 N = 11		
					2.95			22-05-20	
11	3			S	3.5		6,7,5 N = 12		Sand backfill from 1.2m to 6m
					3.95				
12	4			S	4.5		5,7,8 N = 15		Slotted screen from 2.5m to 6m
					4.95				
13	5	Below 5.5m: dense		S	5.5		11,16,26 N = 42		
	6.0	Bore discontinued at 6.0m Target depth reached			5.95				End cap

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** RB **CASING:** HW to 3.5m

TYPE OF BORING: Diatube to 0.16m, Solid Flight Auger (TC-bit) to 2.5m, Rotary to 6.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering and free groundwater observed at 2.85m in the well on 22/05/2020

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 7.4 AHD
EASTING: 333895
NORTHING: 6243124
DIP/AZIMUTH: 90°/--

BORE No: BH9/GW9
PROJECT No: 99679.01
DATE: 12/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
8	0.35	FILL/Silty SAND: fine to medium, dark brown, with rootlets, trace gravel, moist, apparently poorly compacted		A/E	0.1 0.15		PID = 1 ppm		Flush gatic cover and well cap Concrete from 0m to 0.2m Sand backfill from 0.2m to 0.4m
	0.65	FILL/Gravelly SAND: fine to medium, trace silt, bitumen fragments and clay, moist, apparently well compacted		A/E	0.5 0.6		PID = 2 ppm		
		Bulk sample: 0.6-1.3m							
		SAND SP: fine to medium, pale grey, moist, loose, aeolian		A/E	0.9 1.0		PID = 1 ppm		Bentonite from 0.4m to 1.3m Plain PVC casing from 0.1m to 1.9m
9	1			A/E			3,4,5 N = 9		
		Below 1.3m: grading to brown and dark brown, trace silt			1.45				
	2	Below 1.9 m: wet						12-05-20	
				A/E	2.0		2,4,4 N = 8		
10		Below 2.5m: grading to pale brown			2.45				
	3								
				S	3.15		5,4,5 N = 9		
11					3.55				Sand backfill from 1.3m to 6m
	4	Below 4m: medium dense			4.0				Slotted screen from 1.9m to 6m
				S/E			5,6,7 N = 13 PID = <1 ppm		
12					4.45				
	5								
					5.5				
				S/E			7,11,15 N = 26 PID = <1 ppm		
	6.0	Bore discontinued at 6.0m Target depth reached			5.95				End cap

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** RB **CASING:** HW to 3.5m

TYPE OF BORING: Hand Auger to 0.5m, Solid Flight Auger (TC-bit) to 2.5m, Rotary to 6.0m

WATER OBSERVATIONS: Free groundwater observed at 1.9m during drilling and in the well on 22/05/2020

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 7.4 AHD
EASTING: 333929
NORTHING: 6243125
DIP/AZIMUTH: 90°/--

BORE No: BH10
PROJECT No: 99679.01
DATE: 11/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.25	FILL/Silty SAND: fine to medium, dark brown, with rootlets, moist, apparently poorly compacted		A/E	0.05 0.1		PID = 18 ppm		
	0.55	FILL/SAND: fine to medium, pale grey and dark grey, with gravel and a trace of rootlets, moist, apparently well compacted		A/E*	0.4 0.5		PID = 13 ppm		
		SAND SP: fine to medium, pale brown, moist, very loose to loose then loose, aeolian		A/E	0.9 1.0		PID = 16 ppm		
		Below 1.1m: grading to brown and dark brown		S/E			2,2,2 N = 4		
		Below 1.5m: wet			1.45			11-05-20	
		Below 2.2m: grading to pale grey		S/E	2.5		2,3,5 N = 8		
	2.95	Bore discontinued at 2.95m Target depth reached			2.95				

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** RB **CASING:** Uncased

TYPE OF BORING: Hand Auger to 0.5m, Solid Flight Auger (TC-bit) to 2.5m, SPT to 2.95m

WATER OBSERVATIONS: Free groundwater observed at 1.5m

REMARKS: Location coordinates are in MGA94 Zone 56. * Field replicate BD1/110520 taken at 0.4-0.5m.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 7.4 AHD
EASTING: 333938
NORTHING: 6243092
DIP/AZIMUTH: 90°/--

BORE No: BH11
PROJECT No: 99679.01
DATE: 11/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILL/Silty SAND: fine to medium, dark brown, with rootlets, moist, apparently poorly compacted		A/E	0.05 0.15		PID = 11.5 ppm		
		Below 0.4m: with bitumen fragments and igneous gravel, strong hydrocarbon odour		A/E*	0.4 0.5		PID = 36 ppm		
	0.7	SAND SP: fine to medium, pale grey, moist, medium dense, aeolian			0.7				
				A/E B	0.9 1.0		PID = 14 ppm		
				S/E			10,9,8 N = 17		
		Below 1.3m: brown to dark brown, trace silt			1.35 1.45				
		Below 1.65m: wet						11-05-20	
				S/E	2.5		3,3,8 N = 11		
					2.95				
				S/E	4.0		8,10,16 N = 26		
	4.45	Bore discontinued at 4.45m Target depth reached			4.45				

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** RB **CASING:** Uncased

TYPE OF BORING: Hand Auger to 0.3m, Solid Flight Auger (TC-bit) to 4.0m, SPT to 4.45m

WATER OBSERVATIONS: Free groundwater observed at 1.65m

REMARKS: Location coordinates are in MGA94 Zone 56. * Field replicate BD3/110520 taken at 0.4-0.5m.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 7.6 AHD
EASTING: 333948
NORTHING: 6243041
DIP/AZIMUTH: 90°/--

BORE No: BH12
PROJECT No: 99679.01
DATE: 12/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
8		FILL/Silty SAND: fine to medium, dark brown, trace gravel, moist, apparently poorly compacted		A/E	0.1 0.2		PID = <1 ppm		
		Below 0.3m: with gravel, trace brick fragments and metal, apparently well compacted		A/E	0.5 0.6		PID = <1 ppm		
	0.7	SAND SP: fine to medium, pale grey, moist, loose to medium dense, aeolian			0.75				
	1			A/E	0.9 1.0		PID = 3 ppm		1
9				B S/E			7,8,10 N = 18 PID = <1 ppm		
		Below 1.35m: grading to brown and dark brown			1.45 1.5				
		Below 1.75m: grading to pale brown							
	2							▼ 12-05-20	2
10		Below 2.15m: wet							
		Below 2.5m: loose			2.5				
				S/E			2,3,4 N = 7 PID = <1 ppm		
	3				2.95				3
11					3.5				
				S			2,3,4 N = 7 PID = <1 ppm		
	3.95	Bore discontinued at 3.95m Target depth reached			3.95				
12	4								4
	5								5

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** RB **CASING:** Uncased

TYPE OF BORING: Hand Auger to 0.5m, Solid Flight Auger (TC-bit) to 3.5m, SPT to 3.95m

WATER OBSERVATIONS: Free groundwater observed at 2.15m

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 7.5 AHD
EASTING: 333904
NORTHING: 6243114
DIP/AZIMUTH: 90°/--

BORE No: BH18
PROJECT No: 99679.01
DATE: 19/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
8	0.0	FILL/Silty SAND: fine to medium, dark brown, with clay, roots and rootlets, moist		E	0.0–0.1		PID = 1 ppm		
	0.4	Below 0.4m: with fine gravel (asphaltic)		E	0.4–0.5		PID = 2 ppm		
	0.5	FILL/Sandy GRAVEL/FLY ASH: with clinker and fine to medium asphaltic gravel		S/E	0.59		25/90 refusal PID = 2 ppm		
	0.8	SAND SP: fine to medium, pale grey to grey, moist, loose, aeolian		E	0.9–1.0		PID = 3 ppm		
9	1	Below 1.5m: grading to pale grey, orange and dark red-brown		E	1.5–1.6		PID = 4 ppm		
		Below 1.8m: grading to yellow to pale yellow							
	2	Below 2m: wet						19-05-20	
10		Below 2.5m: grading to pale yellow-grey, loose to medium dense							
	3								
11									
	4	4.0 Bore discontinued at 4.0m Target depth reached							
12									
	5								

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** AMS **CASING:** Uncased

TYPE OF BORING: Hand Auger to 0.5m, Solid Flight Auger (TC-bit) to 4m

WATER OBSERVATIONS: Free groundwater observed at 2m

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 7.4 AHD
EASTING: 333934
NORTHING: 6243118
DIP/AZIMUTH: 90°/--

BORE No: BH19
PROJECT No: 99679.01
DATE: 19/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILL/Silty SAND: fine to medium, dark brown, with clay, roots and rootlets, trace gravel (asphaltic) and clinker, moist, strong hydrocarbon odour		E	0.0 0.1		PID = 7 ppm		
	0.4	Below 0.1m: grading to brown FILL/Sandy GRAVEL/FLY ASH: with clinker and fine to coarse asphaltic gravel		E S	0.4 0.5 0.6		PID = 16 ppm 25/100 refusal PID = 11 ppm		
	1.0	SAND SP: fine to medium, pale yellow-grey, slight hydrocarbon odour, moist, loose, aeolian		E	1.0 1.1		PID = 1 ppm		
		Below 1.3m: grading to yellow-orange, odourless, wet						▼ 19-05-20	
	1.5	Bore discontinued at 1.5m Target depth reached		E	1.4 1.5		PID = 1 ppm		

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** AMS **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.5m

WATER OBSERVATIONS: Free groundwater observed at 1.3m

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 7.4 AHD
EASTING: 333945
NORTHING: 6243099
DIP/AZIMUTH: 90°/--

BORE No: BH20
PROJECT No: 99679.01
DATE: 19/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
8	0.0	FILL/Silty SAND: fine to medium, dark brown, with clay, roots and rootlets, trace gravel (asphaltic), moist		E	0.0 0.1		PID = 2 ppm		
		Below 0.1m: grading to brown							
		Below 0.4m: with fine gravel (asphaltic)		E	0.4 0.5		PID = 2 ppm		
	0.6	SAND SP: fine to medium, pale yellow-grey, moist, medium dense, aeolian		S/E			8,9,10 N = 19 PID = 1 ppm		
1					0.95				1
	1.2			E	1.1 1.2		PID = 1 ppm		
		Bore discontinued at 1.2m Target depth reached							
9	2								2
10	3								3
11	4								4
12	5								5

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** AMS **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.2m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 7.8 AHD
EASTING: 3339823
NORTHING: 6243108
DIP/AZIMUTH: 90°/--

BORE No: BH21
PROJECT No: 99679.01
DATE: 19/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
8	0.0	FILL/Silty SAND: fine to coarse, dark brown, with clay, trace gravel (asphaltic), clinker, roots and rootlets, moist		E	0.0 0.1		PID = 1 ppm		
	0.4	FILL/Sandy GRAVEL/FLY ASH: with clinker		E	0.4 0.5		PID = 2 ppm		
	0.6	SAND SP: fine to medium, pale yellow, moist, loose to medium dense, aeolian		S/E			4,4,6 N = 10 PID = 2 ppm		
9	1				0.95 1.0				1
	1.1			E	1.1		PID = 1 ppm		
		Bore discontinued at 1.1m Target depth reached							
10	2								2
11	3								3
12	4								4
	5								5

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** AMS **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.1m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 7.4 AHD
EASTING: 333949
NORTHING: 6243075
DIP/AZIMUTH: 90°/--

BORE No: BH22
PROJECT No: 99679.01
DATE: 19/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILL/Silty SAND: fine to medium, dark brown, with clay, roots and rootlets, trace fine gravel (asphaltic) and clinker, moist, strong hydrocarbon odour		E	0.0 0.1		PID = 2 ppm		
	0.4	Below 0.1m: grading to brown FILL/Sandy GRAVEL/FLY ASH: with fine to medium asphaltic gravel, clinker and clay, strong hydrocarbon odour		E	0.4 0.5		PID = 7 ppm		
		Between 0.5m-0.8m: with concrete		S/E			25,13,15 N = 28 PID = 3 ppm		
	1.0	SAND SP: fine to medium, pale yellow-grey and grey to dark grey, moist, aeolian		E	0.95 1.0 1.1		PID = 1 ppm		
				E	1.4 1.5		PID = 1 ppm		
	1.5	Bore discontinued at 1.5m Target depth reached							

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** AMS **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.5m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 8.4 AHD
EASTING: 333889
NORTHING: 6243033
DIP/AZIMUTH: 90°/--

BORE No: BH27
PROJECT No: 99679.01
DATE: 19/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILL/Silty SAND: fine to medium, dark brown, with clay, roots and rootlets, moist		E	0.0 0.1		PID = 3 ppm		
	0.4	FILL/SAND: fine to coarse, brown to dark brown, trace clinker, clay, roots and rootlets, moist		E	0.4 0.5		PID = 2 ppm		
				S/E			2,1,2 N = 3 PID = 1 ppm		
					0.8 0.9				
	1			E	1.0		PID = 1 ppm		1
				E	1.4 1.5		PID = 3 ppm		
				S/E			12,12,18 N = 30 PID = 2 ppm		
	1.8	SAND SP: fine to medium, pale grey and dark grey, moist, aeolian Below 2m: grading to dark red-brown, brown and orange			1.95				
	2			E	2.0 2.1		PID = 2 ppm		2
				E	2.4		PID = 2 ppm		
	2.5	Bore discontinued at 2.5m Target depth reached			2.5				
	3								3
	4								4
	5								5

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** AMS **CASING:** Uncased

TYPE OF BORING: Hand Auger to 0.5m, Solid Flight Auger (TC-bit) to 2.5m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: CO-OP Studio Pty Ltd
PROJECT: Botany Aquatic Centre
LOCATION: 2 Myrtle Street, Botany

SURFACE LEVEL: 8.2 AHD
EASTING: 333905
NORTHING: 6243098
DIP/AZIMUTH: 90°/--

BORE No: BH40
PROJECT No: 99679.01
DATE: 19/5/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
9	0	FILL/Silty SAND: fine to medium, dark brown, with clay, roots and rootlets, moist		E	0.0 0.1		PID = 1 ppm		
				E	0.4 0.5		PID = 1 ppm		
		Below 0.5m: grading to dark red-brown, brown and orange		S/E			2,1,1 N = 2 PID = 1 ppm		
	1	At 1m: scrap cable encountered Below 1m: with fine to medium gravel (asphaltic)		E	0.9 0.95 1.0		PID = 1 ppm		1
				E	1.4 1.5		PID = 2 ppm		
10				S/E			5,5,4 N = 9 PID = 2 ppm		
	1.9	SAND SP: fine to medium, pale grey and dark grey, moist, aeolian		E	1.9 1.95 2.0		PID = 1 ppm		
	2								2
		Below 2.3m: grading to dark red-brown and orange Below 2.4m: wet		E	2.4		PID = 1 ppm	▼	
	2.5	Bore discontinued at 2.5m Target depth reached			2.5			19-05-20	
11	3								3
12	4								4
13	5								5

RIG: Scout 1 **DRILLER:** Ground Test **LOGGED:** AMS **CASING:** Uncased

TYPE OF BORING: Hand Auger to 0.5m, Solid Flight Auger (TC-bit) to 2.5m

WATER OBSERVATIONS: Free groundwater observed at 2.4m

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Sampling Methods

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Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are generally based on Australian Standard AS1726:2017, Geotechnical Site Investigations. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	19 - 63
Medium gravel	6.7 - 19
Fine gravel	2.36 – 6.7
Coarse sand	0.6 - 2.36
Medium sand	0.21 - 0.6
Fine sand	0.075 - 0.21

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

The proportions of secondary constituents of soils are described as follows:

In fine grained soils (>35% fines)

Term	Proportion of sand or gravel	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	>30%	Sandy Clay
With	15 – 30%	Clay with sand
Trace	0 - 15%	Clay with trace sand

In coarse grained soils (>65% coarse)
- with clays or silts

Term	Proportion of fines	Example
And	Specify	Sand (70%) and Clay (30%)
Adjective	>12%	Clayey Sand
With	5 - 12%	Sand with clay
Trace	0 - 5%	Sand with trace clay

In coarse grained soils (>65% coarse)
- with coarser fraction

Term	Proportion of coarser fraction	Example
And	Specify	Sand (60%) and Gravel (40%)
Adjective	>30%	Gravelly Sand
With	15 - 30%	Sand with gravel
Trace	0 - 15%	Sand with trace gravel

The presence of cobbles and boulders shall be specifically noted by beginning the description with 'Mix of Soil and Cobbles/Boulders' with the word order indicating the dominant first and the proportion of cobbles and boulders described together.

Soil Descriptions

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	VS	<12
Soft	S	12 - 25
Firm	F	25 - 50
Stiff	St	50 - 100
Very stiff	VSt	100 - 200
Hard	H	>200
Friable	Fr	-

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	Density Index (%)
Very loose	VL	<15
Loose	L	15-35
Medium dense	MD	35-65
Dense	D	65-85
Very dense	VD	>85

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Extremely weathered material – formed from in-situ weathering of geological formations. Has soil strength but retains the structure or fabric of the parent rock;
- Alluvial soil – deposited by streams and rivers;
- Estuarine soil – deposited in coastal estuaries;
- Marine soil – deposited in a marine environment;
- Lacustrine soil – deposited in freshwater lakes;
- Aeolian soil – carried and deposited by wind;
- Colluvial soil – soil and rock debris transported down slopes by gravity;
- Topsoil – mantle of surface soil, often with high levels of organic material.
- Fill – any material which has been moved by man.

Moisture Condition – Coarse Grained Soils

For coarse grained soils the moisture condition should be described by appearance and feel using the following terms:

- Dry (D) Non-cohesive and free-running.
- Moist (M) Soil feels cool, darkened in colour.
  Soil tends to stick together.
  Sand forms weak ball but breaks easily.
- Wet (W) Soil feels cool, darkened in colour.
  Soil tends to stick together, free water forms when handling.

Moisture Condition – Fine Grained Soils

For fine grained soils the assessment of moisture content is relative to their plastic limit or liquid limit, as follows:

- ‘Moist, dry of plastic limit’ or ‘w <PL’ (i.e. hard and friable or powdery).
- ‘Moist, near plastic limit’ or ‘w ≈ PL (i.e. soil can be moulded at moisture content approximately equal to the plastic limit).
- ‘Moist, wet of plastic limit’ or ‘w >PL’ (i.e. soils usually weakened and free water forms on the hands when handling).
- ‘Wet’ or ‘w ≈LL’ (i.e. near the liquid limit).
- ‘Wet’ or ‘w >LL’ (i.e. wet of the liquid limit).

Rock Strength

Rock strength is defined by the Unconfined Compressive Strength and it refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects.

The Point Load Strength Index $Is_{(50)}$ is commonly used to provide an estimate of the rock strength and site specific correlations should be developed to allow UCS values to be determined. The point load strength test procedure is described by Australian Standard AS4133.4.1-2007. The terms used to describe rock strength are as follows:

Strength Term	Abbreviation	Unconfined Compressive Strength MPa	Point Load Index * $Is_{(50)}$ MPa
Very low	VL	0.6 - 2	0.03 - 0.1
Low	L	2 - 6	0.1 - 0.3
Medium	M	6 - 20	0.3 - 1.0
High	H	20 - 60	1 - 3
Very high	VH	60 - 200	3 - 10
Extremely high	EH	>200	>10

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$. It should be noted that the UCS to $Is_{(50)}$ ratio varies significantly for different rock types and specific ratios should be determined for each site.

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Residual Soil	RS	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely weathered	XW	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible
Highly weathered	HW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately weathered	MW	The whole of the rock material is discoloured , usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly weathered	SW	Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh	FR	No signs of decomposition or staining.
Note: If HW and MW cannot be differentiated use DW (see below)		
Distinctly weathered	DW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching or may be decreased due to deposition of weathered products in pores.

Rock Descriptions

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with occasional fragments
Fractured	Core lengths of 30-100 mm with occasional shorter and longer sections
Slightly Fractured	Core lengths of 300 mm or longer with occasional sections of 100-300 mm
Unbroken	Core contains very few fractures

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or stronger. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

Symbols & Abbreviations

Douglas Partners

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	Lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

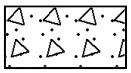
Symbols & Abbreviations

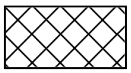
Graphic Symbols for Soil and Rock

General

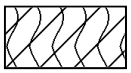
Asphalt

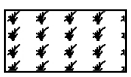
Road base

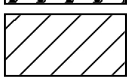

Concrete


Filling

Soils


Topsoil

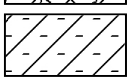

Peat


Clay

Silty clay

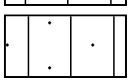
Sandy clay

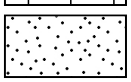
Gravelly clay

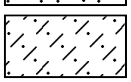

Shaly clay

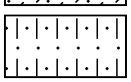
Silt

Clayey silt


Sandy silt

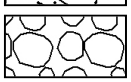

Sand


Clayey sand


Silty sand

Gravel

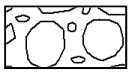
Sandy gravel


Cobbles, boulders

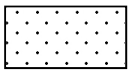
Talus

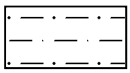
Sedimentary Rocks

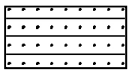
Boulder conglomerate

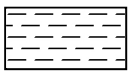

Conglomerate

Conglomeratic sandstone

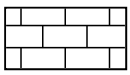

Sandstone


Siltstone

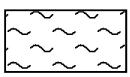

Laminite

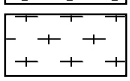

Mudstone, claystone, shale

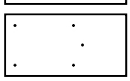
Coal


Limestone

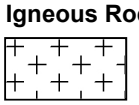
Metamorphic Rocks

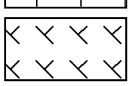

Slate, phyllite, schist

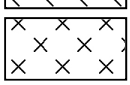

Gneiss

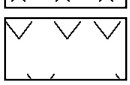

Quartzite

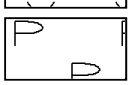
Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

Appendix F

Site Assessment Criteria

Appendix F - Site Assessment Criteria

The Site Assessment Criteria (SAC) applied in the current investigation is informed by the CSM which identified human and ecological receptors of potential contamination on the site (Section 5). Analytical results were assessed (as a Tier 1 assessment) against the SAC comprising the investigation and screening levels of Schedule B1, *National Environment Protection (Assessment of Site Contamination) Measure* 1999, as amended 2013 (NEPC, 2013). The NEPC guidelines are endorsed by the NSW EPA under the CLM Act 1997. Petroleum based health screening levels for direct contact have been adopted from the *Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) Technical Report no.10 Health screening levels for petroleum hydrocarbons in soil and groundwater* (2011) as referenced by NEPC (2013).

The investigation and screening levels are applicable to generic land use settings and include consideration of, where relevant, the soil type and depth of contamination. The investigation and screening levels are not intended to be used as clean up levels. Rather, they establish concentrations above which further appropriate investigation (e.g., Tier 2 assessment) should be undertaken. They are intentionally conservative and are based on a reasonable worst-case scenario.

The investigation and screening levels applied in the current investigation comprise levels adopted for an open space / recreational land use scenario.

F1 Soil Contamination

F1.1 Health Investigation and Screening Levels

The Health Investigation Levels (HIL) and Health Screening Levels (HSL) are scientifically-based, generic assessment criteria designed to be used in the first stage (Tier 1) of an assessment of potential human health risk from chronic exposure to contaminants.

HILs are applicable to assessing health risk arising via all relevant pathways of exposure for a range of metals and organic substances. The HILs are generic to all soil types and apply generally to a depth of 3 m below ground surface. Site-specific conditions may determine the depth to which HILs apply for other land uses.

HSLs are applicable to selected petroleum compounds and fractions to assess the risk to human health via inhalation and direct contact pathways. HSLs have been developed for different land uses, soil types and depths to contamination.

The generic HIL and HSL are considered to be appropriate for the assessment of contamination at the site. Given the proposed land for a recreational facility use the adopted HIL and HSL are:

- HIL-C - recreational / open space C; and
- HSL-C - recreational / open space C.

Given that the proposed development does include enclosed structures (plant and change rooms) HSL A / B for vapour intrusion has been adopted as initial screening criteria given that HSL C (vapour) is not-limiting for all contaminants.

In addition, the HSL adopted are predicated on the inputs summarised in Table F1.

Table F1: Inputs to the Derivation of HSLs

Variable	Input	Rationale
Potential exposure pathway	Ingestion and dermal contact Inhalation of dust and/or vapours Surface water run-off Lateral migration of groundwater providing base flow to water bodies Direct contact*	All six potential exposure pathways are identified in the CSM. It is noted that direct contact HSLs are generally not the risk drivers for further site assessment for the same contamination source as the HSLs for vapour intrusion (NEPM, 2013).
Soil Type	Sand	Sandy fill was generally recorded across the site to depths ranging from 0 m to 2 m.
Depth to contamination	0 m to 1 m	Filling was generally present to depths ranging from 0 m to 2 m and may be retained on site. More conservative 0 - 1 m values have been adopted as initial screening values.

* Developed by CRC CARE (2011)

The adopted soil HIL and HSL for the potential contaminants of concern are presented in Table F2.

Table F2: Health Investigation and Screening Levels (HIL and HSL) in mg/kg Unless Otherwise Indicated

Contaminants		HIL- C and HSL- C Direct Contact	HSL- C Vapour Intrusion (all depth ranges)	HSL – A & B Vapour Intrusion (0-1 m)
Metals	Arsenic	300	-	-
	Cadmium	90	-	-
	Chromium (Total)	300	-	-
	Copper	17000	-	-
	Lead	60	-	-
	Mercury (inorganic)	80	-	-
	Nickel	1200	-	-
	Zinc	30000	-	-
PAH	Benzo(a)pyrene TEQ[1]	3 / 33 [3]	-	-
	Total PAH	300	-	-
TRH	F1	5100[3]	NL	45
	F2	3800[3]	NL	110
	F3	5300	-	-
	F4	7400	-	-
BTEX	Benzene	120	NL	0.5
	Toluene	18000	NL	160
	Ethylbenzene	5300	NL	55
	Xylenes	15000	NL	40
Phenol	Pentachlorophenol	120	-	-
OCP	Aldrin + Dieldrin	10	-	-
	Chlordane	70	-	-
	DDT+DDE+DDD	400	-	-
	Endosulfan	340	-	-
	Endrin	20	-	-
	Heptachlor	10	-	-
	HCB	10	-	-
	Methoxychlor	400	-	-
OPP	Chlorpyrifos	250	-	-
PCB[2]		1	-	

Notes:

1 sum of carcinogenic PAH

2 non-dioxin-like PCBs only'

3 CRC Care 2017 high reliability guidelines, 85% protection of species, mean value.

F1.2 Ecological Investigation and Screening Levels

Ecological Investigation Levels (EIL) have been derived for selected metals and organic compounds and are applicable for assessing risk to terrestrial ecosystems (NEPC, 2013). EIL depend on specific soil physiochemical properties and land use scenarios and generally apply to the top 2 m of soil, which corresponds to the root zone and habitation zone of many species. The EIL is determined for a contaminant based on the sum of the ambient background concentration (ABC) and an added contaminant limit (ACL). The ABC of a contaminant is the soil concentration in a specific locality that is the sum of naturally occurring background levels and the contaminants levels that have been introduced from diffuse or non-point sources (e.g., motor vehicle emissions). The ACL is the added concentration (above the ABC) of a contaminant above which further appropriate investigation and evaluation of the impact on ecological values is required.

The EIL is calculated using the following formula:

EIL = ABC + ACL

The ABC is determined through direct measurement at an appropriate reference site (preferred) or through the use of methods defined by Olszowy et al *Trace element concentrations in soils from rural and urban areas of Australia*, Contaminated Sites monograph no. 4, South Australian Health Commission, Adelaide, Australia 1995 (Olszowy, 1995) or Hamon et al, *Geochemical indices allow estimation of heavy metal background concentrations in soils*, Global Biogeochemical Cycles, vol. 18, GB1014, (Hamon, 2004). ACL is based on the soil characteristics of pH, CEC and clay content.

EIL (and ACLs where appropriate) have been derived in NEPC (2013) for only a short list of contaminants comprising As, Cu, Cr (III), DDT, naphthalene, Ni, Pb and Zn.

The adopted EIL, derived from Tables 1B (1) to 1B (5), Schedule B1 of NEPC (2013) the *Interactive (Excel) Calculation Spreadsheet* are shown in the following Table F3. The following site-specific data and assumptions have been used to determine the EILs:

- A protection level of 95% of species has been adopted;
- The EILs will apply to the top 2 m of the soil profile;
- Given the likely source of soil contaminants (i.e., historical site use/fill) the contamination is considered as “aged” (>2 years);
- ABCs have been derived using the *Interactive (Excel) Calculation Spreadsheet* using input parameters of NSW for the State in which the site is located, and low for traffic volumes; and ACLs have been based on the lowest generic pH (4 pH) and CEC (5 $cmol_c/kg$) they represent the most conservative values;
- It is noted that Generic EILs for aged arsenic, fresh DDT and fresh naphthalene in soils are available from Table 1B (5) and as such, have not been provided a calculation; and
- EILs have been calculated using the formula EIL = ABC + ACL.

Table F3: Ecological Investigation Levels (EIL) in mg/kg

Analyte		EIL C	Comments
Metals	Arsenic	100	Adopted parameters:
	Chromium (Total)	410	pH of 7 (mean value)
	Copper	130	
	Lead	1100	CEC of 6 (mean value)
	Nickel	55	
	Zinc	350	Conservative clay content composition of 10% used.
PAH	Naphthalene	170	Iron not tested as EIL aged criteria was adopted
OCP	DDT	180	Traffic Volume: Low

Notes: 1. Taken from Olszowy (1995)

F1.3 Ecological Screening Levels (ESL)

ESLs are used to assess the risk of selected petroleum hydrocarbon compounds, BTEX and benzo(a)pyrene to terrestrial ecosystems. ESL apply to the top 2 m of the soil profile as for EIL.

ESL have been derived in NEPC (2013) for petroleum fractions F1 to F4 as well as BTEX and Benzo(a)pyrene. Site specific data and assumptions as summarised in Table F4 have been used to determine the ESL. The adopted ESL, from Table 1B (6), Schedule B1 of NEPC (2013) are shown in Table F5.

Table F4*:* Inputs to the Derivation of ESL

Variable	Input	Rationale
Depth of ESL application	Top 2 m of the soil profile	The top 2 m depth below ground level corresponds to the root zone and habitation zone of many species.
Land use	Urban residential and public open space/ commercial and industrial	Proposed land use for redevelopment
Soil Texture	Coarse	The most conservative values based on filling present at the site.

Table F5: Ecological Screening Levels (ESL) in mg/kg

Analyte		ESL C
TRH	F1	180
	F2	120
	F3	300
	F4	2800
BTEX	Benzene	50
	Toluene	85
	Ethylbenzene	70
	Xylenes	105
PAH	Benzo(a)pyrene	0.7

F1.4 Management Limits - Petroleum Hydrocarbons

In addition to appropriate consideration and application of the HSL, there are additional considerations which reflect the nature and properties of petroleum hydrocarbons, including:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosion hazards; and
- Effects on buried infrastructure e.g., penetration of, or damage to, in-ground services.

Management Limits to avoid or minimise these potential effects have been adopted in NEPC (2013) as interim Tier 1 guidance. Management Limits have been derived in NEPC (2013) for the same four petroleum fractions as the HSL (F1 to F4). The adopted Management Limits, from Table 1B (7), Schedule B1 of NEPC (2013) are shown in the following Table F6. The following site specific data and assumptions have been used to determine the Management Limits:

- The Management Limits will apply to any depth within the soil profile;
- The Management Limits for commercial/ industrial and recreational/public open space apply; and
- A coarse soil texture has been adopted due to the presence of sand in filling as well as being the more conservative limits.

Table F6: Management Limits in mg/kg

Analyte		Management Limit C
TRH	F1 #	700
	F2 #	1000
	F3	2500
	F4	10000

Separate management limits for BTEX and naphthalene are not available hence these have not been subtracted from the relevant fractions to obtain F1 and F2

F1.5 Asbestos in Soil

Bonded asbestos-containing material (ACM) is the most common form of asbestos contamination across Australia, generally arising from:

- Inadequate removal and disposal practices during demolition of buildings containing asbestos products;
- Widespread dumping of asbestos products and asbestos containing fill on vacant land and development sites; and
- Commonly occurring in historical fill containing unsorted demolition materials.

