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Engineering | Environmental | Testing

Report Type:

Detailed Site Investigation

Project Address:

51 Masons Parade, Point Frederick, NSW

Lot 51 in DP732632

Client Name:

Brisbane Waters (NSW) Legacy (c/ Grindley Construction)

30 June 2020

Report No: 10827-ER-1-2

We give you the right information to make the right decisions

Alliance Geotechnical Pty Ltd | ABN: 62 106 885 214

PO Box 275, Seven Hills NSW 1730 - 10 Welder Road, Seven Hills, NSW

Phone: 1800 288 188 - Office Email: office@allgeo.com.au - Web: allgeo.com.au

Document Control

Revision	Report Date	Author	Reviewer	Commissioned by	Comment
Rev 0	30 June 2020	J. Walker	A. Rooney	Grindley Construction	Issued for client review

Author Signature		**Reviewer Signature**	
Name	Jacob Walker	**Name**	Aidan Rooney
Title	Environmental Consultant	**Title**	Principal Environmental Consultant

Executive Summary

Alliance Geotechnical Pty Ltd (AG) was engaged by Brisbane Waters (NSW) Legacy Club (c/ Grindley Construction), to undertake a Detailed Site Investigation for 51 Masons Parade, Point Frederick, NSW (refer **Figure 1** with the 'site' boundaries outlined in **Figure 2**).

- The northern portion of the site is being considered for redevelopment, comprising demolition of existing structures and construction of fifty-four (54) apartments over five (5) levels and a mixture of single level basement parking and ground level parking structures; and
- A contamination assessment of the site is required in accordance with the SEPP55.

The objectives of this investigation were to:

- Evaluate the possibility for contamination to be present at the site as a result of current and former land use activities;
- Identify risks to both human-health and environment receptors posed by contaminants identified from intrusive investigation at the site;
- Provide advice on the suitable (in the context of land contamination) of the soil and groundwater for the proposed land use setting at the site; and
- Provide recommendations for further investigation, management and/or remediation (if warranted).

The scope of works undertaken to address the investigation objectives, included:

- A desktop review of relevant information pertaining to the site;
- A site walkover to understand current site conditions;
- The preparation of a Sampling and Analysis Quality Plan (SAQP);
- Conduct an intrusive site investigation to establish ground conditions and to facilitate the collection of representative soil and groundwater samples;
- Laboratory analysis of selected samples collected during the field investigation; and
- An assessment of the contamination status of the site and the recommendation of any further remedial requirements associated with the redevelopment of the site (if necessary).

Conclusions

Based on the findings of desktop review information, fieldwork observations and laboratory analytical data, in the context of the proposed redevelopment scenario, AG makes the following conclusions:

- Site history records indicate that the site has been used historically for residential purposes;
- Based on the findings of the site history and land use, the most plausible sources of contamination were associated with historic filling, the weathering of building structures, pesticide use, and demolition of structures;
- Intrusive investigation at the site utilised 21 sampling locations for the description of site soils and collection of soil samples for laboratory analysis;
- A further 3 boreholes across the proposed development portion of the site were advanced, and groundwater wells installed for the description of site groundwater and collection of groundwater samples for laboratory analysis;
- Laboratory analytical results for TRH, BTEXN, PAH, OCP, OPP, PCB, HM, and Phenols reported concentrations below adopted investigation criteria in fill and natural soils;

- Asbestos was reported in soil sample TP19 analysed by the testing laboratory, in the form of friable asbestos;
- Laboratory analytical results for TRH, BTEXN, PAH, OCP, OPP, PCB, Phenols and Cations/Anions reported concentrations below adopted investigation criteria within groundwater; and
- Priority metals were reported at concentrations in groundwater below adopted investigation criteria, except for lead and zinc which exceeded the ANZG 95% protection of Marine Water criteria in GWM1, GWM3, GWM4 & DUP01, zinc in DUP01A, and nickel which exceeded the NEPM ASC health criteria in GWM3 & GWM4.

Recommendations

Based on the above conclusions, from a contamination perspective, the land in its current state is not suitable for the proposed development. The land could potentially made suitable for the proposed residential subdivision subject to the following recommendations being undertaken:

- A remedial action plan (RAP) should be prepared for the site, to address potentially unacceptable friable asbestos in soil related human health exposure risks at the site and nickel, lead and zinc in groundwater related exposure risks;
- The RAP should be prepared by a suitably experience environmental consultant with reference to NSW EPA (2020) and include (but not be limited to) the following:
    - a remedial goal for the site;
    - an assessment of remedial options available to address the identified asbestos risks. These options may include removal offsite, in-situ containment, ex-situ containment, or a combination of these;
    - the proposed testing to validate the site after remediation;
    - a contingency plan to address unexpected finds or if the selected remedial strategy fails; and
    - a site management plan (for the remediation works).
- Consideration should be given to undertaking lateral delineation assessment works around detected asbestos contamination, as well as a more detailed groundwater assessment across the site, should there be a need to obtain further certainty around the nature and extent of remedial works required. The delineation work could be undertaken
    - prior to preparation of the RAP; or
    - following preparation of the RAP, with a RAP addendum issued incorporating the findings of the delineation assessment;
- Records of the lawful transport and disposal of asbestos containing materials and any other wastes removed from site, should be retained.

This report, including its conclusions and recommendations, must be read in conjunction with the statement of limitations presented in **Section 11.**

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1. Introduction

1.1. Background

Alliance Geotechnical Pty Ltd (AG) was engaged by Brisbane Waters (NSW) Legacy Club (c/ Grindley Construction) to undertake a Detailed Site Investigation at 51 Masons Parade, Point Frederick, NSW (refer **Figure 1,** with the 'site' boundaries outlined in **Figure 2**).

AG understand that additional residential living units are proposed for the Legacy aged care facility, which will require demolition of existing structures, and construction of an apartment style residential aged care facility, roadways, and the installation of associated infrastructure and services. A contamination assessment of the site is required in accordance with the SEPP55.

1.2. Proposed Development

AG understands the development to comprise the following:

- Fifty-four (54) independent living units with basement car parking spaces designed to comply with the Gold Level of the Australian Liveable Housing Design Guidelines, consisting of:
    - Five 3-bedroom apartments;
    - Ten 2-bedroom apartments;
    - Thirty-nine 1-bedroom apartments;
- New community facilities including function rooms, café, community services and others;
- A new entry address, pick up and drop off point for residents and visitors, located adjacent to new community facilities;
- A new village community park boulevard is proposed, which will form a central green space for resident activities;
- Sheltered on-site parking, both in the building basement and above ground to the rear of the site;
- Height of building will be limited to a maximum of 5 storeys, with the residential development located at the front of the site to optimise access to views and the communal facilities located at the rear; and
- An indication of the surplus land area available for subdivision and sale.

1.3. Objectives

The objectives of this project were to:

- Evaluate the possibility for contamination to be present at the site as a result of current and former land use activities;
- Identify risks to both human-health and environment receptors posed by contaminants identified from intrusive investigation at the site;
- Provide advice on the suitable (in the context of land contamination) of the soil and groundwater for the proposed land use setting at the site; and
- Provide recommendations for further investigation, management and/or remediation (if warranted).

1.4. Scope of Work

The following scope of works was utilised to address the project objectives:

- A desktop review of relevant historical site information pertaining to the site;
- A site walkover to understand current site conditions;

- The preparation of a Sampling and Analysis Quality Plan (SAQP);
- Completion of an intrusive site investigation to establish ground conditions and to facilitate the collection of representative soil and groundwater samples;
- Laboratory analysis of selected samples collected during the field investigation for contaminants of potential concern (COPC) identified by the review of site history and land use activities; and
- An appraisal of the contamination status of the site and the recommendation of any further remedial requirements associated with the redevelopment of the site (if necessary).

2. Site Setting

2.1. Site Identification

Site identification details and associated information is present in **Table 2-1**. The locality of the site is presented in **Figure 1**, with the general layout and site boundaries depicted in **Figure 2**.

Table 2-1 Site Identification Information

Site Address	51 Masons Parade, Point Frederick, NSW
Cadastral Identification	Lot 51 in DP732632
Geographical Coordinates	6252325.399N 1463519.749E (Source: Sixmaps)
Site Area	1.253 hectares (Source: SixMaps - https://maps.six.nsw.gov.au/)
Zoning	B4 – Mixed Use (*State Environmental Planning Policy (Gosford City Centre) 2018*)
Current Land Use	Medium density residential
Proposed Land Use	Medium density residential
Local Government Agency	Gosford City Council

2.2. Ground Conditions and Surrounding Environment

A summary of available site and local data identifying topography, geology, soils, and hydrology is provided in **Table 2-2**.

Table 2-2 Summary of Ground Conditions and Surrounding Environment

Geology	A review of the Penrith 1:100,000 Geological Series Sheet (1st Edition), indicates that the site is likely to be underlain by Quarternary (Qa), comprising alluvium, gravel, sand.
Soil Landscape	Disturbed Terrain consists of landscape has been extensively disturbed by human activity and the features of the original landscape have been extensively modified. Includes extensive areas of coal mining in the Hunter valley and past coastal sand mined areas. Also occurs as numerous quarries and garbage tips, industrial sites and other areas where excavation and deposition of material has occurred. (Source: https://www.environment.nsw.gov.au/eSpade2WebApp)
Site Elevation	4 m to 11 mAHD
Acid Sulfate Soil Risk	A review of NSW Department of Land and Water Conservation Acid Sulfate Soil Risk Map for the site indicates that the site lies in an area mapped as '*No known occurrence'* with respect to acid sulfate soils (ASS). However, the site is within close proximity to disturbed terrain to the west (Brisbane Waters). Further assessment of ASS, in the context of this investigation is considered warranted. (Source: https://www.environment.nsw.gov.au/eSpade2WebApp)

Potential Depth of Site Filling	Filling at the site is likely to be <1.5 m.
Site Drainage	Drainage in hardstand areas is likely to be collected and discharged to the municipal stormwater system. Drainage in unsealed areas in likely to consist of direct soil infiltration and overland flow.
Nearest Surface Waterbody	An unnamed creek to the immediate north of the site, with Brisbane Waters approximately 160 m to the west of the site.

2.3. Hydrogeology and Groundwater Use

Available hydrogeological data and records of groundwater use, obtained for this investigation, are summarised below in **Table 2-3**.

Table 2-3 Background Hydrogeological Information

Depth to Watertable[1]	> 4.0 m
Inferred Groundwater Flow Direction	Based on prevailing site topography, groundwater flow direction in the vicinity of the site is inferred to be towards the south to west.
Local Groundwater Bore Records (≤ 500 m of site)	Review of the Water NSW groundwater database identified no registered groundwater bores within a 500 m radius of the site. The Water NSW search records are presented in **Appendix A**. (Source: www.realtimedata.waternsw.com.au/water.stm, accessed on 9 June 2020)
Potential Groundwater Receptors (including vapour flux receptors)	Potential groundwater receptors include: ▪ Proposed users of the site (vapour). ▪ Neighbouring residential properties and schools (vapour). ▪ Basement users. ▪ Brisbane Water.

Notes:

[1] Sourced from https://www.environment.nsw.gov.au/eSpade2WebApp

3. Site History and Land Use

3.1. Historic Records

3.1.1. Land Titles

A search of historical land title ownership was undertaken as part of the review of site history. Distribution of the site historically has led to many registered proprietors throughout the 1900s. For the purposes of this summary, the individual portions will be listed and can be found within **Appendix B**.

The search results indicate that the registered proprietors of portion (1) and (2) were the Morris family (builder) from 1933 to 1939, Mr Arthur Brown (investor) from 1939 to 1944, the Riordan family from 1944 to 1951 and Brisbane Water (NSW) Legacy from 1983 to date.

The registered proprietors of portion (3) were the Buscombe family from 1935 to 1974 and Brisbane Water (NSW) Legacy from 1974 to date.

The registered proprietors of portion (5) were Grace Gill from 1929 to 1936, the Wheeler family (clerks) from 1936 to 1944, the Schwartz family (ship carpenter and builder) from 1944 to 1946 and Brisbane Water (NSW) Legacy from 1963 to date).

The registered proprietors of portion (6) were Grace Gill from 1929 to 1963 and Brisbane Water (NSW) Legacy from 1963 to date.

The registered proprietors of portion (7) were the Gill family from 1929 to 1982 and Brisbane Water (NSW) Legacy from 1985 to date.

The registered proprietors of portion (8) were Grace Gill from 1929 to 1950, the Bridge family (fettler) from 1950 to 1963 and Brisbane Water (NSW) Legacy from 1963 to date.

The registered proprietors of portion (9) were Harold White (chemist) from 1946 to 1946, Ethel Welsh from 1946 to 1963 and Brisbane Water (NSW) Legacy from 1963 to date.

The registered proprietors of portion (10) were Neville Musgrove from 1945 to 1949, Ethel Welsh from 1949 to 1963 and Brisbane Water (NSW) Legacy from 1963 to date.

The registered proprietors of portion (11) were Henry Webster from 1940 to 1955, the Shore and O'Brien family (bus conductor/spinster) from 1955 to 1960, the Linden family (miner) from 1960 to 1963, and Brisbane Water (NSW) Legacy from 1963 to date.

The registered proprietors of portion (12) were Robert Coulter (builder) from 1930 to 1930, the Rooke family (laborer) from 1930 to 1932, Francis Buscombe from 1935 to 1952, William Miley from 1952 to 1954, the Dawson family from 1954 to 1958, Rose Senez from 1958 to 1964, and Brisbane Water NSW Legacy from 1964 to date.

The site has been used historically for rural-residential purposes.

No leases are reported for the site. Two easements have been reported for the site:

- 08.08.1963 (Book 2669 No. 395) Easement for Drainage 12.19 wide
- 03.07.1963 (J 461377) Easement for Drainage 12.19 wide.

A copy of the land title search record is presented in **Appendix B.**

3.1.2. Aerial Imagery

A review of selected historical aerial imagery of the site was undertaken. Observations made of the imagery considered relevant to this investigation, are presented in **Table 3-1**. Imagery is available on request.

Table 3-1 Aerial Imagery Observations

Image Date	Site Features	Surrounding Land Use Settings
1965	The site appears to be well developed, with a large residential style structure in the north west of the site, a large communal office style structure in the north east, and two smaller residential properties in the south west of the site. The remainder of the site appears to be either landscaped grass or driveway.	Undeveloped, cleared land to the immediate west, with Brisbane Waters beyond, low density residential to the north, east and south.
1975	The site appears similar to the previous image, however more commercial and medium density residential structures have appeared within the centre and south east portions of the site.	No significant change from previous image.
1984	The site appears similar to the previous image, however one of the residential structures in the south west of the site has disappeared.	No significant change from previous image.
1994	No significant change from previous image.	No significant change from previous image.
2007 (Google Earth)	No significant change from previous image.	No significant change from previous image.
2020 (Nearmap)	No significant change from previous image.	No significant change from previous image.

Historical aerial imagery indicated potential land contaminating activities on the site, with activities relating specifically to uncontrolled demolition and uncontrolled filling.

Further assessment of potential land contaminating activities, in the context of other historical information identified during this investigation and site walkover observations, is considered warranted.

3.1.3. Supplementary Information

Supplementary information relating to incident reports, complaints history, and anecdotal interviews were not provided to AG for the preparation of this report.

3.2. Regulatory Records and Government Databases

A summary of information gathered from available regulatory records and government databases is presented **Table 3-2**.

Table 3-2 Regulatory Records and Government Databases

NSW EPA CLM Act Record of Notices	A search of the publicly available online NSW EPA CLM Act Record of Notices was completed on 6 June 2020. The results indicated that the site, or sites in proximity (≤100 m), were not the subject of any notifications under Section 58 of the *Contaminated Land Management Act 1997*. A copy of the CLM Act Record of Notices search record is presented **Appendix C** (Source: https://apps.epa.nsw.gov.au/prclmapp/searchregister.aspx)
NSW EPA CLM Act Register of Notified Sites	A search of the publicly available online NSW EPA Record of Notices was completed on 6 June 2020. The results indicated that the site, or sites in proximity (≤100 m), were not the subject of any licences, applications, notices, audits or pollution studies or reduction programs under Section 308 of the *Protection of the Environment Operations Act 1997*. A copy of the POEO Act Register of Licences, Applications, and Notices search record is presented in **Appendix C**. (Source: https://www.epa.nsw.gov.au/your-environment/contaminated-land/notified-and-regulated-contaminated-land/list-of-notified-sites)
NSW EPA POEO Act Register of Licences, Applications and Notices	A search of the publicly available online NSW EPA Record of Notices was completed on 6 June 2020. The results indicated that the site was not the subject of any licences, applications, notices, audits or pollution studies or reduction programs under Section 308 of the *Protection of the Environment Operations Act 1997*. A copy of the POEO Act Register of Licences, Applications, and Notices search record is presented in **Appendix C**. (Source: https://apps.epa.nsw.gov.au/prpoeoapp/)
Section 10.7 Planning Certificate	A copy of the planning certificate issued for the site under Section 10.7 of the Environmental Planning and Assessment Act 1979 was reviewed. The certificate indicated that, within the meaning of the *Contaminated Land Management Act 1997*, the site was not: ▪ Significantly contaminated land; ▪ Subject to a management order; ▪ The subject of an approved voluntary management proposal; ▪ Subject to an ongoing maintenance order; or ▪ The subject of a site audit statement. A copy of the planning certificate is presented in **Appendix D**.
SafeWork NSW Stored Chemical Information Database (SCID)	A search of Safe Work NSW stored chemical information database (SCID) was not undertaken for the site. Historical aerial imagery and land title records did not indicate a potential for licensable quantities of dangerous goods to have been stored historically on the site. AG considers that further assessment of storage of licensable quantities of dangerous goods on the site is not warranted
NSW Government PFAS Investigation Program	Review of available mapping associated with the NSW Government PFAS Investigation Program did not identify locations ≤ 500 m of the site currently being investigated for PFAS. (Source: https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program)

Unexploded Ordnance	Review of the Australian Department of Defence UXO Mapping Application did not indicate potential for UXO to be present on the site. (Source: https://defence.gov.au/UXO/Where/Default.asp)

3.3. PFAS Assessment

Per- and poly-fluorinated substances (PFAS) have recently been highlighted as a persistent and mobile contaminant, of significant toxicity. The potential risk posed by PFAS contamination has been evaluated by using available site history information, in combination with the decision tree developed EnRisk (2016). The decision tree for PFAS assessment at the site is presented in **Table 3-3**.

Table 3-3 Decision Tree for PFAS Assessment

Preliminary Screening	Probability [1]	Justification
Did fire training occur on-site?	L	-
Is an airport or fire station up gradient of or adjacent to the site? [2]	L	Sutherland Fire and Rescue NSW Fire Station is located approximately 400 m to the west and hydraulically down-gradient.
Have "fuel" fires ever occurred on-site? e.g. ignition of fuel (solvent, petrol, diesel, kerosene) tanks.	L	As the site has been used historically for residential purposes, significant use or storage of fuel is unlikely.
Have PFAS been used in manufacturing or stored on-site? [3]	L	Site use is not consistent with manufacturing or storage of PFAS compounds

Notes:

[1] L = Low, M = Medium, H = High.

[2] Runoff from fire training areas may impact surface water, sediment, and groundwater.

[3] PFAS is used wide range of industrial processes and consumer products (https://www.nicnas.gov.au/chemical-information/factsheets/chemical-name/perfluorinated-chemicals-pfas)

3.4. Previous Contamination Assessments

AG are unaware of any previous environmental reports that have been prepared for the site.

4. Site Walkover

A site walkover was undertaken on 14 May 2020 by a suitably experienced AG environmental consultant. The purpose of the site walkover was to make observations of land use activities on the site and on properties immediately adjacent to the site. Observations recorded during the site walkover are summarised in **Table 4-1**. Selected photographs from the site walkover are provided in **Appendix E**.

Table 4-1 Summary of Site Walker Observations

Buildings and General Infrastructure	Observations included: ▪ A residential style building in the north west corner, with carpark and driveway; ▪ Ten (10) office and residential buildings across the site, connected by covered walkways with open area landscaped spaces, with gardens and accessible soils. Example images are provided in **Appendix E.**
Boundary Fencing	The site boundary is securely enclosed along all perimeters, comprising of permanent steel fencing, with the exception of the driveways and the main entrance.
Adjacent Land Use	Observations made during the site walkover indicated the following land use activities adjacent to the site: ▪ North – Construction site, and medium density residential beyond; ▪ East – Medium density residential; ▪ West – Carpark, with Brisbane Water beyond; and ▪ South – medium density residential.
Odours and Staining	Olfactory or visual evidence of gross contamination was not observed on the site during the site walkover.
Chemical Storage	Visual evidence of chemical storage was not observed on the site.
Underground Storage Tanks and Aboveground Storage Tanks	Visual evidence of underground storage tanks (USTs) was not observed on the site.
Fill Materials	Observations compiled during the walkover indicate that fill materials are likely to have been used in the areas across the site, beneath historical structural footings during the construction of site buildings, and to level the site. Example images are provided in **Appendix E.**
Wastes	There was no evidence of widespread waste accumulation on site.
Asbestos Containing Materials	Visual evidence of potential asbestos containing materials (PACM) was no observed on the ground surface during the walkover, however buildings constructed prior to the 1980s do exist on site. AG note that the completion of a hazardous material building survey was not within the scope of this project.
Phytotoxicity	There was no visual evidence observed to suggest significant or widespread phytotoxic impact (in the form of vegetation dieback or plant stress) in the sparse vegetation at the site. Similar observations were made of visible vegetation on land adjacent to the site.

Surface Water and Site Drainage	Visual observations made in the context of site drainage during the walkover, indicated that drainage mechanisms on the site, prior to demolition of structures, are likely to have include: ▪ Collection of run-offs from roofs and gutters, with downpipe drainage into subsurface drainage infrastructure; and ▪ Direct soil infiltration.
Adjacent Ecological Receptors	No significant ecological receptors were identified nearby the site. The closest identifiable surface water features were Brisbane Water (380 m west).

5. Data Integrity Assessment

AG has relied on the following sources of data while undertaking this investigation:

- AG field observations during the site walkover;
- Gosford City Council;
- Department of Land and Water Conservations;
- Department of Primary Industries – Water;
- Australian Soil Resource Information System;
- Google Earth;
- National Environment Protection Council;
- Nearmap;
- NSW Environment Protection Authority;
- NSW Land and Property Information; and
- Water NSW.

Based on AG's experience and professional judgement, the data obtained from the sources relied upon, is considered to be adequately precise, accurate, representative, complete and comparable within the objectives of this investigation and for the purpose of drawing conclusions regarding land contamination risks at the site.

6. Conceptual Site Model

A conceptual site model (CSM) has been developed using information gathered from a review of site history records and from observation compiled during the completion of the site walkover. The methods used in the CSM follow the Contaminated Land Management risk-based approach, with the potential environmental risk assessed qualitatively using the 'source-pathway-target pollutant linkage' concept. For a site to be designated as Contaminated Land, a plausible linkage between the identified Sources, Pathways and Receptors must be demonstrated. A summary of the CSM developed for the site is provided below.