Mining, manufacturing or distribution of asbestos products may result in sites being contaminated by friable asbestos including free fibres. Severe weathering or damage to bonded ACM may also result in the formation of friable asbestos comprising fibrous asbestos (FA) and / or asbestos fines (AF).

Asbestos only poses a risk to human health when asbestos fibres are made airborne and inhaled. If asbestos is bound in a matrix such as cement or resin, it is not readily made airborne except through substantial physical damage. Bonded ACM in sound condition represents a low human health risk, whilst both FA and AF materials have the potential to generate, or be associated with, free asbestos fibres. Consequently, FA and AF must be carefully managed to prevent the release of asbestos fibres into the air.

A limit of reporting of 0.1 g/kg was adopted for the previous investigation as an initial screen.

F1.6 Acid Sulfate Soil

The action criteria (i.e. at which point management of ASS will be required) for acid sulfate soils are sourced from the Acid Sulfate Soils Management Advisory Committee (ASSMAC) (1998) *Acid Sulfate Soils Assessment Guidelines*. With respect to the soils observed at the site, the results were compared against the action criteria for ‘sands’ (‘Coarse Texture’). The Action Criteria are listed in the table below.

Table F7: ASSMAC Action Criteria

Screening Criteria		Screening Levels
Field Results pH	pH_F	<4
	pH_{FOX}	<3
	pH_F - pH_{FOX}	≥1
Action Criteria (Chromium Reducible Sulfur)		**Threshold[1]**
	TPA / TAA (mol H+/tonne)	18
	Oxidisable (%)	0.03

Notes:
1. ASSMAC Action Criteria for disturbance of coarse textured soil 1 - 1000 tonnes
pH_F non-oxidised pH - this measures existing acidity.
pH_{FOX} oxidised pH - this measures potential acidity.
Change (pH_{FOX} - pH_F) - the larger the difference from (pH_{FOX}) to (pH_F), the more likely of the soil being Potential ASS.

F1.7 Waste Classification Criteria

F1.7.1 Fill

The waste classification should be conducted with reference to the NSW Environment Protection Authority (EPA) *Waste Classification Guidelines, Part 1: Classifying Waste*, November 2014 (NSW EPA, 2014).

NSW EPA (2014) contains a six step procedure for determining the type of waste and the waste classification. Part of the procedure, for materials not classified as special waste or pre-classified waste, is a comparison of analytical data initially against contaminant threshold (CT) values specific to a waste category. Alternatively, the data can be assessed against specific contaminant concentration (SCC) thresholds when used in conjunction with toxicity characteristic leaching procedure (TCLP) thresholds.

The CT, SCC and TCLP values can be found in Table 1 and Table 2 of NSW EPA (2014).

F1.7.2 Virgin Excavated Natural Material

The POEO Act defines virgin excavated natural material (VENM) as:

'*natural material (such as clay, gravel, sand, soil or rock fines):*

(a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities and

(b) that does not contain any sulfidic ores or soils or any other waste.

The following publications with background concentration ranges for Australian soils have been referenced in assessing the concentrations of analytes:

- Australian and New Zealand Environment and Conservation Council/National Health and Medical Research Council (ANZECC/NHMRC): *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites* (1992), Environmental Soil Quality Guidelines Column A Background (ANZECC A) (ANZECC 1992); and
- Australian and New Zealand Environment and Conservation Council/National Health and Medical Research Council (ANZECC): *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (2000), Volume 3, Table 9.2.16 Datasets used to derive suggested upper background values for uncontaminated Australian soils (ANZECC 2000).

The VENM waste classification should be conducted with reference to the NSW Environment Protection Authority (EPA) *Waste Classification Guidelines, Part 1: Classifying Waste*, November 2014 (EPA, 2014).

F2 Groundwater

Mill Stream is considered the potential receptor of impacted groundwater from the site.

F2.1 Groundwater Investigation Levels

The ground investigation levels (GIL adopted in NEPC (2013) are based on:

- *Australian Drinking Water Guidelines* 2011 (NHMRC);
- *Guidelines for Managing Risk in Recreational Waters* 2008 (GMRRW); and
- *National water quality management strategy. Australian and New Zealand guidelines for fresh and marine water quality* 2000 (ANZECC, 2000).

It is noted that as of 29 August 2018, the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia.* (ANZG, 2018) replaced the ANZECC (2000). As such, the default guideline values (DGV) from the ANZG (2018) for marine water have been adopted and are shown in Table F8 below. It is noted that values for cadmium, chromium (III), lead, nickel and zinc are adjusted for a mean hardness level of 38 mg/kg $CaCO_3$ /L.

Table F8: Groundwater Investigation Levels (µg/L)

Analyte		Default Guideline Values (µg/L)
		ANZG (2018) [a]
		Freshwater
Dissolved Heavy Metals	Arsenic (III)	24 [c]
	Cadmium	0.2
	Chromium (Total)	4
	Copper	1.7
	Lead	4.6
	Mercury	0.6 [c]
	Nickel	13
	Zinc	9.8
PAH	Benzo(a)pyrene	0.1 [bd]
	Naphthalene	16 [bd]
OCP	Aldrin	0.001 [b]
	Dieldrin	0.01 [b]
	Chlordane	0.003 [cd]
	Heptachlor	0.01 [cd]
	DDT	0.006 [cd]
OPP	Diazinon	0.01
	Dimethoate	0.15
	Fenitrothion	0.2
	Parathion	0.004
Phenols	Phenol	50
BTEX	Benzene	950 [c]
	Toluene	180 [b]
	Ethylbenzene	80 [b]
	o-xylene	350 [b]
	m-xylene	75 [b]

NOTES
a: ANZG (2018) Default Guideline Values for a slightly to moderately disturbed system based on 95% level of species protection unless otherwise stated
b: insufficient data for reliable trigger value; unknown reliability or low reliability value used
c: moderate reliability value used
d: ANZG (2018) Default Guideline Values for a high conservation or ecological value system based on 99% level of species protection unless otherwise stated (bioaccumulation)

F2.2 Health Screening Levels

The generic HSL are considered to be appropriate for the assessment of contamination at the site. The adopted groundwater HSL for the potential contaminants of concern are presented in Table F10, with the inputs used in their derivation shown in Table F9.

Table F9: Inputs to the Derivation of HSLs

Variable	Input	Rationale
Soil Type	Sand	Sand has been adopted as filling across the site was mostly sand.
Depth to contamination	0 m to <3 m	Shallow groundwater levels recorded above 3 m bgl
Land Use	HSL C & HSL A/B	Recreational/ open space land use. HSL A/B adopted as conservative screen for enclosed structures

Table F10: Groundwater HSL C in µg/L

Analyte		HSL C	HSL A /B
TRH	C_6 – C_{10} (less BTEX) [F1]	NL	1000
	>C_{10}-C_{16} (less Naphthalene) [F2]	NL	1000
BTEX	Benzene	NL	800
	Toluene	NL	NL
	Ethylbenzene	NL	NL
	Xylene	NL	NL
PAH	Naphthalene	NL	NL

Note: NL -The solubility limit is defined as the groundwater concentration at which the water cannot dissolve any more of an individual chemical based on a petroleum mixture. The soil vapour which is in equilibrium with the groundwater will be at its maximum. If the derived groundwater HSL exceeds the water solubility limit, a soil-vapour source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for a given scenario. For these scenarios no HSL is presented for these chemicals. These are denoted as not limiting 'NL'.

Appendix G

Summary Tables

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Table 1A: Summary of Laboratory Results – Metals, TRH, BTEX, PAH (HIL-C/HSL-C)

			Metals										TRH & TPH in Soil												BTEX				PAH					
			Arsenic	Cadmium	Total Chromium	Copper	Lead	TCLP Lead	Mercury (inorganic)	Nickel	TCLP Nickel	Zinc	TRH C6 - C10	F1 ((C6-C10)-BTEX)	TRH >C10-C16	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	TPH (C10-C14) - Silica	TPH (>C10-C16) - Silica	TPH (C15-C28) - Silica	TPH >(C16-C34) - Silica	TPH (C29-C36) - Silica	TPH (>C34-C40) - Silica	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	TCLP Naphthalene [b]	Benzo(a)pyrene (BaP)	TCLP Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
		PQL	4	0.4	1	1	1	0.03	0.1	1	0.02	1	25	25	50	50	100	100	50	50	100	100	100	100	0.2	0.5	1	1	1	0.001	0.05	0.001	0.5	0.05
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/L	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/L	mg/kg	mg/L	mg/kg	mg/kg
Site Assessment Criteria																																		
HIL C	-	-	300	90	300	17000	600	-	80	1200	-	30000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	300
HSL C - Vapour Intrusion	-	-	-	-	-	-	-	-	-	-	-	-	-	NL	-	NL	-	-	-	NL	-	-	-	-	NL	NL	NL	NL	-	-	-	-	-	-
HSL A / B - Vapour Intrusion	-	-	-	-	-	-	-	-	-	-	-	-	-	45	-	110	-	-	-	110	-	-	-	-	0.5	160	55	40	-	-	-	-	-	-
EIL/ ESL C	-	-	100	-	410	130	1100	-	-	55	-	350	-	180	-	120	300	2800	-	120	-	300	-	2800	50	85	70	105	170	-	0.7 / 33 [d]	-	-	-
Management Limit (ML)	-	-	-	-	-	-	-	-	-	-	-	-	-	700	-	1000	2500	10000	-	-	-	2500	-	10000	-	-	-	-	-	-	-	-	-	-
HSL C - Direct Contact (DC)	-	-	-	-	-	-	-	-	-	-	-	-	5100	-	3800	-	5300	7400	-	3800	-	5300	-	7400	120	18000	5300	15000	1900	-	-	-	-	-
Laboratory Results - Prensa 2018																																		
BH2	0-0.1 m	25/05/2018	9.3	<0.4	13	18	100	-	0.1	7	-	60	<20	<20	<50	<50	110	<100	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.3	<0.5	-	<0.5	-	1.2	<0.5
BH2	0.4 - 0.5 m	25/05/2018	5.4	<0.4	12	23	280	-	<0.1	29	-	51	<20	<20	<50	<50	310	240	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.3	<0.5	-	<0.5	-	1.2	3.2
Laboratory Results - DP 2020																																		
BH4	0.9 - 1 m	11/05/2020	<4	0.6	7	37	170	0.2	0.1	6	NT	380	<25	<25	<50	<50	240	160	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	<1	<0.001	2.9	<0.001	4.2	25
BH6	0.5 - 0.6 m	12/05/2020	<4	0.4	4	57	91	NT	<0.1	7	NT	610	<25	<25	120	120	140	480	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	14	0.023	18	<0.001	26	310
BH9	0.5 - 0.6 m	12/05/2020	7	<0.4	11	130	63	NT	0.2	10	NT	46	<25	<25	<50	<50	1400	430	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	1.8	<0.001	33	<0.001	49	400
BH10	0.4 - 0.5 m	11/05/2020	<4	<0.4	5	9	30	NT	<0.1	8	NT	61	<25	<25	<50	<50	200	<100	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	1.3	0.005	9.8	<0.001	14	130
BD1/110520	0.4 - 0.5 m	11/05/2020	<4	<0.4	6	14	37	NT	<0.1	10	NT	73	<25	<25	55	53	680	190	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	15	0.004	22	<0.001	33	300
BH11	0.9 - 1 m	11/05/2020	<4	<0.4	<1	1	<1	NT	<0.1	<1	NT	1	<25	<25	<50	<50	<100	<100	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	<1	NT	0.54	NT	0.7	8.3
BH11	1 - 1.3 m	11/05/2020	<4	<0.4	5	<1	2	NT	<0.1	1	NT	<1	<25	<25	<50	<50	<100	<100	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH12	0.5 - 0.6 m	12/05/2020	<4	0.9	19	46	54	NT	0.3	21	NT	280	<25	<25	74	69	3700	1100	<50	<50	760	1200	570	250	<0.2	<0.5	<1	<1	5	0.012	68	<0.001	100	640
BH18	0.4 - 0.5 m	19/05/2020	<4	<0.4	13	160	17	NT	<0.1	35	NT	87	<25	<25	200	200	8100	2200	<50	<50	2400	4000	2200	1500	<0.2	<0.5	<1	<1	<1	<0.001	72	<0.001	110	1200
BH18	0.9 - 1 m	19/05/2020	<4	<0.4	<1	2	25	NT	<0.1	<1	NT	4	<25	<25	<50	<50	<100	<100	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	<1	NT	0.2	NT	<0.5	2
BH19	0.4 - 0.5 m	19/05/2020	<4	<0.4	3	12	13	NT	<0.1	12	NT	16	<25	<25	1300	1000	8100	890	57	130	1300	1500	410	180	<0.2	<0.5	<1	<1	490	0.4	350	<0.001	510	7200
BH19	1.4 - 1.5 m	19/05/2020	<4	<0.4	1	2	2	NT	<0.1	<1	NT	1	<25	<25	<50	<50	<100	<100	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	<1	NT	0.2	NT	<0.5	3.3
BH20	0 - 0.1 m	19/05/2020	<4	<0.4	6	9	35	NT	<0.1	4	NT	20	<25	<25	<50	<50	<100	<100	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	<1	NT	0.2	NT	<0.5	1.8
BH21	0.4 - 0.5 m	19/05/2020	34	<0.4	5	24	21	NT	<0.1	54	0.07	21	<25	<25	<50	<50	<100	<100	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	<1	NT	0.3	NT	<0.5	5.8
BH21	1 - 1.1 m	19/05/2020	<4	<0.4	<1	2	<1	NT	<0.1	2	NT	2	<25	<25	<50	<50	<100	<100	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	<1	NT	0.06	NT	<0.5	0.3
BH22	0.4 - 0.5 m	19/05/2020	<4	<0.4	5	220	130	0.38	<0.1	23	NT	76	<25	<25	890	740	8000	930	140	520	5600	6600	1700	610	<0.2	<0.5	<1	<1	290	0.47	520	<0.001	730	10000
BH22	1.4 - 1.5 m	19/05/2020	<4	<0.4	<1	1	<1	NT	<0.1	<1	NT	4	<25	<25	<50	<50	<100	<100	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	<1	NT	0.1	NT	<0.5	2.7
BH27	1.4 - 1.5 m	18/05/2020	5	0.4	11	140	86	NT	0.1	32	NT	590	<25	<25	<50	<50	880	220	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	6.3	0.016	23	<0.001	34	430
BH40	0.4 - 0.5 m	19/05/2020	<4	<0.4	5	22	46	NT	<0.1	5	NT	40	<25	<25	<50	<50	<100	<100	NT	NT	NT	NT	NT	NT	<0.2	<0.5	<1	<1	<1	NT	0.5	NT	0.6	4.4

Lab result
HIL/HSL value EIL/ESL value

HIL/HSL exceedance | EIL/ESL exceedance | HIL/HSL and EIL/ESL exceedance | ML exceedance | ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab below the PQL, refer to the lab report **Bold** = DC exceedance

Blue = Lab detections NT = Not tested NL = Non limiting NC = No criteria NA = Not applicable NAD = No asbestos detected

Notes:

HIL/HSL/DC	NEPC, Schedule B1 - HIL C (Recreational/Open Space), HSL C (Recreational/Open Space), DC HSL C (Recreational/Open Space)
EIL/ESL	NEPC, Schedule B1 - EIL UR/POS (Urban/Recreational/Public Open Space), ESL UR/POS (Urban/Recreational/Public Open Space)
ML	NEPC, Schedule B1 - ML R/P/POS (Residential, Parkland and Public Open Space)
a	QA/QC replicate of sample listed directly below the primary sample
b	Reported naphthalene laboratory result obtained from BTEXN suite
c	EIL/ESL criteria applies to DDT only
d	CRC Care 2017 high reliabilit guidelines (mean value)
*	Results obtained from Eurofins lab duplicate

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Table 1B: Summary of Laboratory Results – Phenol, OCP, OPP, PCB, Asbestos (HIL-C/HSL-C)

			Phenol	OCP												OPP	PCB	Asbestos		
			Phenol	DDT+DDE+DDD [c]	DDD	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor		Chlorpyriphos	Total PCB	Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos (50 g)
		PQL	5	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			
Sample ID	Depth	Sample Date	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	-	-	-
Site Assessment Criteria - Recreational/ Open Space Land Use																				
HIL C / HSL C Direct Contact	-	-	120	400	-	-	-	10	70	340	20	10	10	400		250	1	-	-	-
HSL C - Vapour Intrusion	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
HSL A / B - Vapour Intrusion	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
EIL/ ESL	-	-	-	180	-	-	180	NC	NC	NC	NC	NC	NC	NC		NC	NC	NC	NC	NC
Management Limit (ML)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Direct Contact (DC)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Laboratory Results - Prensa 2018																				
BH2	0-0.1 m	25/05/2018	NT	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.2	<0.1	NT	NT	NT
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH2	0.4 - 0.5 m	25/05/2018	NT	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.2	<0.1	NT	NT	NT
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
Laboratory Results - DP 2020																				
BH4	0.9 - 1 m	11/05/2020	<5	0.2	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH6	0.5 - 0.6 m	12/05/2020	<5	<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	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH9	0.5 - 0.6 m	12/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH10	0.05 - 0.1 m	11/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH10	0.4 - 0.5 m	11/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BD1/110520	0.4 - 0.5 m	11/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH11	0.9 - 1 m	11/05/2020	<5	<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	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH12	1 - 1.3 m	11/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH18	0.4 - 0.5 m	19/05/2020	<5	<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	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH18	0.9 - 1 m	19/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH19	0.4 - 0.5 m	19/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH19	1.4 - 1.5 m	19/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH20	0 - 0.1 m	19/05/2020	<5	<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	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH21	0.4 - 0.5 m	19/05/2020	<5	<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	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH21	1 - 1.1 m	19/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH22	0.4 - 0.5 m	19/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH22	1.4 - 1.5 m	19/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH27	1.4 - 1.5 m	18/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		<0.1	<0.1	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			
BH40	0.4 - 0.5 m	19/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NAD	NAD	NAD
			120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC		250 NC	1 NC			

Lab result
HIL/HSL value EIL/ESL value

HIL/HSL exceedance EIL/ESL exceedance HIL/HSL and EIL/ESL exceedance ML exceedance ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab below the PQL, refer to the lab report **Blue** = DC exceedance

Bold = Lab detections NT = Not tested NL = Non limiting NC = No criteria NA = Not applicable NAD = No asbestos detected

Notes:

HIL/HSL/DC	NEPC, Schedule B1 - HIL C (Recreational/Open Space), HSL C (Recreational/Open Space), DC HSL C (Recreational/Open Space)
EIL/ESL	NEPC, Schedule B1 - EIL UR/POS (Urban/Recreational/Public Open Space), ESL UR/POS (Urban/Recreational/Public Open Space)
ML	NEPC, Schedule B1 - ML R/P/POS (Residential, Parkland and Public Open Space)
a	QA/QC replicate of sample listed directly below the primary sample
b	Reported naphthalene laboratory result obtained from BTEXN suite
c	EIL/ESL criteria applies to DDT only
*	Results obtained from Eurofins lab duplicate

Douglas Partners
Geotechnics / Environment / Groundwater

Table 2A: Summary of Laboratory Results – Metals, TRH, BTEX, PAH, Phenol, OCP, OPP, PCB, Asbestos (Preliminary Waste Classification)

			Metals								TRH		BTEX						PAH																								Phenol	OCP		OPP	PCB	Asbestos		
			Arsenic	Cadmium	Total Chromium	Lead	TCLP Lead	Mercury (inorganic)	Nickel	TCLP Nickel	TRH C6 - C9	C10-C36 recoverable hydrocarbons	Benzene	Toluene	Ethylbenzene	m+p-Xylene	o-Xylene	Xylenes (total)	TCLP Benzo(a)pyrene (BaP)	Benzo(a)pyrene (BaP)	TCLP Acenaphthene	Acenaphthene	TCLP Acenaphthylene	Acenaphthylene	TCLP Anthracene	Anthracene	TCLP Benzo(a)anthracene	Benzo(a)anthracene	Benzo(b+j)fluoranthene	TCLP Benzo(b,j+k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	TCLP Chrysene	Chrysene	TCLP Dibenz(a,h)anthracene	Dibenz(a,h)anthracene	TCLP Fluoranthene	Fluoranthene	TCLP Fluorene	Fluorene	TCLP Indeno(1,2,3-c,d)pyrene	Indeno(1,2,3-c,d)pyrene	TCLP Naphthalene	Naphthalene	TCLP Phenanthrene	Phenanthrene	TCLP Pyrene	Pyrene	Total PAHs	Phenol	Total Endosulfan	Total Analysed OCP	Total Analysed OPP	Total PCB	Asbestos ID in soil >0.1g/Kg	Trace Analysis	Total Asbestos
		PQL	4	0.4	1	1	0.03	0.1	1	0.02	25	50	0.2	0.5	1	2	1	3	0.001	0.05	0.001	0.1	0.001	0.1	0.001	0.1	0.001	0.1	0.2	0.001	0.1	0.001	0.1	0.001	0.1	0.001	0.1	0.001	0.1	0.001	0.1	0.001	1	0.001	0.1	0.001	0.1	0.05	5	0.1	0.1	0.1	0.1			
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	-	-
BH4	0.9 - 1 m	11/05/2020	<4	0.6	7	170	0.2	0.1	6	NT	<25	290	<0.2	<0.5	<1	<2	<1	<3	<0.001	2.9	<0.001	<0.1	<0.001	0.1	<0.001	0.3	<0.001	2.6	4.4	<0.001	1.9	<0.001	2.5	<0.001	0.4	<0.001	3.4	<0.001	<0.1	<0.001	1.6	<0.001	<1	<0.001	1.1	<0.001	3.7	25	<5	<0.1	0.2	<0.1	<0.1	NAD	NAD	NAD
BH6	0.5 - 0.6 m	12/05/2020	<4	0.4	4	91	NT	<0.1	7	NT	<25	1657	<0.2	<0.5	<1	<2	<1	<3	<0.001	18	0.003	5.8	0.003	<1	0.001	18	<0.001	25	26	<0.001	8.6	<0.001	23	<0.001	2.7	<0.001	47	0.002	4.2	<0.001	7.3	0.023	14	0.007	65	<0.001	46	310	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH9	0.5 - 0.6 m	12/05/2020	7	<0.4	11	63	NT	0.2	10	NT	<25	1630	<0.2	<0.5	<1	<2	<1	<3	<0.001	33	0.001	3	0.001	2.1	0.001	13	<0.001	38	49	<0.001	20	<0.001	36	<0.001	4.6	0.001	67	<0.001	3	<0.001	16	<0.001	1.8	0.005	46	0.001	65	400	NT	NT	NT	NT	NT	NAD	NAD	NAD
BH10	0.05 - 0.1 m	11/05/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	NAD
BH10	0.4 - 0.5 m	11/05/2020	<4	<0.4	5	30	NT	<0.1	8	NT	<25	130	<0.2	<0.5	<1	<2	<1	<3	<0.001	9.8	0.002	0.8	0.003	0.2	0.002	3.5	<0.001	9.8	14	<0.001	7.5	<0.001	8.8	<0.001	1.4	0.003	26	0.004	1.5	<0.001	5.9	0.005	1.3	0.017	21	0.002	24	130	NT	NT	NT	NT	NT	NT	NT	NT
BD1/110520	0.4 - 0.5 m	11/05/2020	<4	<0.4	6	37	NT	<0.1	10	NT	<25	760	<0.2	<0.5	<1	<2	<1	<3	<0.001	22	0.002	3.9	0.003	0.5	0.002	13	<0.001	24	31	<0.001	18	<0.001	21	<0.001	3.3	0.002	41	0.003	8.9	<0.001	14	0.004	15	0.017	42	0.003	39	300	NT	NT	NT	NT	NT	NT	NT	NT
BH11	0.9 - 1.0 m	11/05/2020	<4	<0.4	<1	<1	NT	<0.1	<1	NT	<25	<50	<0.2	<0.5	<1	<2	<1	<3	NT	0.54	NT	<0.1	NT	<0.1	NT	0.3	NT	0.5	0.7	NT	0.4	NT	0.5	NT	<0.1	NT	1.4	NT	0.3	NT	0.3	NT	<1	NT	1.7	NT	1.3	8.3	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH11	1 - 1.3 m	11/05/2020	<4	<0.4	5	2	NT	<0.1	1	NT	<25	<50	<0.2	<0.5	<1	<2	<1	<3	NT	<0.05	NT	<0.1	NT	<0.1	NT	<0.1	NT	<0.1	<0.2	NT	<0.1	NT	<0.1	NT	<0.1	NT	<0.1	NT	<0.1	NT	<0.1	NT	<1	NT	<0.1	NT	<0.1	<0.05	NT	NT	NT	NT	NT	NAD	NAD	NAD
BH12	0.5 - 0.6 m	12/05/2020	<4	0.9	19	54	NT	0.3	21	NT	<25	4200	<0.2	<0.5	<1	<2	<1	<3	<0.001	68	0.004	3.9	0.004	2	0.002	17	<0.001	59	100	<0.001	47	<0.001	51	<0.001	12	0.002	89	0.004	5.4	<0.001	40	0.012	5	0.009	48	<0.001	98	640	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH18	0.4 - 0.5 m	19/05/2020	<4	<0.4	13	17	NT	<0.1	35	NT	<25	9400	<0.2	<0.5	<1	<2	<1	<3	<0.001	72	0.002	9	<0.001	1.7	0.001	48	<0.001	94	120	<0.001	38	<0.001	92	<0.001	9	0.002	240	0.001	6.5	<0.001	31	<0.001	<1	0.004	170	0.001	220	1200	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH18	0.9 - 1 m	19/05/2020	<4	<0.4	<1	25	NT	<0.1	<1	NT	<25	<50	<0.2	<0.5	<1	<2	<1	<3	NT	0.2	NT	<0.1	NT	<0.1	NT	<0.1	NT	0.2	0.3	NT	0.1	NT	0.2	NT	<0.1	NT	0.4	NT	<0.1	NT	<0.1	NT	<1	NT	0.3	NT	0.4	2	NT	NT	NT	NT	NT	NT	NT	NT
BH19	0.4-0.5 m	19/05/2020	<4	<0.4	3	13	NT	<0.1	12	NT	<25	9470	<0.2	<0.5	<1	<2	<1	<3	<0.001	350	0.037	67	0.004	67	0.021	280	0.001	380	510	<0.001	260	0.001	350	<0.001	41	0.028	1300	0.059	150	<0.001	200	0.4	490	0.19	1500	0.022	1200	7200	NT	NT	NT	NT	NT	NAD	NAD	NAD
BH19	1.4 - 1.5 m	19/05/2020	<4	<0.4	1	2	NT	<0.1	<1	NT	<25	<50	<0.2	<0.5	<1	<2	<1	<3	NT	0.2	NT	<0.1	NT	0.1	NT	0.1	NT	0.2	0.3	NT	0.2	NT	0.2	NT	<0.1	NT	0.6	NT	<0.1	NT	0.1	NT	<1	NT	0.5	NT	0.6	3.3	NT	NT	NT	NT	NT	NT	NT	NT
BH20	0 - 0.1 m	19/05/2020	<4	<0.4	6	35	NT	<0.1	4	NT	<25	<50	<0.2	<0.5	<1	<2	<1	<3	NT	0.2	NT	<0.1	NT	<0.1	NT	<0.1	NT	0.1	0.2	NT	0.1	NT	0.1	NT	<0.1	NT	0.4	NT	<0.1	NT	<0.1	NT	<1	NT	0.3	NT	0.4	1.8	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH21	0.4 - 0.5 m	19/05/2020	34	<0.4	5	21	NT	<0.1	54	0.07	<25	<50	<0.2	<0.5	<1	<2	<1	<3	NT	0.3	NT	<0.1	NT	0.1	NT	0.2	NT	0.4	0.6	NT	0.2	NT	0.4	NT	<0.1	NT	1.2	NT	<0.1	NT	0.2	NT	<1	NT	1	NT	1.1	5.8	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH21	1 - 1.1 m	19/05/2020	<4	<0.4	<1	NT	<0.1	2	NT	<25	<50	<0.2	<0.5	<1	<2	<1	<3	NT	0.06	NT	<0.1	NT	<0.1	NT	<0.1	NT	<0.1	NT	<0.2	NT	<0.1	NT	<0.1	NT	<0.1	NT	0.1	NT	<0.1	NT	0.1	NT	<1	NT	<0.1	NT	0.1	0.3	NT	NT	NT	NT	NT	NT	NT	NT
BH22	0.4 - 0.5 m	19/05/2020	<4	<0.4	5	130	0.38	<0.1	23	NT	<25	9030	<0.2	<0.5	<1	<2	<1	<3	<0.001	520	0.045	84	0.007	100	0.025	480	0.001	560	770	<0.001	280	0.001	540	<0.001	38	0.041	2000	0.098	290	<0.001	310	0.47	290	0.26	2300	0.032	1800	10000	NT	NT	NT	NT	NT	NAD	NAD	NAD
BH22	1.4 - 1.5 m	19/05/2020	<4	<0.4	<1	<1	NT	<0.1	<1	NT	<25	<50	<0.2	<0.5	<1	<2	<1	<3	NT	0.1	NT	<0.1	NT	0.1	NT	0.1	NT	0.2	0.2	NT	0.1	NT	0.2	NT	<0.1	NT	0.6	NT	<0.1	NT	<0.1	NT	<1	NT	0.6	NT	0.5	2.7	NT	NT	NT	NT	NT	NT	NT	NT
BH27	1.4 - 1.5 m	18/05/2020	5	0.4	11	86	NT	0.1	32	NT	<25	980	<0.2	<0.5	<1	<2	<1	<3	<0.001	23	0.005	2.4	0.001	6.3	0.005	17	<0.001	24	34	<0.001	18	<0.001	22	<0.001	3.6	0.006	88	0.013	8.4	<0.001	14	0.016	6.3	0.036	78	0.004	84	430	NT	NT	NT	NT	NT	NAD	NAD	NAD
BH40	0.4 - 0.5 m	19/05/2020	<4	<0.4	5	46	NT	<0.1	5	NT	<25	<50	<0.2	<0.5	<1	<2	<1	<3	NT	0.5	NT	<0.1	NT	<0.1	NT	0.1	NT	0.4	0.7	NT	0.3	NT	0.4	NT	<0.1	NT	0.7	NT	<0.1	NT	0.2	NT	<1	NT	0.3	NT	0.7	4.4	NT	NT	NT	NT	NT	NAD	NAD	NAD
Waste Classification Criteria [f]																																																												
CT1			100	20	100	100	N/A	4	40	N/A	650	10000	10	288	600	N/A	N/A	1000	N/A	0.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	200	288	60	<50	4	<50	N/A	N/A	N/A
SCC1			500	100	1900	1500	N/A	50	1050	N/A	650	10000	18	518	1080	N/A	N/A	1800	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	200	518	108	<50	7.5	<50	N/A	N/A	N/A
TCLP1			N/A	N/A	N/A	N/A	5	N/A	N/A	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CT2			400	80	400	400	N/A	16	160	N/A	2600	40000	40	1152	2400	N/A	N/A	4000	N/A	3.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	800	1152	240	<50	16	<50	N/A	N/A	N/A
SCC2			2000	400	7600	6000	N/A	200	4200	N/A	2600	40000	72	2073	4320	N/A	N/A	7200	N/A	23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	800	2073	432	<50	30	<50	N/A	N/A	N/A
TCLP2			N/A	N/A	N/A	N/A	20	N/A	N/A	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

CT1 exceedance | TCLP1 and/or SCC1 exceedance | CT2 exceedance | TCLP2 and/or SCC2 exceedance | Asbestos detection

NT = Not tested NC = No criteria AD = Asbestos detected NAD = No asbestos detected