6.1. Sources of Contamination

Potential sources of contamination that have been identified during review of site history records include:

- Unknown type and concentration of contaminants within imported fill soils across the entire site;
- Weathering of building structures (i.e. painted surfaces, metallic structures, cement-fibre sheeting, etc.); and
- Uncontrolled demolition of historical structures on site.

6.2. Contaminants of Potential Concern

Potential sources of contamination were revealed, with potential to contaminate the site. Given the above sources, the COPC are:

- Soil – the eight priority heavy metals (HMs): *arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc*, total recoverable hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAH), benzene, toluene, ethylbenzene, xylenes, and naphthalene (BTEXN), organochlorine pesticides (OCP), organophosphate pesticides (OPP), polychlorinated biphenyls (PCB), phenols and asbestos.
- Groundwater – the eight priority, dissolved heavy metals (HMs): *arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc*, total recoverable hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAH), benzene, toluene, ethylbenzene, xylenes, and naphthalene (BTEXN), organochlorine pesticides (OCP), organophosphate pesticides (OPP), polychlorinated biphenyls (PCB), phenols, anions and cations.

6.3. Source – Pathway – Receptor Linkages

A summary of potential source – pathway – receptor linkages identified for the site and proposed redevelopment is presented in **Table 6-1**.

Table 6-1 Summary of Source – Pathway – Receptor Linkages for the Site

AEC	Potential Sources	Impacted Media	Contaminants of Potential Concern	Transport mechanism	Exposure pathway	Potential receptor
AEC01	Placement of imported filling for levelling purposes Weathering of building structures Uncontrolled demolition Historic pesticide use	Soil & Groundwater	HM, TRH, PAH, PCB, OCP, OPP, BTEXN, Phenols, asbestos.	Disturbance of surface and subsurface soils during site redevelopment, future site maintenance and future use of the site post-redevelopment	Ingestion Dermal contact Inhalation of dust particulates Mechanical transport	Construction and maintenance workers End users of the site post-redevelopment Downstream end users of groundwater, including potential recreational and drinking water uses
				Atmospheric dispersion from soil to outdoor and indoor air spaces	Ingestion Inhalation dust particulates	
			F1 and F2 TRH, BTEXN	Volatilisation of contamination from soil and diffusion to indoor air spaces	Inhalation of vapours from impacted soil	
			HM, TRH, PAH, OCP, BTEXN	Plant uptake of contamination present in root zone	Biota uptake	Future ecological receptors (e.g. site vegetation in landscaped areas post redevelopment)

7. Sampling and Analysis Quality Plan (SAQP)

7.1. Data Quality Objectives

NEPC (2013b) *Schedule B(2) Guideline on Site Characterisation* and EPA (2017) *Guidelines for the NSW Site Auditor Scheme* provide guidance on the development of data quality objectives (DQO) using a seven-step process. The DQO developed for the project are set out in **Table 7-1**.

Table 7-1 Data Quality Objectives

Step		Commentary
1.	State the Problem	The first step involves summarising the contamination problem that requires new environmental data and identifying resources available to solve the problem. ▪ The objectives of this project are to: ▪ Assess the potential for contamination to be present on the site as a result of past and current land use activities; ▪ Provide advice on whether the site would be suitable (in the context of land contamination) for the proposed land use setting; and ▪ Provide recommendations for further investigation, management and/or remediation (if warranted). The project is being undertaken because: ▪ The site is being considered for redevelopment, comprising include demolition of current structures, and construction of a five (5) storey apartment complex, a combination of basement and on on-ground carparking, an administration office and a community hall facility; and ▪ A contamination assessment of the site is required in accordance with SEPP55. The project team identified for this project consists of suitably experienced environmental consultants from AG. The regulatory authorities identified for this project include NSW EPA and Council.
2.	Identify the Decision / Goals of the Study	The second step involves identifying decisions that need to be made about the contamination problem and the new environmental data required to make them. The decisions that need to be made during this project include: ▪ Is the environmental data collected for the project, suitable for assessing relevant land contamination exposure risks? ▪ Do the concentrations of identified contaminants of potential concern (COPC) present an unacceptable exposure risk to identified receptors, for the proposed land use setting? ▪ Is the site suitable for the proposed land use setting, in the context of land contamination?
3.	Identify the Information Inputs	The third step involves identifying the information needed to support decisions and whether new environmental data will be needed. The inputs required to make the decisions set out in will include: ▪ Proposed land use and layout of the development; ▪ Information gathered via the site history review; ▪ The CSM developed for the site; ▪ The nature and extent of sampling at the site, including both density and distribution; ▪ Sampling of relevant site media; ▪ The measured physical and/or chemical parameters of the site media samples (including field screening and laboratory analysis, where relevant); and ▪ Assessment criteria adopted for the media sampled.

Step	Commentary
4. Define the Study Boundaries	The fourth step involves specifying the spatial and temporal aspects of the environmental media that the data must represent to support decisions. The spatial extent of the project will be limited to the subject investigation area as defined by its boundaries (refer **Figure 2**). The temporal boundaries of the project include: ▪ The project timeframe presented in the AG proposal for this project, ▪ Unacceptable weather conditions at the time of undertaking fieldwork, including rainfall, cold and/or heat; and ▪ Access availability to the site (to be defined by the site owner/representative). Constraints which may affect the carrying out of this project may include access limitations, presence of above and below ground infrastructure, and hazards creating health and safety risks.
5. Develop the Analytical Approach (or Decision Rules)	The fifth step involves defining the parameter of interest, specifying the action level, and integrating information from Steps 1 to 4 into a single statement that gives a logical basis for choosing between alternative actions. **Quality Assurance / Quality Control (QA/QC)** The analytical laboratory QA/QC program will typically include laboratory method blank samples, matrix spike samples, surrogate spike samples, laboratory control samples, and laboratory duplicate samples. **If / Then Decision Rules** AG has adopted the following *'if / then'* decision rules for this project: ▪ If the result of the assessment of field and laboratory analytical data is considered acceptable, then that field data and laboratory analytical data will be considered suitable for interpretation (within the scope of this project); and ▪ If field and laboratory analytical data is within the constraints of the assessment criteria adopted for this project (refer **Section 7.3**), then the contamination exposure risks to identified receptors, are considered acceptable. In the event field and/or laboratory analytical data is considered not to be suitable for interpretation purposes, then a decision regarding collection additional data will be required. In the event that field data and/or laboratory analytical data exceed adopted assessment criteria, an assessment of the exceedance in the context of the project objectives will be completed to establish if additional data, management, and/or remediation is required.

Step	Commentary
6. Specify the Performance or Acceptance Criteria	The sixth step involves specifying the decision maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data. When assessing contaminated land, there are generally two types of errors in decision making: ▪ Contamination exposure risks for a specific land use setting are acceptable, when they are not; and ▪ Contamination exposure risks for a specific land use setting are not acceptable, when they are. the risk of decision error(s) will be mitigated by: ▪ Calculation of the 95% upper confidence limit (UCL) statistic to assess the mean concentration of relevant COPC; ▪ Assignment of fieldwork tasks to suitably experienced AG consulting staff, and suitably experienced contractors; ▪ Assignment of laboratory analytical tasks to reputable NATA accredited analytical laboratories; and ▪ Assignment of data interpretation tasks to suitably experienced AG consulting staff, and outsourcing to technical experts where required. AG will also adopt a range of data quality indicators (DQI) to facilitate assessment of the completeness, comparability, representativeness, precision and accuracy (bias), as presented in **Table 7-2**.
7. Develop the Plan for Obtaining Data	The seventh step involves identifying the most resource effective sampling and analysis design for generating the data that is required to satisfy the DQOs. The Sampling, Analysis and Quality (SAQP) for this investigation encompasses **Section 7**.

7.2. Data Quality Indicators

Data Quality Indicators adopted for the project are summarised below in **Table 7-2**.

Table 7-2 Data Quality Indicators

Completeness			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Critical locations sampled	Refer **Section 7.4**	Critical samples analysed according to DQO	Refer **Section 7.5**
Critical samples collected	Refer **Section 7.4**	Analytes analysed according to DQO	Refer **Section 7.5**
SOPs appropriate and complied with	100%	Appropriate laboratory analytical methods and LORs	Refer **Section 7.5**
Field documentation complete	All sampling point logs, calibration logs and chain of custody forms	Sample documentation complete	All sample receipt advices, all certificates of analysis
-	-	Sample extraction and holding times complied with	Refer **Section 7.5**

Comparability			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Same SOPs used on each occasion	100%	Same analytical methods used by primary laboratory	Refer **Section 7.5**
Climatic conditions	Samples stored in insulated containers with ice, immediately after collection	Same LORs at primary laboratory	Refer **Section 7.5**
Same types of samples collected, and handled/preserved in same manner	All soil samples same size, all stored in insulated containers with ice	Same laboratory for primary sample analysis	All primary samples to Eurofins | mgt
-	-	Same analytical measurement units	Refer **Section 7.5**
Representativeness			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Appropriate media sampled according to DQO	Refer **Section 7.5**	Samples analysed according to DQO	Refer **Section 7.5**
Media identified in DQO sampled	Refer **Section 7.5**		
Precision			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Field duplicate / triplicate RPD	Minimum 5% duplicates and triplicates No limit for analytical results <10 times LOR 50% for analytical results 10-20 times LOR 30% for analytical results >10 times LOR	Laboratory duplicates	No exceedances of laboratory acceptance criteria
SOPs appropriate and complied with	100%		

Accuracy (bias)			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Field trip spikes	Recoveries between 60% and 140%	Matrix spike recovery	No exceedances of laboratory acceptance criteria
Field trip blanks	Analyte concentration <LOR	Surrogate spike recovery	No exceedances of laboratory acceptance criteria

7.3. Investigation Criteria

Taking into consideration the objectives of this project, and the conceptual site model and land use setting presented in **Section 6** of this project, the following soil investigation criteria relevant to the proposed land use setting have been adopted for this project:

Table 7-3 Tier 1 Soil Investigation Criteria

Human Health Criteria	▪ Human health direct contact – HILs in Table 1A (1) in NEPM ASC 2013 and HSLs in Table B4 of Friebel, E & Nadebaum, P (2011). ▪ Human health inhalation/vapour intrusion – HSLs in Table 1 (A) in NEPM ASC 2013. ▪ Human health (asbestos) – absence / presence for preliminary screening, and no visible ACM on surface.
Ecological Criteria	Ecological Investigation and Screening Levels as calculated as per NEPM ASC 2013 Table 1 (B) 1-6. EIL criteria for benzo(α)pyrene (urban residential and public open space) derived from CRC CARE (2017)
Management Limits	Petroleum hydrocarbon compounds (management limits) – Table 1 B (7) of NEPM ASC 2013
Aesthetics	Aesthetics – no highly malodorous site media (e.g. strong residual petroleum hydrocarbon odours, hydrogen sulfide in site media, organosulfur compounds), no hydrocarbon sheen on surface water, no discoloured chemical deposits or soil staining with chemical waste other than of a very minor nature, no large monolithic deposits of otherwise low risk material (e.g. gypsum as powder or plasterboard, cement kiln dust), no presence of putrescible refuse including material that may generate hazardous levels of methane such as a deep-fill profile of green waste or large quantities of timber waste, and no soils containing residue from animal burial (e.g. former abattoir sites).

7.4. Soil Investigation

The methodology employed during the intrusive soil investigation is outlined below in **Table 7-4**. Sampling locations utilised for the investigation are present in **Figure 4**.

Table 7-4 Soil Investigation Methodology

Sampling Rationale	The sampling rationale developed for the soil investigation was based upon the findings of the desktop investigation, site walkover, CSM, and the DQO developed. Based upon this approach the following rationale was adopted: ▪ Based on the size of the site, a program of systematic soil sampling from twenty-one (21) sample locations, as well as groundwater sampling in three locations, in accordance with the minimum sampling requirements of NSW EPA (1995) *Sampling Design Guidelines*, was adopted for site characterisation purposes; ▪ A combination of test pit excavations (13 locations) and soil bores (8 locations) was used to assist with the description and characterisation of fill soils. Where possible, extension of test pits at least 0.5 m in to natural soils to evaluate potential contamination of natural soils from overlying fill; and ▪ Collection of discrete soil samples from the ground surface, fill soils, and at 0.5 m intervals or soil strata changes.
Intrusive Investigation Method	Site works were performed on 1 & 2 June 2020. Test pit and hand augured borehole locations (TP01-TP21) were excavated using a 5t excavator and hand tools, and extended to natural soil where possible. Final test pit depths ranged between 1.1 mBGL and 1.8 mBGL.
Soil Logging and Field Observations	Soils and site lithology were described in the field, with soil classifications and descriptions based on the Unified Soil Classification System (USCS) and Australian Standard AS 1726 – 1993 *Geotechnical site investigations.* Soils were also evaluated qualitatively for odour, visual evidence of contamination, and anthropogenic inclusions. Soil log descriptions and field observations are summarised in **Section 9** and presented on test pit logs provided in **Appendix F**.
Soil Sampling	▪ Soil samples were collected by grab method (unused, dedicated nitrile gloves) and placed into laboratory supplied, acid washed, solvent rinsed, glass jars. ▪ Blind field duplicates collected were separated from primary samples and placed into glass jars. ▪ A small sub-sample from each sample was collected and placed into a zip-lock bag for soil vapour screening. ▪ A small sub-sample was collected from each fill sample and placed into a zip-lock bag for asbestos analysis.
Soil Vapour Screening	A photo-ionisation detector (PID), fitted with a 10.9 eV lamp, was used to screen each discrete soil sample for the presence of potential volatile organic compounds. Soil vapour screening results were also utilised for the selection of samples for laboratory analysis.
Decontamination	Dedicated nitrile gloves were used for the collection of each soil sample. As soil samples were collected directly from the centre of the excavator bucket, decontamination procedures were not required.

Soil Sample Identification, Storage, and Handling	Sampling containers were labelled with site specific nomenclature, including project number, sample location, sampling depth, date, and sampler initials. Samples were stored in a refrigerated (ice-brick) cooler box and transported to Eurofins | Mgt, a NATA accredited analytical laboratory, with an accompanying Chain of Custody (COC) document and laboratory supplied security seals. All samples were submitted and analysed within required holding times, using appropriate laboratory analytical methods. Inter-laboratory duplicate samples were transported to Australian Laboratory Services (ALS), a NATA accredited analytical laboratory, for QA/QC analytical purposes. A Sample Receipt Advice was provided by each laboratory, documenting sample conditions upon receipt. Copies of COC and Sample Receipt Advice (SRA) documents are presented in **Appendix G**.
Quality Assurance / Quality Control	Collection and analysis of quality assurance/quality control (QA/QC) samples was completed in accordance with NEPC (2013) requirements.
Laboratory Analysis	The laboratory analytical suite, holding times, analytical methods and limits of reporting (LOR) used for this project, are presented in **Section 7.5**.

7.5. Groundwater Investigation

The methodology employed during the groundwater investigation is outlined below in **Table 7.5** Sampling locations utilised for the investigation are present in **Figure 4.**

Table 7.5 Groundwater Investigation Methodology

Sampling Rationale	The sampling rationale developed for the groundwater investigation was based upon the findings of the desktop investigation, site walkover, CSM, DQO developed and site auditor's recommendation. Based upon this approach the following scope of works was adopted: ▪ A program of groundwater sampling from three (3) well locations for site characterisation purposes. ▪ Extension of groundwater wells to a target depth of 3.5m or 2m below inferred standing water level or practical refusal, whichever occurs first. All wells located onsite are shown in **Figure 4.**
Fieldworks	Groundwater monitoring wells were installed and developed on 3 June 2020, with water-level gauging, purging, field testing, and sampling performed on 11 June 2020.
Monitoring Well Construction	Three groundwater monitoring well were constructed: ▪ GMW01 – 3.44m depth and hydraulically down-gradient; ▪ GMW03 – 3.52m depth and hydraulically down-gradient; ▪ GMW04 – 3.05m depth and hydraulically up-gradient. Groundwater monitoring wells were drilled by Stratacore Drilling using a geoprobe drilling rig. Screening intervals of 2.5 m used for screening the unconfined sand aquifer, with the upper 1 m of screen positioned above the water table to identify possible LNAPL presence.

	Monitoring well construction was conducted in general accordance with the standards described in NUDLC (2012): ▪ 50 mm, Class 18 uPVC, threaded, machine-slotted screen and casing, with slotted intervals set to screen at least 500 mm above standing water-level to allow for the identification and sampling of Light Non-aqueous Phase Liquid, if present. ▪ Base and top of each well was sealed with a uPVC cap and torque plug, respectively. ▪ Annular, graded sand filter installed to approximately 300 mm above the top of the machine slotted screen. ▪ Granular bentonite (minimum 500 mm) was applied above the annular filter to seal the screen interval. ▪ Drill cuttings were used to backfill the bore annulus to just below ground level. ▪ Surface completion comprised of a standpipe, set in concrete protruding above the ground surface.
Monitoring Well Development	Each monitoring well was developed following installation on 3 June 2020. Development involved agitation and removal of water and accumulated sediment using a Waterra foot valve hand pump. Pumping continued until no further reduction in suspended sediment was observed. All water and sediment generated as a result of well development was collected into a 200L lockable steel drum and retained onsite pending laboratory analytical results.
Well Survey	The surface elevation of each well and standpipe was extrapolated from spot height elevations surveyed by a licensed surveyor. Well elevations were recorded in metres relative to Australian Height Datum (m AHD).
Well Gauging and Groundwater Flow Direction	Monitoring wells were gauged for standing water level (SWL – depth to groundwater) and LNAPL using an Interface Probe prior to the commencement of purging and the groundwater monitoring event on 11 June 2020. SWL for each monitoring well is presented in within the logs.
Purging, Field Testing and Groundwater Sampling	Volatile organic odours were not detected during any stage of well purging. The monitoring well was then sampled using low-flow/minimal drawdown sampling method with a Peristaltic Pump. The Peristaltic Pump system incorporates a low density poly-ethylene (LDPE) pump bladder, and a Teflon-lined LDPE sample delivery tube. Pump pressure and pumping cycles were adjusted accordingly to regulate extraction flow rate, to avoid causing any drawdown of water level during the sampling process. Field measurements for Dissolved Oxygen (DO), Electrical Conductivity (EC) and pH of the sampled water were conducted using an attached water quality meter (WQM Professional Plus). Samples were taken when the readings of all parameters were stabilised within the acceptance range, and the readings at time of sampling, along with the total purged volume were recorded onto field data sheets.
Decontamination	Dedicated nitrile gloves were used at each monitoring well location. All sampling containers were supplied by the laboratory and only opened immediately prior to sample collection. Water-level probe and micro-purge kit (groundwater sampling equipment) were decontaminated between monitoring well locations by washing in a solution of Decon 90 and potable water, followed by rinsing with potable water. The water quality meter probe was also rinsed with potable water between locations.

Water Sample Identification, Storage, and Handling	Sample identification was based on sampling point number, and date the sample was collected. Samples were stored in a refrigerated (ice-brick) cooler box and transported to the relevant analytical laboratory, with chain of custody (COC) documentation that includes the following information: ▪ AG project identification number; ▪ Each sample identifier; ▪ Date each sample was collected; ▪ Sample type (e.g. soil or water); ▪ Container type/s for each sample collected; ▪ Preservation method used for each sample (e.g. ice); ▪ Analytical requirements for each sample and turnaround times; and ▪ Date and time of dispatch and receipt of samples (including signatures).
Quality Assurance / Quality Control	All groundwater samples were submitted for analysis of previously-identified COPC by eurofins | mgt. QA/QC testing comprised intra-laboratory duplicates ('field duplicates') tested blind by eurofins | mgt and an inter-laboratory field duplicate tested blind by ALS. All samples were transported under strict Chain-of-Custody (COC) conditions and COC certificates and laboratory sample receipt documentation were provided to AG for confirmation purposes.
Laboratory Analysis	A Sample Receipt Advice (SRA) was provided by each laboratory to document sample condition upon receipt. The laboratory holding times, analytical methods and limits of reporting (LOR) being used for this project, are presented in **Appendix G.**

7.6. Laboratory Analysis and Sample Analytical Suite

All soil samples were forwarded to NATA accredited laboratories for analysis of the analytes listed below. Eurofins | Mgt was used for the analysis of primary samples and Australian Laboratory Services (ALS) for the analysis of inter-laboratory samples.

The samples collected were transported to the analytical laboratory, using chain of custody (COC) protocols. A selection of these samples was scheduled for analysis, with reference to the relevant COPC identified for the AEC that the samples were collected from.

All soil samples were forwarded to the NATA accredited laboratory for analysis of the analytes listed below. Eurofins | Mgt were used for the analysis of primary samples and SGS for the analysis of interlaboratory samples.

Table 7-**6** details the analysis undertaken for soil and water samples.

Table 7-6 Soil Analytical Schedule

Sample ID	TRH	BTEX	PAH	Metals*	OCP / OPP	PCBs	Phenols	Asbestos NEMP	Asbestos ID
TP01-0.0-0.2, TP02-0.0-0.2, TP03-0.0-0.2, TP04-0.0-0.2, TP05-0.0-0.2, TP06-0.0-0.2, TP07-0.0-0.2, TP08-0.0-0.2, TP09-0.0-0.2, TP09-1.2-1.4, TP10-0.0-0.2, TP11-0.0-0.2, TP12-0.1-0.3, TP13-0.1-0.3, TP14-0.0-0.2, TP15-0.0-0.2, TP16-0.1-0.3, TP17-0.1-0.3, TP18-0.1-0.3, TP19-0.0-0.2, TP20-0.1-0.3, TP21-0.1-0.3	X	X	X	X	X	X	X	X	
TP01-0.8-1.0, TP03-0.8-1.0, TP04-1.0-1.2, TP05-1.0-1.2, TP06-0.2-0.4, TP06-0.9-1.1, TP07-0.2-0.4, TP07-1.3-1.5, TP10-0.4-0.6, TP15-1.0-1.2, TP17-0.9-1.1, TP19-1.0-1.1, TP21-0.7-0.9	X	X	X	X				X	
TP18-FCS01									X
GMW01, GMW03, GMW04	X	X	X	X	X	X	X		
DUP01, DUP01A, DUP02, DUP02A, DUP03, DUP03A, DUP01(W), DUP01A(W)				X					

Sample ID	TRH	BTEX	PAH	Metals*	OCP / OPP	PCBs	Phenols	Asbestos NEMP	Asbestos ID
TRIP BLANK/SPIKE		X							
RIN-1				X					

Notes:

*Metals: As, Cd, Cr, Cu, Hg, Ni, Pb, Zn

Analytical laboratory certificates of analysis, are presented in **Appendix G** and sample analytical results are tabulated and presented in the attached **Table LAR1 and LAR2**.