Notes:

a	QA/QC replicate of sample listed directly below the primary sample
b	Total chromium used as initial screen for chromium(VI).
c	Total recoverable hydrocarbons (TRH) used as an initial screen for total petroleum hydrocarbons (TPH)
d	Criteria for scheduled chemicals used as an initial screen
e	Criteria for Chlorpyrifos used as initial screen
f	All criteria are in the same units as the reported results
PQL	Practical quantitation limit
CT1	NSW EPA, 2014, Waste Classification Guidelines Part 1: Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: General solid waste
SCC1	NSW EPA, 2014, Waste Classification Guidelines Part 1: Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
TCLP1	NSW EPA, 2014, Waste Classification Guidelines Part 1: Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
CT2	NSW EPA, 2014, Waste Classification Guidelines Part 1: Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: Restricted solid waste
SCC2	NSW EPA, 2014, Waste Classification Guidelines Part 1: Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid
TCLP2	NSW EPA, 2014, Waste Classification Guidelines Part 1: Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid

Table 3A: Summary of Laboratory results - Groundwater

		Dissolved Metals / Metalloids								TRH							BTEX					PAH			OCPs and OPPs											Phenols
		Arsenic	Cadmium^	Chromium (Total)^	Copper^	Lead^	Mercury	Nickel^	Zinc^	C6 - C9	C10 - C14	C15 - C28	C29 - C36	Sum* (C10 - C36)	C6 - C10 less BTEX [F1]	>C10-C16 less Naphthalene [F2]	Benzene	Toluene	Ethylbenzene	m+p xylene	o-xylene	Naphthalene	Benzo(a)pyrene	Total PAH	Aldrin	Dieldrin	Chlordane	DDT	Heptachlor	All Other OCPs	Diazinon	Dimethoate	Fenitrothion	Parathion	All Other OPPs	Total Phenols
	PQL	1	0.1	1	1	1	0.05	1	1	10	50	100	100	250	10	50	1	1	1	2	1	1	0.1	-	0.001	0.001	0.001	0.001	0.001	-	0.01	0.15	0.2	0.004	-	0.05
Sample ID	Sampled Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
Site Assessment Criteria																																				
		As(III)		Cr(III)																																
ANZG (2018) Freshwater Default Guideline Values for 95% species protection		24[c]	0.2	4	1.7	4.6	0.6[c]	13	9.8	-	-	-	-	-	-	-	950[c]	180[b]	80[b]	75[b]	350[b]	16[ab]	0.1[ab]	-	0.001[b]	0.01[b]	0.03[ac]	0.006[ac]	0.01[ac]	>PQL	0.01	0.15	0.20	0.004	>PQL	>PQL
NEPM (2013) Groundwater HSL A/B for Vapour Intrusion, Sand 2-4 m		-	-	-	-	-	-	-	-	-	-	-	-	-	1000	1000	800	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM (2013) Groundwater HSL C for Vapour Intrusion, Sand		-	-	-	-	-	-	-	-	-	-	-	-	-	NL	NL	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laboratory Results (µg/L)																																				
GW6	22/05/2020	<1	<0.1	2	<1	<1	<0.05	1	4	14	<50	<100	<100	<250	<10	<50	<1	12	<1	<2	<1	<1	<0.1	0.17	<0.001	<0.001	<0.001	<0.001	<0.001	<PQL	<0.01	<0.15	<0.2	<0.004	<PQL	<0.05
BD1/20200522[#]	22/05/2020	<1	<0.1	<1	<1	<1	<0.05	1	3	<10	<50	<100	<100	<250	<10	<50	<1	18	<1	<2	<1	2	<0.1	0.19	<0.001	<0.001	<0.001	<0.001	<0.001	<PQL	<0.01	<0.15	<0.2	<0.004	<PQL	<0.05
GW9	22/05/2020	<1	0.2	1	2	<1	<0.05	<1	16	<10	<50	<100	<100	<250	<10	<50	<1	<1	<1	<2	<1	3	<0.1	0.6	<0.001	<0.001	<0.001	<0.001	<0.001	<PQL	<0.01	<0.15	<0.2	<0.004	<PQL	<0.05
GW17	28/05/2020	7	<0.1	<1	1	<1	<0.05	<1	3	<10	<50	<100	<100	<250	<10	<50	<1	<1	<1	<2	<1	<0.2	<0.1	0.26	<0.001	<0.001	<0.001	<0.001	<0.001	<PQL	<0.01	<0.15	<0.2	<0.004	<PQL	<0.05
GW30	22/05/2020	3	<0.1	2	1	<1	<0.05	2	3	<10	<50	<100	<100	<250	<10	<50	<1	<1	<1	<2	<1	2	<0.1	0.11	<0.001	<0.001	<0.001	<0.001	<0.001	<PQL	<0.01	<0.15	<0.2	<0.004	<PQL	<0.05

Notes:

PQL	Practical Quantitation Limit
NL	HSL not limiting
-	Not analysed / No value
	Exceedance of ANZG (2018) default guideline values
*	Sum of C10 - C36 is equal to the concentration of detects + PQL of non detects
#	Blind replicate sample collected from the same location as the sample listed directly above in this table
^	Value shown is the mean taken from all groundwater wells, adjusted for water hardness
a	ANZG (2018) Default Guideline Values for a high conservation or ecological value system based on 99% level of species protection (bioaccumulation)
b	Insufficient data for reliable trigger value; unknown reliability or low reliability value used
c	Moderate reliability value used

Appendix H

Laboratory Documentation

Envirolab Services Pty Ltd
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CERTIFICATE OF ANALYSIS 242857

Client Details

Client	Douglas Partners Pty Ltd
Attention	Ayla Sorensen, Wen-Fei Yuan
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany**
Number of Samples	27 Soil
Date samples received	13/05/2020
Date completed instructions received	13/05/2020

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	20/05/2020
Date of Issue	20/05/2020

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Lucy Zhu, Asbestos Supervisor
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Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		242857-1	242857-3	242857-6	242857-10	242857-11
Your Reference	UNITS	BH4/0.9-1	BH5/0.5-0.6	BH7/0.9-1	BD2/110520	BH8/0.9-1.0
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	17	1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	122	113	125	112	121

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		242857-14	242857-15	242857-19	242857-20	242857-22
Your Reference	UNITS	BH10/0.4-0.5	BD1/110520	BH11/0.9-1.0 (light colour)	BH11/1-1.3	TS
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	[NA]
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	108%
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	110%
Ethylbenzene	mg/kg	<1	<1	<1	<1	109%
m+p-xylene	mg/kg	<2	<2	<2	<2	108%
o-Xylene	mg/kg	<1	<1	<1	<1	106%
naphthalene	mg/kg	<1	2	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	[NA]
Surrogate aaa-Trifluorotoluene	%	118	105	122	122	109

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		242857-23
Your Reference	UNITS	TB
Date Sampled		11/05/2020
Type of sample		Soil
Date extracted	-	18/05/2020
Date analysed	-	18/05/2020
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<3
Surrogate aaa-Trifluorotoluene	%	134

svTRH (C10-C40) in Soil						
Our Reference		242857-1	242857-3	242857-6	242857-10	242857-11
Your Reference	UNITS	BH4/0.9-1	BH5/0.5-0.6	BH7/0.9-1	BD2/110520	BH8/0.9-1.0
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	18/05/2020	19/05/2020	18/05/2020	19/05/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	120	<100	1,500	<100	290
TRH C_{29} - C_{36}	mg/kg	170	<100	1,100	<100	460
TRH >C_{10} -C_{16}	mg/kg	<50	<50	120	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	100	<50	<50
TRH >C_{16} -C_{34}	mg/kg	240	<100	2,300	<100	610
TRH >C_{34} -C_{40}	mg/kg	160	<100	680	<100	360
Total +ve TRH (>C10-C40)	mg/kg	400	<50	3,100	<50	970
Surrogate o-Terphenyl	%	103	91	126	88	94

svTRH (C10-C40) in Soil					
Our Reference		242857-14	242857-15	242857-19	242857-20
Your Reference	UNITS	BH10/0.4-0.5	BD1/110520	BH11/0.9-1.0 (light colour)	BH11/1-1.3
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	130	480	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	280	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	55	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	53	<50	<50
TRH >C_{16} -C_{34}	mg/kg	200	680	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	190	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	200	920	<50	<50
Surrogate o-Terphenyl	%	89	105	102	86

PAHs in Soil						
Our Reference		242857-1	242857-3	242857-6	242857-10	242857-11
Your Reference	UNITS	BH4/0.9-1	BH5/0.5-0.6	BH7/0.9-1	BD2/110520	BH8/0.9-1.0
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Naphthalene	mg/kg	<0.1	<0.1	16	<0.1	1.2
Acenaphthylene	mg/kg	0.1	<0.1	7.1	<0.1	0.2
Acenaphthene	mg/kg	<0.1	<0.1	5.4	<0.1	0.6
Fluorene	mg/kg	<0.1	<0.1	25	<0.1	0.6
Phenanthrene	mg/kg	1.1	0.2	210	0.4	9.1
Anthracene	mg/kg	0.3	<0.1	39	0.1	2.3
Fluoranthene	mg/kg	3.4	0.4	220	0.8	11
Pyrene	mg/kg	3.7	0.4	200	0.8	9.9
Benzo(a)anthracene	mg/kg	2.6	0.3	78	0.5	5.7
Chrysene	mg/kg	2.5	0.3	70	0.4	5.2
Benzo(b,j+k)fluoranthene	mg/kg	4.4	0.5	110	0.9	9.8
Benzo(a)pyrene	mg/kg	2.9	0.3	77	0.55	7.0
Indeno(1,2,3-c,d)pyrene	mg/kg	1.6	0.2	44	0.4	4.8
Dibenzo(a,h)anthracene	mg/kg	0.4	<0.1	7.6	<0.1	1.4
Benzo(g,h,i)perylene	mg/kg	1.9	0.2	56	0.4	6.2
Total +ve PAH's	mg/kg	25	2.7	1,200	5.3	75
Benzo(a)pyrene TEQ calc (zero)	mg/kg	4.2	<0.5	110	0.7	11
Benzo(a)pyrene TEQ calc(half)	mg/kg	4.2	<0.5	110	0.8	11
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	4.2	<0.5	110	0.8	11
Surrogate p-Terphenyl-d14	%	104	98	130	99	99

PAHs in Soil					
Our Reference		242857-14	242857-15	242857-19	242857-20
Your Reference	UNITS	BH10/0.4-0.5	BD1/110520	BH11/0.9-1.0 (light colour)	BH11/1-1.3
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Naphthalene	mg/kg	1.3	15	0.4	<0.1
Acenaphthylene	mg/kg	0.2	0.5	<0.1	<0.1
Acenaphthene	mg/kg	0.8	3.9	<0.1	<0.1
Fluorene	mg/kg	1.5	8.9	0.3	<0.1
Phenanthrene	mg/kg	21	42	1.7	<0.1
Anthracene	mg/kg	3.5	13	0.3	<0.1
Fluoranthene	mg/kg	26	41	1.4	<0.1
Pyrene	mg/kg	24	39	1.3	<0.1
Benzo(a)anthracene	mg/kg	9.8	24	0.5	<0.1
Chrysene	mg/kg	8.8	21	0.5	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	14	31	0.7	<0.2
Benzo(a)pyrene	mg/kg	9.8	22	0.54	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	5.9	14	0.3	<0.1
Dibenzo(a,h)anthracene	mg/kg	1.4	3.3	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	7.5	18	0.4	<0.1
Total +ve PAH's	mg/kg	130	300	8.3	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	14	33	0.7	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	14	33	0.7	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	14	33	0.8	<0.5
Surrogate p-Terphenyl-d14	%	98	96	99	97

Organochlorine Pesticides in soil					
Our Reference		242857-1	242857-6	242857-11	242857-19
Your Reference	UNITS	BH4/0.9-1	BH7/0.9-1	BH8/0.9-1.0	BH11/0.9-1.0 (light colour)
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	0.2	<0.1	<0.1	<0.1
Surrogate TCMX	%	97	110	93	96

Organophosphorus Pesticides in Soil					
Our Reference		242857-1	242857-6	242857-11	242857-19
Your Reference	UNITS	BH4/0.9-1	BH7/0.9-1	BH8/0.9-1.0	BH11/0.9-1.0 (light colour)
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	97	110	93	96

PCBs in Soil					
Our Reference		242857-1	242857-6	242857-11	242857-19
Your Reference	UNITS	BH4/0.9-1	BH7/0.9-1	BH8/0.9-1.0	BH11/0.9-1.0 (light colour)
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	97	110	93	96

Acid Extractable metals in soil						
Our Reference		242857-1	242857-3	242857-6	242857-10	242857-11
Your Reference	UNITS	BH4/0.9-1	BH5/0.5-0.6	BH7/0.9-1	BD2/110520	BH8/0.9-1.0
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	0.6	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	2	7	7	14
Copper	mg/kg	37	29	73	14	48
Lead	mg/kg	170	25	110	42	92
Mercury	mg/kg	0.1	<0.1	0.3	<0.1	<0.1
Nickel	mg/kg	6	3	13	4	7
Zinc	mg/kg	380	19	82	50	920

Acid Extractable metals in soil						
Our Reference		242857-14	242857-15	242857-19	242857-20	242857-28
Your Reference	UNITS	BH10/0.4-0.5	BD1/110520	BH11/0.9-1.0 (light colour)	BH11/1-1.3	BH4/0.9-1 - [TRIPLICATE]
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	0.5
Chromium	mg/kg	5	6	<1	5	8
Copper	mg/kg	9	14	1	<1	46
Lead	mg/kg	30	37	<1	2	240
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Nickel	mg/kg	8	10	<1	1	7
Zinc	mg/kg	61	73	1	<1	320

Misc Soil - Inorg					
Our Reference		242857-1	242857-6	242857-11	242857-19
Your Reference	UNITS	BH4/0.9-1	BH7/0.9-1	BH8/0.9-1.0	BH11/0.9-1.0 (light colour)
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5

Moisture						
Our Reference		242857-1	242857-3	242857-6	242857-10	242857-11
Your Reference	UNITS	BH4/0.9-1	BH5/0.5-0.6	BH7/0.9-1	BD2/110520	BH8/0.9-1.0
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Moisture	%	10	7.4	11	15	13

Moisture					
Our Reference		242857-14	242857-15	242857-19	242857-20
Your Reference	UNITS	BH10/0.4-0.5	BD1/110520	BH11/0.9-1.0 (light colour)	BH11/1-1.3
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Moisture	%	9.5	13	3.1	9.5

Asbestos ID - soils						
Our Reference		242857-1	242857-3	242857-6	242857-11	242857-13
Your Reference	UNITS	BH4/0.9-1	BH5/0.5-0.6	BH7/0.9-1	BH8/0.9-1.0	BH10/0.05-0.1
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	20/05/2020	20/05/2020	20/05/2020	20/05/2020	20/05/2020
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 45g	Approx. 30g	Approx. 30g
Sample Description	-	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils			
Our Reference		242857-19	242857-20
Your Reference	UNITS	BH11/0.9-1.0 (light colour)	BH11/1-1.3
Date Sampled		11/05/2020	11/05/2020
Type of sample		Soil	Soil
Date analysed	-	20/05/2020	20/05/2020
Sample mass tested	g	Approx. 35g	Approx. 30g
Sample Description	-	Grey sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected

sPOCAS field test						
Our Reference		242857-2	242857-4	242857-5	242857-7	242857-8
Your Reference	UNITS	BH4/2.5-2.95	BH5/1-1.3	BH5/2.5-2.95	BH7/1.9-2	BH7/2.5-2.95
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/05/2020	15/05/2020	15/05/2020	15/05/2020	15/05/2020
Date analysed	-	15/05/2020	15/05/2020	15/05/2020	15/05/2020	15/05/2020
pH_F (field pH test)*	pH Units	7.4	8.1	7.5	8.8	7.3
pH_{FOX} (field peroxide test)*	pH Units	5.5	5.7	5.7	6.3	5.9
Reaction Rate*	-	Low reaction	Volcanic reaction	Low reaction	Medium reaction	Low reaction

sPOCAS field test						
Our Reference		242857-9	242857-12	242857-16	242857-17	242857-18
Your Reference	UNITS	BH8/0.05-0.15	BH8/2.5-2.95	BH10/0.9-1.0	BH10/1-1.45	BH10/2.5-2.95
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/05/2020	15/05/2020	15/05/2020	15/05/2020	15/05/2020
Date analysed	-	15/05/2020	15/05/2020	15/05/2020	15/05/2020	15/05/2020
pH_F (field pH test)*	pH Units	6.6	7.4	7.0	6.9	6.7
pH_{FOX} (field peroxide test)*	pH Units	4.2	5.5	4.6	5.1	4.9
Reaction Rate*	-	Medium reaction	Low reaction	Low reaction	Medium reaction	Medium reaction

sPOCAS field test			
Our Reference		242857-20	242857-21
Your Reference	UNITS	BH11/1-1.3	BH11/4-4.45
Date Sampled		11/05/2020	11/05/2020
Type of sample		Soil	Soil
Date prepared	-	15/05/2020	15/05/2020
Date analysed	-	15/05/2020	15/05/2020
pH_F (field pH test)*	pH Units	6.2	6.6
pH_{FOX} (field peroxide test)*	pH Units	4.7	5.7
Reaction Rate*	-	Low reaction	Low reaction

Soil Aggressivity						
Our Reference		242857-1	242857-6	242857-8	242857-12	242857-16
Your Reference	UNITS	BH4/0.9-1	BH7/0.9-1	BH7/2.5-2.95	BH8/2.5-2.95	BH10/0.9-1.0
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
pH 1:5 soil:water	pH Units	6.6	9.3	7.2	7.6	6.8
Electrical Conductivity 1:5 soil:water	µS/cm	[NA]	[NA]	16	35	11
Chloride, Cl 1:5 soil:water	mg/kg	[NA]	[NA]	<10	<10	<10
Sulphate, SO4 1:5 soil:water	mg/kg	[NA]	[NA]	<10	<10	<10

Soil Aggressivity		
Our Reference		242857-17
Your Reference	UNITS	BH10/1-1.45
Date Sampled		11/05/2020
Type of sample		Soil
pH 1:5 soil:water	pH Units	6.7

CEC				
Our Reference		242857-1	242857-6	242857-17
Your Reference	UNITS	BH4/0.9-1	BH7/0.9-1	BH10/1-1.45
Date Sampled		11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil
Date prepared	-	20/05/2020	20/05/2020	20/05/2020
Date analysed	-	20/05/2020	20/05/2020	20/05/2020
Exchangeable Ca	meq/100g	2.1	19	0.6
Exchangeable K	meq/100g	<0.1	0.1	<0.1
Exchangeable Mg	meq/100g	0.58	0.58	0.23
Exchangeable Na	meq/100g	<0.1	<0.1	<0.1
Cation Exchange Capacity	meq/100g	2.8	20	<1

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.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-063	pH- measured using pH meter and electrode. Soil is oxidised with Hydrogen Peroxide or extracted with water. Based on section H, Acid Sulfate Soils Laboratory Methods Guidelines, Version 2.1 - June 2004. To ensure accurate results these tests are recommended to be done in the field as pH may change with time thus these results may not be representative of true field conditions.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
Metals-020	Determination of various metals by ICP-AES.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
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	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
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.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	242857-6
Date extracted	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	18/05/2020
Date analysed	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	18/05/2020
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	112	111
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	112	111
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	106	104
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	116	114
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	118	117
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	110	110
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	119	118
naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	137	1	122	118	3	125	117

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	19	18/05/2020	18/05/2020		[NT]	[NT]
Date analysed	-			[NT]	19	18/05/2020	18/05/2020		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	19	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	19	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	19	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	19	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	19	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	19	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	19	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-023	[NT]	19	<1	3	100	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	19	122	132	8	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	242857-6
Date extracted	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	18/05/2020
Date analysed	-			18/05/2020	1	19/05/2020	19/05/2020		18/05/2020	19/05/2020
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	111	127
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	120	210	55	112	79
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	170	260	42	92	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	111	127
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	240	400	50	112	79
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	160	170	6	92	#
Surrogate o-Terphenyl	%		Org-020	93	1	103	94	9	109	#

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	19	18/05/2020	18/05/2020		[NT]	[NT]
Date analysed	-			[NT]	19	18/05/2020	18/05/2020		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	19	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	19	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	19	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	19	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	19	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	19	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	19	102	101	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	242857-6
Date extracted	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	18/05/2020
Date analysed	-			19/05/2020	1	19/05/2020	19/05/2020		19/05/2020	19/05/2020
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	0.1	0	100	#
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.2	67	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	0.2	67	102	#
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	1.1	2.3	71	106	#
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.3	0.7	80	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	3.4	6.7	65	104	#
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	3.7	7.8	71	106	#
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	2.6	4.8	59	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	2.5	4.8	63	90	#
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	4.4	8.2	60	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	2.9	5.6	64	106	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	1.6	2.9	58	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.4	0.9	77	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	1.9	3.5	59	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	97	1	104	99	5	98	95

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	19	18/05/2020	18/05/2020		[NT]	[NT]
Date analysed	-			[NT]	19	19/05/2020	19/05/2020		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	19	0.4	1.2	100	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	0.2	67	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	19	0.3	0.4	29	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	19	1.7	2.7	45	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	19	0.3	0.6	67	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	19	1.4	2.2	44	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	19	1.3	2.0	42	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	19	0.5	0.9	57	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	19	0.5	0.8	46	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	19	0.7	1	35	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	19	0.54	0.84	43	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	19	0.3	0.5	50	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	19	0.4	0.6	40	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	19	99	98	1	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	242857-6
Date extracted	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	18/05/2020
Date analysed	-			19/05/2020	1	19/05/2020	19/05/2020		19/05/2020	19/05/2020
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	114	112
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	100
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	110	104
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	108
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	122	108
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.4	120	118	112
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	126	124
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	122
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	124	120
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.7	150	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	114	122
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	93	1	97	91	6	89	88

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	19	18/05/2020	18/05/2020		[NT]	[NT]
Date analysed	-			[NT]	19	19/05/2020	19/05/2020		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	19	96	94	2	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	242857-6
Date extracted	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	18/05/2020
Date analysed	-			19/05/2020	1	19/05/2020	19/05/2020		19/05/2020	19/05/2020
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	95
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	120	118
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	110	124
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	112	120
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	114	122
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	126
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	114	118
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	93	1	97	91	6	89	88

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	19	18/05/2020	18/05/2020		[NT]	[NT]
Date analysed	-			[NT]	19	19/05/2020	19/05/2020		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	19	96	94	2	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	242857-6
Date extracted	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	18/05/2020
Date analysed	-			19/05/2020	1	19/05/2020	19/05/2020		19/05/2020	19/05/2020
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	114	102
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	93	1	97	91	6	89	88

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	19	18/05/2020	18/05/2020		[NT]	[NT]
Date analysed	-			[NT]	19	19/05/2020	19/05/2020		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	19	96	94	2	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	242857-6
Date prepared	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	18/05/2020
Date analysed	-			19/05/2020	1	19/05/2020	19/05/2020		19/05/2020	19/05/2020
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	106	107
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	0.6	<0.4	40	104	93
Chromium	mg/kg	1	Metals-020	<1	1	7	7	0	103	100
Copper	mg/kg	1	Metals-020	<1	1	37	40	8	106	90
Lead	mg/kg	1	Metals-020	<1	1	170	250	38	103	95
Mercury	mg/kg	0.1	Metals-021	<0.1	1	0.1	0.1	0	102	103
Nickel	mg/kg	1	Metals-020	<1	1	6	6	0	104	93
Zinc	mg/kg	1	Metals-020	<1	1	380	200	62	109	78

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	19	18/05/2020	18/05/2020		[NT]	[NT]
Date analysed	-			[NT]	19	19/05/2020	19/05/2020		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	19	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	19	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	19	<1	<1	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	19	1	1	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	19	<1	<1	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	19	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	19	<1	<1	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	19	1	1	0	[NT]	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	242857-6
Date prepared	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	18/05/2020
Date analysed	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	18/05/2020
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	101	102

QUALITY CONTROL: Soil Aggressivity						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	101	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	[NT]	[NT]	[NT]	[NT]	97	[NT]
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date prepared	-			20/05/2020	1	20/05/2020	20/05/2020		20/05/2020	[NT]
Date analysed	-			20/05/2020	1	20/05/2020	20/05/2020		20/05/2020	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	1	2.1	1.7	21	100	[NT]
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	1	<0.1	0.1	0	98	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	1	0.58	0.60	3	97	[NT]
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	1	<0.1	<0.1	0	92	[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

Incorrect Container for BH11/1-1.3 - no jar received, only bag

PAHs in Soil - # Percent recovery for the matrix spike is not possible to report as the high concentration of analytes in sample242857-6ms have caused interference.

TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate and matrix spike is not possible to report as the high concentration of analytes in sample 242857-6 have caused interference.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 242857-1 for Zn. Therefore a triplicate result has been issued as laboratory sample number 242857-28.

PAH_S The RPD for duplicate results is accepted due to the non homogenous nature of sample/s 242857-1,1d and 243857-19,19d.

1315 3:18pm

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99679.01	**Suburb:**	Botany	**To:**	Envirolab Services
Project Name:	Botany, DSI	**Order Number**	152412		
Project Manager:	WFY	**Sampler:**	WFY	**Attn:**	Aileen Hie
Emails:	wenfei.yuan@douglaspartners.com.au and ayla.sorensen@douglaspartners.com.au			**Phone:**	
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	
Prior Storage:	☐ Esky ☐ Fridge/Freezer ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)	

Sample ID	Lab ID	Date Sampled	Sample Type: S - soil, W - water	Container Type: G - glass, P - plastic	Analytes: Combo8A	Combo3A	ASS Screening	pH, CEC	Combo3	Asbestos	Soil Aggressivity (pH, sulphate, chloride and EC)		Notes
BH4/0.9-1	1	11/05/20	S	G/P	x			x					
BH4/2.5-2.95	2	11/05/20	S	P			X						
BH5/0.5-0.6	3	11/05/20	S	P		X							
BD4/110520	—	11/05/20	S	G					X				Please send the inter-lab replicate to Eurofins
BH5/1-1.3	4	11/05/20	S	P			X						
BH5/2.5-2.95	5	11/05/20	S	P			X						
BH7/0.9-1	6	11/05/20	S	G/P	X			X					
BH7/1.9-2	7	11/05/20	S	P			X						
BH7/2.5-2.95	8	11/05/20	S	P			X				x		
BH8/0.05-0.15	9	11/05/20	S	G/P			X						
BD2/110520	10	11/05/20	S	G/P					X				
BH8/0.9-1.0	11	11/05/20	S	G/P	X								
BH8/2.5-2.95	12	11/05/20	S	P			X				x		
BH10/0.05-0.1	13	11/05/20								X			
BH10/0.4-0.5	14	11/05/20	S	G/P		Combo3							
BD1/110520	15	11/05/20	S	G/P					X				
BH10/0.9-1.0	16	11/05/20	S	P			X				x		
PQL (S) mg/kg													**ANZECC PQLs req'd for all water analytes** ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Total number of samples in container: **Relinquished by:** WFY **Transported to laboratory by:**

Lab Report/Reference No: 242857

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 242857
Date Received: 13/05/2020
Time Received: 13:45
Received By: LM
Temp: Cool/Ambient
Cooling: Ice/Icepack 14.3
Security: Intact/Broken/None

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99679.01	**Suburb:**	Botany	**To:**	Envirolab Services
Project Name:	Botany, DSI	**Order Number**	152412		
Project Manager:	WFY	**Sampler:**	WFY	**Attn:**	Aileen Hie
Emails:	wenfei.yuan@douglaspartners.com.au and ayla.sorensen@douglaspartners.com.au			**Phone:**	
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	
Prior Storage:	☐ Esky ☐ Fridge/Freezer ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)	

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo8A	Combo3A	ASS Screening	pH, CEC	Combo3	TRH/BTEX			
BH10/1-1.45	17	11/05/20	S	P			X	X					
BH10/2.5-2.95	18	11/05/20	S	P			X						
BH11/0.9-1	19	11/05/20	S	G/P	X								
BH11/1-1.3	20	11/05/20	S	G/P		X	X						
BH11/4-4.45	21	11/05/20	S	P			X						
TS	22									BTEX			
TB	23									TRH/BTEX			
Extra. BH11/0.4-0.5	24												
BH11/1.3-1.4	25												
BH11/2.5-2.95	26												
BH11/0.9-1.0 (dark)	27												
PQL (S) mg/kg										**ANZECC PQLs req'd for all water analytes** ☐			

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No: 242857

Total number of samples in container: | **Relinquished by:** WFY | **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd | **Address:** 96 Hermitage Road, West Ryde | **Phone:** 9809 0999

Signed: | **Received by:** Ming Yan To | **Date & Time:** 13/05/2020 13:48

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

24285 14.34.

Project No:	99679.01	**Suburb:**	Botany	**To:**	Envirolab Services
Project Name:	Botany, DSI	**Order Number**	152412		
Project Manager:	WFY	**Sampler:**	WFY	**Attn:**	Aileen Hie
Emails:	wenfei.yuan@douglaspartners.com.au and ayla.sorensen@douglaspartners.com.au			**Phone:**	
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	
Prior Storage:	☐ Esky ☐ Fridge/Freezer ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)	
Send Results to:	Douglas Partners Pty Ltd	**Address:**	96 Hermitage Road, West Ryde	**Phone:**	9809 0999
Signed:		**Received by:**	Ming Yan Zo.	**Date & Time:**	13/05/2020 13:48

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	Douglas Partners Pty Ltd
Attention	Ayla Sorensen, Wen-Fei Yuan

Sample Login Details

Your reference	99679.01, Botany
Envirolab Reference	242857
Date Sample Received	13/05/2020
Date Instructions Received	13/05/2020
Date Results Expected to be Reported	20/05/2020

Sample Condition

Samples received in appropriate condition for analysis	Incorrect Container
No. of Samples Provided	27 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	14.3
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Extra samples received. Added to end of COC and put on hold.
Received 2x bags labelled BH11/0.9-1.0. One dark colour, one light colour. Light colour matched BH11/0.9-1.0 jar. Dark colour added as an extra (242857-27).
BH11/1-1.3 no jar received. Only bag.

Please contact the laboratory within 24 hours if you wish to cancel the aformentioned testing. Otherwise testing will proceed as per the COC and hence invoice accordingly.

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	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils	sPOCAS field test	Soil Aggressivity	CEC	On Hold
BH4/0.9-1	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
BH4/2.5-2.95										✓			
BH5/0.5-0.6	✓	✓	✓				✓		✓				
BH5/1-1.3										✓			
BH5/2.5-2.95										✓			
BH7/0.9-1	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
BH7/1.9-2										✓			
BH7/2.5-2.95										✓	✓		
BH8/0.05-0.15										✓			
BD2/110520	✓	✓	✓				✓						
BH8/0.9-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓				
BH8/2.5-2.95										✓	✓		
BH10/0.05-0.1									✓				
BH10/0.4-0.5	✓	✓	✓				✓						
BD1/110520	✓	✓	✓				✓						
BH10/0.9-1.0										✓	✓		
BH10/1-1.45										✓	✓	✓	
BH10/2.5-2.95										✓			
BH11/0.9-1.0 (light colour)	✓	✓	✓	✓	✓	✓	✓	✓	✓				
BH11/1-1.3	✓	✓	✓				✓		✓	✓			

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	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils	sPOCAS field test	Soil Aggressivity	CEC	On Hold
BH11/4-4.45										✓			
TS	✓												
TB	✓												
BH11/0.4-0.5													✓
BH11/1.3-1.4													✓
BH11/2.5-2.95													✓
BH11/0.9-1.0 (dark colour)													✓

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 242857-A

Client Details

Client	Douglas Partners Pty Ltd
Attention	Ayla Sorensen
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany**
Number of Samples	27 Soil
Date samples received	13/05/2020
Date completed instructions received	21/05/2020

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	28/05/2020
Date of Issue	28/05/2020

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Dragana Tomas, Senior Chemist
Loren Bardwell, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

PAHs in TCLP (USEPA 1311)						
Our Reference		242857-A-1	242857-A-6	242857-A-11	242857-A-14	242857-A-15
Your Reference	UNITS	BH4/0.9-1	BH7/0.9-1	BH8/0.9-1.0	BH10/0.4-0.5	BD1/110520
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Naphthalene in TCLP	mg/L	<0.001	0.11	<0.001	0.005	0.004
Acenaphthylene in TCLP	mg/L	<0.001	0.005	<0.001	0.003	0.003
Acenaphthene in TCLP	mg/L	<0.001	0.001	<0.001	0.002	0.002
Fluorene in TCLP	mg/L	<0.001	0.011	<0.001	0.004	0.003
Phenanthrene in TCLP	mg/L	<0.001	0.026	<0.001	0.017	0.017
Anthracene in TCLP	mg/L	<0.001	0.003	<0.001	0.002	0.002
Fluoranthene in TCLP	mg/L	<0.001	0.003	<0.001	0.003	0.002
Pyrene in TCLP	mg/L	<0.001	0.002	<0.001	0.002	0.003
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Total +ve PAH's	mg/L	NIL (+)VE	0.16	NIL (+)VE	0.038	0.036
Surrogate p-Terphenyl-d14	%	71	75	87	90	81

Metals in TCLP USEPA1311						
Our Reference		242857-A-1	242857-A-6	242857-A-11	242857-A-14	242857-A-15
Your Reference	UNITS	BH4/0.9-1	BH7/0.9-1	BH8/0.9-1.0	BH10/0.4-0.5	BD1/110520
Date Sampled		11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020
pH of soil for fluid# determ.	pH units	7.5	10.5	8.1	7.9	7.7
pH of soil TCLP (after HCl)	pH units	1.7	1.9	1.7	1.6	1.6
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	5.0	5.4	5.0	5.0	5.0
Lead in TCLP	mg/L	0.2	0.06	[NA]	[NA]	[NA]

Method ID	Methodology Summary
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP) using Zero Headspace Extraction (zHE) using AS4439 and USEPA 1311.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using in house method INORG-004. Please note that the mass used may be scaled down from the default based on sample mass available.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Org-022/025	Leachates are extracted with Dichloromethane and analysed by GC-MS/GC-MSMS.