The laboratory holding times, analytical methods and limits of reporting (LOR) being used for this project, are presented in

Table 7-6.

Table 7-6 Laboratory Holding Times, Analytical Methods and Limits of Reporting

Analyte	Holding Time	Analytical Method	Limit of Reporting
BTEX and TRH C_6-C_{10}	14 days	USEPA 5030, 8260B and 8020	0.2-0.5(mg/kg), 1-2 and 50(µg/L)
TRH >C_{10}-C_{40}	14 days	USEPA 8015B & C	20-100(mg/kg), 50-500(µg/L)
VOC	14 days	USEPA 8260	0.1-0.5(mg/kg), 0.001-0.001(µg/L)
SVOC	14 days	USEPA 8270, NEPM Schedule B3	0.05-0.1(µg/L)
VCH	14 days	USEPA 8260	0.001(µg/L)
SVCH	14 days	USEPA 8121, 8270, NEPM Schedule B3	0.005(µg/L)
Phenols	14 days	USEPA 8270, NEPM Schedule B3	0.002-0.01(µg/L)
PAH	14 days	USEPA 8270	0.1-0.5(mg/kg), 0.5-10(µg/L)
OCP/OPP	14 days	USEPA 8081	0.2(mg/kg)
PCB	28 days	USEPA 8270	0.2(mg/kg)
Metals (ex. Hg & Cr^{VI})	6 months	USEPA 8015B & C	0.05 – 2(mg/kg), 0.1-5(µg/L)

Analyte	Holding Time	Analytical Method	Limit of Reporting
pH	On receipt	APHA 4500 pH	0.1 pH unit
Asbestos	No limit	Inhouse Method	0.001% w/w
Asbestos	No limit	AS4964:2004	Absence / presence

8. Data Quality Assessment

An assessment of the completeness of data collected was undertaken, and the results presented in **Appendix H**.

It is concluded that the data collected is adequately accurate and within the objectives and constraints of the project.

9. Results and Site Characterisation

9.1. Soil

9.1.1. Site Geology

Observations of soils encountered during sampling work were described and recorded on test pit logs. A copy of these test pit logs is presented in **Appendix F**.

Soil profiles observed and described typically consist of a sand and clay fill, overlying residual sand. Anthropogenic materials were observed within the fill profile at some test pit locations, with inclusions comprising of brick and road base, as well as some potential asbestos containing materials (PACM). Test pits advance into natural soils at each test pit location, where practical.

Test pits were predominantly advanced into natural soils where feasible at each test pit location.

9.1.2. Field Observations

Field Observation compiled during the intrusive investigation are summarised below:

- Olfactory evidence of contamination was not detected in any of the soil samples collected.
- Visual evidence of contamination in the soil samples collected was not detected.
- Visual evidence of potential asbestos containing materials (PACM) observed within the fill materials at TP18.
- PID screening results collected during sampling did not identify elevated levels of VOCs.

Results summary tables for soil and groundwater sampling conducted during this fieldwork event are included in **Tables LAR 1**, and **LAR 2**.

9.1.3. Soil Analytical Laboratory Results

Human Health - Direct Contact (HIL A – Residential A)

TRH

The concentrations of TRH C_6-C_{10}, >C_{10}-C_{16}, >C_{16}-C_{34} and >C_{34}-C_{40} detected in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria.

Further assessment is not deemed required.

BTEX

The concentrations of benzene, toluene, ethyl benzene and xylenes detected in the soil samples analysed, were less than the Laboratory reporting limit and the applicable adopted direct contact human health exposure criteria.

Further assessment is not deemed required.

PAH

The concentrations of PAHs detected in the soil samples analysed, were less than the Laboratory reporting limit and the applicable adopted direct contact human health exposure criteria.

Further assessment is not deemed required.

OCP

The concentration of relevant OCP compounds detected in the soil samples analysed, were less than the Laboratory reporting limit and the applicable adopted direct contact human health exposure criteria.

Further assessment is not deemed required.

OPP

The concentration of relevant OPP compounds detected in the soil samples analysed, were less than the Laboratory reporting limit and the applicable adopted direct contact human health exposure criteria.

PCB

The concentration of relevant PCB compounds detected in the soil samples analysed, were less than the Laboratory reporting limit and the applicable adopted direct contact human health exposure criteria.

Further assessment is not deemed required

Metals

The concentrations of arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury detected in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria.

Further assessment is not deemed required

Asbestos

PACM was visually identified during the collection of soil samples from within the in-situ fill material at TP04 and TP18. Two suspected ACM fragments (TP04-0.0-0.2 & TP18-FRAG-01) was collected and analysed by the laboratory and confirmed to contain asbestos.

Asbestos fines/Friable asbestos (AF/FA) was detected above the adopted direct contact human health exposure criteria in soil sample TP19-0.0-0.2. AG considers that further investigation/ management of the identified onsite asbestos risk is deemed required as the concentrations detected may pose a risk to human health.

Human Health – Inhalation / Vapour Intrusion (Residential)

TRH

The concentrations of TRH C_6-C_{10} (minus BTEX) and >C_{10}-C_{16} (minus naphthalene) detected in the soil samples analysed, were less than the applicable adopted inhalation / vapour intrusion human health exposure criteria.

Further assessment is not deemed required.

BTEX

The concentrations of benzene, toluene, ethyl benzene and xylenes detected in the soil samples analysed, were less than the applicable adopted inhalation / vapour intrusion human health exposure criteria.

Further assessment is not deemed required.

PAH

The concentrations of naphthalene detected in the soil samples analysed, were less than the applicable adopted inhalation / vapour intrusion human health exposure criteria.

Further assessment is not deemed required.

TPH Management Limits (Residential)

The concentrations of TRH C_6-C_{10}, >C_{10}-C_{16}, >C_{16}-C_{34} and >C_{34}-C_{40} detected in the soil samples analysed, were less than the applicable adopted TRH management limits or less than laboratory limits of reporting.

Further assessment is not deemed required.

Aesthetics

There was some visual evidence of foreign materials within the soil profile on site in certain areas, including brick, road base and potential asbestos containing materials in the form of fibrous cement sheeting. The aesthetics assessment criteria adopted for this project, indicate that further assessment/management is required due to asbestos containing materials throughout the site surface and fill.

Ecological Health - Terrestrial Ecosystems

Ecological Investigation Levels (EILs)

Site specific EILs were calculated for Chromium III, Copper, Nickel and Zinc using fill soil samples collected across the site from test pits TP02-0.0-0.2, TP06-0.2-0.4 & TP10-1.2-1.4. Results obtained from these samples were entered into the NEPM ASC 2013 EIL Calculator to generate site specific EILs and the results are shown below in **Table 9.1** and **Table 9.2**:

Table 9.1 Laboratory Result used for Site Specific Derivations of ACLs

Analyte / Sample ID	TP02-0.0-0.2 (mg/kg)	TP06-0.2-0.4 (mg/kg)	TP10-1.2-1.4 (mg/kg)
% Clay (estimated)	Approx. 20%	Approx. 30%	Approx. 10%
% Moisture	9.5	12	19
Conductivity	58	12	19
pH	6.8	5.7	5.1

The site average value was considered appropriate to be adopted as the adopted site specific EIL criteria for the assessment of Cr^{III}, Cu, Ni and Zinc across the site.

Table 9.2 Site EILs Derived from NEPM ASC 2013 EIL Calculator

Analyte/ Sample ID	TP02-0.0-0.2 (mg/kg)	TP06-0.2-0.4 (mg/kg)	TP10-1.2-1.4 (mg/kg)	Adopted site criteria (mg/kg)
Chromium III (Cr^{iii})	510	580	410	500
Copper (Cu)	220	110	50	127
Nickel (Ni)	210	35	8	84
Zinc (Zn)	600	280	150	343

In accordance with the NEPCM ASC 2013 guidelines, the detected concentrations of zinc in fill sample TP18-0.1-0.3 analysed, were subjected to a statistical analysis using ProUCL 5.1.002 by analysing 35 samples of similar fill profile across the entire site. The maximum value of the data set was 430mg/kg, the standard deviation of the data set was 73.4 and the 95% upper confidence limit was 60.64mg/kg, which is lower than the site adopted criteria for Zinc. A copy of the copper ProUCL output is presented in **Appendix E**

As such, in light of the inclusion of site-specific criteria, AG considers that further assessment of EILs are not required.

Ecological Screening Levels (ESLs)

The concentrations of all analytes detected in the soil samples analysed were less than the applicable adopted site criteria for the site ESLs.

As such, AG considers that further assessment of ESLs is not required.

Phenols

Although there are no criteria for phenols, a judgemental approach with reference to pragmatic background levels was taken to assessing the analytical results.

As all phenols reported analytical results less than the reporting limit, AG considers that further assessment of phenols is not deemed required.

9.1.4. Soil Characterisation

The findings of the detailed site investigation indicate that identified contaminants of potential concern are at concentrations above the adopted residential human health criteria. The results of the investigation indicate that sources of soil contamination at the site are attributed to historic demolition and placement of fill soils.

Asbestos, present as bonded cement-fibre sheeting fragments, was identified in fill soil at two sampling points, TP04 and TP18. Given the distribution of bonded cement-fibre sheeting fragments, localised to adjacent areas to the sampling points, the source of this contamination is potentially related to historic demolition practices at the site, though fill as a potential source cannot be discounted. Friable asbestos or asbestos fines were not identified in samples from the same sample point locations, however, onsite restrictions meant a quantitative approach could not used to estimate asbestos fragments in soil.

The investigation indicates soil contamination associated with the historical contamination sources, and also confirms the validity of the CSM developed for the investigation, which identified probable contamination sources and associated contaminants of potential concern. AG considers that the asbestos impacts (specifically the FA) at the site have not been adequately characterised and as such, further investigation in order to laterally delineate asbestos in the hotspot area surrounding TP19 & TP19.

9.2. Groundwater

9.2.1. Groundwater Monitoring Well Installation

Details of groundwater monitoring well construction are summarised below in **Table 9.3**. Monitoring well construction details are also presented diagrammatically on concomitant borehole logs in **Appendix F**.

Table 9.3 Summary of Groundwater Monitoring Well Installation

Monitoring Well	Surface Level (mAHD) [1]	Top of Casing (mBGL)	Depth of Well (mBGL)	Screening Interval (mBGL)	Lithology Screened
GWM01	1.20	1.13	3.5	2.5	Fill, Clayey Sand
GWM03	2.01	1.94	3.5	2.5	Fill, Sand, Clayey Sand
GWM04	2.02	1.95	3.2	2.5	Fill, Clayey Sand

Notes:

[1] surface elevation was estimated from a site survey provided by the client.

9.2.2. Calculated Groundwater Flow Direction

Given the surface elevations of the land and nearby creek, groundwater is inferred to flow in a north westerly direction. Survey on the monitoring wells was not undertaken.

9.2.3. Groundwater Parameters

Data collected during the completion of the GME, including standing water levels, volume purged, final water quality parameters, and other observations, is summarised below in **Table 9.4**.

Table 9.4 Summary of Groundwater Parameters

MW	SWL (mBGL)	SWL (mAHD)	Vol. Purged (L)	DO	pH	EC	mV	Temp.	Observations
GMW01	0.42	-	0.6	0.09	6.38	3888	-70.4	19.2	Brown, slightly turbid, no sheen, no odour
GMW03	2.34	-	0.3	0.44	5.87	327.7	6.4	18.9	Clear, not turbid, no sheen, no odour
GMW04	2.35	-	0.2	0.84	5.97	4970	5.9	18.8	Clear, not turbid, no sheen, no odour

Notes:

MW – Monitoring well

SWL – Standing water level (as mBGL and mAHD)

DO – Dissolved Oxygen

EC – Electrical Conductivity

mV – Millivolts

9.2.4. Groundwater Analytical Laboratory Results

Heavy Metals

Laboratory analytical results for groundwater samples analysed were compared to the relevant marine water quality guidelines in ANZECC & ARMCANZ (2000), as well as relevant NEPM ASC (2013) HSLs for vapour intrusion and health drinking water guidelines, and NHMRC (2008) Aesthetics criteria for groundwater. The concentrations of the contaminants of potential concern analysed were less than the applicable ANZECC & ARMCANZ (2000) trigger values (95% species protection level), with the exception of the following:

- GMW1 for Lead (13 ug/L) & Zinc (3,200 ug/L);
- GMW3 for Lead (31 ug/L) & Zinc (110 ug/L);
- GMW4 for Lead (20 ug/L) & Zinc (140 ug/L);
- DUP01 for Lead (18 ug/L) & Zinc (790 ug/L); and
- DUP01A for Zinc (720 ug/L).

Similarly, the concentrations of the contaminants of potential concern analysed were less than the applicable NHMRC (2008) Aesthetics criteria, with the exception of the following:

- GMW3 for Nickel (21 ug/L); and

- GMW4 for Nickel (27 ug/L).

Given the analytical exceedances observed, AG consider that as the contaminant concentrations detected are not within the same order of magnitude as groundwater migrates across the site.

Further assessment of heavy metals within groundwater across the site is deemed required.

TRH/ BTEX

Concentration of TRH and BTEX were less than the laboratory reporting limit and the applicable ANZECC & ARMCANZ (2000), as well as relevant NEPM ASC (2013) HSLs for vapour intrusion and health drinking water guidelines, and NHMRC (2008) Aesthetics criteria for groundwater in all the samples analysed.

Further assessment is not deemed required.

Phenols (Halogenated and Non-Halogenated)

Concentration of Phenols were less than the laboratory reporting limit and the applicable ANZECC & ARMCANZ (2000), as well as relevant NEPM ASC (2013) HSLs for vapour intrusion and health drinking water guidelines, and NHMRC (2008) Aesthetics criteria for groundwater in all the samples analysed.

Further assessment is not deemed required.

PAHs

Concentration of relevant PAHs were below laboratory detection limit and the applicable ANZECC & ARMCANZ (2000), as well as relevant NEPM ASC (2013) HSLs for vapour intrusion and health drinking water guidelines, and NHMRC (2008) Aesthetics criteria for groundwater in all the samples analysed.

Further assessment is not deemed required.

OCP

The concentration of relevant OCP compounds were below laboratory detection limit and the applicable ANZECC & ARMCANZ (2000), as well as relevant NEPM ASC (2013) HSLs for vapour intrusion and health drinking water guidelines, and NHMRC (2008) Aesthetics criteria for groundwater in all the samples analysed.

Further assessment is not deemed required.

OPP

The concentration of relevant OPP compounds were below laboratory detection limit and the applicable ANZECC & ARMCANZ (2000), as well as relevant NEPM ASC (2013) HSLs for vapour intrusion and health drinking water guidelines, and NHMRC (2008) Aesthetics criteria for groundwater in all the samples analysed.

Further assessment is not deemed required.

PCB

The concentration of relevant PCB compounds were below laboratory detection limit and the applicable ANZECC & ARMCANZ (2000), as well as relevant NEPM ASC (2013) HSLs for vapour intrusion and health drinking water guidelines, and NHMRC (2008) Aesthetics criteria for groundwater in all the samples analysed.

Further assessment is not deemed required.

9.2.5. Groundwater Characterisation

Based on the historic use of the site, and the contamination of groundwater identified during this investigation, the potential for groundwater to pose a risk to end users at the site, as well as recreational groundwater users is considered medium to high. There is, however, an absence of recognised mobile contamination sources on site, and so there is potential for the elevated contaminant levels to be a result of a site anomaly. In light of this, AG consider that the risk of groundwater contamination affecting the end land use of the site to be medium to high, and that further investigation into groundwater quality across the site is deemed required.

9.3. Revised Conceptual Site Model

Following AGs assessment of desktop review information, fieldwork observations and laboratory analytical data, as applicable to the proposed land use, a revised conceptual site model for the site is presented in **Table 9.5** below and **Figure 6.**

Table 9.5 Revised Conceptual Site Model

Area of Environmental Concern	Contaminant of Potential Concern	Media	Potential Receptor	Potential Exposure Pathway	Validated
AEC01	HM, TRH, PAH, PCB, OCP, OPP, BTEXN, Phenols, asbestos	Soil & Water	Site Users and Visitors. Future Construction and maintenance personal.	Direct contact and/or ingestion	No – potentially unacceptable contamination risks detected. Further broken down into AEC02 & AEC03
AEC02	Asbestos	Soil	Construction and maintenance workers End users of the site post-redevelopment	Direct contact and/or ingestion	No – potentially unacceptable contamination risks detected
AEC03	Lead, Zinc & Nickel	Groundwater	Construction and maintenance workers End users of the site post-redevelopment Downstream end users of groundwater	Direct contact and/or ingestion	No – potentially unacceptable contamination risks detected

10. Conclusions and Recommendations

Conclusions

Based on the findings of desktop review information, fieldwork observations and laboratory analytical data, in the context of the proposed redevelopment scenario, AG makes the following conclusions:

- Site history records indicate that the site has been used historically for residential purposes;
- Based on the findings of the site history and land use, the most plausible sources of contamination were associated with historic filling, the weathering of building structures, pesticide use, and demolition of structures;
- Intrusive investigation at the site utilised 21 sampling locations for the description of site soils and collection of soil samples for laboratory analysis;
- A further 3 boreholes across the proposed development portion of the site were advanced, and groundwater wells installed for the description of site groundwater and collection of groundwater samples for laboratory analysis;
- Laboratory analytical results for TRH, BTEXN, PAH, OCP, OPP, PCB, HM, and Phenols reported concentrations below adopted investigation criteria in fill and natural soils;
- Asbestos was reported in soil sample TP19 analysed by the testing laboratory, in the form of friable asbestos;
- Laboratory analytical results for TRH, BTEXN, PAH, OCP, OPP, PCB, Phenols and Cations/Anions reported concentrations below adopted investigation criteria within groundwater; and
- Priority metals were reported at concentrations in groundwater below adopted investigation criteria, except for lead and zinc which exceeded the ANZG 95% protection of Marine Water criteria in GWM1, GWM3, GWM4 & DUP01, zinc in DUP01A, and nickel which exceeded the NEPM ASC health criteria in GWM3 & GWM4.

Recommendations

Based on the above conclusions, from a contamination perspective, the land in its current state is not suitable for the proposed development. The land could potentially made suitable for the proposed residential subdivision subject to the following recommendations being undertaken:

- A remedial action plan (RAP) should be prepared for the site, to address potentially unacceptable friable asbestos in soil related human health exposure risks at the site and nickel, lead and zinc in groundwater related exposure risks;
- The RAP should be prepared by a suitably experience environmental consultant with reference to NSW EPA (2020) and include (but not be limited to) the following:
    - a remedial goal for the site;
    - an assessment of remedial options available to address the identified asbestos risks. These options may include removal offsite, in-situ containment, ex-situ containment, or a combination of these;
    - the proposed testing to validate the site after remediation;
    - a contingency plan to address unexpected finds or if the selected remedial strategy fails; and
    - a site management plan (for the remediation works).
- Consideration should be given to undertaking lateral delineation assessment works around detected asbestos contamination, as well as a more detailed groundwater assessment across

the site, should there be a need to obtain further certainty around the nature and extent of remedial works required. The delineation work could be undertaken

  - prior to preparation of the RAP; or
  - following preparation of the RAP, with a RAP addendum issued incorporating the findings of the delineation assessment;

- Records of the lawful transport and disposal of asbestos containing materials and any other wastes removed from site, should be retained.

This report, including its conclusions and recommendations, must be read in conjunction with the statement of limitations presented in **Section 11**.

11. Statement of Limitations

The findings presented in this report are based on specific searches of relevant, government historical databases and anecdotal information that were made available during the course of this investigation. To the best of our knowledge, these observations represent a reasonable interpretation of the general condition of the site at the time of report completion.

This report has been prepared solely for the use of the client to whom it is addressed and no other party is entitled to rely on its findings.

No warranties are made as to the information provided in this report. All conclusions and recommendations made in this report are of the professional opinions of personnel involved with the project and while normal checking of the accuracy of data has been conducted, any circumstances outside the scope of this report or which are not made known to personnel and which may impact on those opinions is not the responsibility of Alliance Geotechnical Pty Ltd. Should information become available regarding conditions at the site including previously unknown sources of contamination, AG reserves the right to review the report in the context of the additional information.

This report must be reviewed in its entirety and in conjunction with the objectives, scope and terms applicable to AG's engagement. The report must not be used for any purpose other than the purpose specified at the time AG was engaged to prepare the report.

Logs, figures, and drawings are generated for this report based on individual AG consultant interpretations of nominated data, as well as observations made at the time site walkover/s were completed.

Data and/or information presented in this report must not be redrawn for its inclusion in other reports, plans or documents, nor should that data and/or information be separated from this report in any way.

Should additional information that may impact on the findings of this report be encountered or site conditions change, AG reserves the right to review and amend this report.

12. References

AG 2020, 'Sampling and Analytical Quality Plan', 51 Masons Parade, Point Frederick, NSW dated 30 June 2020, ref: 10827-ER-1-1

CRC CARE 2017, *Risk-based management and remediation guidance for benzo(a)pyrene*, CRC CARE Technical Report no. 39, CRC for Contamination Assessment and Remediation of the Environment, Newcastle, Australia.

EnRisks 2016, *Proposed Decision Tree for Prioritising Sites Potentially Contaminated with PFASs*, dated 25 February 2016.

National Environment Protection Council (NEPC) 2013a, *Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater*, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013.

National Environment Protection Council (NEPC) 2013b, *Schedule B(2) Guideline on Site Characterisation*, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013.

NSW EPA 1995, *Contaminated Sites: Sampling Design Guidelines*.

NSW EPA 2017, *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme*.

NSW EPA 2020, *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*.