QUALITY CONTROL: PAHs in TCLP (USEPA 1311)					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			26/05/2020	1	26/05/2020	26/05/2020		26/05/2020	[NT]
Date analysed	-			26/05/2020	1	26/05/2020	26/05/2020		26/05/2020	[NT]
Naphthalene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	120	[NT]
Acenaphthylene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Acenaphthene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Fluorene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	128	[NT]
Phenanthrene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	86	[NT]
Anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Fluoranthene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	84	[NT]
Pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	104	[NT]
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Chrysene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	104	[NT]
Benzo(bjk)fluoranthene in TCLP	mg/L	0.002	Org-022/025	<0.002	1	<0.002	<0.002	0	[NT]	[NT]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	130	[NT]
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	118	1	71	70	1	70	[NT]

QUALITY CONTROL: Metals in TCLP USEPA1311						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	242857-A-6
Date extracted	-			26/05/2020	1	26/05/2020	26/05/2020		26/05/2020	26/05/2020
Date analysed	-			26/05/2020	1	26/05/2020	26/05/2020		26/05/2020	26/05/2020
Lead in TCLP	mg/L	0.03	Metals-020 ICP-AES	<0.03	1	0.2	0.1	67	101	98

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

Metals in TCLP USEPA1311 - The duplicate result is greater than the acceptable RPD. The RPD for duplicate results is accepted due to the inhomogeneous nature of the sample/s.

Andrew (Fitzy) Fitzsimons

From: Andrew (Fitzy) Fitzsimons
Sent: Thursday, 21 May 2020 2:51 PM
To: Andrew (Fitzy) Fitzsimons
Subject: FW: Results for Registration 242857 99679.01, Botany

Ref: 242857-A
Due: 28/5/20

Kind Regards,

Andrew (Fitzy) Fitzsimons | Customer Service | Envirolab Services Pty Ltd

***Celebrating 15 years of* Great Science. Great Service.**
12 Ashley Street Chatswood NSW 2067
T 612 9910 6200 **F** 612 9910 6201
E afitzsimons@envirolab.com.au | **W** www.envirolab.com.au

View reduced sampling bottle provision for PFAS in water | COVID-19 Update

Please note that all samples submitted to the Envirolab Group laboratories will be analysed under the Envirolab Group Terms and Conditions. The Terms and Conditions are accessible by clicking this link

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From: Ayla Sorensen <Ayla.Sorensen@douglaspartners.com.au>
Sent: Thursday, 21 May 2020 12:49 PM
To: Nancy Zhang <NZhang@envirolab.com.au>
Cc: Wen-Fei Yuan <WenFei.Yuan@douglaspartners.com.au>
Subject: RE: Results for Registration 242857 99679.01, Botany

Hi Nancy

Please conduct additional testing on the following samples (standard TAT):

TCLP (PAH only):

- BH8/0.9-1.0; and -11
- BH10/0.4-0.5; and - 14
- BD1/110520.-15

TCLP (PAH and Lead):

- BH7/0.9-1.0; and -6
- BH4/0.9-1.0. — 1

Kind regards,

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
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SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Ayla Sorensen

Sample Login Details

Your reference	99679.01, Botany
Envirolab Reference	242857-A
Date Sample Received	13/05/2020
Date Instructions Received	21/05/2020
Date Results Expected to be Reported	28/05/2020

Sample Condition

Samples received in appropriate condition for analysis	Incorrect Container
No. of Samples Provided	27 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	14.3
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Please contact the laboratory within 24 hours if you wish to cancel the aformentioned testing. Otherwise testing will proceed as per the COC and hence invoice accordingly.

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
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Sample ID	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(b)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Lead in TCLP	On Hold
BH4/0.9-1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH4/2.5-2.95																							✓
BH5/0.5-0.6																							✓
BH5/1-1.3																							✓
BH5/2.5-2.95																							✓
BH7/0.9-1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH7/1.9-2																							✓
BH7/2.5-2.95																							✓
BH8/0.05-0.15																							✓
BD2/110520																							✓
BH8/0.9-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH8/2.5-2.95																							✓
BH10/0.05-0.1																							✓
BH10/0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BD1/110520	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH10/0.9-1.0																							✓
BH10/1-1.45																							✓
BH10/2.5-2.95																							✓
BH11/0.9-1.0 (light colour)																							✓
BH11/1-1.3																							✓

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Sample ID	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Lead in TCLP	On Hold
BH11/4-4.45																							✓
TS																							✓
TB																							✓
BH11/0.4-0.5																							✓
BH11/1.3-1.4																							✓
BH11/2.5-2.95																							✓
BH11/0.9-1.0 (dark colour)																							✓
BH4/0.9-1 - [TRIPLICATE]																							✓

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 242857-B

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany**
Number of Samples	27 Soil
Date samples received	13/05/2020
Date completed instructions received	09/06/2020

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	16/06/2020
Date of Issue	16/06/2020

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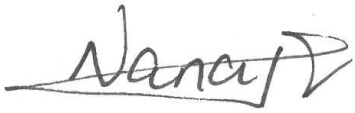
Results Approved By
Josh Williams, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

sTPH in Soil (C10-C40)-Silica		
Our Reference		242857-B-6
Your Reference	UNITS	BH7/0.9-1
Date Sampled		11/05/2020
Type of sample		Soil
Date extracted	-	09/06/2020
Date analysed	-	11/06/2020
TPH C_{10} - C_{14}	mg/kg	<50
TPH C_{15} - C_{28}	mg/kg	610
TPH C_{29} - C_{36}	mg/kg	430
TPH >C_{10} -C_{16}	mg/kg	<50
TPH >C_{16} -C_{34}	mg/kg	930
TPH >C_{34} -C_{40}	mg/kg	220
Surrogate o-Terphenyl	%	99

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.

QUALITY CONTROL: sTPH in Soil (C10-C40)-Silica						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			09/06/2020	6	09/06/2020	09/06/2020		09/06/2020	[NT]
Date analysed	-			11/06/2020	6	11/06/2020	11/06/2020		11/06/2020	[NT]
TPH C_{10} - C_{14}	mg/kg	50	Org-020	<50	6	<50	<50	0	91	[NT]
TPH C_{15} - C_{28}	mg/kg	100	Org-020	<100	6	610	940	43	78	[NT]
TPH C_{29} - C_{36}	mg/kg	100	Org-020	<100	6	430	460	7	77	[NT]
TPH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	6	<50	<50	0	91	[NT]
TPH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	6	930	1300	33	78	[NT]
TPH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	6	220	220	0	77	[NT]
Surrogate o-Terphenyl	%		Org-020	93	6	99	109	10	78	[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

Samples are out of recommended holding time

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SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan

Sample Login Details

Your reference	99679.01, Botany
Envirolab Reference	242857-B
Date Sample Received	13/05/2020
Date Instructions Received	09/06/2020
Date Results Expected to be Reported	16/06/2020

Sample Condition

Samples received in appropriate condition for analysis	Incorrect Container
No. of Samples Provided	27 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	14.3
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Samples are out of recommended holding time

Please contact the laboratory within 24 hours if you wish to cancel the aformentioned testing. Otherwise testing will proceed as per the COC and hence invoice accordingly.

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:

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ph 02 9910 6200 fax 02 9910 6201
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Sample ID	sTPH in Soil (C10-C40)-Silica	On Hold
BH4/0.9-1		✓
BH4/2.5-2.95		✓
BH5/0.5-0.6		✓
BH5/1-1.3		✓
BH5/2.5-2.95		✓
BH7/0.9-1	✓	
BH7/1.9-2		✓
BH7/2.5-2.95		✓
BH8/0.05-0.15		✓
BD2/110520		✓
BH8/0.9-1.0		✓
BH8/2.5-2.95		✓
BH10/0.05-0.1		✓
BH10/0.4-0.5		✓
BD1/110520		✓
BH10/0.9-1.0		✓
BH10/1-1.45		✓
BH10/2.5-2.95		✓
BH11/0.9-1.0 (light colour)		✓
BH11/1-1.3		✓
BH11/4-4.45		✓
TS		✓
TB		✓
BH11/0.4-0.5		✓
BH11/1.3-1.4		✓
BH11/2.5-2.95		✓
BH11/0.9-1.0 (dark colour)		✓
BH4/0.9-1 - [TRIPLICATE]		✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

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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 242991

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany**
Number of Samples	13 Soil
Date samples received	14/05/2020
Date completed instructions received	15/05/2020

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	22/05/2020
Date of Issue	22/05/2020

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Diego Bigolin, Team Leader, Inorganics
Hannah Nguyen, Senior Chemist
Josh Williams, Senior Chemist
Lucy Zhu, Asbestos Supervisor
Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		242991-1	242991-5	242991-8	242991-11
Your Reference	UNITS	BH6	BH9	BH12	BH30
Depth		0.5-0.6	0.5-0.6	0.5-0.6	0.3-0.5
Date Sampled		12/05/2020	12/05/2020	12/05/2020	13/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1
naphthalene	mg/kg	3	<1	5	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	123	120	115	118

svTRH (C10-C40) in Soil					
Our Reference		242991-1	242991-5	242991-8	242991-11
Your Reference	UNITS	BH6	BH9	BH12	BH30
Depth		0.5-0.6	0.5-0.6	0.5-0.6	0.3-0.5
Date Sampled		12/05/2020	12/05/2020	12/05/2020	13/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020
TRH C_{10} - C_{14}	mg/kg	57	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	970	880	2,200	510
TRH C_{29} - C_{36}	mg/kg	630	750	2,000	470
TRH >C_{10} -C_{16}	mg/kg	120	<50	74	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	120	<50	69	<50
TRH >C_{16} -C_{34}	mg/kg	140	1,400	3,700	850
TRH >C_{34} -C_{40}	mg/kg	480	430	1,100	300
Total +ve TRH (>C10-C40)	mg/kg	740	1,900	4,900	1,200
Surrogate o-Terphenyl	%	115	103	#	119

PAHs in Soil					
Our Reference		242991-1	242991-5	242991-8	242991-11
Your Reference	UNITS	BH6	BH9	BH12	BH30
Depth		0.5-0.6	0.5-0.6	0.5-0.6	0.3-0.5
Date Sampled		12/05/2020	12/05/2020	12/05/2020	13/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Naphthalene	mg/kg	14	1.8	2.4	<1
Acenaphthylene	mg/kg	<1	2.1	2.0	2.6
Acenaphthene	mg/kg	5.8	3.0	3.9	<1
Fluorene	mg/kg	4.2	3.0	5.4	<1
Phenanthrene	mg/kg	65	46	48	3.8
Anthracene	mg/kg	18	13	17	1.6
Fluoranthene	mg/kg	47	67	89	9.7
Pyrene	mg/kg	46	65	98	15
Benzo(a)anthracene	mg/kg	25	38	59	6.3
Chrysene	mg/kg	23	36	51	7.5
Benzo(b,j+k)fluoranthene	mg/kg	26	49	100	13
Benzo(a)pyrene	mg/kg	18	33	68	9.7
Indeno(1,2,3-c,d)pyrene	mg/kg	7.3	16	40	5.7
Dibenzo(a,h)anthracene	mg/kg	2.7	4.6	12	2.0
Benzo(g,h,i)perylene	mg/kg	8.6	20	47	7.9
Total +ve PAH's	mg/kg	310	400	640	86
Benzo(a)pyrene TEQ calc (zero)	mg/kg	26	49	100	14
Benzo(a)pyrene TEQ calc(half)	mg/kg	26	49	100	14
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	26	49	100	14
Surrogate p-Terphenyl-d14	%	130	120	130	120

Organochlorine Pesticides in soil			
Our Reference		242991-1	242991-8
Your Reference	UNITS	BH6	BH12
Depth		0.5-0.6	0.5-0.6
Date Sampled		12/05/2020	12/05/2020
Type of sample		Soil	Soil
Date extracted	-	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020
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	%	120	110

Organophosphorus Pesticides in Soil			
Our Reference		242991-1	242991-8
Your Reference	UNITS	BH6	BH12
Depth		0.5-0.6	0.5-0.6
Date Sampled		12/05/2020	12/05/2020
Type of sample		Soil	Soil
Date extracted	-	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	120	110

PCBs in Soil			
Our Reference		242991-1	242991-8
Your Reference	UNITS	BH6	BH12
Depth		0.5-0.6	0.5-0.6
Date Sampled		12/05/2020	12/05/2020
Type of sample		Soil	Soil
Date extracted	-	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020
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	%	120	110

Acid Extractable metals in soil					
Our Reference		242991-1	242991-5	242991-8	242991-11
Your Reference	UNITS	BH6	BH9	BH12	BH30
Depth		0.5-0.6	0.5-0.6	0.5-0.6	0.3-0.5
Date Sampled		12/05/2020	12/05/2020	12/05/2020	13/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Arsenic	mg/kg	<4	7	<4	<4
Cadmium	mg/kg	0.4	<0.4	0.9	<0.4
Chromium	mg/kg	4	11	19	8
Copper	mg/kg	57	130	46	16
Lead	mg/kg	91	63	54	19
Mercury	mg/kg	<0.1	0.2	0.3	<0.1
Nickel	mg/kg	7	10	21	160
Zinc	mg/kg	610	46	280	34

Misc Soil - Inorg			
Our Reference		242991-1	242991-8
Your Reference	UNITS	BH6	BH12
Depth		0.5-0.6	0.5-0.6
Date Sampled		12/05/2020	12/05/2020
Type of sample		Soil	Soil
Date prepared	-	18/05/2020	18/05/2020
Date analysed	-	18/05/2020	18/05/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5

Moisture					
Our Reference		242991-1	242991-5	242991-8	242991-11
Your Reference	UNITS	BH6	BH9	BH12	BH30
Depth		0.5-0.6	0.5-0.6	0.5-0.6	0.3-0.5
Date Sampled		12/05/2020	12/05/2020	12/05/2020	13/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Moisture	%	15	7.0	9.1	7.6

Asbestos ID - soils					
Our Reference		242991-1	242991-5	242991-8	242991-11
Your Reference	UNITS	BH6	BH9	BH12	BH30
Depth		0.5-0.6	0.5-0.6	0.5-0.6	0.3-0.5
Date Sampled		12/05/2020	12/05/2020	12/05/2020	13/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	20/05/2020	20/05/2020	20/05/2020	20/05/2020
Sample mass tested	g	Approx. 55g	Approx. 30g	Approx. 30g	Approx. 45g
Sample Description	-	Brown fine-grained soil & mica	Brown fine-grained soil & mica	Brown fine-grained soil & mica	Brown fine-grained soil & mica
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

sPOCAS field test						
Our Reference		242991-2	242991-3	242991-4	242991-6	242991-7
Your Reference	UNITS	BH6	BH6	BH6	BH9	BH9
Depth		1-1.45	2.5-2.95	5.5-5.95	1-1.45	5.5-5.95
Date Sampled		12/05/2020	12/05/2020	12/05/2020	12/05/2020	12/05/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Date analysed	-	18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
pH_F (field pH test)*	pH Units	5.3	5.9	6.5	8.7	7.6
pH_{FOX} (field peroxide test)*	pH Units	2.5	5.0	5.3	6.1	5.6
Reaction Rate*	-	Low reaction	Low reaction	Low reaction	Low reaction	Low reaction

sPOCAS field test					
Our Reference		242991-9	242991-10	242991-12	242991-13
Your Reference	UNITS	BH12	BH12	BH30	BH30
Depth		1.0-1.45	3.5-3.95	3.5-3.95	5.5-5.95
Date Sampled		12/05/2020	12/05/2020	13/05/2020	13/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	18/05/2020	19/05/2020	18/05/2020	18/05/2020
Date analysed	-	18/05/2020	19/05/2020	18/05/2020	18/05/2020
pH_F (field pH test)*	pH Units	7.9	6.5	6.1	6.6
pH_{FOX} (field peroxide test)*	pH Units	6.4	4.5	4.9	5.8
Reaction Rate*	-	Low reaction	Low reaction	Low reaction	Low reaction

Soil Aggressivity		
Our Reference		242991-10
Your Reference	UNITS	BH12
Depth		3.5-3.95
Date Sampled		12/05/2020
Type of sample		Soil
pH 1:5 soil:water	pH Units	6.7
Electrical Conductivity 1:5 soil:water	µS/cm	10
Chloride, Cl 1:5 soil:water	mg/kg	<10
Sulphate, SO4 1:5 soil:water	mg/kg	<10

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.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-063	pH- measured using pH meter and electrode. Soil is oxidised with Hydrogen Peroxide or extracted with water. Based on section H, Acid Sulfate Soils Laboratory Methods Guidelines, Version 2.1 - June 2004. To ensure accurate results these tests are recommended to be done in the field as pH may change with time thus these results may not be representative of true field conditions.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
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	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
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.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	[NT]
Date analysed	-			18/05/2020	1	18/05/2020	18/05/2020		18/05/2020	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	112	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	112	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	106	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	116	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	118	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	110	[NT]
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	119	[NT]
naphthalene	mg/kg	1	Org-023	<1	1	3	3	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	137	1	123	91	30	125	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			18/05/2020	[NT]	[NT]	[NT]	[NT]	18/05/2020	[NT]
Date analysed	-			19/05/2020	[NT]	[NT]	[NT]	[NT]	19/05/2020	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	95	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	99	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	123	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	99	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	123	[NT]
Surrogate o-Terphenyl	%		Org-020	103	[NT]	[NT]	[NT]	[NT]	124	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			18/05/2020	[NT]	[NT]	[NT]	[NT]	18/05/2020	[NT]
Date analysed	-			19/05/2020	[NT]	[NT]	[NT]	[NT]	19/05/2020	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[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]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	106	[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]	104	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	106	[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]	90	[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]	106	[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	97	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			18/05/2020	[NT]	[NT]	[NT]	[NT]	18/05/2020	[NT]
Date analysed	-			19/05/2020	[NT]	[NT]	[NT]	[NT]	19/05/2020	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	114	[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]	108	[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]	110	[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]	118	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	122	[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]	118	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	126	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	106	[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]	124	[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]	114	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	93	[NT]	[NT]	[NT]	[NT]	89	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			18/05/2020	[NT]	[NT]	[NT]	[NT]	18/05/2020	[NT]
Date analysed	-			19/05/2020	[NT]	[NT]	[NT]	[NT]	19/05/2020	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Malathion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	93	[NT]	[NT]	[NT]	[NT]	89	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			18/05/2020	[NT]	[NT]	[NT]	[NT]	18/05/2020	[NT]
Date analysed	-			19/05/2020	[NT]	[NT]	[NT]	[NT]	19/05/2020	[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]	114	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	93	[NT]	[NT]	[NT]	[NT]	89	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date prepared	-			18/05/2020	[NT]	[NT]	[NT]	[NT]	18/05/2020	[NT]
Date analysed	-			19/05/2020	[NT]	[NT]	[NT]	[NT]	19/05/2020	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	106	[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]	103	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date prepared	-			18/05/2020	[NT]	[NT]	[NT]	[NT]	18/05/2020	[NT]
Date analysed	-			18/05/2020	[NT]	[NT]	[NT]	[NT]	18/05/2020	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: Soil Aggressivity						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	10	6.7	6.6	2	101	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	10	10	10	0	101	[NT]
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	10	<10	<10	0	113	[NT]
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	10	<10	<10	0	120	[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

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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.
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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.

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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.

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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

PAHs in Soil - The PQL for samples 242991-1 and 11 has been raised due to the high concentration of analytes in the samples, resulting in the samples requiring a dilution.
TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate is not possible to report as the high concentration of analytes in sample 242991-8 have caused interference.

Asbestos: Excessive sample volume was provided for asbestos analysis. A portion of the supplied sample was sub-sampled according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.
Note: Samples were sub-sampled from bags provided by the client.

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99679.01	**Suburb:** Botany	**To:** Envirolab Services
Project Name:	Botany, DSI	**Order Number** 152412	
Project Manager:	WFY	**Sampler:** WFY	**Attn:** Aileen Hie
Emails:	wenfei.yuan@douglaspartners.com.au and ayla.sorensen@douglaspartners.com.au		**Phone:**
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐		**Email:**
Prior Storage:	☐ Esky ☐ Fridge/Freezer ☐ Shelved	Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)	

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo8	Combo3	ASS Screening	Soil Aggressivity (pH, sulphate, chloride)						
BH6/0.5-0.6	1	12-13/05/2020	S	G/P	X									
BH6/1-1.45	2	12-13/05/2020	S	P			X							
BH6/2.5-2.95	3	12-13/05/2020	S	P			X							
BH6/5.5-5.95	4	12-13/05/2020	S	P			X							
BH9/0.5-0.6	5	12-13/05/2020	S	G/P		X								
BH9/1-1.45	6	12-13/05/2020	S	P			X							
BH9/5.5-5.95	7	12-13/05/2020	S	P			X							
BH12/0.5-0.6	8	12-13/05/2020	S	P	X									
BH12/1.0-1.45	9	12-13/05/2020	S	P			X							
BH12/3.5-3.95	10	12-13/05/2020	S	P			X	x						
BH30/0.3-0.5	11	13/05/20	S	G/P		X								
BH30/3.5-3.95	12	13/05/20	S	P			X							
BH30/5.5-5.95	13	13/05/20	S	P			X							
PQL (S) mg/kg														

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Total number of samples in container: **Relinquished by:** WFY **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** 96 Hermitage Road, West Ryde **Phone:** 9809 0999

Signed: **Received by:** Michael Opie ECS **Date & Time:**

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 242991
Date Received: 15.5.20
Time Received: 1230
Received by: MO
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

ANZECC PQLs req'd for all water analytes ☐

Lab Report/Reference No: 242991

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	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan

Sample Login Details

Your reference	99679.01, Botany
Envirolab Reference	242991
Date Sample Received	14/05/2020
Date Instructions Received	15/05/2020
Date Results Expected to be Reported	22/05/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	13 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	20
Cooling Method	Ice Pack
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	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils	sPOCAS field test	Soil Aggressivity
BH6-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH6-1-1.45										✓	
BH6-2..5-2.95										✓	
BH6-5.5-5.95										✓	
BH9-0.5-0.6	✓	✓	✓				✓		✓		
BH9-1-1.45										✓	
BH9-5.5-5.95										✓	
BH12-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH12-1.0-1.45										✓	
BH12-3.5-3.95										✓	✓
BH30-0.3-0.5	✓	✓	✓				✓		✓		
BH30-3.5-3.95										✓	
BH30-5.5-5.95										✓	

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
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 242991-A

Client Details

Client	Douglas Partners Pty Ltd
Attention	Ayla Sorensen
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany**
Number of Samples	13 Soil
Date samples received	14/05/2020
Date completed instructions received	29/05/2020

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

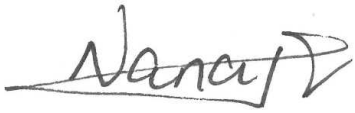
Date results requested by	29/05/2020
Date of Issue	28/05/2020

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
Josh Williams, Senior Chemist
Loren Bardwell, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Metals in TCLP USEPA1311					
Our Reference		242991-A-1	242991-A-5	242991-A-8	242991-A-11
Your Reference	UNITS	BH6	BH9	BH12	BH30
Depth		0.5-0.6	0.5-0.6	0.5-0.6	0.3-0.5
Date Sampled		12/05/2020	12/05/2020	12/05/2020	13/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020
pH of soil for fluid# determ.	pH units	8.9	9.6	7.9	7.2
pH of soil TCLP (after HCl)	pH units	1.7	1.8	1.6	1.6
Extraction fluid used	-	1	1	1	1
pH of final Leachate	pH units	5.0	5.3	5.0	5.0
Nickel in TCLP	mg/L	[NA]	[NA]	[NA]	0.2

PAHs in TCLP (USEPA 1311)					
Our Reference		242991-A-1	242991-A-5	242991-A-8	242991-A-11
Your Reference	UNITS	BH6	BH9	BH12	BH30
Depth		0.5-0.6	0.5-0.6	0.5-0.6	0.3-0.5
Date Sampled		12/05/2020	12/05/2020	12/05/2020	13/05/2020
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Naphthalene in TCLP	mg/L	0.023	<0.001	0.012	<0.001
Acenaphthylene in TCLP	mg/L	0.003	0.001	0.004	<0.001
Acenaphthene in TCLP	mg/L	0.003	0.001	0.004	<0.001
Fluorene in TCLP	mg/L	0.002	<0.001	0.004	<0.001
Phenanthrene in TCLP	mg/L	0.007	0.005	0.009	<0.001
Anthracene in TCLP	mg/L	0.001	0.001	0.002	<0.001
Fluoranthene in TCLP	mg/L	<0.001	0.001	0.002	<0.001
Pyrene in TCLP	mg/L	<0.001	0.001	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Total +ve PAH's	mg/L	0.039	0.0099	0.037	NIL (+)VE
Surrogate p-Terphenyl-d14	%	86	75	68	73

Method ID	Methodology Summary
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP) using Zero Headspace Extraction (zHE) using AS4439 and USEPA 1311.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using in house method INORG-004. Please note that the mass used may be scaled down from the default based on sample mass available.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Org-022/025	Leachates are extracted with Dichloromethane and analysed by GC-MS/GC-MSMS.

QUALITY CONTROL: Metals in TCLP USEPA1311						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			26/05/2020	[NT]	[NT]	[NT]	[NT]	26/05/2020	[NT]
Date analysed	-			26/05/2020	[NT]	[NT]	[NT]	[NT]	26/05/2020	[NT]
Nickel in TCLP	mg/L	0.02	Metals-020 ICP-AES	<0.02	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: PAHs in TCLP (USEPA 1311)						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	242991-A-5
Date extracted	-			26/05/2020	1	26/05/2020	26/05/2020		26/05/2020	26/05/2020
Date analysed	-			26/05/2020	1	26/05/2020	26/05/2020		26/05/2020	26/05/2020
Naphthalene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	0.023	0.020	14	118	87
Acenaphthylene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	0.003	0.003	0	[NT]	[NT]
Acenaphthene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	0.003	0.003	0	[NT]	[NT]
Fluorene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	0.002	0.002	0	118	88
Phenanthrene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	0.007	0.007	0	122	74
Anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	0.001	0.001	0	[NT]	[NT]
Fluoranthene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	92	80
Pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	92	72
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Chrysene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	126	73
Benzo(bjk)fluoranthene in TCLP	mg/L	0.002	Org-022/025	<0.002	1	<0.002	<0.002	0	[NT]	[NT]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	120	95
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-022/025	<0.001	1	<0.001	<0.001	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	91	1	86	79	8	83	81

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Jessica Hie

From: Nancy Zhang
Sent: Friday, 22 May 2020 4:38 PM
To: Ayla Sorensen
Cc: Customer Service
Subject: RE: Results for Registration 242991 99679.01, Botany

Hi Ayla,

No problem.

242991-A
Due: 29/5/20.
Std TAT

Kind Regards,

Nancy Zhang | Laboratory Manager, Sydney | Envirolab Services Pty Ltd

***Celebrating 15 years of* Great Science. Great Service.**
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View reduced sampling bottle provision for PFAS in water | COVID-19 Update

Please note that all samples submitted to the Envirolab Group laboratories will be analysed under the Envirolab Group Terms and Conditions. The Terms and Conditions are accessible by clicking this link

From: Ayla Sorensen <Ayla.Sorensen@douglaspartners.com.au>
Sent: Friday, 22 May 2020 4:28 PM
To: Nancy Zhang <NZhang@envirolab.com.au>
Subject: RE: Results for Registration 242991 99679.01, Botany

Hi Nancy

Please conduct additional testing on the following samples (standard TAT):

TCLP (PAH only):

- BH6/0.5-0.6; and — 1
- BH9/0.5-0.6; and — 5
- BH12/0.5-0.6. — 8

TCLP (PAH and Nickel):

- BH30/0.3-0.5. — 11

Kind regards,

Envirolab Services Pty Ltd
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SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Ayla Sorensen

Sample Login Details

Your reference	99679.01, Botany
Envirolab Reference	242991-A
Date Sample Received	14/05/2020
Date Instructions Received	29/05/2020
Date Results Expected to be Reported	29/05/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	13 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	20
Cooling Method	Ice Pack
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:

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Sample ID	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Nickel in TCLP	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	On Hold
BH6-0.5-0.6	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH6-1-1.45																							✓
BH6-2.5-2.95																							✓
BH6-5.5-5.95																							✓
BH9-0.5-0.6	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH9-1-1.45																							✓
BH9-5.5-5.95																							✓
BH12-0.5-0.6	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH12-1.0-1.45																							✓
BH12-3.5-3.95																							✓
BH30-0.3-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH30-3.5-3.95																							✓
BH30-5.5-5.95																							✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

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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 242991-B

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany**
Number of Samples	13 Soil
Date samples received	14/05/2020
Date completed instructions received	09/06/2020

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	16/06/2020
Date of Issue	16/06/2020

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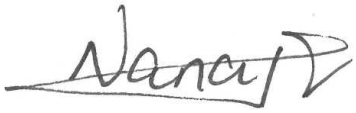
Results Approved By
Josh Williams, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

sTPH in Soil (C10-C40)-Silica		
Our Reference		242991-B-8
Your Reference	UNITS	BH12
Depth		0.5-0.6
Date Sampled		12/05/2020
Type of sample		Soil
Date extracted	-	09/06/2020
Date analysed	-	11/06/2020
TPH C_{10} - C_{14}	mg/kg	<50
TPH C_{15} - C_{28}	mg/kg	760
TPH C_{29} - C_{36}	mg/kg	570
TPH >C_{10} -C_{16}	mg/kg	<50
TPH >C_{16} -C_{34}	mg/kg	1,200
TPH >C_{34} -C_{40}	mg/kg	250
Surrogate o-Terphenyl	%	91

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.