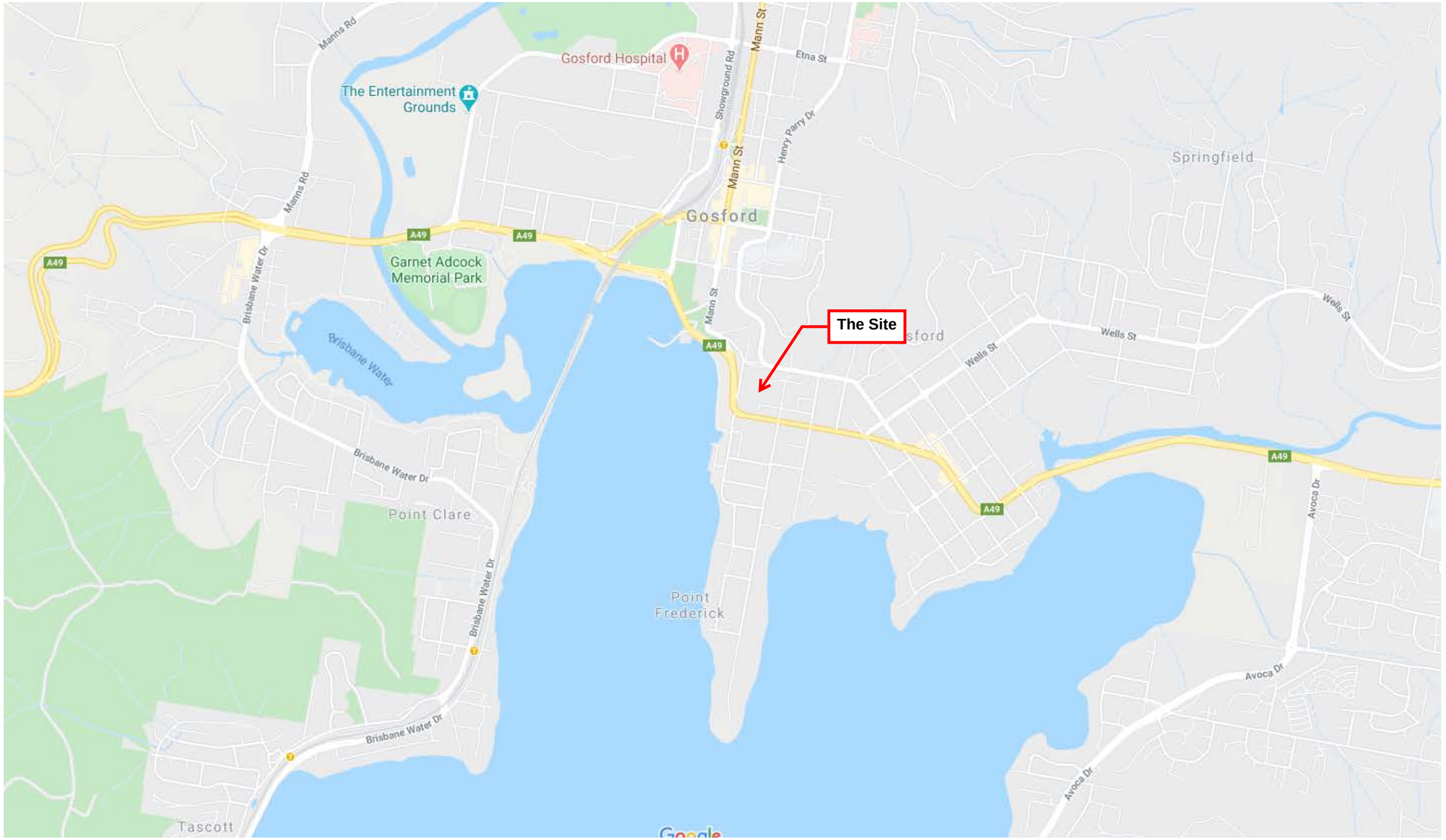
WA DOH 2009, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*, dated May 2009.

13. Abbreviations

ABC	Ambient Background Concentration
ACL	Added Contaminant Limit
ACM	Asbestos Containing Material
AEC	Areas of Environmental Concern
AF	Asbestos Fines
AS	Australian Standard
ASS	Acid Sulfate Soils
B(α)P	Benzo(α)pyrene
BTEXN	Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene
CEC	Cation Exchange Capacity
COC	Chain of Custody
COPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
CRC CARE	Cooperative Research Centre for Contamination Assessment and Remediation of the Environment
DA	Development Application
DCP	Development Control Plan
DNAPL	Dense Non-aqueous Phase Liquid
DO	Dissolved Oxygen
DP	Deposited Plan
DQI	Data Quality Indicators
DQO	Data Quality Objectives
DSI	Detailed Site Investigation
EIL	Ecological Investigation Level
ESL	Ecological Screening Level
F1	TRH C_6-C_{10}
F2	TRH >C_{10}-C_{16}
F3	TRH >C_{16}-C_{34}
F4	TRH >C_{34}-C_{40}
FA	Friable Asbestos
HIL	Health Investigation Levels
HSL	Health Screening Levels
LEP	Local Environmental Plan
LOR	Limit of Reporting

mAHD	Metres Australian Height Datum
mBGL	Metres Below Ground Level
µg/L	Micrograms per litre
mg/kg	Milligrams per kilogram
mg/L	Milligrams per litre
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NEPC	National Environmental Protection Council
NEPM	National Environmental Protection Measure
NL	Not Limiting
NSW DEC	New South Wales Department of Environment and Conservation
NSW OEH	New South Wales Office of Environment and Heritage
NSW EPA	New South Wales Environmental Protection Authority
OCP	Organochlorine Pesticides
OPP	Organophosphorus Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PFAS	Polyfluorinated Alkyl Sulfonate
ppm	Parts per million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance / Quality Control
RAP	Remedial Action Plan
SAQP	Sampling, Analysis, and Quality Plan
SEPP	State Environmental Protection Plan
SRA	Sample Receipt Advice
TEQ	Toxicity Equivalent Quotient
TPH	Total Petroleum Hydrocarbon
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
VOC	Volatile Organic Compounds
WA DOH	Western Australian Department of Health

FIGURES



Alliance Geotechnical ENGINEERING | ENVIRONMENTAL | TESTING Manage the earth, eliminate the risk	Site Locality				
	Client Name:	Grindley Constructions	N	Figure Number:	1
	Project Name:	Detailed Site Investigation		Figure Date:	30 June 2020
	Project Location:	51 Mason Parade, Point Frederick NSW		Report Number:	10827-ER-1-2

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Site Layout

Client Name:	Grindley Constructions	N	Figure Number:	2
Project Name:	Detailed Site Investigation		Figure Date:	30 June 2020
Project Location:	51 Mason Parade, Point Frederick NSW		Report Number:	10827-ER-1-2

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Areas of Environmental Concern

Client Name:	Grindley Constructions	Figure Number:	3
Project Name:	Detailed Site Investigation	Figure Date:	30 June 2020
Project Location:	51 Mason Parade, Point Frederick NSW	Report Number:	10827-ER-1-2

N

Source: NearMap (Nearmap.com)

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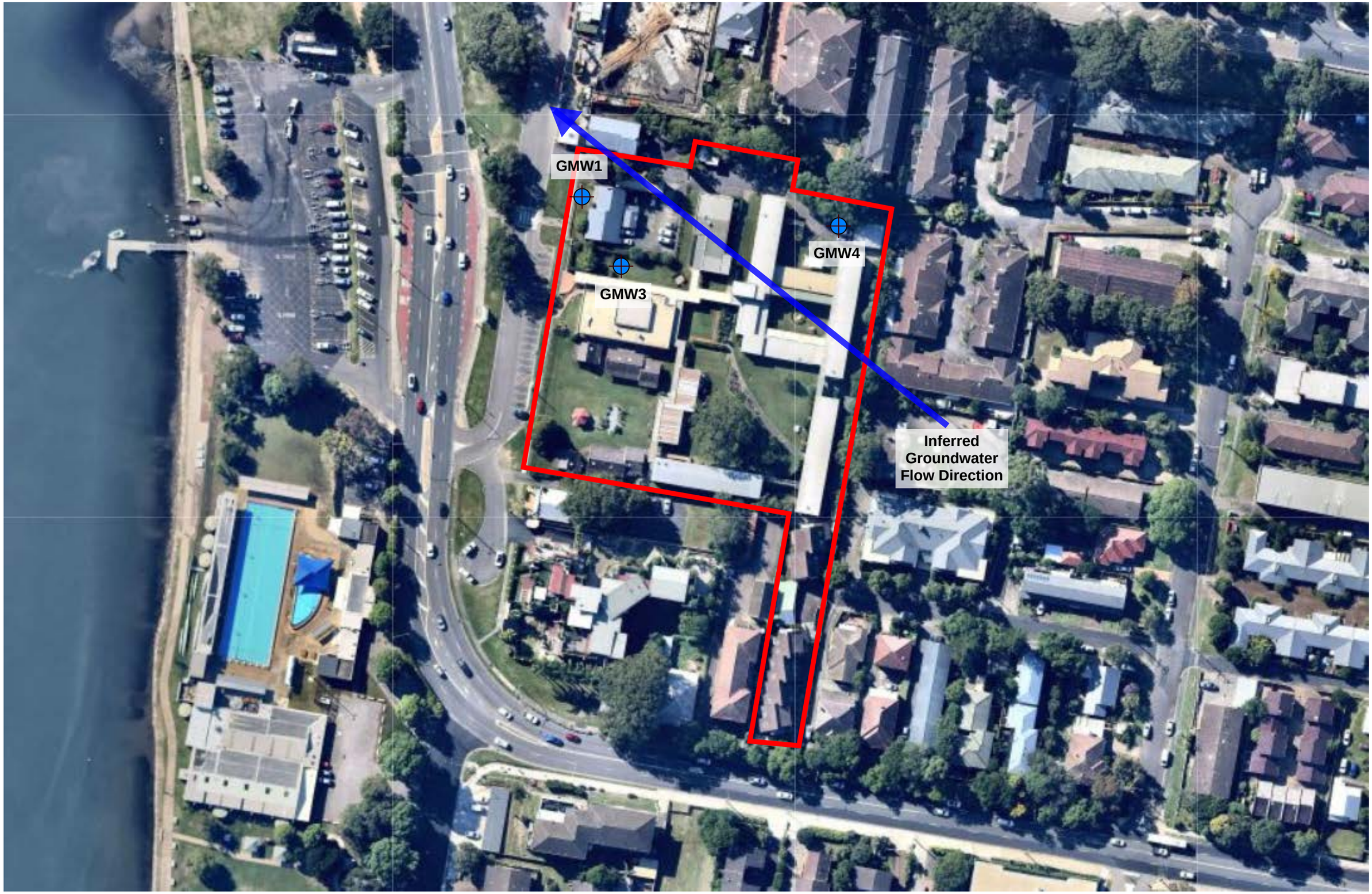
Sampling Point Layout Plan

Client Name:	Grindley Constructions	N	Figure Number:	4
Project Name:	Detailed Site Investigation		Figure Date:	30 June 2020
Project Location:	51 Mason Parade, Point Frederick NSW		Report Number:	10827-ER-1-2



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Inferred Groundwater Flow Direction

Client Name:	Grindley Constructions	N	Figure Number:	5
Project Name:	Detailed Site Investigation		Figure Date:	30 June 2020
Project Location:	51 Mason Parade, Point Frederick NSW		Report Number:	10827-ER-1-2

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Revised Areas of Environmental Concern

Client Name:	Grindley Constructions	N	Figure Number:	6
Project Name:	Detailed Site Investigation		Figure Date:	30 June 2020
Project Location:	51 Mason Parade, Point Frederick NSW		Report Number:	10827-ER-1-2

TABLES

Table 1
51 Mason Parade, Point Frederick NSW
Soil Results & Adopted Site Criteria
10827-ER-1-2

													Sample ID	TP01-0.0-0.2	TP01-0.8-1.0	TP02-0.0-0.2	TP03-0.0-0.2	TP03-0.8-1.0	TP04-0.0-0.2	TP04-1.0-1.2	TP05-0.0-0.2	TP05-1.0-1.2	TP06-0.0-0.2	TP06-0.2-0.4	TP06-0.9-1.1	TP07-0.0-0.2	TP07-0.2-0.4	TP07-1.3-1.5	TP08-0.0-0.2	TP09-0.0-0.2	TP09-1.2-1.4	TP10-0.0-0.2	TP10-0.4-0.6	TP11-0.0-0.2	TP12-0.1-0.3	TP13-0.1-0.3	TP14-0.0-0.2	TP15-0.0-0.2	TP15-1.0-1.2	TP16-0.1-0.3	TP17-0.1-0.3	TP17-0.9-1.1	TP18-0.1-0.3	TP19-0.0-0.2	TP19-1.0-1.1	TP20-0.1-0.3	TP21-0.1-0.3	TP21-0.7-0.9
													Reference	S20-Jn04605	S20-Jn04627	S20-Jn04606	S20-Jn04607	S20-Jn04629	S20-Jn04608	S20-Jn04630	S20-Jn04609	S20-Jn04632	S20-Jn04610	S20-Jn04633	S20-Jn04634	S20-Jn04611	S20-Jn04635	S20-Jn04636	S20-Jn04612	S20-Jn04613	S20-Jn04614	S20-Jn04615	S20-Jn04638	S20-Jn04616	S20-Jn04617	S20-Jn04618	S20-Jn04619	S20-Jn04620	S20-Jn04645	S20-Jn04621	S20-Jn04622	S20-Jn04646	S20-Jn04623	S20-Jn04624	S20-Jn04647	S20-Jn04625	S20-Jn04626	S20-Jn04649
													Date Sampled	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	1/06/2020	2/06/2020	1/06/2020	1/06/2020	1/06/2020	2/06/2020	2/06/2020	2/06/2020	2/06/2020	2/06/2020	2/06/2020	2/06/2020	2/06/2020	2/06/2020
													Sample Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Group	Analyte	Units	PQL	Screening Levels for Direct Contact (mg/kg) CRC Care 2011	Inhalation / Vapour Intrusion HSLs (mg/kg) NEPC 2013 (SAND)			Management Limits for TPH Fractions F1 - F4 in soil (mg/Kg) - NEPC 2013	ESLs for TPH Fractions F1 - F4, BTEX and Benzo(a)pyrene - NEPC 2013	Ecological Investigations Levels for Open space land use - NEPC 2013	Health Investigation Levels for Soil Contaminants - NEPC 2013																																					
				HSL - A Residential (Low Density)	HSL A & HSL B - Low - High density Residential			Residential, Parkland and Public Open Space	Urban Residential and Public Open Space	Ecological Investigations Levels for Residential A - Fresh/Aged	Residential A	Data Set Minimum	Data Set Maximum																																	n		
					0 m to <1 m	1 m to <2 m	2 m to <4 m	Coarse Soil Texture	Coarse Soil Texture																																							
Metals	Arsenic, As	mg/kg	2	-	-	-	-	-	-	50/100	100	< 2	28	16	< 2	3.1	5.7	28	5.1	10	4.7	3.2	7.9	< 2	17	2.5	2.3	< 2	< 2	2.5	< 2	< 2	2.3	< 2	5	6.7	2.9	2.4	2.8	< 2	< 2	3.6	9.9	6	3.4	9.4	< 2	< 2
	Cadmium, Cd	mg/kg	0.4	-	-	-	-	-	-		20	< 0.4	0.7	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.7	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
	Chromium, Cr	mg/kg	5.0	-	-	-	-	-	-	500	100	< 5	39	24	< 5	11	13	25	16	25	15	< 5	23	5.9	28	39	6.8	< 5	8.7	6.3	< 5	5.6	7.3	31	12	14	11	< 5	< 5	6.6	8.8	10	21	9.8	< 5	14	< 5	< 5
	Copper, Cu	mg/kg	5.0	-	-	-	-	-	-	127	6,000	< 5	61	17	< 5	7.6	8.1	10	11	12	11	< 5	8.9	< 5	13	5.9	< 5	< 5	8.9	< 5	< 5	6.8	< 5	14	< 5	6.2	< 5	< 5	< 5	< 5	8.3	< 5	61	61	< 5	6.1	< 5	< 5
	Lead, Pb	mg/kg	5	-	-	-	-	-	-	270/1,100	300	< 5	300	67	< 5	19	25	24	38	26	36	5.6	24	8.7	26	23	8.5	9	21	7.9	< 5	17	9	27	12	9.7	16	53	< 5	8.4	32	12	300	76	< 5	100	44	< 5
	Mercury (inorganic)	mg/kg	0.10	-	-	-	-	-	-		40	< 0.1	0.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	0.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	0.2	< 0.1	< 0.1	< 0.1	< 0.1
	Nickel, Ni	mg/kg	5.0	-	-	-	-	-	-	84	400	< 5	24	17	< 5	5.5	6.3	8	9.1	9.1	8.7	< 5	< 5	< 5	9.8	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	24	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	8	< 5	< 5	< 5	< 5	< 5
	Zinc, Zn	mg/kg	5.0	-	-	-	-	-	-	343	7,400	< 5	430	86	< 5	27	36	87	47	17	45	< 5	78	5.3	21	19	6.1	< 5	33	5.9	< 5	47	< 5	54	8.3	23	16	23	< 5	6.3	53	11	430	110	15	60	47	< 5
PAH	Acenaphthene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Acenaphthylene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Anthracene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)anthracene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene	mg/kg	0.5	-	-	-	-	-	0.7		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.5	-	-	-	-	-	-		3	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.5	-	-	-	-	-	-		-	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	Benzo(b&j)fluoranthene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(ghi)perylene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(k)fluoranthene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Chrysene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Dibenzo(ah)anthracene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluoranthene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluorene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Naphthalene	mg/kg	0.5	1,400	3	NL	NL	-	-		-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Phenanthrene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Pyrene	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Total PAH (18)	mg/kg	0.5	-	-	-	-	-	-		-	< 0.5	2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRH	TRH C10-C36 Total	mg/kg	50	-	-	-	-	-	-		-	< 50	205	124	< 50	< 50	54	< 50	141	136	< 50	< 50	< 50	< 50	112	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	205	< 50	< 50
	TRH C10-C14	mg/kg	20	-	-	-	-	-	-		-	< 20	35	35	< 20	< 20	< 20	< 20	< 20	22	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	25	< 20	< 20
	TRH C15-C28	mg/kg	50	-	-	-	-	-	-		-	< 50	90	89	< 50	< 50	54	< 50	72	60	< 50	< 50	< 50	< 50	62	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	90	< 50	< 50
	TRH C29-C36	mg/kg	50	-	-	-	-	-	-		-	< 50	90	< 50	< 50	< 50	< 50	< 50	69	54	< 50	< 50	< 50	< 50	50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	90	< 50	< 50
	TRH C6-C9	mg/kg	20	-	-	-	-	-	-		-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	Naphthalene	mg/kg	0.5	1,400	3	NL	NL	-	-	170	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	TRH >C10-C16 (F2)	mg/kg	50	3,300	-	-	-	1,000	120		-	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C10-C16 (F2) - Naphthalene	mg/kg	50	-	110	240	440	-	-		-	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH C10-C40 Total (F bands)	mg/kg	100	-	-	-	-	-	-		-	< 100	140	120	< 100	< 100	< 100	< 100	120	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	140	< 100	< 100
	TRH >C16-C34 (F3)	mg/kg	100	4,500	-	-	-	2,500	300		-	< 100	140	120	< 100	< 100	< 100	< 100	120	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	140	< 100	< 100
	TRH >C34-C40 (F4)	mg/kg	100	6,300	-	-	-	10,000	2,800		-	< 100	100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
	TRH C6-C10	mg/kg	20	4,400	-	-	-	700	180		-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	TRH C6-C10 minus BTEX (F1)	mg/kg	20	-	45	70	110	-	-		-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
BTEX	Benzene	mg/kg	0.1	100	0.5	0.5	0.5	-	50		-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Ethylbenzene	mg/kg	0.1	4,500	55	NL	NL	-	70		-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	m/p-xylene	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	o-xylene	mg/kg	0.1	-	-	-	-	-	-		-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Toluene	mg/kg	0.1	14,000	160	220	310	-	85		-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Total Xylenes	mg/kg	0.3	12,000	40	60	95	-	105		-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
OPP	Azinphos-methyl	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Bolstar	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Chlorfenvinphos	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Chlorpyrifos	mg/kg	0.2	-	-	-	-	-	-		160	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Chlorpyrifos-methyl	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Coumaphos	mg/kg	2.0	-	-	-	-	-	-		-	< 2	< 2	< 2	-	< 2	< 2	-	< 2	-	< 2	-	< 2	-	-	< 2	-	-	< 2	< 2	< 2	< 2	-	< 2	< 2	< 2	< 2	< 2	-	< 2	< 2	-	< 2	< 2	-	< 2	< 2	-
	Demeton-O	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Demeton-S	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Diazinon	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Dichlorvos	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Dimethoate	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Disulfoton	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	EPN	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Ethion	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Ethoprop	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Ethyl parathion	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Fenitrothion	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Fensulfothion	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Fenthion	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Malathion	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Merphos	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Methyl parathion	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Mevinphos	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Monocrotophos	mg/kg	2.0	-	-	-	-	-	-		-	< 2	< 2	< 2	-	< 2	< 2	-	< 2	-	< 2	-	< 2	-	-	< 2	-	-	< 2	< 2	< 2	< 2	-	< 2	< 2	< 2	< 2	< 2	-	< 2	< 2	-	< 2	< 2	-	< 2	< 2	-
	Naled	mg/kg	0.2	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.2	< 0.5	< 0.5	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.2	-
	Omethoate	mg/kg	2.0	-	-	-	-	-	-		-	< 2	< 2	< 2	-	< 2	< 2	-	< 2	-	< 2	-	< 2	-	-	< 2	-	-	< 2	< 2	< 2	< 2	-	< 2	< 2	< 2	< 2	< 2	-	< 2	< 2	-	< 2	< 2	-	< 2	< 2	-
	Phorate	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Pirimiphos-methyl	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Pyrazophos	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Ronnel	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Terbufos	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Tetrachlorvinphos	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Tokuthion	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Trichloronate	mg/kg	0.2	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
Halogenated Phenols	2.4.5-Trichlorophenol	mg/kg	0.5		-	-	-	-	-		-	< 1	< 1	< 1	-	< 1	< 1	-	-	-	< 1	-	< 1	-	-	-	-	-	< 1	-	-	< 1	-	-	< 1	< 1	-	< 1	-	-	< 1	-	< 1	-	-	< 1	< 1	-
	2.4.6-Trichlorophenol	mg/kg	0.5		-	-	-	-	-		-	< 1	< 1	< 1	-	< 1	< 1	-	-	-	< 1	-	< 1	-	-	-	-	-	< 1	-	-	< 1	-	-	< 1	< 1	-	< 1	-	-	< 1	-	< 1	-	-	< 1	< 1	-
	2.4-Dichlorophenol	mg/kg	1.0		-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	-	< 0.5	-	< 0.5	-	-	-	-	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	-	< 0.5	-	-	< 0.5	-	< 0.5	-	-	< 0.5	< 0.5	-
	2.6-Dichlorophenol	mg/kg	1.0		-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	-	< 0.5	-	< 0.5	-	-	-	-	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	-	< 0.5	-	-	< 0.5	-	< 0.5	-	-	< 0.5	< 0.5	-
	2-Chlorophenol	mg/kg	0.5		-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	-	< 0.5	-	< 0.5	-	-	-	-	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	-	< 0.5	-	-	< 0.5	-	< 0.5	-	-	< 0.5	< 0.5	-
	4-Chloro-3-methylphenol	mg/kg	1.0		-	-	-	-	-		-	< 1	< 1	< 1	-	< 1	< 1	-	-	-	< 1	-	< 1	-	-	-	-	-	< 1	-	-	< 1	-	-	< 1	< 1	-	< 1	-	-	< 1	-	< 1	-	-	< 1	< 1	-
	Pentachlorophenol	mg/kg	1.0		-	-	-	-	-		100	< 1	< 1	< 1	-	< 1	< 1	-	-	-	< 1	-	< 1	-	-	-	-	-	< 1	-	-	< 1	-	-	< 1	< 1	-	< 1	-	-	< 1	-	< 1	-	-	< 1	< 1	-
	Tetrachlorophenols - Total	mg/kg	1.0		-	-	-	-	-		-	< 10	< 10	< 10	-	< 10	< 10	-	-	-	< 10	-	< 10	-	-	-	-	-	< 10	-	-	< 10	-	-	< 10	< 10	-	< 10	-	-	< 10	-	< 10	-	-	< 10	< 10	-
	Total Halogenated Phenol*	mg/kg	1.0		-	-	-	-	-		-	< 1	< 1	< 1	-	< 1	< 1	-	-	-	< 1	-	< 1	-	-	-	-	-	< 1	-	-	< 1	-	-	< 1	< 1	-	< 1	-	-	< 1	-	< 1	-	-	< 1	< 1	-
Non-Halogenated Phenols	2.4-Dimethylphenol	mg/kg	20.0		-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	-	< 0.5	-	< 0.5	-	-	-	-	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	-	< 0.5	-	-	< 0.5	-	< 0.5	-	-	< 0.5	< 0.5	-
	2.4-Dinitrophenol	mg/kg	5.0		-	-	-	-	-		-	< 5	< 5	< 5	-	< 5	< 5	-	-	-	< 5	-	< 5	-	-	-	-	-	< 5	-	-	< 5	-	-	< 5	< 5	-	< 5	-	-	< 5	-	< 5	-	-	< 5	< 5	-
	2-Cyclohexyl-4.6-dinitrophenol	mg/kg	0.2		-	-	-	-	-		-	< 20	< 20	< 20	-	< 20	< 20	-	-	-	< 20	-	< 20	-	-	-	-	-	< 20	-	-	< 20	-	-	< 20	< 20	-	< 20	-	-	< 20	-	< 20	-	-	< 20	< 20	-
	2-Methyl-4.6-dinitrophenol	mg/kg	1.0		-	-	-	-	-		-	< 5	< 5	< 5	-	< 5	< 5	-	-	-	< 5	-	< 5	-	-	-	-	-	< 5	-	-	< 5	-	-	< 5	< 5	-	< 5	-	-	< 5	-	< 5	-	-	< 5	< 5	-
	2-Methylphenol (o-Cresol)	mg/kg	0.5		-	-	-	-	-		400	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	-	-	< 0.2	-	< 0.2	-	-	-	-	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	-	< 0.2	-	-	< 0.2	-	< 0.2	-	-	< 0.2	< 0.2	-
	2-Nitrophenol	mg/kg	5.0		-	-	-	-	-		-	< 1	< 1	< 1	-	< 1	< 1	-	-	-	< 1	-	< 1	-	-	-	-	-	< 1	-	-	< 1	-	-	< 1	< 1	-	< 1	-	-	< 1	-	< 1	-	-	< 1	< 1	-
	3&4-Methylphenol (m&p-Cresol)	mg/kg	0.4		-	-	-	-	-		400	< 0.4	< 0.4	< 0.4	-	< 0.4	< 0.4	-	-	-	< 0.4	-	< 0.4	-	-	-	-	-	< 0.4	-	-	< 0.4	-	-	< 0.4	< 0.4	-	< 0.4	-	-	< 0.4	-	< 0.4	-	-	< 0.4	< 0.4	-
	4-Nitrophenol	mg/kg	5.0		-	-	-	-	-		-	< 5	< 5	< 5	-	< 5	< 5	-	-	-	< 5	-	< 5	-	-	-	-	-	< 5	-	-	< 5	-	-	< 5	< 5	-	< 5	-	-	< 5	-	< 5	-	-	< 5	< 5	-
	Dinoseb	mg/kg	20.0		-	-	-	-	-		-	< 20	< 20	< 20	-	< 20	< 20	-	-	-	< 20	-	< 20	-	-	-	-	-	< 20	-	-	< 20	-	-	< 20	< 20	-	< 20	-	-	< 20	-	< 20	-	-	< 20	< 20	-
	Phenol	mg/kg	0.5		-	-	-	-	-		3000	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	-	-	< 0.5	-	< 0.5	-	-	-	-	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	-	< 0.5	-	-	< 0.5	-	< 0.5	-	-	< 0.5	< 0.5	-
	Total Non-Halogenated Phenol*	mg/kg	20.0		-	-	-	-	-		-	< 20	< 20	< 20	-	< 20	< 20	-	-	-	< 20	-	< 20	-	-	-	-	-	< 20	-	-	< 20	-	-	< 20	< 20	-	< 20	-	-	< 20	-	< 20	-	-	< 20	< 20	-
OCP	4.4 - DDD	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	4.4 - DDE	mg/kg	0.05									< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	4.4 - DDT	mg/kg	0.05	-	-	-	-	-	-	180	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	a - BHC	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Aldrin	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Aldrin + Dieldrin (total)	mg/kg	0.05	-	-	-	-	-	-		6	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.2	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	b - BHC	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Chlordanes (total)	mg/kg	0.05	-	-	-	-	-	-		50	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	-
	d - BHC	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	DDT + DDE + DDD (total)	mg/kg	0.05	-	-	-	-	-	-		240	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Dieldrin	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.2	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Endosulfan 1	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Endosulfan 2	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Endosulfan sulphate	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Endrin	mg/kg	0.05	-	-	-	-	-	-		10	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Endrin Aldehyde	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Endrin Ketone	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	g-BHC (Lindane)	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Heptachlor	mg/kg	0.05	-	-	-	-	-	-		6	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Heptachlor epoxide	mg/kg	0.05	-	-	-	-	-	-		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Hexachlorobenzene	mg/kg	0.05	-	-	-	-	-	-		10	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05	-
	Methoxychlor	mg/kg	0.05	-	-	-	-	-	-		300	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Toxaphene	mg/kg	1.0	-	-	-	-	-	-		-	< 1	< 1	< 1	-	< 1	< 1	-	< 1	-	< 1	-	< 1	-	-	< 1	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1	< 1	< 1	-	< 1	< 1	-	< 1	< 1	-	< 1	< 1	-
	Vic EPA IWRG 621 OCP 9total)	mg/kg	0.1	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Vic EPA IWRG 621 Other OCP (total)	mg/kg	0.1	-	-	-	-	-	-		-	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-	< 0.2	< 0.2	-
	Alpha + Beta Endosulfan	mg/kg	0.05	-	-	-	-	-	-		270	0	0	0	-	0	0	-	0	-	0	-	0	-	-	0	-	-	0				-						-			-	0	0	-	0	0	-
PCB	Aroclor-1016	mg/kg	0.1	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-
	Aroclor-1221	mg/kg	0.1	-	-	-	-	-	-		-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	-
	Aroclor-1232	mg/kg	0.1	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-
	Aroclor-1242	mg/kg	0.1	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-
	Aroclor-1248	mg/kg	0.1	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-
	Aroclor-1254	mg/kg	0.1	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-
	Aroclor-1260	mg/kg	0.1	-	-	-	-	-	-		-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-
	Total PCB*	mg/kg	0.1	-	-	-	-	-	-		1	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	-	-	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5	-

🟨	Highlighted concentration exceeds the adopted site criteria - Screening Levels for Direct Contact (mg/kg) - CRC Care 2011
🟦	Highlighted concentration exceeds the adopted site criteria - Inhalation / Vapour Intrusion HSLs (mg/kg) - NEPC 2013 (SAND)
🟪	Highlighted concentration exceeds the adopted site criteria - Management Limits for TPH Fractions F1 - F4 in soil (mg/Kg) - NEPC 2013
🟧	Highlighted concentration exceeds the adopted site criteria - ESLs for TPH Fractions F1 - F4, BTEX and Benzo(a)pyrene - NEPC 2013
🟦	Highlighted concentration exceeds the adopted site criteria - Ecological Investigation Levels - NEPC 2013
🟩	Highlighted concentration exceeds the adopted site criteria - Health Investigation Levels for Soil Contaminants - NEPC 2013
-	No published criteria or sample not analysed
NL	Not Limiting

Table LAR3
51 Mason Parade, Point Frederick NSW

Groundwater Results & Adopted Site Criteria

		Inhalation / Vapour Intrusion HSLs - NEPM ASC 2013	Drinking Water Guideline Values		ANZG (2018)					
10827-ER-1-2		HSL A & HSL B Low - high density residential (2m to <8m)	Health - NEPM ASC 2013	Aesthetic - NHMRC 2008	95% Marine Water	GWM1	GWM3	GWM4	DUP01	DUP01A
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Metals	Arsenic, As (III)	-	10	-	-	**3**	**13**	**3**	**3**	**3**
	Cadmium, Cd	-	2	-	5.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	Chromium, (unspeciated), Cr	-	50	-	27	< 1	**2**	< 1	< 1	< 1
	Copper, Cu	-	2,000	1,000	1.3	**13**	**31**	**20**	**18**	< 1
	Lead, Pb	-	10	-	4.4	< 1	**3**	**1**	**1**	< 1
	Mercury (Total), Hg	-	1	-	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Nickel, Ni	-	20	-	70	**19**	**21**	**27**	**13**	**3**
	Zinc, Zn	-	-	3,000	15	**3200**	**110**	**140**	**790**	**720**
Alkali Metals & Speciated Alkalinity	Bicarbonate Alkalinity (as CaCO3)	-	-	-	-	**170,000**	**-**	**120000**	**-**	**-**
	Carbonate Alkalinity (as CaCO3)	-	-	-	-	< 10,000	**-**	< 10,000	**-**	**-**
	Hydroxide Alkalinity (as CaCO3)	-	-	-	-	< 20,000	**-**	< 20,000	**-**	**-**
	Total Alkalinity (as CaCO3)	-	-	-	-	**170,000**	**-**	**120000**	**-**	**-**
	Chloride	-	-	-	-	**1,100,000**	**-**	**1400000**	**-**	**-**
	Sulphate (as S04)	-	-	-	-	**190,000**	**-**	**260000**	**-**	**-**
	Calcium	-	-	-	-	**120,000**	**-**	**150000**	**-**	**-**
	Magnesium	-	-	-	-	**97,000**	**-**	**73000**	**-**	**-**
	Potassium	-	-	-	-	**14,000**	**-**	**20000**	**-**	**-**
	Sodium	-	-	-	-	**460,000**	**-**	**680000**	**-**	**-**
TRH	TRH C10-C14	-	-	-	-	< 50	< 50	< 50	-	-
	TRH C10-C36 (Total)	-	-	-	-	< 100	< 100	< 100	-	-
	TRH C15-C28	-	-	-	-	< 100	< 100	< 100	-	-
	TRH C29-C36	-	-	-	-	< 100	< 100	< 100	-	-
	TRH C6-C9	-	-	-	-	< 20	< 20	< 20	-	-
	Naphthalene	-	-	-	-	< 10	< 10	< 10	-	-
	TRH >C10-C16	-	-	-	-	< 50	< 50	< 50	-	-
	TRH >C10-C16 less Naphthalene (F2)	1,000	-	-	-	< 50	< 50	< 50	-	-
	TRH >C10-C40 (total)*	-	-	-	-	< 100	< 100	< 100	-	-
	TRH >C16-C34	-	-	-	-	< 100	< 100	< 100	-	-
	TRH >C34-C40	-	-	-	-	< 100	< 100	< 100	-	-
	TRH C6-C10	-	-	-	-	< 20	< 20	< 20	-	-
	TRH C6-C10 less BTEX (F1)	1,000	-	-	-	< 20	< 20	< 20	-	-
BTEX	Benzene	800	1	-	-	< 1	< 1	< 1	-	-
	Ethylbenzene	-	300	3	80	< 1	< 1	< 1	-	-
	m&p-Xylenes	-	600	20	75	< 2	< 2	< 2	-	-
	Xylenes	-	600	20	-	< 1	< 1	< 1	-	-
	Toluene	-	800	25	180	< 1	< 1	< 1	-	-
	Xylenes - Total	-	600	20	-	< 3	< 3	< 3	-	-
PAHs	Naphthalene	-	-	-	70	< 1	< 1	< 1	-	-
	Benzo[a]pyrene	-	0.01	-	0.2	< 1	< 1	< 1	-	-
	Total PAHs	-	-	-	-	< 1	< 1	< 1	-	-
PCBs	Total Polychlorinated Biphenyls	-	-	-	-	< 1	< 1	< 1	-	-
OPPs	Total Organophosporus Pesticides	-	-	-	-	**ND**	**ND**	**ND**	-	-
OCPs	Total Organochlorine Pesticides	-	-	-	-	**ND**	**ND**	**ND**	-	-
Phenol	Total Halogentated Phenols	-	-	-	400	< 10	< 10	< 10	-	-
	Total Non-Halogentated Phenols	-	-	-	400	< 100	< 100	< 100	-	-

ND – Not detected

LAR3
51 Mason Parade, Point Frederick
RPD Table
10827-ER-1-2

	Sample ID	TP02-0.0-0.2	DUP01		TP02-0.0-0.2	DUP01A		TP14-0.0-0.2	DUP02		TP14-0.0-0.2	DUP02A		TP09-0.0-0.2	DUP03		TP09-0.0-0.2	DUP03A	
	Reference	S20-Jn04606	S20-Jn04651		S20-Jn04606	ES2019195001		S20-Jn04619	S20-Jn04652		S20-Jn04619	ES2019195002		S20-Jn04613	S20-Jn04653		S20-Jn04613	ES2019195003	
	Date Sampled	1/6/2020	1/6/2020		1/6/2020	1/6/2020		1/6/2020	1/6/2020		1/6/2020	1/6/2020		1/6/2020	1/6/2020		1/6/2020	1/6/2020	
	Sample Matrix	Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil	
Group	**Analyte**	**Units**	**LOR**			RPD (%)			RPD (%)			RPD (%)				RPD (%)			RPD (%)
Metals	**Arsenic**	**mg/kg**	**2**	3.1	2.8	10	3.1	<5	#VALUE!	2.9	2	37	2.9	<5	#VALUE!	2.5	2.1	17	2.5	<5	#VALUE!
	Cadmium	**mg/kg**	**0.4**	< 0.4	< 0.4	#VALUE!	< 0.4	<1	#VALUE!	< 0.4	< 0.4	#VALUE!	< 0.4	<1	#VALUE!	< 0.4	< 0.4	#VALUE!	< 0.4	<1	#VALUE!
	Chromium	**mg/kg**	**5**	11	8.4	27	11	7	44	11	11	0	11	12	9	6.3	5.9	7	6.3	3	71
	Copper	**mg/kg**	**5**	7.6	< 5	#VALUE!	7.6	6	24	< 5	< 5	#VALUE!	< 5	<5	#VALUE!	< 5	< 5	#VALUE!	< 5	<5	#VALUE!
	Lead	**mg/kg**	**5**	19	15	24	19	16	17	16	23	36	16	24	40	7.9	7.6	4	7.9	6	27
	Mercury	**mg/kg**	**0.1**	< 0.1	< 0.1	#VALUE!	< 0.1	<0.1	#VALUE!	< 0.1	< 0.1	#VALUE!	< 0.1	<0.1	#VALUE!	< 0.1	< 0.1	#VALUE!	< 0.1	<0.1	#VALUE!
	Nickel	**mg/kg**	**5**	5.5	< 5	#VALUE!	5.5	3	59	< 5	< 5	#VALUE!	< 5	<2	#VALUE!	< 5	< 5	#VALUE!	< 5	<2	#VALUE!
	Zinc	**mg/kg**	**5**	27	21	25	27	21	25	16	22	32	16	22	32	5.9	< 5	#VALUE!	5.9	<5	#VALUE!

RPD exceeding criteria

 # VALUE **Primary, Duplicate or Triplicate less than LOR and/or not analysed**

APPENDIX A

GROUNDWATER SEARCH

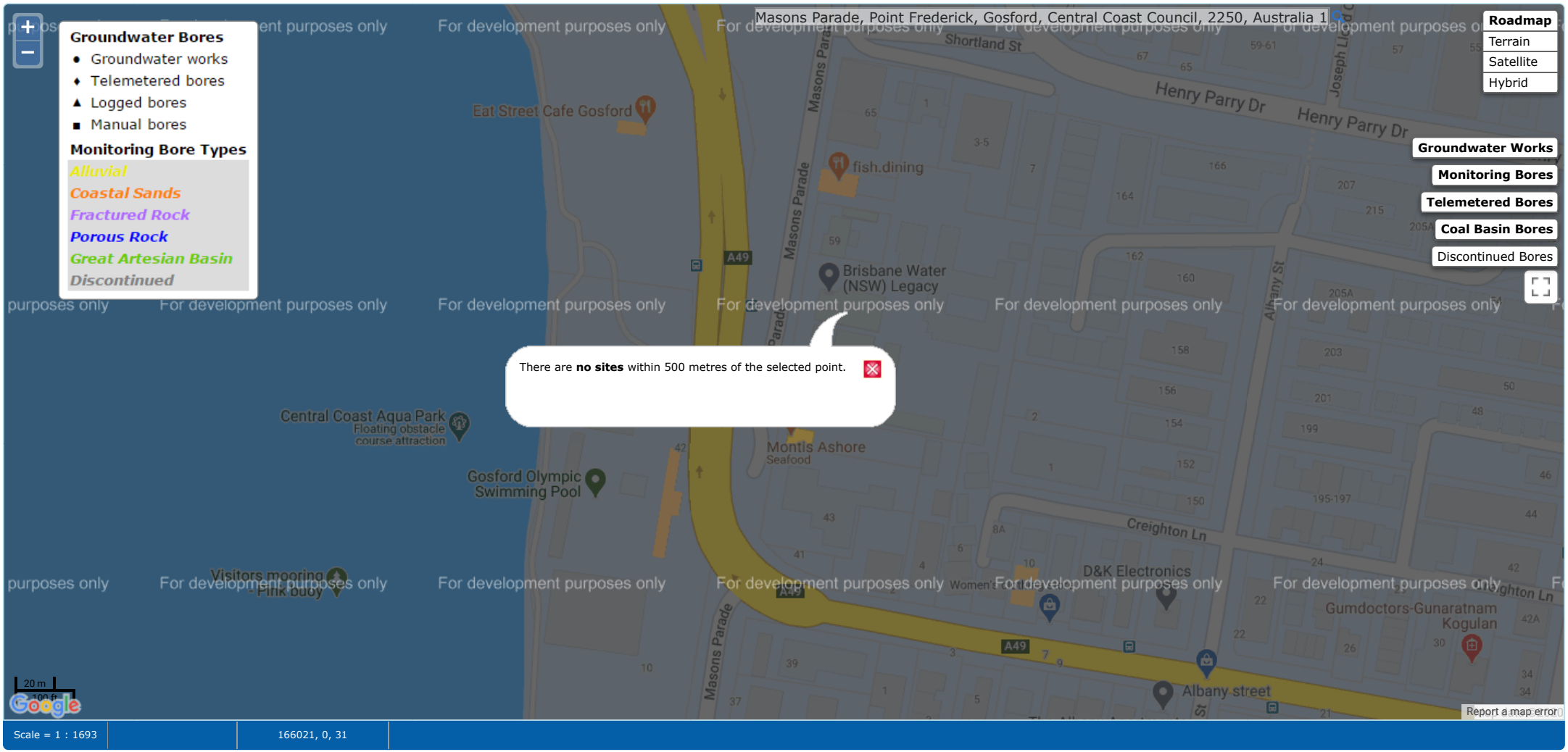
All Groundwater Site Details

All Groundwater Map

bookmark this page

All data times are Eastern Standard Time

Map | Info



Scale = 1 : 1693 | 166021, 0, 31

/

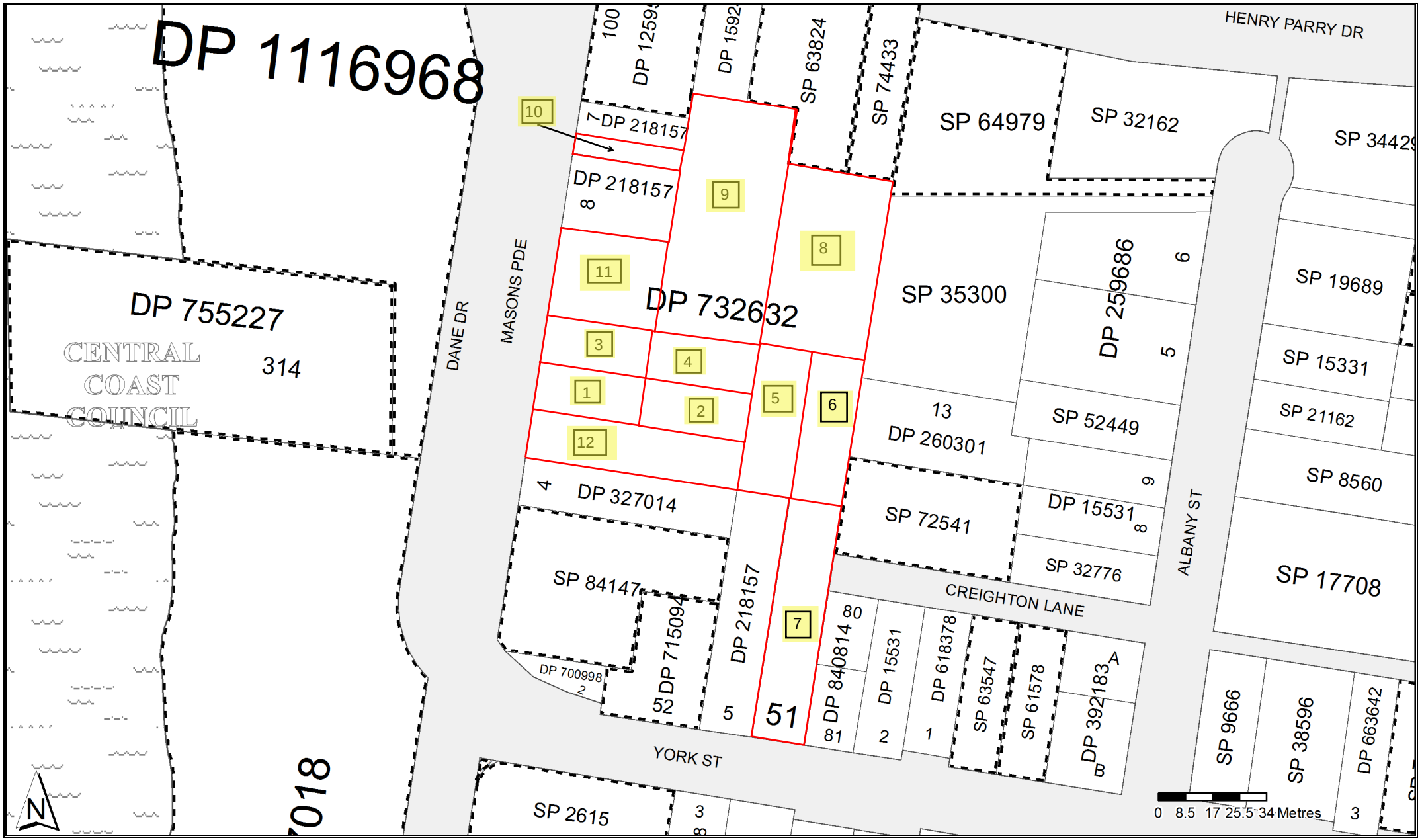
APPENDIX B

LAND TITLES

Cadastral Records Enquiry Report : Lot 51 DP 732632

Ref : Point Frederick 51 Masons Pde

Locality : POINT FREDERICK
Parish : GOSFORD
LGA : CENTRAL COAST
County : NORTHUMBERLAND



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

PLAN FORM 2 — Plan Drawing only to appear in this space — OFFICE USE ONLY

Signatures and seals only.