QUALITY CONTROL: sTPH in Soil (C10-C40)-Silica						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			09/06/2020	8	09/06/2020	09/06/2020		09/06/2020	[NT]
Date analysed	-			11/06/2020	8	11/06/2020	11/06/2020		11/06/2020	[NT]
TPH C_{10} - C_{14}	mg/kg	50	Org-020	<50	8	<50	<50	0	91	[NT]
TPH C_{15} - C_{28}	mg/kg	100	Org-020	<100	8	760	690	10	78	[NT]
TPH C_{29} - C_{36}	mg/kg	100	Org-020	<100	8	570	480	17	77	[NT]
TPH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	8	<50	<50	0	91	[NT]
TPH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	8	1200	1100	9	78	[NT]
TPH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	8	250	190	27	77	[NT]
Surrogate o-Terphenyl	%		Org-020	93	8	91	88	3	78	[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

Samples are out of recommended holding time

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SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan

Sample Login Details

Your reference	99679.01, Botany
Envirolab Reference	242991-B
Date Sample Received	14/05/2020
Date Instructions Received	09/06/2020
Date Results Expected to be Reported	16/06/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	13 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	20
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Samples are out of recommended holding time

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:

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Sample ID	sTPH in Soil (C10-C40)-Silica	On Hold
BH6-0.5-0.6		✓
BH6-1-1.45		✓
BH6-2.5-2.95		✓
BH6-5.5-5.95		✓
BH9-0.5-0.6		✓
BH9-1-1.45		✓
BH9-5.5-5.95		✓
BH12-0.5-0.6	✓	
BH12-1.0-1.45		✓
BH12-3.5-3.95		✓
BH30-0.3-0.5		✓
BH30-3.5-3.95		✓
BH30-5.5-5.95		✓

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 243277

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany DSI**
Number of Samples	34 soil, 1 water
Date samples received	20/05/2020
Date completed instructions received	20/05/2020

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	27/05/2020
Date of Issue	27/05/2020

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Diego Bigolin, Team Leader, Inorganics
Dragana Tomas, Senior Chemist
Hannah Nguyen, Senior Chemist
Josh Williams, Senior Chemist
Lucy Zhu, Asbestos Supervisor
Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		243277-1	243277-2	243277-3	243277-4	243277-5
Your Reference	UNITS	BH15/0.9-1.0	BH15/1.4-1.5	BH16/0.2-0.4	BH18/0.4-0.5	BH18/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	2	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	87	103	86	94	82

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		243277-6	243277-7	243277-8	243277-9	243277-10
Your Reference	UNITS	BH19/0.4-0.5	BH19/1.4-1.5	BH20/0-0.1	BH21/0.4-0.5	BH21/1-1.1
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	280	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	88	82	83	89	82

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		243277-11	243277-12	243277-13	243277-14	243277-15
Your Reference	UNITS	BH22/0.4-0.5	BH22/1.4-1.5	BH23/0-0.1	BH24/0.4-0.5	BH25/0.9-1.0
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	150	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	88	87	86	82	83

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		243277-16	243277-17	243277-18	243277-19	243277-20
Your Reference	UNITS	BH26/0.4-0.5	BH27/1.4-1.5	BH31/0.4-0.5	BH32/0.4-0.5	BD6/20200518
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	5	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	90	82	82	82	87

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		243277-21	243277-22	243277-24	243277-25	243277-27
Your Reference	UNITS	BH32/1.5-1.6	BH33/0.9-1.0	BH35/0.9-1.0	BH36/0.4-0.5	BH38/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	88	84	84	85	84

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		243277-29	243277-31	243277-34	243277-35
Your Reference	UNITS	BH39/0.9-1.0	BH40/0.4-0.5	TS	TB
Date Sampled		18/05/2020	19/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020
TRH C_6 - C_9	mg/kg	<25	<25	[NA]	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	[NA]	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	[NA]	<25
Benzene	mg/kg	<0.2	<0.2	92%	<0.2
Toluene	mg/kg	<0.5	<0.5	86%	<0.5
Ethylbenzene	mg/kg	<1	<1	83%	<1
m+p-xylene	mg/kg	<2	<2	84%	<2
o-Xylene	mg/kg	<1	<1	87%	<1
naphthalene	mg/kg	<1	<1	[NA]	<1
Total +ve Xylenes	mg/kg	<3	<3	[NA]	<3
Surrogate aaa-Trifluorotoluene	%	94	78	95	92

svTRH (C10-C40) in Soil						
Our Reference		243277-1	243277-2	243277-3	243277-4	243277-5
Your Reference	UNITS	BH15/0.9-1.0	BH15/1.4-1.5	BH16/0.2-0.4	BH18/0.4-0.5	BH18/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	25/05/2020	25/05/2020	26/05/2020	26/05/2020	26/05/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	220	2,700	5,000	<100
TRH C_{29} - C_{36}	mg/kg	<100	180	2,300	4,400	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	78	200	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	78	200	<50
TRH >C_{16} -C_{34}	mg/kg	<100	350	4,600	8,100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	150	840	2,200	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	490	5,500	10,000	<50
Surrogate o-Terphenyl	%	66	76	#	#	62

svTRH (C10-C40) in Soil						
Our Reference		243277-6	243277-7	243277-8	243277-9	243277-10
Your Reference	UNITS	BH19/0.4-0.5	BH19/1.4-1.5	BH20/0-0.1	BH21/0.4-0.5	BH21/1-1.1
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020	25/05/2020	25/05/2020
TRH C_{10} - C_{14}	mg/kg	670	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	6,200	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	2,600	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	1,300	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	1,000	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	8,100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	890	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	10,000	<50	<50	<50	<50
Surrogate o-Terphenyl	%	#	60	81	64	76

svTRH (C10-C40) in Soil						
Our Reference		243277-11	243277-12	243277-13	243277-14	243277-15
Your Reference	UNITS	BH22/0.4-0.5	BH22/1.4-1.5	BH23/0-0.1	BH24/0.4-0.5	BH25/0.9-1.0
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	26/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
TRH C_{10} - C_{14}	mg/kg	330	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	6,000	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	2,700	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	890	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	740	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	8,000	<100	<100	<100	120
TRH >C_{34} -C_{40}	mg/kg	930	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	9,800	<50	<50	<50	120
Surrogate o-Terphenyl	%	#	75	78	70	71

svTRH (C10-C40) in Soil						
Our Reference		243277-16	243277-17	243277-18	243277-19	243277-20
Your Reference	UNITS	BH26/0.4-0.5	BH27/1.4-1.5	BH31/0.4-0.5	BH32/0.4-0.5	BD6/20200518
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	26/05/2020	26/05/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	570	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	410	<100	300	140
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	880	<100	240	110
TRH >C_{34} -C_{40}	mg/kg	<100	220	<100	490	200
Total +ve TRH (>C10-C40)	mg/kg	<50	1,100	<50	730	320
Surrogate o-Terphenyl	%	68	89	76	99	64

svTRH (C10-C40) in Soil						
Our Reference		243277-21	243277-22	243277-24	243277-25	243277-27
Your Reference	UNITS	BH32/1.5-1.6	BH33/0.9-1.0	BH35/0.9-1.0	BH36/0.4-0.5	BH38/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	25/05/2020	26/05/2020	25/05/2020	25/05/2020	25/05/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	100	<100	110	<100
TRH C_{29} - C_{36}	mg/kg	<100	150	<100	220	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	210	<100	270	<100
TRH >C_{34} -C_{40}	mg/kg	<100	100	<100	140	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	320	<50	400	<50
Surrogate o-Terphenyl	%	66	75	71	99	69

svTRH (C10-C40) in Soil			
Our Reference		243277-29	243277-31
Your Reference	UNITS	BH39/0.9-1.0	BH40/0.4-0.5
Date Sampled		18/05/2020	19/05/2020
Type of sample		soil	soil
Date extracted	-	22/05/2020	22/05/2020
Date analysed	-	26/05/2020	25/05/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	190	<100
TRH C_{29} - C_{36}	mg/kg	240	<100
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	360	<100
TRH >C_{34} -C_{40}	mg/kg	200	<100
Total +ve TRH (>C10-C40)	mg/kg	570	<50
Surrogate o-Terphenyl	%	80	68

PAHs in Soil						
Our Reference		243277-1	243277-2	243277-3	243277-4	243277-5
Your Reference	UNITS	BH15/0.9-1.0	BH15/1.4-1.5	BH16/0.2-0.4	BH18/0.4-0.5	BH18/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
Naphthalene	mg/kg	<0.1	2.5	0.3	0.2	<0.1
Acenaphthylene	mg/kg	<0.1	0.6	2.6	1.7	<0.1
Acenaphthene	mg/kg	<0.1	1.1	1	9.0	<0.1
Fluorene	mg/kg	<0.1	1.3	0.6	6.5	<0.1
Phenanthrene	mg/kg	0.4	20	39	170	0.3
Anthracene	mg/kg	<0.1	4.5	18	48	<0.1
Fluoranthene	mg/kg	0.4	21	130	240	0.4
Pyrene	mg/kg	0.4	20	120	220	0.4
Benzo(a)anthracene	mg/kg	0.1	8.2	65	94	0.2
Chrysene	mg/kg	0.1	7.0	55	92	0.2
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	9.0	80	120	0.3
Benzo(a)pyrene	mg/kg	0.1	6.4	51	72	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	3.0	25	31	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.8	7.4	9.0	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	3.9	31	38	0.1
Total +ve PAH's	mg/kg	1.5	110	630	1,200	2.0
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	9.3	76	110	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	9.3	76	110	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	9.3	76	110	<0.5
Surrogate p-Terphenyl-d14	%	82	82	#	#	83

PAHs in Soil						
Our Reference		243277-6	243277-7	243277-8	243277-9	243277-10
Your Reference	UNITS	BH19/0.4-0.5	BH19/1.4-1.5	BH20/0-0.1	BH21/0.4-0.5	BH21/1-1.1
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
Naphthalene	mg/kg	490	<0.1	<0.1	0.1	<0.1
Acenaphthylene	mg/kg	67	0.1	<0.1	0.1	<0.1
Acenaphthene	mg/kg	67	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	150	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	1,500	0.5	0.3	1	<0.1
Anthracene	mg/kg	280	0.1	<0.1	0.2	<0.1
Fluoranthene	mg/kg	1,300	0.6	0.4	1.2	0.1
Pyrene	mg/kg	1,200	0.6	0.4	1.1	0.1
Benzo(a)anthracene	mg/kg	380	0.2	0.1	0.4	<0.1
Chrysene	mg/kg	350	0.2	0.1	0.4	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	510	0.3	0.2	0.6	<0.2
Benzo(a)pyrene	mg/kg	350	0.2	0.2	0.3	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	200	0.1	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	41	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	260	0.2	0.1	0.2	<0.1
Total +ve PAH's	mg/kg	7,200	3.3	1.8	5.8	0.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	510	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	510	<0.5	<0.5	0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	510	<0.5	<0.5	0.6	<0.5
Surrogate p-Terphenyl-d14	%	110	80	81	78	82

PAHs in Soil						
Our Reference		243277-11	243277-12	243277-13	243277-14	243277-15
Your Reference	UNITS	BH22/0.4-0.5	BH22/1.4-1.5	BH23/0-0.1	BH24/0.4-0.5	BH25/0.9-1.0
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
Naphthalene	mg/kg	290	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	100	0.1	0.6	0.2	0.3
Acenaphthene	mg/kg	84	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	290	<0.1	0.1	<0.1	0.2
Phenanthrene	mg/kg	2,300	0.6	2.8	0.5	3.2
Anthracene	mg/kg	480	0.1	0.8	0.2	0.9
Fluoranthene	mg/kg	2,000	0.6	6.5	1.2	5.7
Pyrene	mg/kg	1,800	0.5	6.6	1.2	5.9
Benzo(a)anthracene	mg/kg	560	0.2	2.9	0.7	3.2
Chrysene	mg/kg	540	0.2	2.6	0.6	3.0
Benzo(b,j+k)fluoranthene	mg/kg	770	0.2	4.6	1	3.8
Benzo(a)pyrene	mg/kg	520	0.1	3.3	0.70	2.7
Indeno(1,2,3-c,d)pyrene	mg/kg	310	<0.1	1.9	0.4	1.2
Dibenzo(a,h)anthracene	mg/kg	38	<0.1	0.4	0.1	0.4
Benzo(g,h,i)perylene	mg/kg	280	0.1	2.5	0.4	1.4
Total +ve PAH's	mg/kg	10,000	2.7	36	7.3	32
Benzo(a)pyrene TEQ calc (zero)	mg/kg	730	<0.5	4.7	1.0	3.9
Benzo(a)pyrene TEQ calc(half)	mg/kg	730	<0.5	4.7	1.0	3.9
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	730	<0.5	4.7	1.0	3.9
Surrogate p-Terphenyl-d14	%	110	82	81	78	81

PAHs in Soil						
Our Reference		243277-16	243277-17	243277-18	243277-19	243277-20
Your Reference	UNITS	BH26/0.4-0.5	BH27/1.4-1.5	BH31/0.4-0.5	BH32/0.4-0.5	BD6/20200518
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
Naphthalene	mg/kg	<0.1	6.3	0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	6.3	0.3	0.1	0.2
Acenaphthene	mg/kg	<0.1	2.4	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	8.4	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.6	78	1.5	0.2	0.8
Anthracene	mg/kg	0.2	17	0.4	0.1	0.3
Fluoranthene	mg/kg	1.4	88	3.1	0.6	1.8
Pyrene	mg/kg	1.3	84	3.1	0.6	2.0
Benzo(a)anthracene	mg/kg	0.6	24	1.9	0.4	1.2
Chrysene	mg/kg	0.6	22	1.5	0.4	1.2
Benzo(b,j+k)fluoranthene	mg/kg	1	34	2.6	0.6	2.0
Benzo(a)pyrene	mg/kg	0.63	23	1.8	0.4	1.3
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	14	0.9	0.2	0.7
Dibenzo(a,h)anthracene	mg/kg	<0.1	3.6	0.2	<0.1	0.2
Benzo(g,h,i)perylene	mg/kg	0.5	18	1.2	0.3	0.9
Total +ve PAH's	mg/kg	7.2	430	19	3.9	13
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.8	34	2.6	0.5	1.9
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.9	34	2.6	0.6	1.9
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.9	34	2.6	0.6	1.9
Surrogate p-Terphenyl-d14	%	82	77	85	85	82

PAHs in Soil						
Our Reference		243277-21	243277-22	243277-24	243277-25	243277-27
Your Reference	UNITS	BH32/1.5-1.6	BH33/0.9-1.0	BH35/0.9-1.0	BH36/0.4-0.5	BH38/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	0.2	0.3	0.2	0.3
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	0.5	1.4	0.4	1.1
Anthracene	mg/kg	<0.1	0.3	0.4	0.2	0.4
Fluoranthene	mg/kg	0.4	2.1	2.9	1.5	2.2
Pyrene	mg/kg	0.5	2.8	2.8	1.8	2.2
Benzo(a)anthracene	mg/kg	0.3	1.9	1.4	1.2	1.2
Chrysene	mg/kg	0.3	2.0	1.2	1.2	1.1
Benzo(b,j+k)fluoranthene	mg/kg	0.5	4.7	2	2.3	2
Benzo(a)pyrene	mg/kg	0.3	3.4	1.3	1.6	1.2
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	1.9	0.7	0.8	0.6
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.6	0.2	0.2	0.2
Benzo(g,h,i)perylene	mg/kg	0.2	2.5	1	1.0	0.8
Total +ve PAH's	mg/kg	2.9	23	15	12	13
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	4.8	1.9	2.3	1.7
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	4.8	1.9	2.3	1.7
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	4.8	1.9	2.3	1.7
Surrogate p-Terphenyl-d14	%	84	83	79	79	83

PAHs in Soil			
Our Reference		243277-29	243277-31
Your Reference	UNITS	BH39/0.9-1.0	BH40/0.4-0.5
Date Sampled		18/05/2020	19/05/2020
Type of sample		soil	soil
Date extracted	-	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020
Naphthalene	mg/kg	0.2	<0.1
Acenaphthylene	mg/kg	0.3	<0.1
Acenaphthene	mg/kg	0.5	<0.1
Fluorene	mg/kg	0.4	<0.1
Phenanthrene	mg/kg	2.6	0.3
Anthracene	mg/kg	1	0.1
Fluoranthene	mg/kg	4.5	0.7
Pyrene	mg/kg	5.3	0.7
Benzo(a)anthracene	mg/kg	3.2	0.4
Chrysene	mg/kg	3.0	0.4
Benzo(b,j+k)fluoranthene	mg/kg	5.3	0.7
Benzo(a)pyrene	mg/kg	3.6	0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	1.8	0.2
Dibenzo(a,h)anthracene	mg/kg	0.6	<0.1
Benzo(g,h,i)perylene	mg/kg	2.4	0.3
Total +ve PAH's	mg/kg	35	4.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	5.3	0.6
Benzo(a)pyrene TEQ calc(half)	mg/kg	5.3	0.7
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	5.3	0.7
Surrogate p-Terphenyl-d14	%	82	87

Organochlorine Pesticides in soil						
Our Reference		243277-1	243277-4	243277-8	243277-9	243277-13
Your Reference	UNITS	BH15/0.9-1.0	BH18/0.4-0.5	BH20/0-0.1	BH21/0.4-0.5	BH23/0-0.1
Date Sampled		18/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	91	100	89	89	89

Organochlorine Pesticides in soil						
Our Reference		243277-14	243277-16	243277-19	243277-22	243277-25
Your Reference	UNITS	BH24/0.4-0.5	BH26/0.4-0.5	BH32/0.4-0.5	BH33/0.9-1.0	BH36/0.4-0.5
Date Sampled		19/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	0.8	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	88	91	88	88

Organochlorine Pesticides in soil		
Our Reference		243277-29
Your Reference	UNITS	BH39/0.9-1.0
Date Sampled		18/05/2020
Type of sample		soil
Date extracted	-	22/05/2020
Date analysed	-	27/05/2020
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	90

Organophosphorus Pesticides in Soil						
Our Reference		243277-1	243277-4	243277-8	243277-9	243277-13
Your Reference	UNITS	BH15/0.9-1.0	BH18/0.4-0.5	BH20/0-0.1	BH21/0.4-0.5	BH23/0-0.1
Date Sampled		18/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	91	100	89	89	89

Organophosphorus Pesticides in Soil						
Our Reference		243277-14	243277-16	243277-19	243277-22	243277-25
Your Reference	UNITS	BH24/0.4-0.5	BH26/0.4-0.5	BH32/0.4-0.5	BH33/0.9-1.0	BH36/0.4-0.5
Date Sampled		19/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	88	91	88	88

Organophosphorus Pesticides in Soil		
Our Reference		243277-29
Your Reference	UNITS	BH39/0.9-1.0
Date Sampled		18/05/2020
Type of sample		soil
Date extracted	-	22/05/2020
Date analysed	-	27/05/2020
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Parathion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Ethion	mg/kg	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1
Surrogate TCMX	%	90

PCBs in Soil						
Our Reference		243277-1	243277-4	243277-8	243277-9	243277-13
Your Reference	UNITS	BH15/0.9-1.0	BH18/0.4-0.5	BH20/0-0.1	BH21/0.4-0.5	BH23/0-0.1
Date Sampled		18/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	91	100	89	89	89

PCBs in Soil						
Our Reference		243277-14	243277-16	243277-19	243277-22	243277-25
Your Reference	UNITS	BH24/0.4-0.5	BH26/0.4-0.5	BH32/0.4-0.5	BH33/0.9-1.0	BH36/0.4-0.5
Date Sampled		19/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	27/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	88	91	88	88

PCBs in Soil		
Our Reference		243277-29
Your Reference	UNITS	BH39/0.9-1.0
Date Sampled		18/05/2020
Type of sample		soil
Date extracted	-	22/05/2020
Date analysed	-	27/05/2020
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	90

Acid Extractable metals in soil						
Our Reference		243277-1	243277-2	243277-3	243277-4	243277-5
Your Reference	UNITS	BH15/0.9-1.0	BH15/1.4-1.5	BH16/0.2-0.4	BH18/0.4-0.5	BH18/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Arsenic	mg/kg	<4	<4	4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	<1	8	13	<1
Copper	mg/kg	3	21	100	160	2
Lead	mg/kg	<1	5	45	17	25
Mercury	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Nickel	mg/kg	<1	3	19	35	<1
Zinc	mg/kg	2	7	42	87	4

Acid Extractable metals in soil						
Our Reference		243277-6	243277-7	243277-8	243277-9	243277-10
Your Reference	UNITS	BH19/0.4-0.5	BH19/1.4-1.5	BH20/0-0.1	BH21/0.4-0.5	BH21/1-1.1
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Arsenic	mg/kg	<4	<4	<4	34	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	1	6	5	<1
Copper	mg/kg	12	2	9	24	2
Lead	mg/kg	13	2	35	21	<1
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	<1	4	54	2
Zinc	mg/kg	16	1	20	21	2

Acid Extractable metals in soil						
Our Reference		243277-11	243277-12	243277-13	243277-14	243277-15
Your Reference	UNITS	BH22/0.4-0.5	BH22/1.4-1.5	BH23/0-0.1	BH24/0.4-0.5	BH25/0.9-1.0
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Arsenic	mg/kg	<4	<4	6	<4	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	0.5
Chromium	mg/kg	5	<1	5	4	10
Copper	mg/kg	220	1	11	11	58
Lead	mg/kg	130	<1	26	180	88
Mercury	mg/kg	<0.1	<0.1	<0.1	1.6	<0.1
Nickel	mg/kg	23	<1	3	5	20
Zinc	mg/kg	76	4	27	58	140

Acid Extractable metals in soil						
Our Reference		243277-16	243277-17	243277-18	243277-19	243277-20
Your Reference	UNITS	BH26/0.4-0.5	BH27/1.4-1.5	BH31/0.4-0.5	BH32/0.4-0.5	BD6/20200518
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Arsenic	mg/kg	<4	5	<4	<4	<4
Cadmium	mg/kg	<0.4	0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	11	1	5	10
Copper	mg/kg	29	140	13	44	35
Lead	mg/kg	70	86	11	42	64
Mercury	mg/kg	<0.1	0.1	<0.1	0.1	0.2
Nickel	mg/kg	37	32	3	7	9
Zinc	mg/kg	110	590	24	84	63

Acid Extractable metals in soil						
Our Reference		243277-21	243277-22	243277-24	243277-25	243277-27
Your Reference	UNITS	BH32/1.5-1.6	BH33/0.9-1.0	BH35/0.9-1.0	BH36/0.4-0.5	BH38/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Arsenic	mg/kg	<4	<4	<4	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	9	42	15	11
Copper	mg/kg	17	23	37	26	42
Lead	mg/kg	51	75	45	85	64
Mercury	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Nickel	mg/kg	4	4	260	5	72
Zinc	mg/kg	45	49	370	66	100

Acid Extractable metals in soil			
Our Reference		243277-29	243277-31
Your Reference	UNITS	BH39/0.9-1.0	BH40/0.4-0.5
Date Sampled		18/05/2020	19/05/2020
Type of sample		soil	soil
Date prepared	-	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	9	5
Copper	mg/kg	20	22
Lead	mg/kg	76	46
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	5	5
Zinc	mg/kg	58	40

Misc Soil - Inorg						
Our Reference		243277-1	243277-4	243277-8	243277-9	243277-13
Your Reference	UNITS	BH15/0.9-1.0	BH18/0.4-0.5	BH20/0-0.1	BH21/0.4-0.5	BH23/0-0.1
Date Sampled		18/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		243277-14	243277-16	243277-19	243277-22	243277-25
Your Reference	UNITS	BH24/0.4-0.5	BH26/0.4-0.5	BH32/0.4-0.5	BH33/0.9-1.0	BH36/0.4-0.5
Date Sampled		19/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg		
Our Reference		243277-29
Your Reference	UNITS	BH39/0.9-1.0
Date Sampled		18/05/2020
Type of sample		soil
Date prepared	-	22/05/2020
Date analysed	-	22/05/2020
Total Phenolics (as Phenol)	mg/kg	<5

Moisture						
Our Reference		243277-1	243277-2	243277-3	243277-4	243277-5
Your Reference	UNITS	BH15/0.9-1.0	BH15/1.4-1.5	BH16/0.2-0.4	BH18/0.4-0.5	BH18/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Moisture	%	1.7	3.7	37	5.4	1.9

Moisture						
Our Reference		243277-6	243277-7	243277-8	243277-9	243277-10
Your Reference	UNITS	BH19/0.4-0.5	BH19/1.4-1.5	BH20/0-0.1	BH21/0.4-0.5	BH21/1-1.1
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Moisture	%	5.5	14	15	17	4.1

Moisture						
Our Reference		243277-11	243277-12	243277-13	243277-14	243277-15
Your Reference	UNITS	BH22/0.4-0.5	BH22/1.4-1.5	BH23/0-0.1	BH24/0.4-0.5	BH25/0.9-1.0
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Moisture	%	7.8	4.5	19	15	10

Moisture						
Our Reference		243277-16	243277-17	243277-18	243277-19	243277-20
Your Reference	UNITS	BH26/0.4-0.5	BH27/1.4-1.5	BH31/0.4-0.5	BH32/0.4-0.5	BD6/20200518
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Moisture	%	12	6.2	2.2	3.4	5.9

Moisture						
Our Reference		243277-21	243277-22	243277-24	243277-25	243277-27
Your Reference	UNITS	BH32/1.5-1.6	BH33/0.9-1.0	BH35/0.9-1.0	BH36/0.4-0.5	BH38/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Moisture	%	6.0	6.2	9.1	14	11

Moisture			
Our Reference		243277-29	243277-31
Your Reference	UNITS	BH39/0.9-1.0	BH40/0.4-0.5
Date Sampled		18/05/2020	19/05/2020
Type of sample		soil	soil
Date prepared	-	22/05/2020	22/05/2020
Date analysed	-	25/05/2020	25/05/2020
Moisture	%	5.3	8.4

Asbestos ID - soils						
Our Reference		243277-1	243277-3	243277-4	243277-6	243277-8
Your Reference	UNITS	BH15/0.9-1.0	BH16/0.2-0.4	BH18/0.4-0.5	BH19/0.4-0.5	BH20/0-0.1
Date Sampled		18/05/2020	18/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Sample mass tested	g	Approx. 25g	Approx. 55g	Approx. 35g	Approx. 80g	Approx. 25g
Sample Description	-	Brown sandy soil	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		243277-9	243277-11	243277-13	243277-14	243277-15
Your Reference	UNITS	BH21/0.4-0.5	BH22/0.4-0.5	BH23/0-0.1	BH24/0.4-0.5	BH25/0.9-1.0
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Sample mass tested	g	Approx. 45g	Approx. 60g	Approx. 40g	Approx. 45g	Approx. 55g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown sandy soil	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		243277-16	243277-17	243277-18	243277-19	243277-21
Your Reference	UNITS	BH26/0.4-0.5	BH27/1.4-1.5	BH31/0.4-0.5	BH32/0.4-0.5	BH32/1.5-1.6
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Sample mass tested	g	Approx. 30g	Approx. 60g	Approx. 40g	Approx. 50g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		243277-22	243277-24	243277-25	243277-27	243277-29
Your Reference	UNITS	BH33/0.9-1.0	BH35/0.9-1.0	BH36/0.4-0.5	BH38/0.9-1.0	BH39/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Sample mass tested	g	Approx. 35g	Approx. 45g	Approx. 30g	Approx. 50g	Approx. 50g
Sample Description	-	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils		
Our Reference		243277-31
Your Reference	UNITS	BH40/0.4-0.5
Date Sampled		19/05/2020
Type of sample		soil
Date analysed	-	25/05/2020
Sample mass tested	g	Approx. 50g
Sample Description	-	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO
Trace Analysis	-	No asbestos detected

sPOCAS field test						
Our Reference		243277-2	243277-5	243277-7	243277-10	243277-15
Your Reference	UNITS	BH15/1.4-1.5	BH18/0.9-1.0	BH19/1.4-1.5	BH21/1-1.1	BH25/0.9-1.0
Date Sampled		18/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	21/05/2020	21/05/2020	21/05/2020	21/05/2020	21/05/2020
Date analysed	-	21/05/2020	21/05/2020	21/05/2020	21/05/2020	21/05/2020
pH_F (field pH test)*	pH Units	9.9	8.3	7.4	7.5	6.9
pH_{FOX} (field peroxide test)*	pH Units	7.0	6.1	5.5	3.3	3.6
Reaction Rate*	-	High reaction	Medium reaction	Low reaction	Medium reaction	Medium reaction

sPOCAS field test						
Our Reference		243277-17	243277-21	243277-23	243277-28	243277-30
Your Reference	UNITS	BH27/1.4-1.5	BH32/1.5-1.6	BH33/2.4-2.5	BH38/1.9-2.0	BH39/1.9-2.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	21/05/2020	21/05/2020	25/05/2020	21/05/2020	21/05/2020
Date analysed	-	21/05/2020	21/05/2020	25/05/2020	21/05/2020	21/05/2020
pH_F (field pH test)*	pH Units	6.9	7.4	6.9	7.2	7.6
pH_{FOX} (field peroxide test)*	pH Units	4.8	4.5	4.8	4.9	4.7
Reaction Rate*	-	High reaction	Medium reaction	Low reaction	Medium reaction	High reaction

sPOCAS field test		
Our Reference		243277-32
Your Reference	UNITS	BH40/2.4-2.5
Date Sampled		18/05/2020
Type of sample		soil
Date prepared	-	21/05/2020
Date analysed	-	21/05/2020
pH_F (field pH test)*	pH Units	7.2
pH_{FOX} (field peroxide test)*	pH Units	4.8
Reaction Rate*	-	Low reaction

Misc Inorg - Soil						
Our Reference		243277-2	243277-4	243277-8	243277-12	243277-14
Your Reference	UNITS	BH15/1.4-1.5	BH18/0.4-0.5	BH20/0-0.1	BH22/1.4-1.5	BH24/0.4-0.5
Date Sampled		18/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
pH 1:5 soil:water	pH Units	9.2	8.1	6.6	7.0	6.6

Misc Inorg - Soil						
Our Reference		243277-16	243277-18	243277-23	243277-27	243277-31
Your Reference	UNITS	BH26/0.4-0.5	BH31/0.4-0.5	BH33/2.4-2.5	BH38/0.9-1.0	BH40/0.4-0.5
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
Date analysed	-	25/05/2020	25/05/2020	25/05/2020	25/05/2020	25/05/2020
pH 1:5 soil:water	pH Units	6.3	7.9	6.9	8.9	6.4

CEC						
Our Reference		243277-2	243277-4	243277-8	243277-12	243277-14
Your Reference	UNITS	BH15/1.4-1.5	BH18/0.4-0.5	BH20/0-0.1	BH22/1.4-1.5	BH24/0.4-0.5
Date Sampled		18/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Exchangeable Ca	meq/100g	3.8	7.7	3.7	0.2	0.4
Exchangeable K	meq/100g	<0.1	0.2	0.2	<0.1	<0.1
Exchangeable Mg	meq/100g	0.17	1.1	1.5	<0.1	0.16
Exchangeable Na	meq/100g	<0.1	0.18	<0.1	<0.1	<0.1
Cation Exchange Capacity	meq/100g	4.0	9.2	5.5	<1	<1

CEC						
Our Reference		243277-16	243277-18	243277-23	243277-27	243277-31
Your Reference	UNITS	BH26/0.4-0.5	BH31/0.4-0.5	BH33/2.4-2.5	BH38/0.9-1.0	BH40/0.4-0.5
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Exchangeable Ca	meq/100g	5.1	2.4	0.7	8.5	1
Exchangeable K	meq/100g	0.2	<0.1	<0.1	<0.1	<0.1
Exchangeable Mg	meq/100g	1.6	0.61	0.13	0.37	0.30
Exchangeable Na	meq/100g	<0.1	<0.1	<0.1	<0.1	<0.1
Cation Exchange Capacity	meq/100g	6.9	3.1	<1	8.9	1.3

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	243277-33
Your Reference		Rinsate
Date Sampled		18/05/2020
Type of sample		water
Date extracted	-	22/05/2020
Date analysed	-	23/05/2020
TRH C_6 - C_9	µg/L	25
TRH C_6 - C_{10}	µg/L	29
TRH C_6 - C_{10} less BTEX (F1)	µg/L	28
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	%	107
Surrogate toluene-d8	%	96
Surrogate 4-BFB	%	104

svTRH (C10-C40) in Water		
Our Reference	UNITS	243277-33
Your Reference		Rinsate
Date Sampled		18/05/2020
Type of sample		water
Date extracted	-	22/05/2020
Date analysed	-	23/05/2020
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
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
Surrogate o-Terphenyl	%	107

PAHs in Water		
Our Reference	UNITS	243277-33
Your Reference		Rinsate
Date Sampled		18/05/2020
Type of sample		water
Date extracted	-	22/05/2020
Date analysed	-	22/05/2020
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	110

Metals in Water - Dissolved		
Our Reference		243277-33
Your Reference	UNITS	Rinsate
Date Sampled		18/05/2020
Type of sample		water
Date digested	-	22/05/2020
Date analysed	-	22/05/2020
Arsenic - Dissolved	mg/L	<0.05
Cadmium - Dissolved	mg/L	<0.01
Chromium - Dissolved	mg/L	<0.01
Copper - Dissolved	mg/L	<0.01
Lead - Dissolved	mg/L	<0.03
Mercury - Dissolved	mg/L	<0.0005
Nickel - Dissolved	mg/L	<0.02
Zinc - Dissolved	mg/L	<0.02

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.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-063	pH- measured using pH meter and electrode. Soil is oxidised with Hydrogen Peroxide or extracted with water. Based on section H, Acid Sulfate Soils Laboratory Methods Guidelines, Version 2.1 - June 2004. To ensure accurate results these tests are recommended to be done in the field as pH may change with time thus these results may not be representative of true field conditions.
Metals-020	Determination of various metals by ICP-AES.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
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.
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	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.