DP 732632

Registered: 22-4-1986

C.A.: No.1166 OF 13-3-1986

Title System: TORRENS

Purpose: CONSOLIDATION

Ref. Map: U2797-82

Last Plan: DPs 708326, 218157 & 520596

PLAN OF CONSOLIDATION OF LOT 50 D.P. 708326, LOT 6 D.P. 218157 & LOT 2 D.P. 520596.

Reduction Ratio 1: 800 Lengths are in metres.

Mun/Shire City: GOSFORD

Locality: GOSFORD

Parish: GOSFORD

County: NORTHUMBERLAND.

~~This is sheet 1 of my plan in ~~ sheets. (Delete if inapplicable).

I, LESLIE ALAN WALKER of BANNISTER & HUNTER P.O. 7212 GOSFORD 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 Regulations, 1933,~~ and was completed on* 19.11.85

Signature: L.A. Walker.

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

Panel for use only for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

BLOCK 1 OF 1

DP 732632 SHEET 1

PARADE

MASONS (20.115 WIDE)

CREIGHTON (VAR) LANE

YORK ST.

ALG. (3.66-12.8-3.66)

D.P. 159244, D.P. 218157, D.P. 321947, D.P. 260381, D.P. 159888, D.P. 218157, D.P. 927014, D.P. 238826, D.P. 218157, D.P. 155731

51
1.152 ha.

EASEMENT FOR DRAINAGE ("X" - J461377, "Y" - Bk 2669 No. 395)

~~"X" J461377 AFFECTING THE SITE FORMERLY IN LOT 2 D.P. 218157~~

~~"Y" BK 2669 NO. 395 AFFECTING THE SITE FORMERLY IN LOT 9 D.P. 218157~~

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 24B of the Metropolitan Water, Sewerage and Drainage Act, 1924, as amended, Hunter District Water, Sewerage, and Drainage Act, 1938, as amended,~~

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

Subdivision No. 1166

Date 13.3.86

(Signature) DEPUTY 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.

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 Table of mm 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390

MPD

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SURVEYOR'S REFERENCE 16195/22

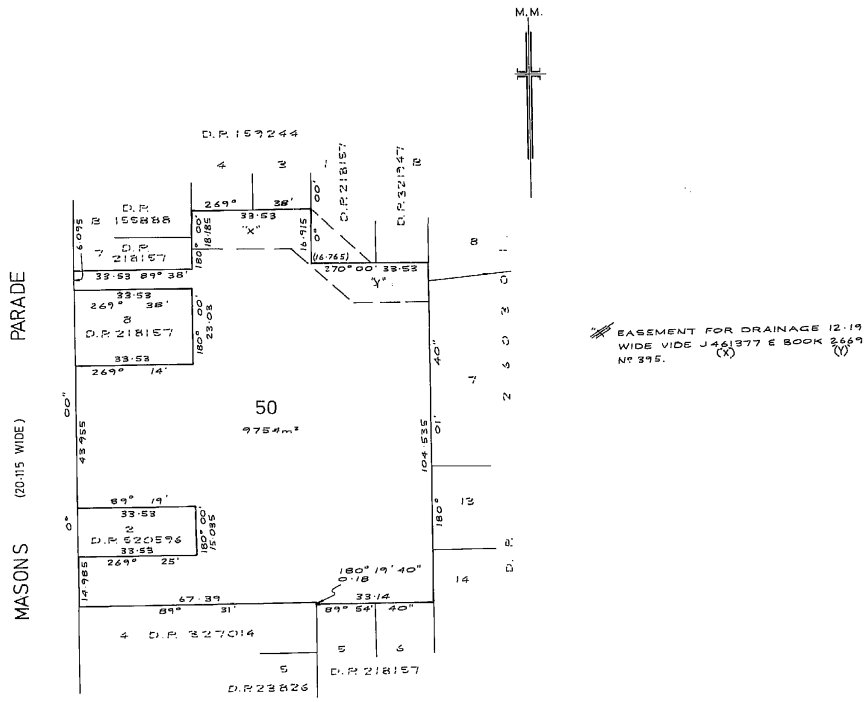
This negative is a photograph made as a permanent record of a document in the custody of the Registrar General this day. 23rd April, 1986

PLAN FORM 2

Plan Drawing only to appear in this space

Signatures and seals only.

Common Seal (N.S.W.) Legacy ... Gosford Water ... CHAIRMAN DIRECTOR



*OFFICE USE ONLY

DP 708326

Registered: 26-10-1984

C.A.: No. 837 OF 30·8·1984

Title System: TORRENS

Purpose: CONSOLIDATION

Ref. Map: U2797 · B2 #

Last Plan: DP596400, DP327014, DP218157, DP520596.

PLAN OF CONSOLIDATION OF
LOT 10 D.P. 596400
LOT 3, D.P. 327014
LOT 2 & 9 D.P. 218157 &
LOTS 1 & 3 D.P. 520596.

Reduction Ratio 1: 800
Lengths are in metres.

~~Mun./Shire~~ City GOSFORD

Locality: GOSFORD

Parish: GOSFORD

County: NORTHUMBERLAND

~~This is sheet 1 of my plan in sheets~~
(Delete if inapplicable).

I, LESLIE ALAN WALKER.
of BANNISTER & HUNTER DX7212 GOSF.
~~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 Regulations, 1933,~~ and was completed on †
24TH AUGUST, 1984

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

Panel for use only for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

NOO1K1B

DP 708326

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 349 of the †Metropolitan Water, Sewerage and Drainage Act, 1924, as amended. †Hunter District Water, Sewerage, and Drainage Act, 1938, as amended~~

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

Subdivision No. 837.

Date 30. 8. 84.

(Signature) ....
DEPUTY 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.

M.P.D.

Table of mm

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SURVEYOR'S REFERENCE 16195/21

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.

29th October, 1984

10380011

[redacted]TIFICATE OF TITLE

NEW SOUTH WALES — [redacted]PERTY ACT, 1900, as amended.

Vol. 10380 Fol. 11

CANCELLED

Edition issued 23-8-1966

Application No. 30418

Prior Title Volume 4562 Folio 180

EH

(Page 1) Vol. 10380 Fol. 11

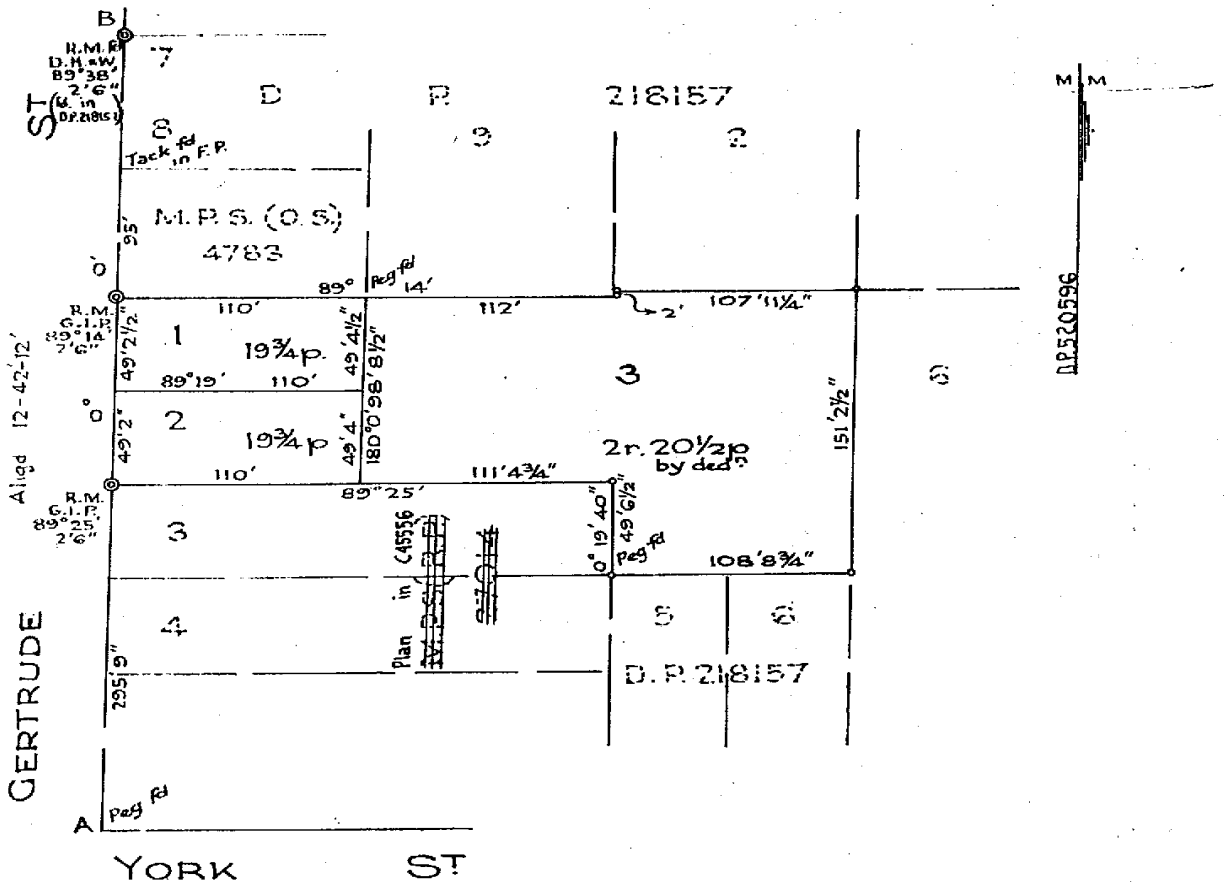
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness D. Sullivan.

Registrar General.

CANCELLED

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 520596 at Gosford in the Shire of Gosford Parish of Gosford and County of Northumberland being part of Allotment 4 of Section 36 granted to Robert Creighton on 28-5-1855.

FIRST SCHEDULE (continued overleaf)

~~ANNIE GORDON RIORDAN, of Gosford, Widow.~~

Registrar General.

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

Registrar General

PT 1, 17 V.C.N. Blight, Government Printer

T807791 T807792 732032

Vol. 10380 Fol 11

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
Brisbane Water (New South Wales) Legacy War Orphans Fund by Transmission T807791 and Transfer T807792. Registered 2-11-1983.					
DP/SP 732632 Registered 22.4.1985 This folio is cancelled as to whole/part upon creation of computer folios for lots 51 in abovementioned plan.					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		

(Page 2 of 2 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

20 OCT 1983 11 38 T807791

OFFICE USE ONLY

B 1 of 2 X

$ 30 -

MISSION APPLICATION

TA

SECTION 93, REAL PROPERTY ACT, 1900

(See Instructions for Completion on back of form)

LAND of which deceased is registered proprietor

Torrens Title Reference	If Part Only, Delete Whole and Give Details	Location
Volume 10380 Folio 11	WHOLE	at Gosford Parish of Gosford County of Northumberland

DESCRIPTION OF LAND Note (a)

LEASE, MORTGAGE, OR CHARGE of which deceased is registered proprietor

REGISTERED DEALING Note (b)

Type of Dealing	Registered Number	Torrens Title Reference	Location

DECEASED REGISTERED PROPRIETOR Note (c)

ANNIE GORDON RIORDAN

OFFICE USE ONLY N

Note (d) (the abovenamed DECEASED) is registered as proprietor of the ~~abovementioned registered dealing~~ land above described. The APPLICANT

APPLICANT Note (e)

is IAN JEFFREY BRENNAN, Executor of the Will of the late Annie Gordon RIORDAN.

OFFICE USE ONLY S

Pole checked

ENTITLEMENT Notes (f) and (j)

being entitled as Executor of the will/~~estate~~ of the abovenamed deceased

Probate No. 959154 ~~Letters of Administration No.~~ of whose will was ~~of whose estate were~~ granted on 16th ~~March~~ June, 1983

to IAN JEFFREY BRENNAN of 2 Baker Street, Gosford, the Executor of the said Will

Note (d) hereby applies to be registered as proprietor of the estate or interest of the said deceased in the ~~abovementioned registered dealing~~ land above described.

DATE OF APPLICATION 22nd August 1983

I hereby certify this application to be correct for the purposes of the Real Property Act, 1900.

Signed in my presence by the applicant who is personally known to me.

Signature of Witness

R. BLAIR

Name of Witness (BLOCK LETTERS)

2 Baker St Gosford

Address and Occupation of Witness

Solicitor

EXECUTION Note (g)

Signature of Applicant

IAN JEFFREY BRENNAN ~~BRENNAN & BLAIR, SOLICITORS~~

TO BE COMPLETED BY LODGING PARTY Notes (h) and (i)

LODGED BY R. L. CHISHOLM & CO. 309 PITT STREET, SYDNEY ~~Brennan & Blair Solicitors~~ LAW STATIONERS ~~2 Baker Street GOSFORD NSW 2250~~ PHONE 264 1613 264 1816

178 E

Delivery Box Number

LOCATION OF DOCUMENTS

CT	OTHER

Herewith

In R.G.O. with Pole sighted

Produced by returned D.O.D. 16/3/83

OFFICE USE ONLY

Extra Fee	Checked by	REGISTERED 2-11-1983
		Registrar General

OVER TO T807792

4

RDB

RP3

I, I.

executor of the will of
administrator of the estate of

consent to this application.

Signature of Witness .....

Name of Witness (BLOCK LETTERS) .....

Address and Occupation of Witness .....

.....

.....
Signature of Executor/Administrator
I J Brennan, Per:

CONSENT OF EXECUTOR OR ADMINISTRATOR Note (j)

INSTRUCTIONS FOR COMPLETION

Before lodgment at the Registrar General's Office this application should be marked "Registration not opposed" by the Commissioner of Stamp Duties and, where applicable, stamp duty should be paid and the application appropriately stamped.

Typewriting and handwriting should be clear, legible and in permanent black non-copying ink.

Alterations are not to be made by erasure; the words rejected are to be ruled through and initialled by the parties to the dealing.

If the space provided is insufficient, additional sheets of the same size and quality of paper and having the same margins as this form should be used. Each additional sheet must be identified as an annexure and signed by the applicant and the attesting witness.

Rule up all blanks.

The following instructions relate to the side notes on the form.

(a) Description of land. (If application is only in respect of a registered dealing, rule through this panel.)

(i) TORRENS TITLE REFERENCE. Insert the current Folio Identifier and Volume and Folio of the Certificate of Title/Crown Grant for the land the subject of the application, e.g. 135/SP12345 or Vol. 8514 Fol. 126.

(ii) PART/WHOLE. If part only of the land in the folio of the Register is the subject of the application, delete the word "WHOLE" and insert the lot and plan number, portion, &c.

(iii) LOCATION. Insert the locality shown on the Certificate of Title/Crown Grant, e.g., at Chullora. If the locality is not shown insert the Parish and County, e.g., Ph Lismore Co. Rous.

~~(b) Registered dealing. (If application is only in respect of a certificate of title, rule through this panel.)~~

~~Show the registered number of the lease, mortgage, or charge, the title reference affected thereby, and the location of the land involved, e.g. Lease Q123456 Vol. 3456 Fol. 124 at Camperdown.~~

(c) Show the full name of the deceased registered proprietor.

(d) Strike out "land above described" or "abovementioned registered dealing", whichever does not apply.

(e) Show the full name, address and occupation or description of the applicant. If devisees or beneficiaries apply, indicate whether they hold as joint tenants or tenants in common, and, if as tenants in common, state the shares in which they hold.

(f) Insert executor, administrator, trustee, devisee or beneficiary as appropriate. If letters of administration have been granted, e.g. "cum testamento annexo" or "de bonis non", the entitlement may be abbreviated, e.g. administrator c.t.a., administrator d.b.n., &c. Applicants should not claim as executor *and* devisee or executor *and* trustee.

(g) Execution.

GENERALLY (i) Should there be insufficient space for the execution of this dealing, use an annexure sheet.

(ii) The certificate of correctness under the Real Property Act, 1900, must be signed by all the applicants, each applicant to execute the dealing in the presence of an adult witness, not being a party to the application, to whom he is personally known. Any person falsely or negligently certifying is liable to the penalties provided by section 117 of the Real Property Act, 1900.

ATTORNEY (iii) If the application is executed by an attorney for the applicant pursuant to a registered power of attorney, the form of attestation must set out the full name of the attorney, and the form of execution must indicate the source of his authority, e.g. "AB by his attorney (or receiver or delegate, as the case may be), XY pursuant to power of attorney registered Book No. , and I declare that I have no notice of the revocation of the said power of attorney".

AUTHORITY (iv) If the application is executed pursuant to an authority (other than specified in (iii)), the form of execution must indicate the statutory, judicial or other authority pursuant to which the application has been executed.

CORPORATION (v) If the application is executed by a corporation under seal, the form of execution should include a statement that the seal has been properly affixed, e.g. in accordance with the Articles of Association of the corporation. Each person attesting the affixing of the seal must state his position (e.g., director, secretary) in the corporation.

(h) Insert the name, postal address, Document Exchange reference, telephone number and delivery box number of the lodging party.

(i) The lodging party is to complete the LOCATION OF DOCUMENTS panel. Place a tick in the appropriate box to indicate the whereabouts of the Certificate of Title or duplicate registered dealing. List, in an abbreviated form, other documents lodged, e.g. stat. dec. for statutory declaration, pbte for probate, L/A for letters of administration.

(j) Consent of the executor or administrator is required only where the applicant claims otherwise than as executor, administrator, or trustee.

OFFICE USE ONLY

DIRECTION. PROP

No. OF NAMES:

FIRST SCHEDULE DIRECTIONS

(A) FOLIO IDENTIFIER	(B) No.	(C) SHARE	(D) J	(E) NAME AND DESCRIPTION

SECOND SCHEDULE AND OTHER DIRECTIONS

(F) FOLIO IDENTIFIER (OR REGD. DEALING & FOLIO IDENTIFIER)	(G) DIRECTION	(H) NOTFN TYPE	(I) DEALING NUMBER	(K) DETAILS

NP 721 D. WEST, GOVERNMENT PRINTER

10380012

[redacted]TIFICATE OF TITLE

NEW SOUTH WALES — [redacted]PERTY ACT, 1900, as amended.

Vol. 10380 Fol. 12

Applications Nos. 28334 and 30418
Prior Titles Vol. 4562 Fol. 180
Vol. 4727 Fol. 72
Vol. 9632 Fols. 120 and 121

EH

Edition issued 23-8-1966

CANCELLED

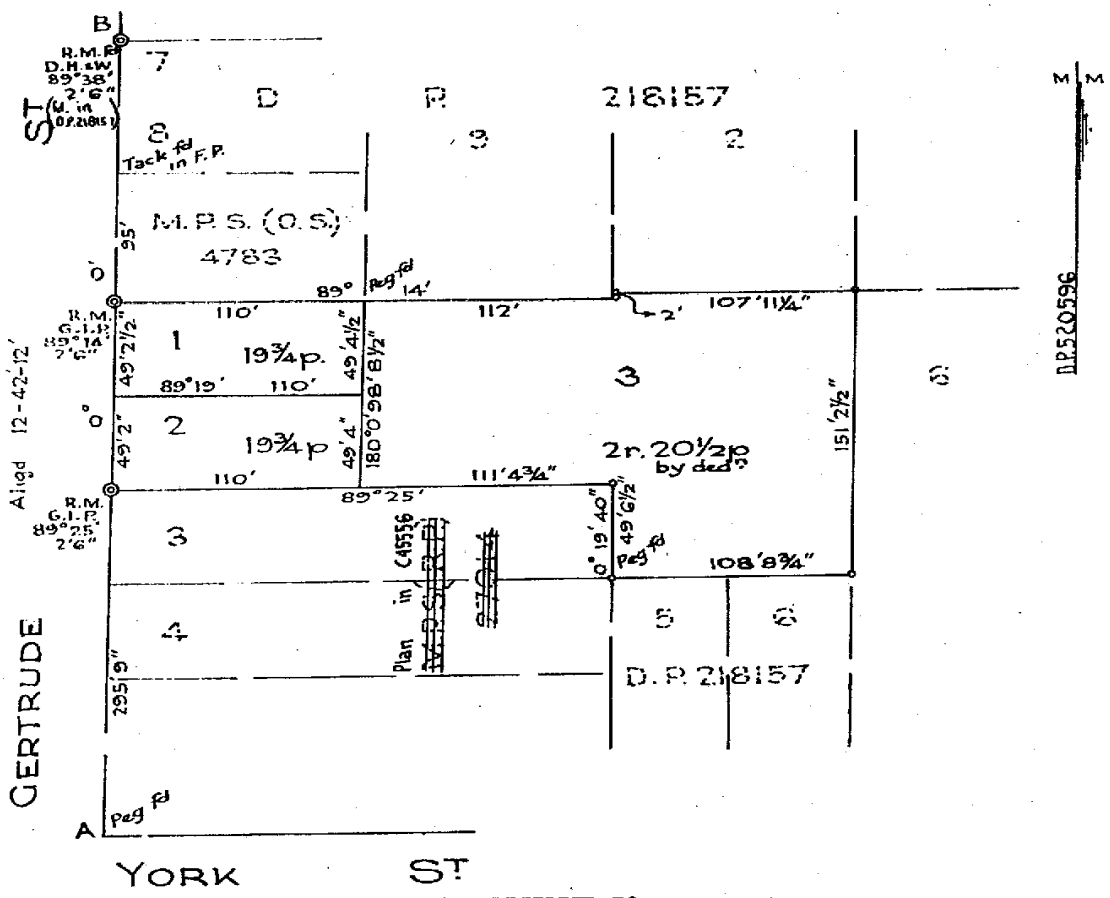
(Page 1) Vol. 10380 Fol. 12

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness D. Sullivan.

Registrar General.

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 3 inDeposited Plan 520596 at Gosford in the Shire of Gosford Parish of Gosford and County of Northumberland being part of Allotment 4 of Section 36 granted to Robert Creighton on 28-5-1855.

FIRST SCHEDULE (continued overleaf)

~~ANNIE GORDON RIORDAN, of Gosford, Widow, as regards the part of the land above described formerly comprised in Certificate of Title Volume 4562 Folio 180 and MAURICE FRANCIS BUSCOMBE, of Leichhardt, Member of the Royal Australian Air Force, as regards the part formerly comprised in Certificate of Title Volume 4727 Folio 72 and BRISBANE WATER (N.S.W.) LEGACY WAR ORPHANS FUND, as regards the part formerly comprised in Certificates of Title Volume 9632 Folios 120 and 121.~~

Registrar General.

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

Registrar General.

PT 1, 17 V.C.N. Blight, Government Printer

Vol. 10380 Fol 12

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
Brisbane Water (N.S.W.) Legacy War Orphans Fund.	Transfers	K404344 K446328	16.6.1966 28.7.1966	4.10.1966	

DP/SP 708326 Registered 26-10-1984

This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lot/s 50 in the abovementioned plan.

Registrar General.

K404344 (Lot of Lot formerly 4727-7 DP708326 R. 26-10-84

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

R.P. 13

No. K 404344

REGISTRAR-GENERAL · NEW SOUTH WALES

LODGED -7 SEP

New South Wales

MEMORANDUM OF TRANSFER

(REAL PROPERTY ACT, 1900)

$=00.75 STAMP DUTY

FEES:— £ s. d.
Lodgment : :
Endorsement : :
: :
: :
: :

£15.0.0
3.866

(Trusts must not be disclosed in the transfer.)

Typing or handwriting in this instrument should not extend into any margin. Handwriting should be clear and legible and in permanent black non-copying ink.

a If a less estate, strike out "in *fee simple*" and interline the required alteration.

b State in full the name of the person who furnished the consideration monies.

c Show in BLOCK LETTERS the full name, postal address and description of the persons taking.

d If more than one person is taking state whether they hold as joint tenants or tenants in common.

e The description may refer to the defined residue of the land in a certificate or grant (eg. "and being residue after Transfer No. ") or may refer to parcels shown in Town or Parish Maps issued by the Dept. of Lands or shown in Plans filed in the Office of the Registrar General (eg. "and being lot sec. D.P. "). Unless authorised by Reg. 63 of the Conveyancing Act Regulations, 1961, a plan may not be annexed to or endorsed on this transfer form.

f A very short note will suffice.

g Execution in New South Wales may be proved if this instrument is signed or acknowledged before the Registrar General, or Deputy Registrar General, or a Notary Public, a J.P., or Commissioner for Affidavits, to whom the Transferor is known, otherwise the attesting witness should appear before one of the above functionaries who having questioned the witness should sign the certificate on the back of this form.

As to instruments executed elsewhere, see Section 107 of the Real Property Act, 1900, Section 168 of the Conveyancing Act, 1919, and Section 52A of the Evidence Act, 1898.

h Repeat attestation if necessary.

If the Transferor or Transferee signs by a mark, the attestation must state "that the instrument was read over and explained to him, and that he appeared fully to understand the same."

THIS SPACE TO BE LEFT FREE FROM NOTATION NOT TO BE ALTERED BY ERASURE—See Foot Note

I, MAURICE FRANCIS BUSCOMBE of Gosford, Member Royal Australian Air Force (herein called transferor) being registered as the proprietor of an estate in *fee simple*[a] in the land hereinafter described, subject, however, to such encumbrances, liens and interests as are notified hereunder, in consideration of FIFTEEN POUNDS (£ 15. 0. 0) (the receipt whereof is hereby acknowledged) paid to me by[b] BRISBANE WATER (N.S.W.) LEGACY WAR ORPHANS FUND do hereby transfer to

[c] the said BRISBANE WATER (N.S.W.) LEGACY WAR ORPHANS FUND of 142 Donnison Street, Gosford (herein called transferee)[d]

ALL such my Estate and Interest in ALL THE land mentioned in the schedule following:—

County	Parish	Reference to Title			Description of Land (if part only)[e]
		Whole or Part	Vol.	Fol.	
Northumberland	Gosford	Part	4727	72	being that part of Lot 3 in D.P. ~~250596~~ 220596 comprised in the said Certificate of Title.

[e] Now being part of land in Cert. of Title Vol. 10380 Fol. 124

ENCUMBRANCES, &c., REFERRED TO[f]

Signed at Gosford the 16th. day of June 1966.

[g] Signed in my presence by the transferor WHO IS PERSONALLY KNOWN TO ME
M. Arnold

A. F. Buscombe
Transferor*

[h] Signed solicitor Gosford

† Accepted, and I hereby certify this Transfer to be correct for the purposes of the Real Property Act.

Signed in my presence by the transferee WHO IS PERSONALLY KNOWN TO ME

D. J. Tidey
Solicitor for the Transferee(s) whose signature cannot be obtained without difficulty and delay.

* If signed by virtue of any power of attorney, the original power must be registered in the Miscellaneous Register, and produced with each dealing, and the memorandum of non-revocation on back of form signed by the attorney before a witness.

† N.B.—Section 117 requires that the above Certificate be signed by each Transferee or his Solicitor or Conveyancer, and renders any person falsely or negligently certifying liable to a penalty of £50; also to damages recoverable by parties injured. Acceptance by the Solicitor or Conveyancer (who must sign his own name, and not that of his firm) is permitted only when the signature of the Transferee cannot be obtained without difficulty, and when the instrument does not impose a liability on the party taking under it. When the instrument contains some special covenant by the Transferee or is subject to a mortgage, encumbrance or lease, the Transferee must accept personally.

No alterations should be made by erasure. The words rejected should be scored through with the pen, and those substituted written over them, the alteration being verified by signature or initials in the margin, or noticed in the attestation.

5t 437—W K 1165 V. C. N. Blight, Government Printer

N 19299

4

No. K 404344

R. L. CHISHOLM & CO
LODGED BY: LAW STATIONERS
Address: 160 CASTLEREAGH ST.
Phone No.: SYDNEY

PARTIAL DISCHARGE OF MORTGAGE

(N.B.—Before execution read marginal note)

I,

mortgagee under Mortgage No.

release and discharge the land comprised in the within transfer from such mortgage and all claims thereunder but without prejudice to my rights and remedies as regards the balance of the land comprised in such mortgage.

i This discharge is appropriate to a transfer of part of the land in the Mortgage. The mortgagee should execute a formal discharge where the land transferred is the whole of or the residue of the land in the Certificate of Title or Crown Grant or is the whole of the land in the mortgage.

Dated at *this* *day of* 19 .

Signed in my presence by

who is personally known to me.

Mortgagee.

MEMORANDUM AS TO NON-REVOCATION OF POWER OF ATTORNEY

(To be signed at the time of executing the within instrument)

Memorandum whereby the undersigned states that he has no notice of the revocation of the Power of Attorney registered No. *Miscellaneous Register under the authority of which he has just executed the within transfer.*[j]

Signed at *the* *day of* , 19 .

Signed in the presence of—

j Strike out unnecessary words. Add any other matter necessary to show that the power is effective.

CERTIFICATE OF J.P., &c., TAKING DECLARATION OF ATTESTING WITNESS[k]

Appeared before me at , *the* *day of* , *one thousand nine hundred and* *the attesting witness to this instrument and declared that he personally knew* *the person signing the same, and whose signature thereto he has attested; and that the name purporting to be such signature of the said* *is* *own handwriting, and that* *he was of sound mind and freely and voluntarily signed the same.*

k To be signed by Registrar General, Deputy Registrar General, a Notary Public, J.P., Commissioner for Affidavits, or other functionary before whom the attesting witness appears. Not required if the instrument itself be signed or acknowledged before one of these parties.

LEAVE THESE SPACES FOR DEPARTMENTAL USE

INDEXED	MEMORANDUM OF TRANSFER
Checked by	Particulars entered in Register Book, 4 · 10 · 1966
Passed (in S.D.B.) by	at 11 A M
Signed by	Registrar General

DOCUMENTS LODGED HEREWITH

To be filled in by person lodging dealing

1	4	Received Docs. Nos.
2	5	Receiving Clerk.
3	6	

PROGRESS RECORD

	Initials	Date
Sent to Survey Branch		
Received from Records		
Draft written		
Draft examined		
Diagram prepared		
Diagram examined		
Draft forwarded		
Supt. of Engrossers		
Cancellation Clerk		

VOL. FOL.

FEES.

The Fees, which are payable on lodgment, are as follows:—

(a) £2 10s. 0d. where the memorandum of transfer is accompanied by the relevant Certificates of Title or Crown Grants, otherwise £3. Where such instrument is to be endorsed on more than one folium of the register, an additional charge of 5s. is made for every Certificate of Title or Crown Grant after the first.

(b) A supplementary charge of £1 is made in each of the following—

(i) where a restrictive covenant is imposed; or

(ii) a new easement is created; or

(iii) a partial discharge of mortgage is endorsed on the transfer.

K 1165 St 437—W

10380010

CERTIFICATE OF TITLE

NEW SOUTH WALES — REAL PROPERTY ACT, 1900, as amended.

Application No. 30418
Prior Title Volume 4727 Folio 72

Vol. 10380 Fol. 10

EH

Edition issued 23-8-1966

(Page 1) Vol. 10380 Fol. 10

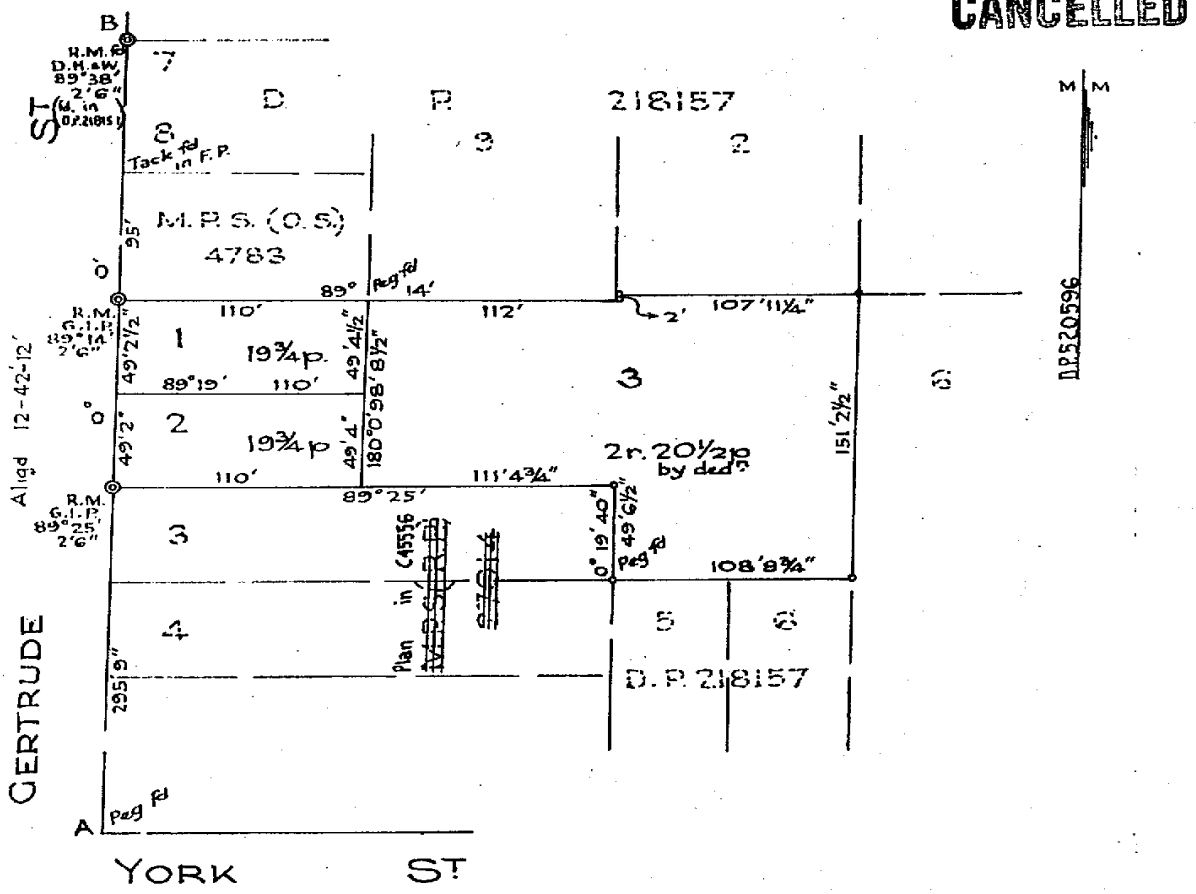
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness D. O'Sullivan.

Registrar General.

CANCELLED

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 520596 at Gosford in the Shire of Gosford Parish of Gosford and County of Northumberland being part of Allotment 4 of Section 36 granted to Robert Creighton on 28-5-1855.

FIRST SCHEDULE (continued overleaf)

~~MAURICE FRANCIS BUSCOMBE of Leichhardt, Member of Royal Australian Air Force.~~

Registrar General.

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

Registrar General.

PT 1, 17 V.C.N. Blight, Government Printer

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
~~Valerie Catherine Buscombe of Gosford, Widow~~	~~Transmission~~	~~L194250~~	~~16-9-1968~~	~~17-10-1968~~	Johnston
Brisbane Water (N.S.W.) Legacy War Orphans Fund	Transfer	P74178	8-7-1974	20-11-1974	Johnston

L194250
P74178 Tx
DP708326
R. 26-10-84

DP 708326 Registered 26-10-1984
This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 50 . in the abovementioned plan.

Registrar General.

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

09632120

M

NEW SOUTH WALES

(For Grant and title reference prior to first edition see Deposited Plan.)

[redacted]TIFICATE OF TITLE

[redacted]PERTY ACT, 1900, as amended.

Vol. 9632 Fol. 120

1st Edition issued 14-2-1964.

CANCELLED

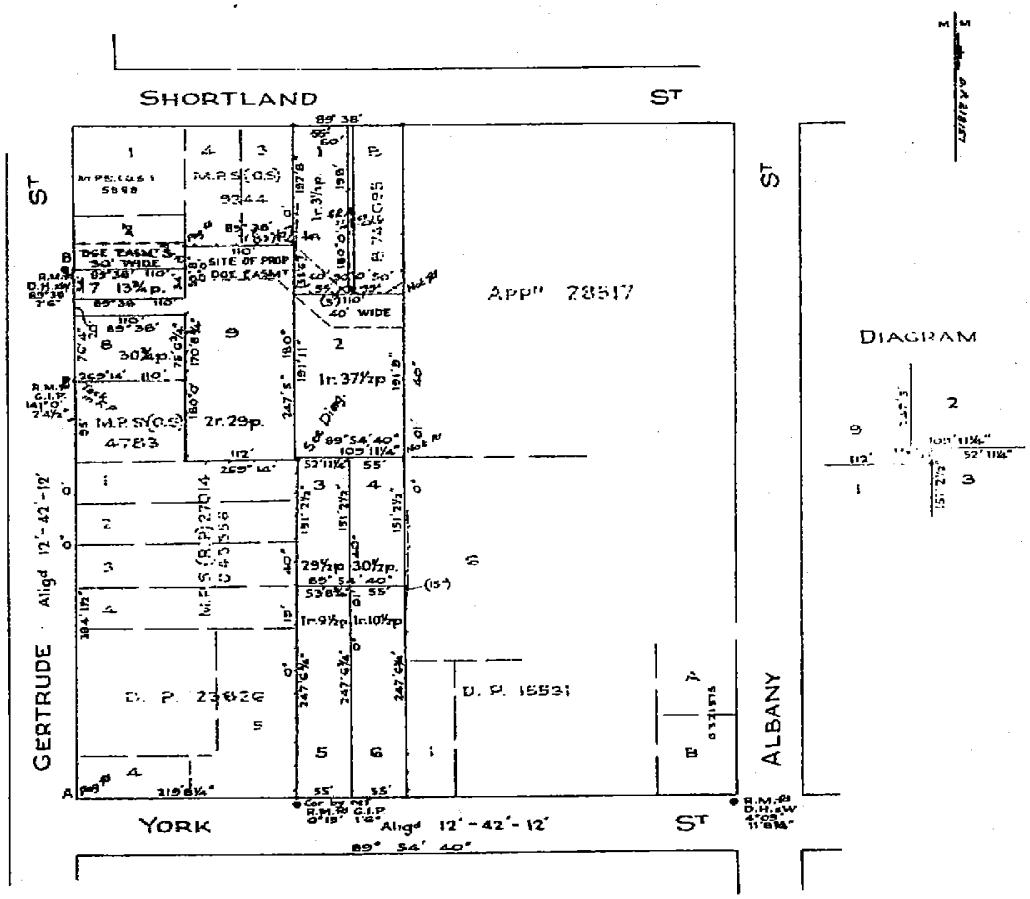
Vol. 9632 Fol. 120 (Page 1)

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness B Bailey

Registrar-General.

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 3 in Deposited Plan 218157 at Gosford in the Shire of Gosford Parish of Gosford and County of Northumberland.

FIRST SCHEDULE (Continued overleaf)

~~ALBERT AMBROSE SCHWARTZ, of Gosford, Builder.~~

Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

Registrar General.

V. C. N. BLIGHT, GOVERNMENT PRINTER

J348453
DP520596
(ST)
8.8.C(

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
Brisbane Water (N.S.W.) Legacy War Orphans' Fund.	Transfer	J348453	6-2-1963	27-5-1965	[signature]
This deed is cancelled as to the whole. New Certificates of Title have issued for lots in Deposited Plan No. 520596 as follows:- Lots 1, 2 & 3 Vol. 10380 Fol. 10, 11 & 12 respectively. [signature] [seal: Registrar General New South Wales]					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
M/c's [illegible] on D.P. 520596 No [illegible] to [illegible]								

FORM No. 184A

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

M

NEW SOUTH WALES

CERTIFICATE OF TITLE

PROPERTY ACT, 1900, as amended.

(For Grant and title reference prior to first edition see Deposited Plan.)

Vol. 9632 Fol. 121

1st Edition issued 14-2-1964.

CANCELLED

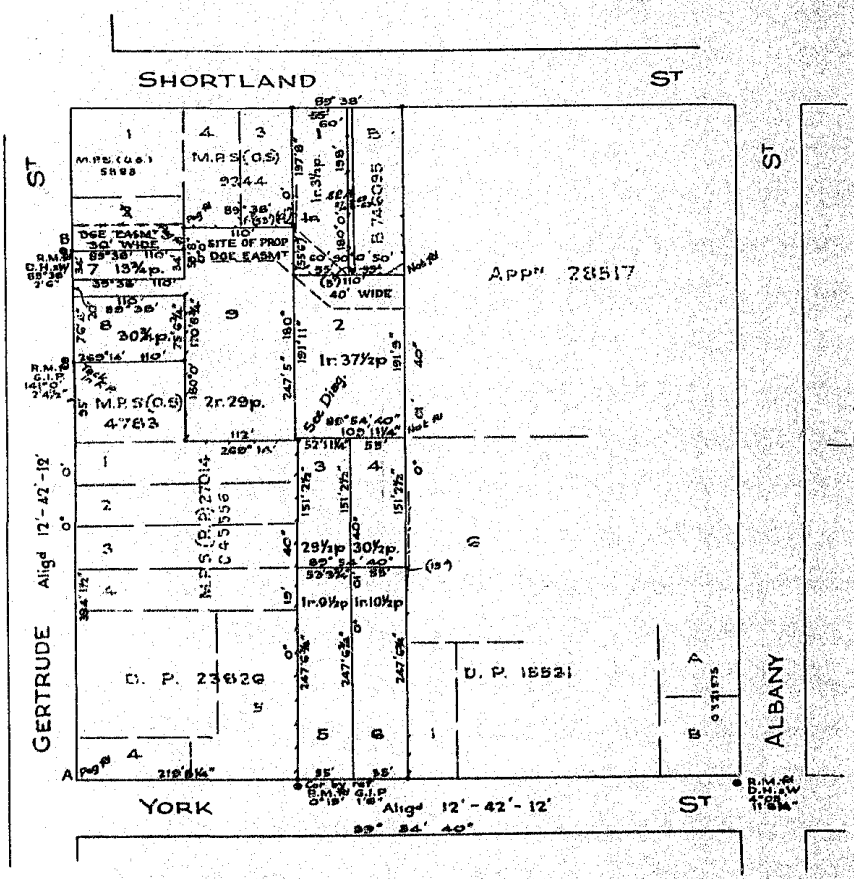
(Page 1) Vol. 9632 Fol. 121

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness B Bailey

Registrar-General.

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 4 in Deposited Plan 218157 at Gosford in the Shire of Gosford Parish of Gosford and County of Northumberland.

FIRST SCHEDULE (Continued overleaf)

~~GRACE HANNAH GELL, wife of William Edward Gell, of Gosford, Clerk.~~

Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

Registrar General.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED.

ST 1608 V. C. N. BLIGHT, GOVERNMENT PRINTER

Vol. 9632 Fol. 121

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
Brisbane Water (N.S.W.) Legacy War Orphans' Fund.	Transfer	J348452	6-2-1963	27-5-1964	J.A. Watson

This deed is cancelled as to the whole

New Certificates of Title have issued for lots in Deposited Plan No. 520596 as follows:—

Lots 1, 2 & 3 Vol. 10380 Fols. 10, 11 & 12 respectively

J.A. Watson

J345452 DP520596 8.8.6 ... D.O.P.

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
M/Cs issuing on D.P.			520596 No dealings to be registered without reference to S.D.B.			

FORM No. 184A NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

09632123

M

NEW SOUTH WALES

(For Grant and title reference prior to first edition see Deposited Plan.)

CERTIFICATE OF TITLE

[redacted]ERTY ACT, 1900, as amended.

Vol. 9632 Fol. 123

CANCELLED

1st Edition issued 14-2-1964.