Method ID	Methodology Summary
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/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
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	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.
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.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	243277-4
Date extracted	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Date analysed	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	88	75
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	88	75
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	78	74
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	89	79
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	94	79
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	89	71
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	94	79
naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	79	1	87	89	2	91	78

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			[NT]	13	22/05/2020	22/05/2020		22/05/2020	[NT]
Date analysed	-			[NT]	13	22/05/2020	22/05/2020		22/05/2020	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	13	<25	<25	0	81	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	13	<25	<25	0	81	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	13	<0.2	<0.2	0	80	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	13	<0.5	<0.5	0	84	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	13	<1	<1	0	85	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	13	<2	<2	0	77	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	13	<1	<1	0	86	[NT]
naphthalene	mg/kg	1	Org-023	[NT]	13	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	13	86	75	14	86	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
Date analysed	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	29	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	29	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	29	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	29	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	29	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	29	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	29	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-023	[NT]	29	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	29	94	87	8	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	243277-4
Date extracted	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Date analysed	-			22/05/2020	1	25/05/2020	25/05/2020		22/05/2020	22/05/2020
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	85	77
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	70	#
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	77	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	85	77
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	70	#
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	77	#
Surrogate o-Terphenyl	%		Org-020	100	1	66	62	6	87	#

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			[NT]	13	22/05/2020	22/05/2020		22/05/2020	[NT]
Date analysed	-			[NT]	13	25/05/2020	25/05/2020		22/05/2020	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	13	<50	<50	0	99	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	13	<100	<100	0	70	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	13	<100	<100	0	77	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	13	<50	<50	0	99	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	13	<100	130	26	70	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	13	<100	<100	0	77	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	13	78	84	7	102	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
Date analysed	-			[NT]	29	26/05/2020	26/05/2020		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	29	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	29	190	240	23	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	29	240	250	4	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	29	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	29	360	330	9	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	29	200	200	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	29	80	90	12	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	243277-4
Date extracted	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Date analysed	-			27/05/2020	1	27/05/2020	27/05/2020		27/05/2020	27/05/2020
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	0.1	0	94	112
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	#
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	0.4	0.7	55	102	#
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	0.2	67	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	0.4	0.8	67	98	#
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.4	0.7	55	100	#
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.3	100	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.2	67	84	#
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	0.3	40	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	0.1	0.2	67	98	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	0.2	67	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	85	1	82	80	2	84	81

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			[NT]	13	22/05/2020	22/05/2020		22/05/2020	[NT]
Date analysed	-			[NT]	13	27/05/2020	27/05/2020		27/05/2020	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	94	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	13	0.6	0.6	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	13	0.1	0.1	0	92	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	13	2.8	3.0	7	102	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	13	0.8	1	22	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	13	6.5	7.7	17	98	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	13	6.6	7.7	15	100	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	13	2.9	3.4	16	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	13	2.6	3.2	21	84	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	13	4.6	5.5	18	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	13	3.3	3.9	17	102	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	13	1.9	2.2	15	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	13	0.4	0.5	22	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	13	2.5	2.9	15	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	13	81	81	0	81	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
Date analysed	-			[NT]	29	27/05/2020	27/05/2020		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	29	0.2	0.2	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	29	0.3	0.2	40	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	29	0.5	0.7	33	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	29	0.4	0.6	40	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	29	2.6	3.7	35	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	29	1	1.4	33	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	29	4.5	5.6	22	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	29	5.3	6.3	17	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	29	3.2	3.4	6	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	29	3.0	3.3	10	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	29	5.3	5.4	2	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	29	3.6	3.6	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	29	1.8	1.8	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	29	0.6	0.5	18	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	29	2.4	2.3	4	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	29	82	86	5	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	243277-4
Date extracted	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Date analysed	-			27/05/2020	1	27/05/2020	27/05/2020		27/05/2020	27/05/2020
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	116	#
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	124	#
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	122	108
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	132	124
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	124	120
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	120	120
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	128	112
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	110	#
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	122	#
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	#
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	91	1	91	87	4	89	88

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			[NT]	13	22/05/2020	22/05/2020		22/05/2020	[NT]
Date analysed	-			[NT]	13	27/05/2020	27/05/2020		27/05/2020	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	106	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	116	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	94	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	128	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	118	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	114	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	114	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	108	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	112	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	72	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	13	89	87	2	85	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
Date analysed	-			[NT]	29	27/05/2020	27/05/2020		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	29	90	94	4	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	243277-4
Date extracted	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Date analysed	-			27/05/2020	1	27/05/2020	27/05/2020		27/05/2020	27/05/2020
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	138
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	84
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	#
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	#
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	#
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	#
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	#
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	91	1	91	87	4	89	88

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			[NT]	13	22/05/2020	22/05/2020		22/05/2020	[NT]
Date analysed	-			[NT]	13	27/05/2020	27/05/2020		27/05/2020	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	122	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	90	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	96	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	122	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	100	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	96	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	100	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	13	89	87	2	85	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
Date analysed	-			[NT]	29	27/05/2020	27/05/2020		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	29	90	94	4	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	243277-4
Date extracted	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Date analysed	-			27/05/2020	1	27/05/2020	27/05/2020		27/05/2020	27/05/2020
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	110	100
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	91	1	91	87	4	89	88

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			[NT]	13	22/05/2020	22/05/2020		22/05/2020	[NT]
Date analysed	-			[NT]	13	27/05/2020	27/05/2020		27/05/2020	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	13	<0.1	<0.1	0	104	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	13	89	87	2	85	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
Date analysed	-			[NT]	29	27/05/2020	27/05/2020		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	29	90	94	4	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	243277-4
Date prepared	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Date analysed	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	105	98
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	100	82
Chromium	mg/kg	1	Metals-020	<1	1	<1	<1	0	103	89
Copper	mg/kg	1	Metals-020	<1	1	3	3	0	107	#
Lead	mg/kg	1	Metals-020	<1	1	<1	<1	0	105	107
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	89	74
Nickel	mg/kg	1	Metals-020	<1	1	<1	<1	0	105	#
Zinc	mg/kg	1	Metals-020	<1	1	2	2	0	102	#

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	243277-31
Date prepared	-			[NT]	13	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Date analysed	-			[NT]	13	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Arsenic	mg/kg	4	Metals-020	[NT]	13	6	5	18	107	106
Cadmium	mg/kg	0.4	Metals-020	[NT]	13	<0.4	<0.4	0	101	91
Chromium	mg/kg	1	Metals-020	[NT]	13	5	4	22	105	106
Copper	mg/kg	1	Metals-020	[NT]	13	11	10	10	109	127
Lead	mg/kg	1	Metals-020	[NT]	13	26	26	0	109	106
Mercury	mg/kg	0.1	Metals-021	[NT]	13	<0.1	<0.1	0	74	82
Nickel	mg/kg	1	Metals-020	[NT]	13	3	3	0	107	106
Zinc	mg/kg	1	Metals-020	[NT]	13	27	26	4	110	118

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
Date analysed	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	29	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	29	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	29	9	8	12	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	29	20	20	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	29	76	76	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	29	5	5	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	29	58	62	7	[NT]	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	243277-4
Date prepared	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Date analysed	-			22/05/2020	1	22/05/2020	22/05/2020		22/05/2020	22/05/2020
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	102	105

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
Date analysed	-			[NT]	29	22/05/2020	22/05/2020		[NT]	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	29	<5	<5	0	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			25/05/2020	2	25/05/2020	25/05/2020		25/05/2020	[NT]
Date analysed	-			25/05/2020	2	25/05/2020	25/05/2020		25/05/2020	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	2	9.2	9.2	0	103	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			26/05/2020	8	26/05/2020	26/05/2020		26/05/2020	[NT]
Date analysed	-			26/05/2020	8	26/05/2020	26/05/2020		26/05/2020	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	8	3.7	3.8	3	106	[NT]
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	8	0.2	0.2	0	109	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	8	1.5	1.6	6	103	[NT]
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	8	<0.1	<0.1	0	96	[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	-			22/05/2020	33	22/05/2020	26/05/2020		22/05/2020	[NT]
Date analysed	-			22/05/2020	33	23/05/2020	27/05/2020		23/05/2020	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	33	25	<10	86	86	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	33	29	<10	97	86	[NT]
Benzene	µg/L	1	Org-023	<1	33	<1	<1	0	90	[NT]
Toluene	µg/L	1	Org-023	<1	33	1	1	0	87	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	33	<1	<1	0	83	[NT]
m+p-xylene	µg/L	2	Org-023	<2	33	<2	<2	0	85	[NT]
o-xylene	µg/L	1	Org-023	<1	33	<1	<1	0	84	[NT]
Naphthalene	µg/L	1	Org-023	<1	33	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	110	33	107	102	5	104	[NT]
Surrogate toluene-d8	%		Org-023	97	33	96	98	2	99	[NT]
Surrogate 4-BFB	%		Org-023	103	33	104	106	2	103	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			22/05/2020	[NT]	[NT]	[NT]	[NT]	22/05/2020	[NT]
Date analysed	-			22/05/2020	[NT]	[NT]	[NT]	[NT]	22/05/2020	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	93	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	88	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	88	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	113	[NT]
Surrogate o-Terphenyl	%		Org-020	89	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			22/05/2020	[NT]	[NT]	[NT]	[NT]	22/05/2020	[NT]
Date analysed	-			22/05/2020	[NT]	[NT]	[NT]	[NT]	22/05/2020	[NT]
Naphthalene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	122	[NT]
Acenaphthylene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Phenanthrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	122	[NT]
Benzo(a)anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	124	[NT]
Benzo(b,j+k)fluoranthene	µg/L	2	Org-022/025	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	91	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: Metals in Water - Dissolved					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date digested	-			22/05/2020	[NT]	[NT]	[NT]	[NT]	22/05/2020	[NT]
Date analysed	-			22/05/2020	[NT]	[NT]	[NT]	[NT]	22/05/2020	[NT]
Arsenic - Dissolved	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	115	[NT]
Cadmium - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	107	[NT]
Chromium - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	110	[NT]
Copper - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	114	[NT]
Lead - Dissolved	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	114	[NT]
Mercury - Dissolved	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	99	[NT]
Nickel - Dissolved	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	113	[NT]
Zinc - Dissolved	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	111	[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: Excessive sample volumes were provided for asbestos analysis.
A portion of the supplied samples were sub-sampled according to Envirolab procedures.
We cannot guarantee that these sub-samples are indicative of the entire sample.
Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.
Note: Samples requested for asbestos testing were sub-sampled from bags provided by the client.

Acid Extractable Metals in Soil: # Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate and matrix spike is not possible to report as the high concentration of analytes in samples 243277-3, 4, 4ms, 6, 11 have caused interference.

PAHs in Soil:
- # Percent recovery for the matrix spike is not possible to report as the high concentration of analytes in sample 243277-4ms have caused interference.
- The RPD for duplicate results is accepted due to the non homogenous nature of sample 243277-1.

OC's in Soil - # Percent recovery for the matrix spike is not possible to report due to interference from analytes (other than those being tested) in sample 243277-4ms.
OP's in Soil - # Percent recovery for the matrix spike is not possible to report due to interference from analytes (other than those being tested) in sample 243277-4ms.
PAHs in Soil - The RPD for duplicate results is accepted due to the non homogenous nature of sample/s XXXXXX-YY.

Douglas Partners
Geotechnics | Environment | Groundwater

243277

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99679.01	**Suburb:**	Botany	**To:**	Envirolab Services
Project Name:	Botany, DSI	**Order Number**	152412		
Project Manager:	WFY	**Sampler:**	WFY	**Attn:**	Aileen Hie
Emails:	wenfei.yuan@douglaspartners.com.au and ayla.sorensen@douglaspartners.com.au			**Phone:**	
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	
Prior Storage:	☐ Esky ☐ Fridge/Freezer ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo8A	Combo3A	ASS Screening	Combo3	pH, CEC	Notes
BH15/0.9-1.0	1	18/05/20	S	G/P	X					
BH15/1.4-0.5	2	18/05/20	S	G/P			X	X	X	
BH16/0.2-0.4	3	18/05/20	S	G/P		X				
BH18/0.4-0.5	4	19/05/20	S	G/P	X				X	
BH18/0.9-1.0	5	19/05/20	S	G/P			X	X		
BH19/0.4-0.5	6	19/05/20	S	G/P		X				
BH19/1.4-1.5	7	19/05/20	S	G/P			X	X		
BH20/0-0.1	8	19/05/20	S	G/P	X				X	
BH21/0.4-0.5	9	19/05/20	S	G/P	X					
BH21/1-1.1	10	19/05/20	S	G/P			X	X		
BH22/0.4-0.5	11	19/05/20	S	G/P		X				
BH22/1.4-1.5	12	19/05/20	S	G/P				X	X	
BH23/0-0.1	13	19/05/20	S	G/P	X					
BH24/0.4-0.5	14	19/05/20	S	G/P	X				X	
BH25/0.9-1.0	15	19/05/20	S	G/P		X	X			
BH26/0.4-0.5	16	18/05/20	S	G/P	X				X	
BH27/1.4-1.5	17	18/05/20	S	G/P		X	X			
BH31/0.4-0.5	18	18/05/20	S	G/P		X			X	
BH32/0.4-0.5	19	18/05/20	S	G/P	X					
BD6/20200518	20	18/05/20	S	G/P				X		
BH32/1.5-1.6	21	18/05/20	S	G/P		X	X			
BH33/0.9-1.0	22	18/05/20	S	G/P	X					

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243277

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99679.01	**Suburb:** Botany	**To:** Envirolab Services
Project Name:	Botany, DSI	**Order Number** 152412	
Project Manager:	WFY	**Sampler:** WFY	**Attn:** Aileen Hie
Emails:	wenfei.yuan@douglaspartners.com.au and ayla.sorensen@douglaspartners.com.au		**Phone:**
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐		**Email:**
Prior Storage:	☐ Esky ☐ Fridge/Freezer ☐ Shelved	Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)	

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo8A	Combo3A	ASS Screening	Combo3	pH, CEC	Notes
BH33/2.4-2.5	23	18/05/20	S	G/P			X		X	
BH35/0.9-1.0	24	18/05/20	S	G/P		X				
BH36/0.4-0.5	25	18/05/20	S	G/P	X					
BD4/20200518	26	18/05/20	S	G/P				X		Please despatch the inter-lab replicate to Eurofins Mgt
BH38/0.9-1.0	27	18/05/20	S	G/P		X			X	
BH38/1.9-2.0	28	18/05/20	S	G/P			X			
BH39/0.9-1.0	29	18/05/20	S	G/P	X					
BH39/1.9-2.0	30	18/05/20	S	G/P			X			
BH40/0.4-0.5	31	19/05/20	S	G/P		X			X	
BH40/2.4-25	32	18/05/20	S	G/P			X			
Rinsate	33	18/05/20	W	G				x		Please filter heavy metal in rinsate sample
TS/TB	34/35	-	S	G					TS - BTEX; TB - TRH/BTEX	
PQL (S) mg/kg										**ANZECC PQLs req'd for all water analytes** ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Lab Report/Reference No:

Metals to Analyse: 8HM unless specified here:

Total number of samples in container: **Relinquished by:** WFY **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** 96 Hermitage Road, West Ryde **Phone:** 9809 0999

Signed: **Received by:** **Date & Time:**

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	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan

Sample Login Details

Your reference	99679.01, Botany DSI
Envirolab Reference	243277
Date Sample Received	20/05/2020
Date Instructions Received	20/05/2020
Date Results Expected to be Reported	27/05/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	34 soil, 1 water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10.0
Cooling Method	Ice Pack
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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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils	sPOCAS field test	Misc Inorg - Soil	CEC	Metals in Water - Dissolved
BH15/0.9-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓				
BH15/1.4-1.5	✓	✓	✓				✓			✓	✓	✓	
BH16/0.2-0.4	✓	✓	✓				✓		✓				
BH18/0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
BH18/0.9-1.0	✓	✓	✓				✓			✓			
BH19/0.4-0.5	✓	✓	✓				✓		✓				
BH19/1.4-1.5	✓	✓	✓				✓			✓			
BH20/0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
BH21/0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓				
BH21/1-1.1	✓	✓	✓				✓			✓			
BH22/0.4-0.5	✓	✓	✓				✓		✓				
BH22/1.4-1.5	✓	✓	✓				✓				✓	✓	
BH23/0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓				
BH24/0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
BH25/0.9-1.0	✓	✓	✓				✓		✓	✓			
BH26/0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
BH27/1.4-1.5	✓	✓	✓				✓		✓	✓			
BH31/0.4-0.5	✓	✓	✓				✓		✓		✓	✓	
BH32/0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓				
BD6/20200518	✓	✓	✓				✓						
BH32/1.5-1.6	✓	✓	✓				✓		✓	✓			
BH33/0.9-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓				
BH33/2.4-2.5										✓	✓	✓	
BH35/0.9-1.0	✓	✓	✓				✓		✓				
BH36/0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓				
BD4/20200518	✓	✓	✓				✓						
BH38/0.9-1.0	✓	✓	✓				✓		✓		✓	✓	
BH38/1.9-2.0										✓			
BH39/0.9-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓				
BH39/1.9-2.0										✓			
BH40/0.4-0.5	✓	✓	✓				✓		✓		✓	✓	
BH40/2.4-2.5										✓			

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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	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils	sPOCAS field test	Misc Inorg - Soil	CEC	Metals in Water - Dissolved
Rinsate													✓
TS	✓												
TB	✓												

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 243277-A

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany DSI**
Number of Samples	34 soil, 1 water
Date samples received	20/05/2020
Date completed instructions received	29/06/2020

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	09/06/2020
Date of Issue	04/06/2020

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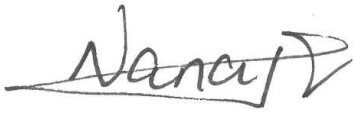
Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Chromium Suite				
Our Reference		243277-A-10	243277-A-15	243277-A-21
Your Reference	UNITS	BH21/1-1.1	BH25/0.9-1.0	BH32/1.5-1.6
Date Sampled		19/05/2020	19/05/2020	18/05/2020
Type of sample		soil	soil	soil
Date prepared	-	02/06/2020	02/06/2020	02/06/2020
Date analysed	-	02/06/2020	02/06/2020	02/06/2020
pH $_{kcl}$	pH units	5.6	5.8	6.7
s-TAA pH 6.5	%w/w S	<0.01	<0.01	<0.01
TAA pH 6.5	moles H^+ /t	<5	<5	<5
Chromium Reducible Sulfur	%w/w	<0.005	<0.005	<0.005
a-Chromium Reducible Sulfur	moles H^+ /t	<3	<3	<3
S_{HCl}	%w/w S	NA	NA	NA
S_{KCl}	%w/w S	<0.005	<0.005	0.007
S_{NAS}	%w/w S	NA	NA	NA
ANC_{BT}	% $CaCO_3$	NA	NA	0.35
s-ANC_{BT}	%w/w S	NA	NA	0.11
s-Net Acidity	%w/w S	<0.005	<0.005	<0.005
a-Net Acidity	moles H^+ /t	<5	<5	<5
Liming rate	kg $CaCO_3$ /t	<0.75	<0.75	<0.75
a-Net Acidity without ANCE	moles H^+ /t	<5	<5	<5
Liming rate without ANCE	kg $CaCO_3$ /t	<0.75	<0.75	<0.75
s-Net Acidity without ANCE	%w/w S	<0.005	<0.005	<0.005

Method ID	Methodology Summary
Inorg-068	Chromium Reducible Sulfur - Hydrogen Sulfide is quantified by iodometric titration after distillation to determine potential acidity. Based on Acid Sulfate Soils Laboratory Methods Guidelines, Version 2.1 - June 2004.

QUALITY CONTROL: Chromium Suite						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			02/06/2020	21	02/06/2020	02/06/2020		02/06/2020	[NT]
Date analysed	-			02/06/2020	21	02/06/2020	02/06/2020		02/06/2020	[NT]
pH $_{kcl}$	pH units		Inorg-068	[NT]	21	6.7	6.7	0	91	[NT]
s-TAA pH 6.5	%w/w S	0.01	Inorg-068	<0.01	21	<0.01	<0.01	0	[NT]	[NT]
TAA pH 6.5	moles H^+ /t	5	Inorg-068	<5	21	<5	<5	0	89	[NT]
Chromium Reducible Sulfur	%w/w	0.005	Inorg-068	<0.005	21	<0.005	<0.005	0	[NT]	[NT]
a-Chromium Reducible Sulfur	moles H^+ /t	3	Inorg-068	<3	21	<3	<3	0	108	[NT]
S_{HCl}	%w/w S	0.005	Inorg-068	<0.005	21	NA	NA		[NT]	[NT]
S_{KCl}	%w/w S	0.005	Inorg-068	<0.005	21	0.007	0.007	0	[NT]	[NT]
S_{NAS}	%w/w S	0.005	Inorg-068	<0.005	21	NA	NA		[NT]	[NT]
ANC_{BT}	% $CaCO_3$	0.05	Inorg-068	<0.05	21	0.35	0.30	15	[NT]	[NT]
s-ANC_{BT}	%w/w S	0.05	Inorg-068	<0.05	21	0.11	0.1	10	[NT]	[NT]
s-Net Acidity	%w/w S	0.005	Inorg-068	<0.005	21	<0.005	<0.005	0	[NT]	[NT]
a-Net Acidity	moles H^+ /t	5	Inorg-068	<5	21	<5	<5	0	[NT]	[NT]
Liming rate	kg $CaCO_3$ /t	0.75	Inorg-068	<0.75	21	<0.75	<0.75	0	[NT]	[NT]
a-Net Acidity without ANCE	moles H^+ /t	5	Inorg-068	<5	21	<5	<5	0	[NT]	[NT]
Liming rate without ANCE	kg $CaCO_3$ /t	0.75	Inorg-068	<0.75	21	<0.75	<0.75	0	[NT]	[NT]
s-Net Acidity without ANCE	%w/w S	0.005	Inorg-068	<0.005	21	<0.005	<0.005	0	[NT]	[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
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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.

Andrew (Fitzy) Fitzsimons

From: Nancy Zhang
Sent: Monday, 1 June 2020 11:19 AM
To: Wen-Fei Yuan
Cc: Ayla Sorensen; Customer Service
Subject: RE: Botany, 99679.01

Follow Up Flag: Follow up
Flag Status: Flagged

243277-A

Due: 9/6/20

Hi Wen-Fei,

No problem.

Kind Regards,

Nancy Zhang | Laboratory Manager, Sydney | Envirolab Services Pty Ltd

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12 Ashley Street Chatswood NSW 2067
T 612 9910 6200 **F** 612 9910 6201
E nzhang@envirolab.com.au | **W** www.envirolab.com.au

View reduced sampling bottle provision for PFAS in water | COVID-19 Update

Please note that all samples submitted to the Envirolab Group laboratories will be analysed under the Envirolab Group Terms and Conditions. The Terms and Conditions are accessible by clicking this link

From: Wen-Fei Yuan <WenFei.Yuan@douglaspartners.com.au>
Sent: Friday, 29 May 2020 6:29 PM
To: Nancy Zhang <NZhang@envirolab.com.au>
Cc: Ayla Sorensen <Ayla.Sorensen@douglaspartners.com.au>
Subject: Botany, 99679.01

Hi Nancy,

Please conduct CRS test on the following samples (standard TAT):

ELS Ref. No. 243138:

- BH13/1.5-1.98; and
- BH17/5.5-5.95;

ELS Ref. No 243277:

- BH21/1-1.1; -10
- BH25/0.9-1; and - 15
- BH32/1.5-1.6. - 21

Regards

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12 Ashley St Chatswood NSW 2067
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customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan

Sample Login Details

Your reference	99679.01, Botany DSI
Envirolab Reference	243277-A
Date Sample Received	20/05/2020
Date Instructions Received	29/06/2020
Date Results Expected to be Reported	09/06/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	34 soil, 1 water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10.0
Cooling Method	Ice Pack
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:

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Sample ID	Chromium Suite	On Hold
BH15/0.9-1.0		✓
BH15/1.4-1.5		✓
BH16/0.2-0.4		✓
BH18/0.4-0.5		✓
BH18/0.9-1.0		✓
BH19/0.4-0.5		✓
BH19/1.4-1.5		✓
BH20/0-0.1		✓
BH21/0.4-0.5		✓
BH21/1-1.1	✓	
BH22/0.4-0.5		✓
BH22/1.4-1.5		✓
BH23/0-0.1		✓
BH24/0.4-0.5		✓
BH25/0.9-1.0	✓	
BH26/0.4-0.5		✓
BH27/1.4-1.5		✓
BH31/0.4-0.5		✓
BH32/0.4-0.5		✓
BD6/20200518		✓
BH32/1.5-1.6	✓	
BH33/0.9-1.0		✓
BH33/2.4-2.5		✓
BH35/0.9-1.0		✓
BH36/0.4-0.5		✓
BD4/20200518		✓
BH38/0.9-1.0		✓
BH38/1.9-2.0		✓
BH39/0.9-1.0		✓
BH39/1.9-2.0		✓
BH40/0.4-0.5		✓
BH40/2.4-2.5		✓

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Sample ID	Chromium Suite	On Hold
Rinsate		✓
TS		✓
TB		✓

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 243277-B

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany DSI**
Number of Samples	34 soil, 1 water
Date samples received	20/05/2020
Date completed instructions received	09/06/2020

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	16/06/2020
Date of Issue	16/06/2020

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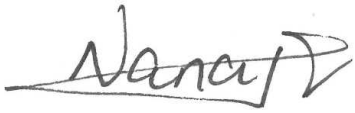
Results Approved By
Josh Williams, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

sTPH in Soil (C10-C40)-Silica					
Our Reference		243277-B-3	243277-B-4	243277-B-6	243277-B-11
Your Reference	UNITS	BH16/0.2-0.4	BH18/0.4-0.5	BH19/0.4-0.5	BH22/0.4-0.5
Date Sampled		18/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil
Date extracted	-	09/06/2020	09/06/2020	09/06/2020	09/06/2020
Date analysed	-	11/06/2020	11/06/2020	11/06/2020	11/06/2020
TPH C_{10} - C_{14}	mg/kg	<50	<50	57	140
TPH C_{15} - C_{28}	mg/kg	1,800	2,400	1,300	5,600
TPH C_{29} - C_{36}	mg/kg	1,200	2,200	410	1,700
TPH >C_{10} -C_{16}	mg/kg	<50	<50	130	520
TPH >C_{16} -C_{34}	mg/kg	2,700	4,000	1,500	6,600
TPH >C_{34} -C_{40}	mg/kg	570	1,500	180	610
Surrogate o-Terphenyl	%	113	116	#	84

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.

QUALITY CONTROL: sTPH in Soil (C10-C40)-Silica						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			09/06/2020	3	09/06/2020	09/06/2020		09/06/2020	[NT]
Date analysed	-			11/06/2020	3	11/06/2020	11/06/2020		11/06/2020	[NT]
TPH C_{10} - C_{14}	mg/kg	50	Org-020	<50	3	<50	<50	0	91	[NT]
TPH C_{15} - C_{28}	mg/kg	100	Org-020	<100	3	1800	2200	20	78	[NT]
TPH C_{29} - C_{36}	mg/kg	100	Org-020	<100	3	1200	1500	22	77	[NT]
TPH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	3	<50	<50	0	91	[NT]
TPH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	3	2700	3400	23	78	[NT]
TPH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	3	570	700	20	77	[NT]
Surrogate o-Terphenyl	%		Org-020	93	3	113	74	42	78	[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.
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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

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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.

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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

Samples are out of recommended holding time

sTPH in Soil (C10-C40)-Silica - # Percent recovery for the surrogate/matrix spike is not possible to report as the high concentration of analytes in sample 243277-B-6 have caused interference.

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SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan

Sample Login Details

Your reference	99679.01, Botany DSI
Envirolab Reference	243277-B
Date Sample Received	20/05/2020
Date Instructions Received	09/06/2020
Date Results Expected to be Reported	16/06/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	34 soil, 1 water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10.0
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Samples are out of recommended holding time

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:

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Sample ID	sTPH in Soil (C10-C40)-Silica	On Hold
BH15/0.9-1.0		✓
BH15/1.4-1.5		✓
BH16/0.2-0.4	✓	
BH18/0.4-0.5	✓	
BH18/0.9-1.0		✓
BH19/0.4-0.5	✓	
BH19/1.4-1.5		✓
BH20/0-0.1		✓
BH21/0.4-0.5		✓
BH21/1-1.1		✓
BH22/0.4-0.5	✓	
BH22/1.4-1.5		✓
BH23/0-0.1		✓
BH24/0.4-0.5		✓
BH25/0.9-1.0		✓
BH26/0.4-0.5		✓
BH27/1.4-1.5		✓
BH31/0.4-0.5		✓
BH32/0.4-0.5		✓
BD6/20200518		✓
BH32/1.5-1.6		✓
BH33/0.9-1.0		✓
BH33/2.4-2.5		✓
BH35/0.9-1.0		✓
BH36/0.4-0.5		✓
BD4/20200518		✓
BH38/0.9-1.0		✓
BH38/1.9-2.0		✓
BH39/0.9-1.0		✓
BH39/1.9-2.0		✓
BH40/0.4-0.5		✓
BH40/2.4-2.5		✓

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www.envirolab.com.au

Sample ID	sTPH in Soil (C10-C40)-Silica	On Hold
Rinsate		✓
TS		✓
TB		✓

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 243277-C

Client Details

Client	Douglas Partners Pty Ltd
Attention	Ayla Sorensen, Wen-Fei Yuan
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany DSI**
Number of Samples	34 soil, 1 water
Date samples received	20/05/2020
Date completed instructions received	28/05/2020

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	16/06/2020
Date of Issue	16/06/2020

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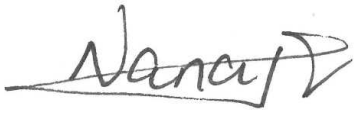
Results Approved By
Hannah Nguyen, Senior Chemist
Josh Williams, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Metals in TCLP USEPA1311						
Our Reference		243277-C-2	243277-C-3	243277-C-4	243277-C-6	243277-C-9
Your Reference	UNITS	BH15/1.4-1.5	BH16/0.2-0.4	BH18/0.4-0.5	BH19/0.4-0.5	BH21/0.4-0.5
Date Sampled		18/05/2020	18/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
Date analysed	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
pH of soil for fluid# determ.	pH units	9.5	9.4	9.1	8.1	7.6
pH of soil TCLP (after HCl)	pH units	1.6	1.8	1.7	1.7	1.7
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	5.0	5.1	5.0	5.0	5.0
Nickel in TCLP	mg/L	[NA]	[NA]	[NA]	[NA]	0.07

Metals in TCLP USEPA1311						
Our Reference		243277-C-11	243277-C-13	243277-C-14	243277-C-15	243277-C-17
Your Reference	UNITS	BH22/0.4-0.5	BH23/0-0.1	BH24/0.4-0.5	BH25/0.9-1.0	BH27/1.4-1.5
Date Sampled		19/05/2020	19/05/2020	19/05/2020	19/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
Date analysed	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
pH of soil for fluid# determ.	pH units	7.5	6.6	6.7	6.8	7.0
pH of soil TCLP (after HCl)	pH units	1.7	1.7	1.7	1.7	1.7
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	5.0	5.0	5.0	5.0	5.0
Lead in TCLP	mg/L	0.38	[NA]	0.91	[NA]	[NA]

Metals in TCLP USEPA1311						
Our Reference		243277-C-18	243277-C-22	243277-C-24	243277-C-25	243277-C-26
Your Reference	UNITS	BH31/0.4-0.5	BH33/0.9-1.0	BH35/0.9-1.0	BH36/0.4-0.5	BD4/20200518
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
Date analysed	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
pH of soil for fluid# determ.	pH units	7.1	6.8	7.4	7.5	7.1
pH of soil TCLP (after HCl)	pH units	1.7	1.7	1.7	1.7	1.7
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	5.0	5.0	5.0	5.0	5.0
Nickel in TCLP	mg/L	[NA]	[NA]	0.1	[NA]	[NA]

Metals in TCLP USEPA1311			
Our Reference		243277-C-27	243277-C-29
Your Reference	UNITS	BH38/0.9-1.0	BH39/0.9-1.0
Date Sampled		18/05/2020	18/05/2020
Type of sample		soil	soil
Date extracted	-	16/06/2020	16/06/2020
Date analysed	-	16/06/2020	16/06/2020
pH of soil for fluid# determ.	pH units	9.6	7.5
pH of soil TCLP (after HCl)	pH units	1.7	1.7
Extraction fluid used	-	1	1
pH of final Leachate	pH units	5.1	5.0
Nickel in TCLP	mg/L	0.04	[NA]

PAHs in TCLP (USEPA 1311)						
Our Reference		243277-C-2	243277-C-3	243277-C-4	243277-C-6	243277-C-11
Your Reference	UNITS	BH15/1.4-1.5	BH16/0.2-0.4	BH18/0.4-0.5	BH19/0.4-0.5	BH22/0.4-0.5
Date Sampled		18/05/2020	18/05/2020	19/05/2020	19/05/2020	19/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
Date analysed	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
Naphthalene in TCLP	mg/L	<0.001	<0.001	<0.001	0.40	0.47
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	<0.001	0.004	0.007
Acenaphthene in TCLP	mg/L	<0.001	0.001	0.002	0.037	0.045
Fluorene in TCLP	mg/L	<0.001	<0.001	0.001	0.059	0.098
Phenanthrene in TCLP	mg/L	0.002	0.006	0.004	0.19	0.26
Anthracene in TCLP	mg/L	0.001	0.002	0.001	0.021	0.025
Fluoranthene in TCLP	mg/L	<0.001	0.003	0.002	0.028	0.041
Pyrene in TCLP	mg/L	<0.001	0.002	0.001	0.022	0.032
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	0.001	0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001	0.001	0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Total +ve PAH's	mg/L	0.0034	0.014	0.012	0.76	0.98
Surrogate p-Terphenyl-d14	%	107	120	76	74	87

PAHs in TCLP (USEPA 1311)						
Our Reference		243277-C-13	243277-C-15	243277-C-17	243277-C-18	243277-C-22
Your Reference	UNITS	BH23/0-0.1	BH25/0.9-1.0	BH27/1.4-1.5	BH31/0.4-0.5	BH33/0.9-1.0
Date Sampled		19/05/2020	19/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
Date analysed	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
Naphthalene in TCLP	mg/L	0.002	<0.001	0.016	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	<0.001	0.005	0.001	<0.001
Fluorene in TCLP	mg/L	0.001	<0.001	0.013	<0.001	<0.001
Phenanthrene in TCLP	mg/L	0.004	0.002	0.036	0.003	<0.001
Anthracene in TCLP	mg/L	0.001	<0.001	0.005	0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	<0.001	0.006	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001	0.004	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Total +ve PAH's	mg/L	0.0088	0.0019	0.085	0.0047	NIL (+)VE
Surrogate p-Terphenyl-d14	%	79	83	111	98	101

PAHs in TCLP (USEPA 1311)						
Our Reference		243277-C-24	243277-C-25	243277-C-26	243277-C-27	243277-C-29
Your Reference	UNITS	BH35/0.9-1.0	BH36/0.4-0.5	BD4/20200518	BH38/0.9-1.0	BH39/0.9-1.0
Date Sampled		18/05/2020	18/05/2020	18/05/2020	18/05/2020	18/05/2020
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
Date analysed	-	16/06/2020	16/06/2020	16/06/2020	16/06/2020	16/06/2020
Naphthalene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	0.001
Fluorene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Phenanthrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	0.001
Anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Total +ve PAH's	mg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	0.001	0.0022
Surrogate p-Terphenyl-d14	%	93	76	90	103	80

Method ID	Methodology Summary
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP) using Zero Headspace Extraction (zHE) using AS4439 and USEPA 1311.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using in house method INORG-004. Please note that the mass used may be scaled down from the default based on sample mass available.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Org-022/025	Leachates are extracted with Dichloromethane and analysed by GC-MS/GC-MSMS.

QUALITY CONTROL: Metals in TCLP USEPA1311						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	243277-C-11
Date extracted	-			16/06/2020	9	16/06/2020	16/06/2020		16/06/2020	16/06/2020
Date analysed	-			16/06/2020	9	16/06/2020	16/06/2020		16/06/2020	16/06/2020
Nickel in TCLP	mg/L	0.02	Metals-020 ICP-AES	<0.02	9	0.07	0.06	15	95	95
Lead in TCLP	mg/L	0.03	Metals-020 ICP-AES	<0.03	[NT]	[NT]	[NT]	[NT]	94	97

QUALITY CONTROL: PAHs in TCLP (USEPA 1311)					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			16/06/2020	[NT]	[NT]	[NT]	[NT]	16/06/2020	[NT]
Date analysed	-			16/06/2020	[NT]	[NT]	[NT]	[NT]	16/06/2020	[NT]
Naphthalene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	124	[NT]
Acenaphthylene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	124	[NT]
Phenanthrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	128	[NT]
Anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	128	[NT]
Pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	130	[NT]
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	114	[NT]
Benzo(bjk)fluoranthene in TCLP	mg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	130	[NT]
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	99	[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.

Jessica Hie

From: Ayla Sorensen <Ayla.Sorensen@douglaspartners.com.au>
Sent: Monday, 15 June 2020 2:24 PM
To: Customer Service
Cc: Wen-Fei Yuan
Subject: FW: Results for Registration 243277 99679.01, Botany DSI

Importance: High

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

Hello,

As Simon is on leave, please see below.

Thank you.

Kind regards,

243277-0
Due: 16/6/20
1 day TAT.
No surcharge

Ayla Sorensen | Graduate Environmental Scientist
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
96 Hermitage Road West Ryde NSW 2114 | PO Box 472 West Ryde NSW 1685
P: 02 9809 0666 | M: 0428 841 928 | E: Ayla.Sorensen@douglaspartners.com.au

To find information on our COVID-19 measures, please visit douglaspartners.com.au/news/covid-19

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2020 WINNER

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From: Ayla Sorensen
Sent: Monday, 15 June 2020 2:22 PM
To: 'Simon Song' <SSong@envirolab.com.au>
Cc: Wen-Fei Yuan <WenFei.Yuan@douglaspartners.com.au>
Subject: FW: Results for Registration 243277 99679.01, Botany DSI
Importance: High

Good afternoon Simon

We haven't received the below TCLP results, requested on 28 May.
Could you please let us know the status of this order?

Thank you.

Kind regards,

Ayla Sorensen | Graduate Environmental Scientist
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
96 Hermitage Road West Ryde NSW 2114 | PO Box 472 West Ryde NSW 1685
P: 02 9809 0666 | M: 0428 841 928 | E: Ayla.Sorensen@douglaspartners.com.au

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From: Ayla Sorensen
Sent: Thursday, 28 May 2020 10:28 AM
To: Wen-Fei Yuan <WenFei.Yuan@douglaspartners.com.au>
Subject: FW: Results for Registration 243277 99679.01, Botany DSI

From: Ayla Sorensen
Sent: Thursday, 28 May 2020 10:24 AM
To: 'Ken Nguyen' <KNguyen@envirolab.com.au>
Subject: RE: Results for Registration 243277 99679.01, Botany DSI

Hi Ken

Please conduct additional testing on the following samples (standard TAT):

TCLP (PAH only):

2 • BH15/1.4-1.5; and
3 • BH16/0.2-0.4; and
4 • BH18/0.4-0.5; and
6 • BH19/0.4-0.5; and
13 • BH23/0-0.1; and
15 • BH25/0.9-1; and
17 • BH27/1.4-1.5; and
18 • BH31/0.4-0.5; and
22 • BH33/0.9-1; and
25 • BH36/0.4-0.5; and
29 • BH39/0.9-1; and
26 • BD6/20200518.

TCLP (PAH and Nickel):

24 • BH35/0.9-1; and
27 • BH38/0.9-1.

TCLP (Nickel only):
9 • BH21/0.4-0.5.

TCLP (PAH and Lead):

11 • BH22/0.4-0.5.

TCLP (Lead only):
14 • BH24/0.4-0.5.

Kind regards,

Ayla Sorensen | Graduate Environmental Scientist
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
96 Hermitage Road West Ryde NSW 2114 | PO Box 472 West Ryde NSW 1685
P: 02 9809 0666 | M: 0428 841 928 | E: Ayla.Sorensen@douglaspartners.com.au

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From: Ken Nguyen <KNguyen@envirolab.com.au>
Sent: Wednesday, 27 May 2020 6:09 PM
To: Ayla Sorensen <Ayla.Sorensen@douglaspartners.com.au>; Wen-Fei Yuan <WenFei.Yuan@douglaspartners.com.au>
Subject: Results for Registration 243277 99679.01, Botany DSI

Please refer to attached for:
a copy of the Certificate of Analysis
a copy of the COC/paperwork received from you
ESDAT Extracts
an Excel or .csv file containing the results

Please note that a hard copy will not be posted.

Enquiries should be made directly to:
customerservice@envirolab.com.au

How did we do? Send Feedback

Kind Regards,

Ken Nguyen | Customer Service / Chemist | Envirolab Services Pty Ltd
(Monday to Friday 10am to 6pm)
***Celebrating 15 years of* Great Science. Great Service.**
12 Ashley Street Chatswood NSW 2067
T 612 9910 6200 **F** 612 9910 6201
E knguyen@envirolab.com.au | **W** www.envirolab.com.au

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

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Ayla Sorensen, Wen-Fei Yuan

Sample Login Details

Your reference	99679.01, Botany DSI
Envirolab Reference	243277-C
Date Sample Received	20/05/2020
Date Instructions Received	28/05/2020
Date Results Expected to be Reported	16/06/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	34 soil, 1 water
Turnaround Time Requested	1 day
Temperature on Receipt (°C)	10.0
Cooling Method	Ice Pack
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	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Nickel in TCLP	Lead in TCLP	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(b)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	On Hold
BH15/0.9-1.0																								✓
BH15/1.4-1.5	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH16/0.2-0.4	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH18/0.4-0.5	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH18/0.9-1.0																								✓
BH19/0.4-0.5	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH19/1.4-1.5																								✓
BH20/0-0.1																								✓
BH21/0.4-0.5	✓	✓	✓	✓	✓																			
BH21/1-1.1																								✓
BH22/0.4-0.5	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH22/1.4-1.5																								✓
BH23/0-0.1	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH24/0.4-0.5	✓	✓	✓	✓		✓																		
BH25/0.9-1.0	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH26/0.4-0.5																								✓
BH27/1.4-1.5	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH31/0.4-0.5	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH32/0.4-0.5																								✓
BD6/20200518																								✓

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Sample ID	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Nickel in TCLP	Lead in TCLP	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	On Hold
BH32/1.5-1.6																								✓
BH33/0.9-1.0	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH33/2.4-2.5																								✓
BH35/0.9-1.0	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH36/0.4-0.5	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BD4/20200518	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH38/0.9-1.0	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH38/1.9-2.0																								✓
BH39/0.9-1.0	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH39/1.9-2.0																								✓
BH40/0.4-0.5																								✓
BH40/2.4-2.5																								✓
Rinsate																								✓
TS																								✓
TB																								✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

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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 243464

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany**
Number of Samples	6 WATER
Date samples received	22/05/2020
Date completed instructions received	22/05/2020

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	29/05/2020
Date of Issue	29/05/2020

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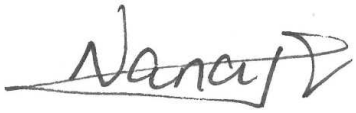
Results Approved By
Diego Bigolin, Team Leader, Inorganics
Hannah Nguyen, Senior Chemist
Josh Williams, Senior Chemist
Loren Bardwell, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in water				
Our Reference	UNITS	243464-1	243464-2	243464-3
Your Reference		GW6	GW9	GW30
Date Sampled		22/05/2020	22/05/2020	22/05/2020
Type of sample		WATER	WATER	WATER
Date extracted	-	26/05/2020	27/05/2020	27/05/2020
Date analysed	-	27/05/2020	28/05/2020	28/05/2020
Dichlorodifluoromethane	µg/L	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1
Chloroform	µg/L	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Benzene	µg/L	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1
Toluene	µg/L	12	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1

VOCs in water				
Our Reference		243464-1	243464-2	243464-3
Your Reference	UNITS	GW6	GW9	GW30
Date Sampled		22/05/2020	22/05/2020	22/05/2020
Type of sample		WATER	WATER	WATER
Bromoform	µg/L	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2
Styrene	µg/L	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1
o-xylene	µg/L	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1
Surrogate Dibromofluoromethane	%	107	99	102
Surrogate toluene-d8	%	98	102	101
Surrogate 4-BFB	%	102	105	104

vTRH(C6-C10)/BTEXN in Water						
Our Reference		243464-1	243464-2	243464-3	243464-4	243464-5
Your Reference	UNITS	GW6	GW9	GW30	BD1/20200522	TS
Date Sampled		22/05/2020	22/05/2020	22/05/2020	22/05/2020	22/05/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	26/05/2020	27/05/2020	27/05/2020	27/05/2020	27/05/2020
Date analysed	-	27/05/2020	28/05/2020	28/05/2020	28/05/2020	28/05/2020
TRH C_6 - C_9	µg/L	14	<10	<10	<10	[NA]
TRH C_6 - C_{10}	µg/L	15	<10	<10	<10	[NA]
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	[NA]
Benzene	µg/L	<1	<1	<1	<1	93%
Toluene	µg/L	12	<1	<1	18	91%
Ethylbenzene	µg/L	<1	<1	<1	<1	80%
m+p-xylene	µg/L	<2	<2	<2	<2	79%
o-xylene	µg/L	<1	<1	<1	<1	81%
Naphthalene	µg/L	<1	3	2	2	[NA]
Surrogate Dibromofluoromethane	%	107	99	102	102	103
Surrogate toluene-d8	%	98	102	101	101	104
Surrogate 4-BFB	%	102	105	104	105	105

vTRH(C6-C10)/BTEXN in Water		
Our Reference		243464-6
Your Reference	UNITS	TB
Date Sampled		22/05/2020
Type of sample		WATER
Date extracted	-	27/05/2020
Date analysed	-	28/05/2020
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	2
Surrogate Dibromofluoromethane	%	101
Surrogate toluene-d8	%	99
Surrogate 4-BFB	%	105

svTRH (C10-C40) in Water					
Our Reference	UNITS	243464-1	243464-2	243464-3	243464-4
Your Reference		GW6	GW9	GW30	BD1/20200522
Date Sampled		22/05/2020	22/05/2020	22/05/2020	22/05/2020
Type of sample		WATER	WATER	WATER	WATER
Date extracted	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	27/05/2020	27/05/2020
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100
Surrogate o-Terphenyl	%	94	104	94	100

PAHs in Water - Low Level					
Our Reference	UNITS	243464-1	243464-2	243464-3	243464-4
Your Reference		GW6	GW9	GW30	BD1/20200522
Date Sampled		22/05/2020	22/05/2020	22/05/2020	22/05/2020
Type of sample		WATER	WATER	WATER	WATER
Date extracted	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	0.2	0.1	0.1	0.2
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	0.2	<0.1	<0.1
Pyrene	µg/L	<0.1	0.2	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	0.17	0.60	0.11	0.19
Surrogate p-Terphenyl-d14	%	74	81	71	70

Total Phenolics in Water					
Our Reference		243464-1	243464-2	243464-3	243464-4
Your Reference	UNITS	GW6	GW9	GW30	BD1/20200522
Date Sampled		22/05/2020	22/05/2020	22/05/2020	22/05/2020
Type of sample		WATER	WATER	WATER	WATER
Date extracted	-	28/05/2020	28/05/2020	28/05/2020	28/05/2020
Date analysed	-	28/05/2020	28/05/2020	28/05/2020	28/05/2020
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05

OCPs in Water - Trace Level				
Our Reference	UNITS	243464-1	243464-2	243464-3
Your Reference		GW6	GW9	GW30
Date Sampled		22/05/2020	22/05/2020	22/05/2020
Type of sample		WATER	WATER	WATER
Date extracted	-	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020
alpha-BHC	µg/L	<0.001	<0.001	<0.001
HCB	µg/L	<0.001	<0.001	<0.001
beta-BHC	µg/L	<0.001	<0.001	<0.001
gamma-BHC	µg/L	<0.001	<0.001	<0.001
Heptachlor	µg/L	<0.001	<0.001	<0.001
delta-BHC	µg/L	<0.001	<0.001	<0.001
Aldrin	µg/L	<0.001	<0.001	<0.001
Heptachlor Epoxide	µg/L	<0.001	<0.001	<0.001
gamma-Chlordane	µg/L	<0.001	<0.001	<0.001
alpha-Chlordane	µg/L	<0.001	<0.001	<0.001
Endosulfan I	µg/L	<0.002	<0.002	<0.002
pp-DDE	µg/L	<0.001	<0.001	<0.001
Dieldrin	µg/L	<0.001	<0.001	<0.001
Endrin	µg/L	<0.001	<0.001	<0.001
Endosulfan II	µg/L	<0.002	<0.002	<0.002
pp-DDD	µg/L	<0.001	<0.001	<0.001
Endrin Aldehyde	µg/L	<0.001	<0.001	<0.001
pp-DDT	µg/L	<0.001	<0.001	<0.001
Endosulfan Sulphate	µg/L	<0.001	<0.001	<0.001
Methoxychlor	µg/L	<0.001	<0.001	<0.001
Surrogate TCMX	%	75	75	84

OP in water Trace ANZECCF/ADWG				
Our Reference	UNITS	243464-1	243464-2	243464-3
Your Reference		GW6	GW9	GW30
Date Sampled		22/05/2020	22/05/2020	22/05/2020
Type of sample		WATER	WATER	WATER
Date extracted	-	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020
Dichlorovos	µg/L	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.15	<0.15	<0.15
Diazinon	µg/L	<0.01	<0.01	<0.01
Chlorpyriphos-methyl	µg/L	<0.2	<0.2	<0.2
Methyl Parathion	µg/L	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2
Malathion	µg/L	<0.05	<0.05	<0.05
Chlorpyriphos	µg/L	<0.009	<0.009	<0.009
Parathion	µg/L	<0.004	<0.004	<0.004
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	µg/L	<0.02	<0.02	<0.02
Surrogate TCMX	%	75	75	84

HM in water - dissolved					
Our Reference		243464-1	243464-2	243464-3	243464-4
Your Reference	UNITS	GW6	GW9	GW30	BD1/20200522
Date Sampled		22/05/2020	22/05/2020	22/05/2020	22/05/2020
Type of sample		WATER	WATER	WATER	WATER
Date prepared	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Date analysed	-	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Arsenic-Dissolved	µg/L	<1	<1	3	<1
Cadmium-Dissolved	µg/L	<0.1	0.2	<0.1	<0.1
Chromium-Dissolved	µg/L	2	<1	1	2
Copper-Dissolved	µg/L	<1	2	1	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	1	<1	2	1
Zinc-Dissolved	µg/L	4	16	3	3

Cations in water Dissolved				
Our Reference		243464-1	243464-2	243464-3
Your Reference	UNITS	GW6	GW9	GW30
Date Sampled		22/05/2020	22/05/2020	22/05/2020
Type of sample		WATER	WATER	WATER
Date digested	-	29/05/2020	29/05/2020	29/05/2020
Date analysed	-	29/05/2020	29/05/2020	29/05/2020
Calcium - Dissolved	mg/L	10	14	8.4
Magnesium - Dissolved	mg/L	2.2	3.6	2.9
Hardness	mgCaCO 3 /L	35	50	33

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-020	Determination of various metals by ICP-AES.
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-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.

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			27/05/2020	1	26/05/2020	28/05/2020		27/05/2020	[NT]
Date analysed	-			28/05/2020	1	27/05/2020	29/05/2020		28/05/2020	[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	120	[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	123	[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	126	[NT]
1,1,1-trichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	119	[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	125	[NT]
Bromodichloromethane	µg/L	1	Org-023	<1	1	<1	<1	0	112	[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	12	13	8	[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	116	[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	121	[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-W3	[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	107	1	107	104	3	98	[NT]
Surrogate toluene-d8	%		Org-023	99	1	98	99	1	98	[NT]
Surrogate 4-BFB	%		Org-023	102	1	102	99	3	103	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			27/05/2020	1	26/05/2020	28/05/2020		27/05/2020	[NT]
Date analysed	-			28/05/2020	1	27/05/2020	29/05/2020		28/05/2020	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	1	14	<10	33	121	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	1	15	13	14	121	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	122	[NT]
Toluene	µg/L	1	Org-023	<1	1	12	13	8	122	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	118	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	122	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	119	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	107	1	107	104	3	98	[NT]
Surrogate toluene-d8	%		Org-023	99	1	98	99	1	98	[NT]
Surrogate 4-BFB	%		Org-023	102	1	102	99	3	103	[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	-			26/05/2020	[NT]	[NT]	[NT]	[NT]	26/05/2020	[NT]
Date analysed	-			27/05/2020	[NT]	[NT]	[NT]	[NT]	26/05/2020	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	82	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	82	[NT]
Surrogate o-Terphenyl	%		Org-020	107	[NT]	[NT]	[NT]	[NT]	89	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W5	[NT]
Date extracted	-			26/05/2020	[NT]	[NT]	[NT]	[NT]	26/05/2020	[NT]
Date analysed	-			27/05/2020	[NT]	[NT]	[NT]	[NT]	27/05/2020	[NT]
Naphthalene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	96	[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]	[NT]	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[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]	98	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	104	[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]	72	[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]	118	[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	118	[NT]	[NT]	[NT]	[NT]	124	[NT]

QUALITY CONTROL: Total Phenolics in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			28/05/2020	[NT]	[NT]	[NT]	[NT]	28/05/2020	[NT]
Date analysed	-			28/05/2020	[NT]	[NT]	[NT]	[NT]	28/05/2020	[NT]
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: OCPs in Water - Trace Level					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W5	[NT]
Date extracted	-			26/05/2020	[NT]	[NT]	[NT]	[NT]	26/05/2020	[NT]
Date analysed	-			27/05/2020	[NT]	[NT]	[NT]	[NT]	27/05/2020	[NT]
alpha-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	90	[NT]
HCB	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	100	[NT]
gamma-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	82	[NT]
delta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	74	[NT]
Heptachlor Epoxide	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	128	[NT]
gamma-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	106	[NT]
Dieldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	90	[NT]
Endrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	88	[NT]
Endosulfan II	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	108	[NT]
Endrin Aldehyde	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	96	[NT]
Methoxychlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	89	[NT]	[NT]	[NT]	[NT]	108	[NT]

QUALITY CONTROL: OP in water Trace ANZECCF/ADWG						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W5	[NT]
Date extracted	-			26/05/2020	[NT]	[NT]	[NT]	[NT]	26/05/2020	[NT]
Date analysed	-			27/05/2020	[NT]	[NT]	[NT]	[NT]	27/05/2020	[NT]
Dichlorovos	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	126	[NT]
Dimethoate	µg/L	0.15	Org-022/025	<0.15	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	µg/L	0.01	Org-022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos-methyl	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Methyl Parathion	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	108	[NT]
Fenitrothion	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	126	[NT]
Malathion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	96	[NT]
Chlorpyriphos	µg/L	0.009	Org-022/025	<0.009	[NT]	[NT]	[NT]	[NT]	122	[NT]
Parathion	µg/L	0.004	Org-022/025	<0.004	[NT]	[NT]	[NT]	[NT]	120	[NT]
Bromophos ethyl	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	122	[NT]
Azinphos-methyl (Guthion)	µg/L	0.02	Org-022/025	<0.02	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	89	[NT]	[NT]	[NT]	[NT]	108	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	243464-2
Date prepared	-			26/05/2020	1	26/05/2020	26/05/2020		26/05/2020	26/05/2020
Date analysed	-			26/05/2020	1	26/05/2020	26/05/2020		26/05/2020	26/05/2020
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	89	93
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	90	95
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	2	2	0	95	103
Copper-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	95	100
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	95	100
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	101	97
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	1	1	0	95	91
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	4	3	29	96	98

QUALITY CONTROL: Cations in water Dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	
Date digested	-			29/05/2020	[NT]	[NT]	[NT]	[NT]	29/05/2020	[NT]
Date analysed	-			29/05/2020	[NT]	[NT]	[NT]	[NT]	29/05/2020	[NT]
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	104	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	[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.

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99679.01	**Suburb:**	Botany	**To:**	Envirolab Services
Project Name:	Botany, DSI	**Order Number**	152412		
Project Manager:	WFY	**Sampler:**	WFY	**Attn:**	Aileen Hie
Emails:	wenfei.yuan@douglaspartners.com.au and ayla.sorensen@douglaspartners.com.au			**Phone:**	
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	
Prior Storage:	☐ Esky ☐ Fridge/Freezer ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)	

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 4L (Low level PAH)	OCP/OPP (trace level)	VOC	TRH/BTEX		Notes
GW6	1	22/05/20	W	G/P	X	X	X			
GW9	2	22/05/20	W	G/P	X	X	X			
GW30	3	22/05/20	W	G/P	X	X	X			
BD1/20200522	4	22/05/20	W	G/P	X					
TS	5	-	W	G				BTEX		
TB	6	-	W	G				X		
PQL (S) mg/kg										**ANZECC PQLs req'd for all water analytes** ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No:

Total number of samples in container: **Relinquished by:** WFY **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** 96 Hermitage Road, West Ryde **Phone:** 9809 0999

Signed: **Received by:** May **Date & Time:** 22/5/2020 1430

COC 22/5/2020 1600

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 243464
Date Received: 22/5/2020
Time Received: 1600
Received by:
Temp: Cool/Ambient PR
Cooling: Ice/Icepack
Security: Intact/Broken/None 4.2

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	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan

Sample Login Details

Your reference	99679.01, Botany
Envirolab Reference	243464
Date Sample Received	22/05/2020
Date Instructions Received	22/05/2020
Date Results Expected to be Reported	29/05/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	6 WATER
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	4.2
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	Total Phenolicsin Water	OCPs in Water - Trace Level	OP in water Trace ANZECCF/ADWG	HM in water - dissolved
GW6	✓	✓	✓	✓	✓	✓	✓	✓
GW9	✓	✓	✓	✓	✓	✓	✓	✓
GW30	✓	✓	✓	✓	✓	✓	✓	✓
BD1/20200522		✓	✓	✓	✓			✓
TS		✓						
TB		✓						

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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ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 243891

Client Details

Client	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99679.01, Botany**
Number of Samples	1 WATER
Date samples received	29/05/2020
Date completed instructions received	29/05/2020

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	05/06/2020
Date of Issue	05/06/2020

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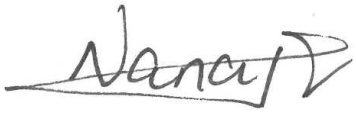
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Diego Bigolin, Team Leader, Inorganics
Dragana Tomas, Senior Chemist
Josh Williams, Senior Chemist
Loren Bardwell, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in water		
Our Reference		243891-1
Your Reference	UNITS	GW17
Date Sampled		22/05/2020
Type of sample		WATER
Date extracted	-	01/06/2020
Date analysed	-	02/06/2020
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		243891-1
Your Reference	UNITS	GW17
Date Sampled		22/05/2020
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	%	115
Surrogate toluene-d8	%	99
Surrogate 4-BFB	%	99

vTRH(C6-C10)/BTEXN in Water		
Our Reference		243891-1
Your Reference	UNITS	GW17
Date Sampled		22/05/2020
Type of sample		WATER
Date extracted	-	01/06/2020
Date analysed	-	02/06/2020
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	%	115
Surrogate toluene-d8	%	99
Surrogate 4-BFB	%	99

svTRH (C10-C40) in Water		
Our Reference		243891-1
Your Reference	UNITS	GW17
Date Sampled		22/05/2020
Type of sample		WATER
Date extracted	-	01/06/2020
Date analysed	-	01/06/2020
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
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
Surrogate o-Terphenyl	%	100

PAHs in Water - Low Level		
Our Reference		243891-1
Your Reference	UNITS	GW17
Date Sampled		22/05/2020
Type of sample		WATER
Date extracted	-	04/06/2020
Date analysed	-	04/06/2020
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	0.26
Surrogate p-Terphenyl-d14	%	113

Total Phenolics in Water		
Our Reference		243891-1
Your Reference	UNITS	GW17
Date Sampled		22/05/2020
Type of sample		WATER
Date extracted	-	01/06/2020
Date analysed	-	01/06/2020
Total Phenolics (as Phenol)	mg/L	<0.05

OCPs in Water - Trace Level		
Our Reference		243891-1
Your Reference	UNITS	GW17
Date Sampled		22/05/2020
Type of sample		WATER
Date extracted	-	04/06/2020
Date analysed	-	04/06/2020
alpha-BHC	µg/L	<0.001
HCB	µg/L	<0.001
beta-BHC	µg/L	<0.001
gamma-BHC	µg/L	<0.001
Heptachlor	µg/L	<0.001
delta-BHC	µg/L	<0.001
Aldrin	µg/L	<0.001
Heptachlor Epoxide	µg/L	<0.001
gamma-Chlordane	µg/L	<0.001
alpha-Chlordane	µg/L	<0.001
Endosulfan I	µg/L	<0.002
pp-DDE	µg/L	<0.001
Dieldrin	µg/L	<0.001
Endrin	µg/L	<0.001
Endosulfan II	µg/L	<0.002
pp-DDD	µg/L	<0.001
Endrin Aldehyde	µg/L	<0.001
pp-DDT	µg/L	<0.001
Endosulfan Sulphate	µg/L	<0.001
Methoxychlor	µg/L	<0.001
Surrogate TCMX	%	93

OP in water Trace ANZECCF/ADWG		
Our Reference		243891-1
Your Reference	UNITS	GW17
Date Sampled		22/05/2020
Type of sample		WATER
Date extracted	-	04/06/2020
Date analysed	-	04/06/2020
Dichlorovos	µg/L	<0.2
Dimethoate	µg/L	<0.15
Diazinon	µg/L	<0.01
Chlorpyriphos-methyl	µg/L	<0.2
Methyl Parathion	µg/L	<0.2
Ronnel	µg/L	<0.2
Fenitrothion	µg/L	<0.2
Malathion	µg/L	<0.05
Chlorpyriphos	µg/L	<0.009
Parathion	µg/L	<0.004
Bromophos ethyl	µg/L	<0.2
Ethion	µg/L	<0.2
Azinphos-methyl (Guthion)	µg/L	<0.02
Surrogate TCMX	%	93

HM in water - dissolved		
Our Reference		243891-1
Your Reference	UNITS	GW17
Date Sampled		22/05/2020
Type of sample		WATER
Date prepared	-	01/06/2020
Date analysed	-	01/06/2020
Arsenic-Dissolved	µg/L	7
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	<1
Zinc-Dissolved	µg/L	3

Cations in water Dissolved		
Our Reference		243891-1
Your Reference	UNITS	GW17
Date Sampled		22/05/2020
Type of sample		WATER
Date digested	-	01/06/2020
Date analysed	-	01/06/2020
Calcium - Dissolved	mg/L	9.5
Magnesium - Dissolved	mg/L	2.5
Hardness	mgCaCO 3 /L	34

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-020	Determination of various metals by ICP-AES.
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-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.

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			01/06/2020	[NT]	[NT]	[NT]	[NT]	01/06/2020	[NT]
Date analysed	-			02/06/2020	[NT]	[NT]	[NT]	[NT]	02/06/2020	[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]	117	[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]	119	[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]	125	[NT]
1,1,1-trichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	112	[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]	121	[NT]
Bromodichloromethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	106	[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]	98	[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]	114	[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	106	[NT]	[NT]	[NT]	[NT]	98	[NT]
Surrogate toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate 4-BFB	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			01/06/2020	[NT]	[NT]	[NT]	[NT]	01/06/2020	[NT]
Date analysed	-			02/06/2020	[NT]	[NT]	[NT]	[NT]	02/06/2020	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	112	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	112	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	112	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	106	[NT]	[NT]	[NT]	[NT]	98	[NT]
Surrogate toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate 4-BFB	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	102	[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	-			01/06/2020	[NT]	[NT]	[NT]	[NT]	01/06/2020	[NT]
Date analysed	-			01/06/2020	[NT]	[NT]	[NT]	[NT]	01/06/2020	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	97	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	97	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	108	[NT]
Surrogate o-Terphenyl	%		Org-020	106	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			04/06/2020	[NT]	[NT]	[NT]	[NT]	04/06/2020	[NT]
Date analysed	-			04/06/2020	[NT]	[NT]	[NT]	[NT]	04/06/2020	[NT]
Naphthalene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	130	[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]	[NT]	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	124	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	124	[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]	130	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	132	[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]	96	[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]	116	[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	120	[NT]	[NT]	[NT]	[NT]	120	[NT]

QUALITY CONTROL: Total Phenolics in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			01/06/2020	[NT]	[NT]	[NT]	[NT]	01/06/2020	[NT]
Date analysed	-			01/06/2020	[NT]	[NT]	[NT]	[NT]	01/06/2020	[NT]
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: OCPs in Water - Trace Level					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			04/06/2020	[NT]	[NT]	[NT]	[NT]	04/06/2020	[NT]
Date analysed	-			04/06/2020	[NT]	[NT]	[NT]	[NT]	04/06/2020	[NT]
alpha-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	116	[NT]
HCB	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	110	[NT]
gamma-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	126	[NT]
delta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	130	[NT]
Heptachlor Epoxide	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	124	[NT]
gamma-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	124	[NT]
Dieldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	122	[NT]
Endrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	96	[NT]
Endosulfan II	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	122	[NT]
Endrin Aldehyde	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	124	[NT]
Methoxychlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	102	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: OP in water Trace ANZECCF/ADWG						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			04/06/2020	[NT]	[NT]	[NT]	[NT]	04/06/2020	[NT]
Date analysed	-			04/06/2020	[NT]	[NT]	[NT]	[NT]	04/06/2020	[NT]
Dichlorovos	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	124	[NT]
Dimethoate	µg/L	0.15	Org-022/025	<0.15	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	µg/L	0.01	Org-022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos-methyl	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Methyl Parathion	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	126	[NT]
Fenitrothion	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	108	[NT]
Malathion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	127	[NT]
Chlorpyriphos	µg/L	0.009	Org-022/025	<0.009	[NT]	[NT]	[NT]	[NT]	88	[NT]
Parathion	µg/L	0.004	Org-022/025	<0.004	[NT]	[NT]	[NT]	[NT]	96	[NT]
Bromophos ethyl	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	114	[NT]
Azinphos-methyl (Guthion)	µg/L	0.02	Org-022/025	<0.02	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	102	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date prepared	-			01/06/2020	[NT]	[NT]	[NT]	[NT]	01/06/2020	[NT]
Date analysed	-			01/06/2020	[NT]	[NT]	[NT]	[NT]	01/06/2020	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	100	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]

QUALITY CONTROL: Cations in water Dissolved					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date digested	-			01/06/2020	1	01/06/2020	01/06/2020		01/06/2020	[NT]
Date analysed	-			01/06/2020	1	01/06/2020	01/06/2020		01/06/2020	[NT]
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	9.5	9.4	1	89	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	2.5	2.4	4	86	[NT]
Hardness	mgCaCO 3 /L	3		[NT]	1	34	34	0	[NT]	[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.

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99679.01	**Suburb:**	Botany	**To:**	Envirolab Services
Project Name:	Botany, DSI	**Order Number**	152412		
Project Manager:	WFY	**Sampler:**	AMS	**Attn:**	Aileen Hie
Emails:	wenfei.yuan@douglaspartners.com.au and ayla.sorensen@douglaspartners.com.au			**Phone:**	
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	
Prior Storage:	☐ Esky ☐ Fridge/Freezer ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)	

Sample ID	Lab ID	Date Sampled	Sample Type: S - soil, W - water	Container Type: G - glass, P - plastic	Analytes: Combo 4L (Low level PAH)	OCP/OPP (trace level)	VOC	Water hardness		Notes			
GW17		22/05/20	W	G/P	X	X	X	X					
PQL (S) mg/kg										**ANZECC PQLs req'd for all water analytes** ☐			

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No:

Total number of samples in container:	1	**Relinquished by:**	AMS	**Transported to laboratory by:**	Courier
Send Results to:	Douglas Partners Pty Ltd	**Address:**	96 Hermitage Road, West Ryde	**Phone:**	9809 0999
Signed:	AMS	**Received by:**	ECS	**Date & Time:**	29-5-20 1500

ENVIROLAB GROUP

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 243891

Date Received: 29-5-20
Time Received: 1500
Received by: Helen
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99679.01	**Suburb:**	Botany	**To:**	Envirolab Services
Project Name:	Botany, DSI	**Order Number**	152412		
Project Manager:	WFY	**Sampler:**	AMS	**Attn:**	Aileen Hie
Emails:	wenfei.yuan@douglaspartners.com.au and ayla.sorensen@douglaspartners.com.au			**Phone:**	
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	
Prior Storage:	☐ Esky ☐ Fridge/Freezer ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 4L (Low level PAH)	OCP/OPP (trace level)	VOC	Water hardness		Notes			
GW17	\	22/05/20	W	G/P	X	X	X	X					
PQL (S) mg/kg										**ANZECC PQLs req'd for all water analytes** ☐			

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No:

Total number of samples in container: 1 **Relinquished by:** AMS **Transported to laboratory by:** Courier

Send Results to: Douglas Partners Pty Ltd **Address:** 96 Hermitage Road, West Ryde **Phone:** 9809 0999

Signed: AMS **Received by:** ECS **Date & Time:** 29-5-2015 00

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 243891

Date Received: 29-5-20
Time Received: 1500
Received by: Helen
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

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	Douglas Partners Pty Ltd
Attention	Wen-Fei Yuan

Sample Login Details

Your reference	99679.01, Botany
Envirolab Reference	243891
Date Sample Received	29/05/2020
Date Instructions Received	29/05/2020
Date Results Expected to be Reported	05/06/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 WATER
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	8.5
Cooling Method	Ice Pack
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	Total Phenolicsin Water	OCPs in Water - Trace Level	OP in water Trace ANZECCF/ADWG	HM in water - dissolved	Cations in water Dissolved
GW17	✓	✓	✓	✓	✓	✓	✓	✓	✓

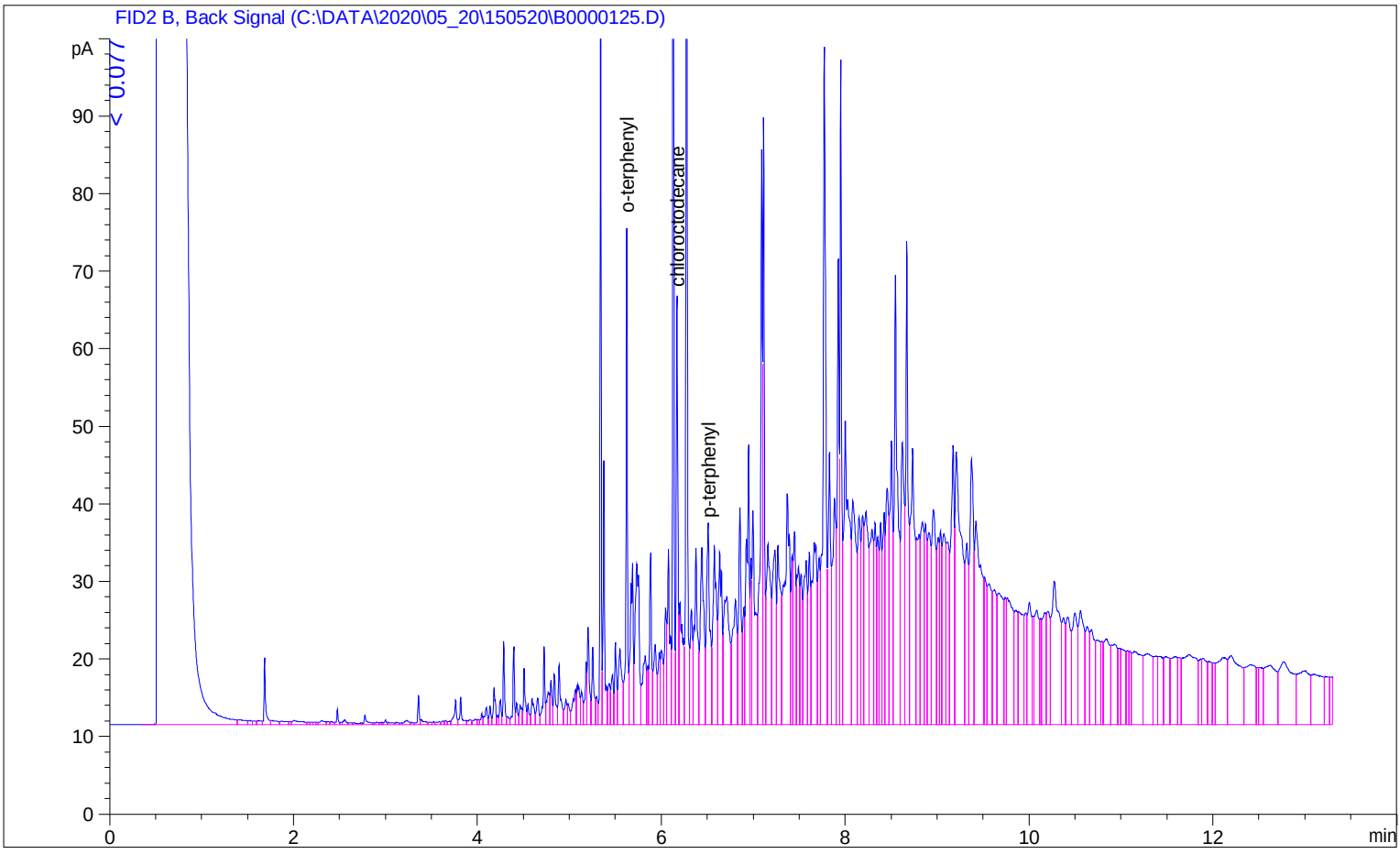
The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

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.

Data File C:\DATA\2020\05_20\150520\B0000125.D
Sample Name: s242991-5

```
==========================================================================
Acq. Operator   :                                  Seq. Line : 125
Acq. Instrument : GC#4                              Location : Vial 125
Injection Date  : 19/05/2020 11:12:23 AM                 Inj :   1
                                                  Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\METHODS\NEPM JF.M
Last changed    : 16/01/2020 11:55:46 AM
Analysis Method : C:\METHODS\2020\05_20\220520-B-PROCESSING-.M
Last changed    : 02/06/2020 2:50:42 PM
                  (modified after loading) (Current integration events modified)
Method Info     : FAST TPH WITH 15M HP5 COLUMNS
```

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==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      25/05/2020 2:45:58 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B, Back Signal

RetTime  Type     Area     Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                 [mg/L]
-------|------|----------|----------|----------|--|------------------
  5.625 VV    I   75.18771 1.68499e-1   12.66908    o-terphenyl
  6.172 VV        69.91956 2.07492e-1   14.50778    chloroctodecane
  6.510 VV    I   67.18139 6.97511e-2    4.68598    p-terphenyl
```

Data File C:\DATA\2020\05_20\150520\B0000125.D
Sample Name: s242991-5

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
Totals :				31.86283		

Summed Peaks Report

Signal 1: FID2 B, Back Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	2.080	4.130	57.61182	9.5606
NEPM >C10-C16	2.590	4.790	150.50981	24.9770
TRH C15-C28	4.131	7.850	2912.92572	446.8748
NEPM >C16-C34	4.791	8.960	4669.36581	716.3321
TRH C29-C36	7.851	9.310	2418.26868	372.6141
NEPM >C34-C40	8.961	10.370	1542.55117	237.6809
Totals :				1808.0395

Final Summed Peaks Report

Signal 1: FID2 B, Back Signal

Name	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	57.61182	9.5606
NEPM >C10-C16	150.50981	24.9770
TRH C15-C28	2912.92572	446.8748
NEPM >C16-C34	4669.36581	716.3321
TRH C29-C36	2418.26868	372.6141
NEPM >C34-C40	1542.55117	237.6809
o-terphenyl	75.18771	12.6691
chloroctodecane	69.91956	14.5078
p-terphenyl	67.18139	4.6860
Totals :	1839.9023	

*** End of Report ***

Data File C:\DATA\2020\05_20\070520\150520 2020-05-15 18-29-39\F0000348.D
Sample Name: s243277-4

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==========================================================================
Acq. Operator   : SYSTEM                          Seq. Line : 348
Sample Operator : SYSTEM
Acq. Instrument : GC_7                            Location :   48  (F)
Injection Date  : 26/05/2020 1:54:03 AM                Inj :   1
                                                 Inj Volume : 1 µl
Acq. Method     : C:\DATA\2020\05_20\070520\150520 2020-05-15 18-29-39\TRH_FAST_RACER.M
Last changed    : 28/04/2020 4:42:33 PM by SYSTEM
Analysis Method : C:\METHODS\2020\05_20\150520-F-PROCESSING-.M
Last changed    : 09/06/2020 11:34:01 AM by SYSTEM
                  (modified after loading)
Method Info     : FAST TPH WITH 15M HP5 COLUMNS
```

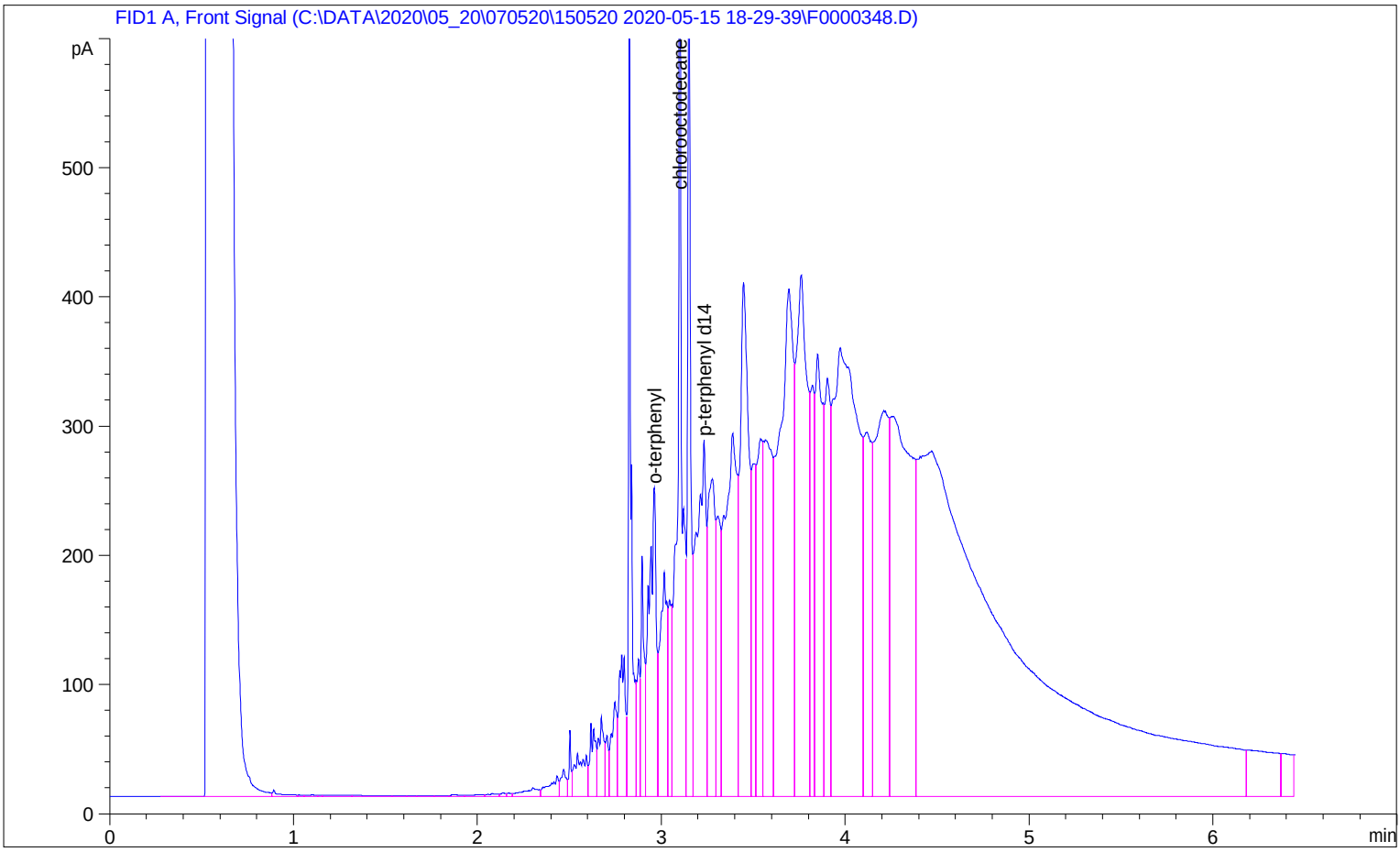


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==========================================================================
                    External Standard Report
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Sorted By             :      Signal
Calib. Data Modified  :      18/05/2020 11:44:59 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, Front Signal

RetTime  Type     Area     Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                 [mg/L]
-------|------|----------|----------|----------|--|-----------------
  2.962 VV    I  672.52893 2.02904e-1  136.45893    o-terphenyl
  3.101 VV     1249.29700 2.57446e-1  321.62703    chlorooctodecane
```

Data File C:\DATA\2020\05_20\070520\150520 2020-05-15 18-29-39\F0000348.D
Sample Name: s243277-4

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
3.233	VV	I 995.97247	8.34408e-2	83.10475		p-terphenyl d14

Totals : 541.19072

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Summed Peaks Report

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Signal 1: FID1 A, Front Signal

Signal 1: FID1 A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	1.400	2.430	73.17284	15.3827
NEPM >C10-C16	1.770	2.660	456.49861	95.9670
TRH C15-C28	2.431	3.720	1.13042e4	2.409e3
NEPM >C16-C34	2.661	4.100	1.81231e4	3.862e3
TRH C29-C36	3.721	4.220	9660.56860	2.130e3
NEPM >C34-C40	4.110	4.440	4841.70538	1.067e3

Totals : 9579.8266

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Final Summed Peaks Report

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Signal 1: FID1 A, Front Signal

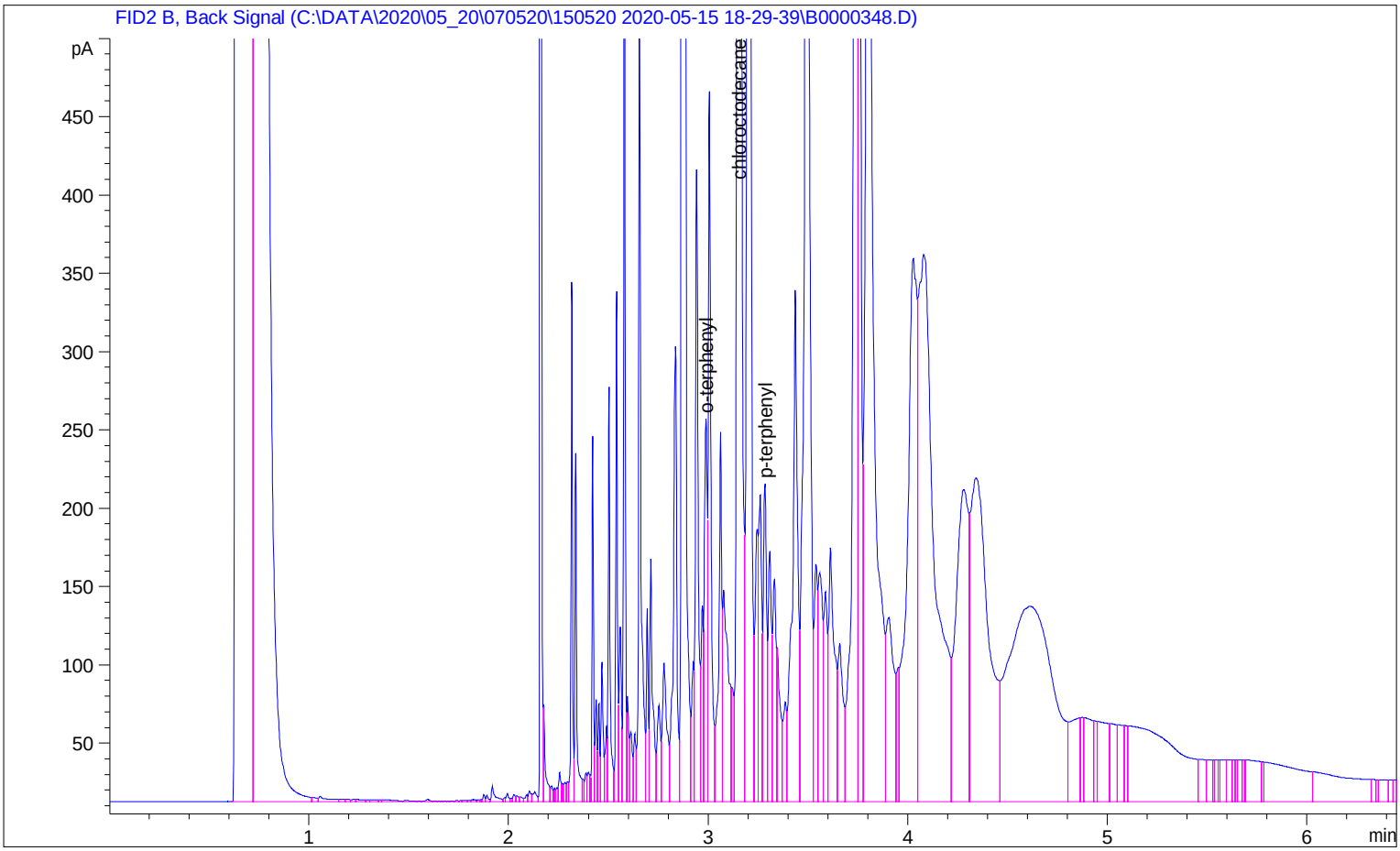
Name	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	73.17284	15.3827
NEPM >C10-C16	456.49861	95.9670
TRH C15-C28	1.13042e4	2.409e3
NEPM >C16-C34	1.81231e4	3.862e3
TRH C29-C36	9660.56860	2.130e3
NEPM >C34-C40	4841.70538	1.067e3
o-terphenyl	672.52893	136.4589
chlorooctodecan	1249.29700	321.6270
p-terphenyl d14	995.97247	83.1048

Totals : 1.0121e4

*** End of Report ***

Data File C:\DATA\2020\05_20\070520\150520 2020-05-15 18-29-39\B0000348.D
Sample Name: s243277-6

```
======================================================================
Acq. Operator   : SYSTEM                        Seq. Line : 348
Sample Operator : SYSTEM
Acq. Instrument : GC_7                          Location :   123  (B)
Injection Date  : 26/05/2020 1:54:03 AM              Inj :   1
                                                Inj Volume : 1 µl
Acq. Method     : C:\DATA\2020\05_20\070520\150520 2020-05-15 18-29-39\TRH_FAST_RACER.M
Last changed    : 28/04/2020 4:42:33 PM by SYSTEM
Analysis Method : C:\METHODS\2020\05_20\150520-B-PROCESSING-.M
Last changed    : 09/06/2020 11:35:28 AM by SYSTEM
                  (modified after loading)
Method Info     : FAST TPH WITH 15M HP5 COLUMNS
```

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======================================================================
                    External Standard Report
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Sorted By             :      Signal
Calib. Data Modified  :      18/05/2020 12:56:16 PM
Multiplier            :      1.0000
Dilution              :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B, Back Signal

RetTime  Type     Area     Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                [mg/L]
-------|------|----------|----------|----------|--|-----------------
  2.989 VV    I  242.06113 2.00040e-1   48.42180    o-terphenyl
  3.155 VV     2747.77612 2.26228e-1  621.62416    chloroctodecane
```

Data File C:\DATA\2020\05_20\070520\150520 2020-05-15 18-29-39\B0000348.D
Sample Name: s243277-6

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
3.285	VV I	234.44817	8.23883e-2	19.31578		p-terphenyl

Totals : 689.36175

1 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)

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Summed Peaks Report
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Signal 1: FID2 B, Back Signal

Signal 1: FID2 B, Back Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	1.510	2.460	1783.37707	324.4765
NEPM >C10-C16	1.835	2.700	3406.08804	619.7207
TRH C15-C28	2.461	3.755	1.56222e4	2.992e3
NEPM >C16-C34	2.701	4.155	2.04217e4	3.912e3
TRH C29-C36	3.756	4.275	6431.61059	1.279e3
NEPM >C34-C40	4.155	4.510	2165.34271	430.6455

Totals : 9558.1538

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Final Summed Peaks Report
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Signal 1: FID2 B, Back Signal

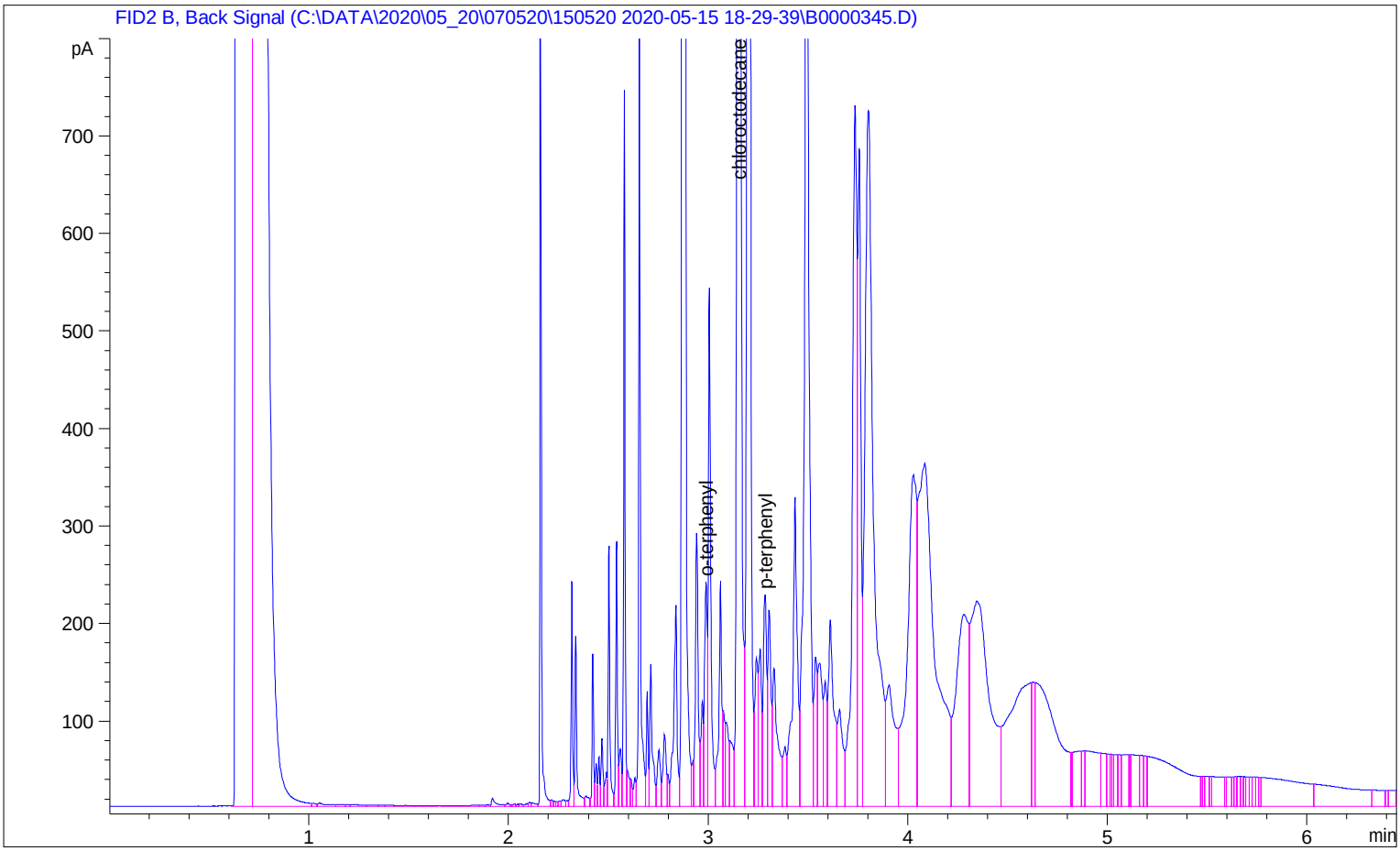
Name	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	1783.37707	324.4765
NEPM >C10-C16	3406.08804	619.7207
TRH C15-C28	1.56222e4	2.992e3
NEPM >C16-C34	2.04217e4	3.912e3
TRH C29-C36	6431.61059	1.279e3
NEPM >C34-C40	2165.34271	430.6455
o-terphenyl	242.06113	48.4218
chloroctodecane	2747.77612	621.6242
p-terphenyl	234.44817	19.3158

Totals : 1.0248e4

*** End of Report ***

Data File C:\DATA\2020\05_20\070520\150520 2020-05-15 18-29-39\B0000345.D
Sample Name: s243277-11

```
======================================================================
Acq. Operator   : SYSTEM                        Seq. Line : 345
Sample Operator : SYSTEM
Acq. Instrument : GC_7                          Location :   120  (B)
Injection Date  : 26/05/2020 1:20:47 AM              Inj :   1
                                               Inj Volume : 1 µl
Acq. Method     : C:\DATA\2020\05_20\070520\150520 2020-05-15 18-29-39\TRH_FAST_RACER.M
Last changed    : 28/04/2020 4:42:33 PM by SYSTEM
Analysis Method : C:\METHODS\2020\05_20\150520-B-PROCESSING-.M
Last changed    : 09/06/2020 11:37:11 AM by SYSTEM
                  (modified after loading)
Method Info     : FAST TPH WITH 15M HP5 COLUMNS
```




```
======================================================================
                    External Standard Report
======================================================================

Sorted By             :      Signal
Calib. Data Modified  :      18/05/2020 12:56:16 PM
Multiplier            :      1.0000
Dilution              :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B, Back Signal

RetTime  Type     Area     Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                [mg/L]
-------|------|----------|----------|----------|--|-----------------
  2.990 VV    I  209.33093 2.00040e-1   41.87447    o-terphenyl
  3.155 VV     2737.86865 2.26228e-1  619.38281    chloroctodecane
```

Data File C:\DATA\2020\05_20\070520\150520 2020-05-15 18-29-39\B0000345.D
Sample Name: s243277-11

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
3.285	VV I	253.02446	8.23883e-2	20.84625		p-terphenyl

Totals : 682.10354

1 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)

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Summed Peaks Report
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Signal 1: FID2 B, Back Signal

Signal 1: FID2 B, Back Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	1.510	2.460	875.07160	159.2149
NEPM >C10-C16	1.835	2.700	2338.50369	425.4791
TRH C15-C28	2.461	3.755	1.49140e4	2.857e3
NEPM >C16-C34	2.701	4.155	1.99820e4	3.828e3
TRH C29-C36	3.756	4.275	6539.39551	1.301e3
NEPM >C34-C40	4.155	4.510	2245.36243	446.5599

Totals : 9016.1191

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Final Summed Peaks Report
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Signal 1: FID2 B, Back Signal

Name	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	875.07160	159.2149
NEPM >C10-C16	2338.50369	425.4791
TRH C15-C28	1.49140e4	2.857e3
NEPM >C16-C34	1.99820e4	3.828e3
TRH C29-C36	6539.39551	1.301e3
NEPM >C34-C40	2245.36243	446.5599
o-terphenyl	209.33093	41.8745
chloroctodecane	2737.86865	619.3828
p-terphenyl	253.02446	20.8463

Totals : 9698.2226

*** End of Report ***