Vol. 9632 Fol. 123 (Page 1)

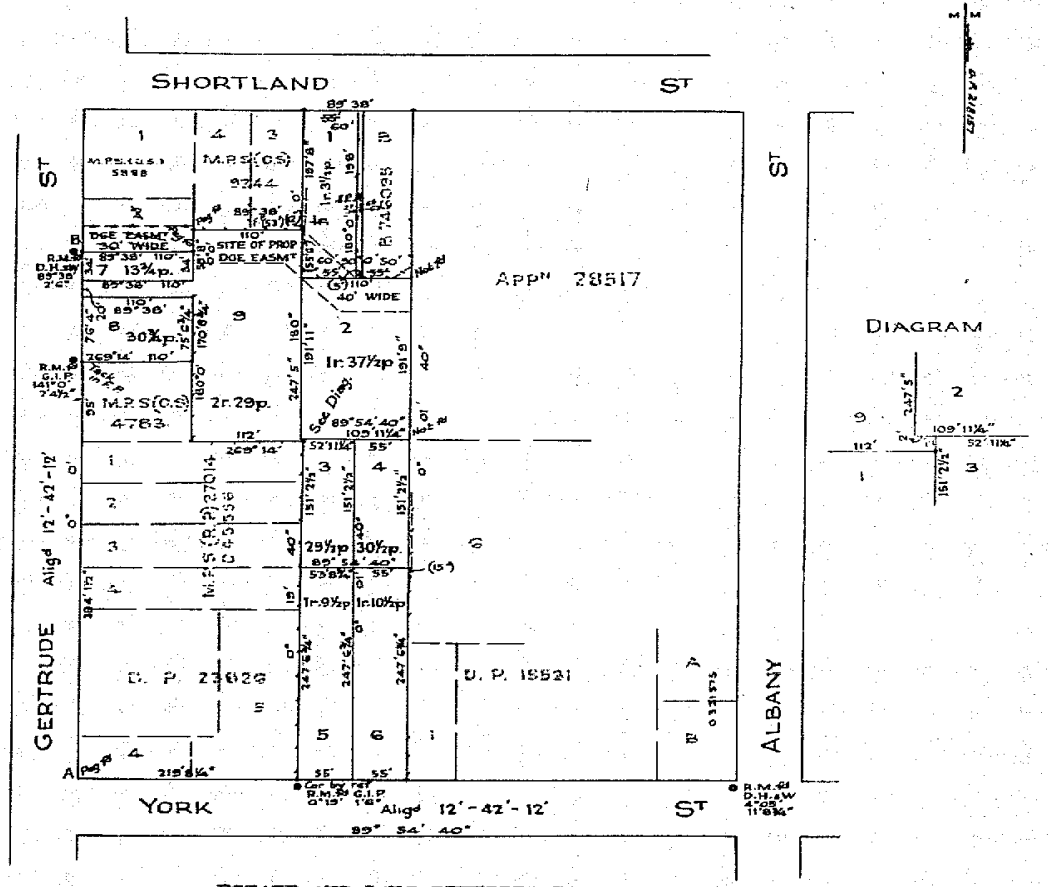
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness B Bailey

Jan Watson
Registrar-General.

REGISTRAR GENERAL • NEW SOUTH WALES

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 6 in Deposited Plan 218157 at Gosford in the Shire of Gosford Parish of Gosford and County of Northumberland.

FIRST SCHEDULE (Continued overleaf)

~~GRACE HANNAH GELL, wife of William Edward Gell, of Gosford, Clerk.~~

Jan Watson
Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

Jan Watson
Registrar General.

AT 1908 V. C. N. BLIGHT, GOVERNMENT PRINTER

T313602T
V566225
OP7326

Vol. 9632 Fol 123

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	~~Signature of~~ Registrar-General
~~Stanley Byron Gell by Transmission T313602. Registered 9-11-1982~~ Brisbane Water (N.S.W.) Legacy War Orphans Fund by Transfer V566225 Registered 14-2-1985					

DP/~~#~~ 732632 Registered 22-4-1986
This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 51 in the abovementioned plan.

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	~~Signature of~~ Registrar-General	CANCELLATION		

(Page 2 of 2 pages)

FORM No. 184A

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

09632119

M

NEW SOUTH WALES

[redacted]IFICATE OF TITLE

[redacted]PERTY ACT, 1900, as amended.

(For Grant and title reference prior to first edition see Deposited Plan.)

Vol. 9632 Fol. 119

1st Edition issued 14-2-1964.

CANCELLED

Vol. 9632 Fol. 119 (Page 1)

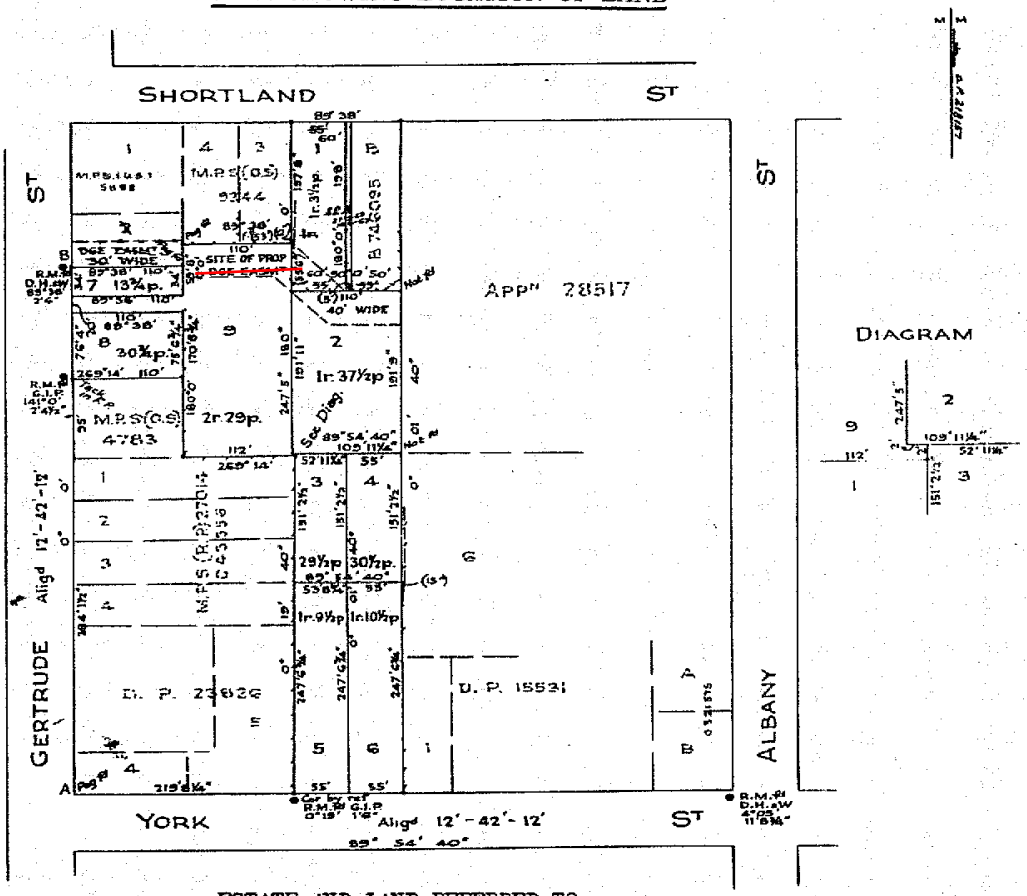
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness B Bailey

Registrar-General.

REGISTRAR GENERAL N.S.W. SOUTH WALES

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 2 in Deposited Plan 218157 at Gosford in the Shire of Gosford Parish of Gosford and County of Northumberland.

FIRST SCHEDULE (Continued overleaf)

~~ARNOLD ROY BRIDGE, of Point Clare, Fettler, and RUBY MAUD BRIDGE, his wife, as Joint Tenants.~~

Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.
2. ~~Mortgage No.F395214 to Gosford & District Co-operative Building Society No.2 Limited. Entered 13-2-1951.~~ Discharged J348455

Registrar General.

ST 1809 V. C. N. BLIGHT, GOVERNMENT PRINTER

Vol. 9632 Fol 119

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
Brisbane Water (N.S.W.) Legacy War Orphans' Fund	Transfer	J348455	22-3-1963	27-5-1964	[signature]

J348455 T
J461377 T to ?dge.
DP 708326 R 26-10

DP/SP 708326 Registered 26-10-1984
This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 50 in the mentioned plan.

Registrar General.

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
Transfer	J461377	3-7-1963	Easement for drainage affecting the site of proposed drainage easement 40 feet wide shown in the plan hereon.	27-5-1964	[signature]	

(Page 2 of 2 pages)

FORM No. 184A

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

09632119

M

NEW SOUTH WALES

[redacted]IFICATE OF TITLE

[redacted]PERTY ACT, 1900, as amended.

(For Grant and title reference prior to first edition see Deposited Plan.)

Vol. 9632 Fol. 119

1st Edition issued 14-2-1964.

CANCELLED

Fol. 119

9632

(Page 1) Vol.

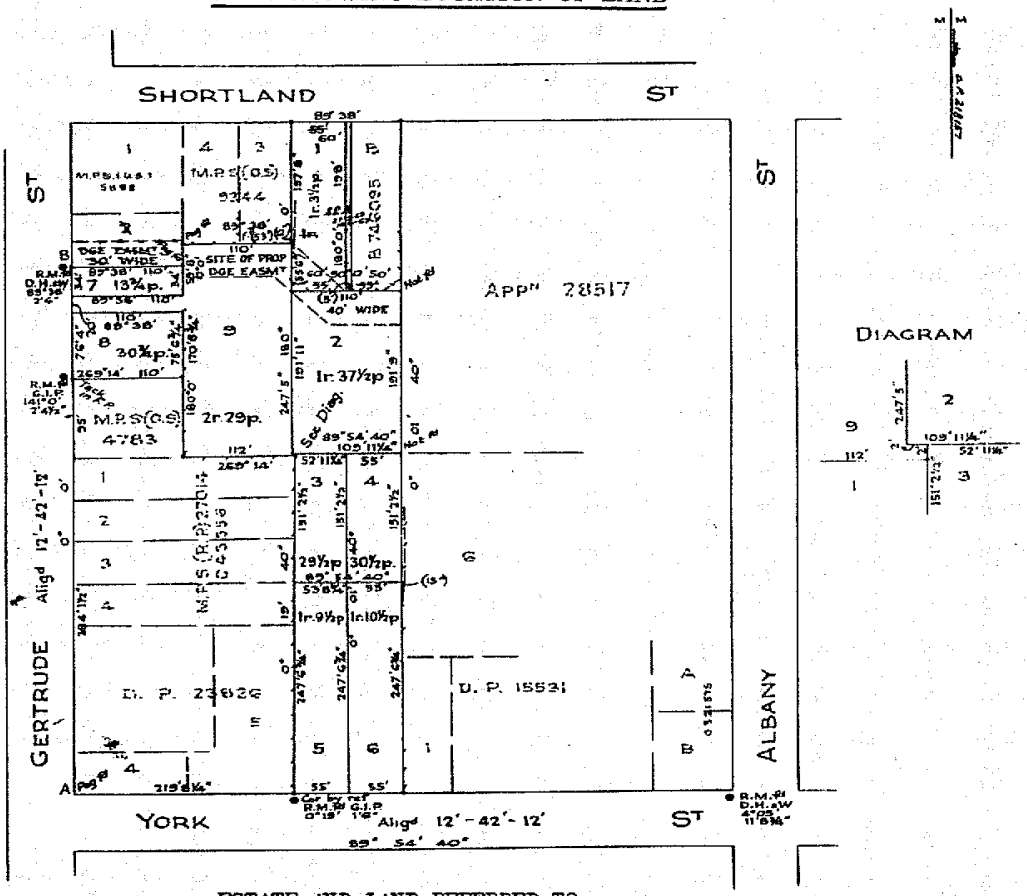
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness B Bailey

Registrar-General.

REGISTRAR GENERAL N.S.W. SOUTH WALES

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 2 in Deposited Plan 218157 at Gosford in the Shire of Gosford Parish of Gosford and County of Northumberland.

FIRST SCHEDULE (Continued overleaf)

~~ARNOLD ROY BRIDGE, of Point Clare, Fettler, and RUBY MAUD BRIDGE, his wife, as Joint Tenants.~~

Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.
2. ~~Mortgage No.F395214 to Gosford & District Co-operative Building Society No.2 Limited. Entered 13-2-1951.~~ Discharged J348455

Registrar General.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED.

Vol. 9632 Fol 119

St 1809 V. C. N. BLIGHT, GOVERNMENT PRINTER

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
Brisbane Water (N.S.W.) Legacy War Orphans' Fund	Transfer	J348455	22-3-1963	27-5-1964	[signature]

J348455 1
J461377 Tr drge.
DP 708326 R 26-10

DP/SP 708326 Registered 26-10-1984
This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 50 in the mentioned plan.

Registrar General.

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
Transfer	J461377	3-7-1963	Easement for drainage affecting the site of proposed drainage easement 40 feet wide shown in the plan hereon.	27-5-1964	[signature]	

(Page 2 of 2 pages)

FORM No. 184A NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

[redacted]FICATE OF TITLE

[redacted]L PROPERTY ACT, 1900

NEW SOUTH WALES

Vol. 13803 Fol. 96

Appln. No.53485

CANCELLED

EDITION ISSUED 9 2 1979

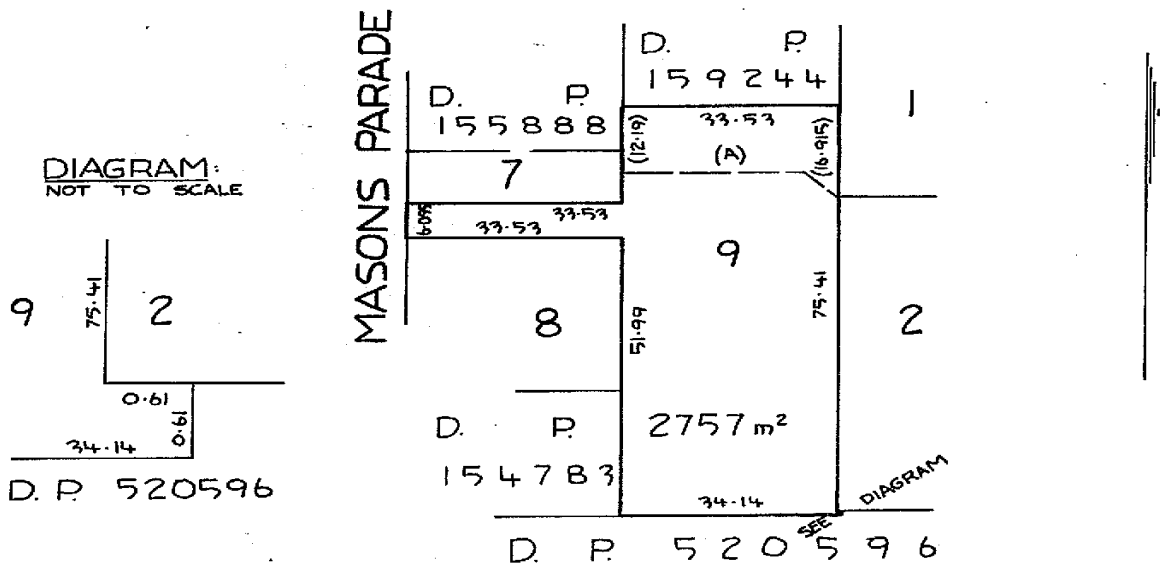
(Page 1) Vol. 13803 Fol. 96

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



(A) EASEMENT FOR DRAINAGE - BOOK 2669 NO. 395

P.A. 53485

REDUCTION RATIO 1:1000

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 9 in Deposited Plan 218157 at Gosford in the Shire of Gosford Parish of Gosford and County of Northumberland being part of Allotment 3 of Section 36 granted to Robert Creighton on 28-5-1855.

FIRST SCHEDULE

BRISBANE WATER (N.S.W.) LEGACY WAR ORPHANS FUND.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. Book 2669 No.395 Easement for Drainage affecting the part of the land above described shown so burdened in the plan hereon.

Vol. 13803 Fol. 96

DP 708326
R. 26-10-84

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	Signature of Registrar General
DP/~~SP~~ 708326 Registered 26-10-1984				
This folio is cancelled as to whole/~~part~~ upon c...				
of computer folios for lots 50 .				
~~abovementioned plan.~~				
~~Registrar General.~~				

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	PARTICULARS	REGISTERED	Signature of Registrar General	CANCELLATION	

(Page 2 of 2 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

[redacted]FICATE OF TITLE

[redacted]AL PROPERTY ACT, 1900

13778079

NEW SOUTH WALES

Appln. No.53484

Vol. 13778 Fol. 79

EDITION ISSUED

3 | 1979

Vol. 13778 Fol. 79

(Page 1) Vol. 13778 Fol. 79

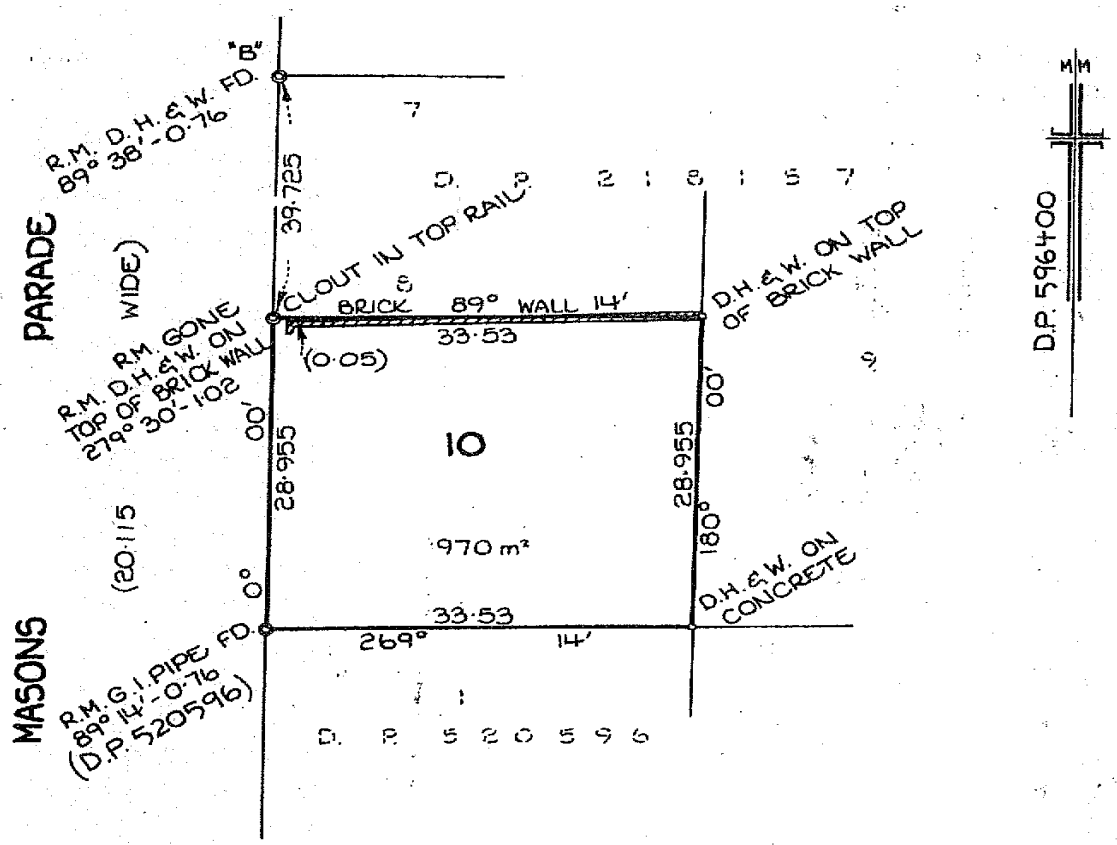
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

CANCELLED

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 10 in Deposited Plan 596400 at Gosford in the Shire of Gosford Parish of Gosford and County of Northumberland being part of Allotment 3 of Section 36 granted to Robert Creighton on 28-5-1855.

FIRST SCHEDULE

BRISBANE WATER (N.S.W.) LEGACY WAR ORPHANS FUND.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

Vol. 13778 Fol. 79

DP708326
R.26-10-84

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT		REGISTERED	Signature of Registrar General
	NATURE	NUMBER		
DP/~~SP~~ 708326 Registered 26-10-1984 This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lot~~s~~ 50 in the abovementioned plan. Registrar General.				

SECOND SCHEDULE (continued)

INSTRUMENT		PARTICULARS	REGISTERED	Signature of Registrar General	CANCELLATION	
NATURE	NUMBER					

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
28/5/2020 11:41AM

FOLIO: 50/708326

First Title(s): OLD SYSTEM
Prior Title(s): VOL 4471 FOL 68 VOL 9632 FOL 119
VOL 10380 FOL 10 VOL 10380 FOL 12
VOL 13778 FOL 79 VOL 13803 FOL 96

Recorded	Number	Type of Instrument	C.T. Issue
29/10/1984	DP708326	DEPOSITED PLAN	FOLIO CREATED EDITION 1
30/4/1986	DP732632	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

Point Frederick 51 Masons Pde PRINTED ON 28/5/2020

Received: 28/05/2020 11:41:59

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
28/5/2020 11:40AM

FOLIO: 51/732632

First Title(s): OLD SYSTEM
Prior Title(s): 50/708326 VOL 9632 FOL 123
VOL 10380 FOL 11

Recorded	Number	Type of Instrument	C.T. Issue
28/4/1986	DP732632	DEPOSITED PLAN	FOLIO CREATED EDITION 1
28/4/1993	I288809	CHANGE OF NAME	EDITION 2
15/11/2012	AH128939	REQUEST	

*** END OF SEARCH ***

Point Frederick 51 Masons Pde PRINTED ON 28/5/2020

Received: 28/05/2020 11:40:46

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 51/732632

SEARCH DATE	TIME	EDITION NO	DATE
28/5/2020	11:39 AM	2	28/4/1993

LAND

LOT 51 IN DEPOSITED PLAN 732632
AT GOSFORD
LOCAL GOVERNMENT AREA CENTRAL COAST
PARISH OF GOSFORD COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP732632

FIRST SCHEDULE

BRISBANE WATER (NSW) LEGACY (CN I288809)

SECOND SCHEDULE (4 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

* 2 AH128939 PART OF THE LAND ABOVE DESCRIBED IS USED AS A RETIREMENT VILLAGE UNDER THE RETIREMENT VILLAGES ACT 1999 KNOWN AS LEGACY INDEPENDENT LIVING UNITS POINT FREDERICK SHOWN HATCHED IN PLAN WITH AH128939

3 BK 2669 NO 395 EASEMENT FOR DRAINAGE 12.19 WIDE AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM

4 J461377 EASEMENT FOR DRAINAGE 12.19 WIDE AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM

NOTATIONS

NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO.

AH128939 NOTE: REFER ALL DEALINGS TO SD2 (RETIREMENT VILLAGE)

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Point Frederick 51 Masons Pde PRINTED ON 28/5/2020

Received: 28/05/2020 11:39:33

APPENDIX C

NSW EPA RECORDS

Search results

Your search for:Suburb: POINT FREDERICK

Search Again
Refine Search

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... more search tips

More information about particular sites may be available from:

- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act.

See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.
This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register.POEO public register

For

9 June 2020

Search results

Your search for: **General Search** with the following criteria

Suburb - POINT FREDERICK

returned 0 result

Search Again

For business and industry

For local government

Contact us

- 131 555 (tel:131555)
- Online (https://yoursay.epa.nsw.gov.au/epa-website-feedback)
- info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)
- EPA Office Locations (https://www.epa.nsw.gov.au/about-us/contact-us/locations)

APPENDIX D

PLANNING CERTIFICATES

Alliance Geotechnical Pty Ltd
PO Box 1028
ST MARYS NSW 1790

PLANNING CERTIFICATE

This Planning Certificate is issued in accordance with Section 10.7 of the *Environmental Planning and Assessment Act, 1979*

Certificate No:	165701
Certificate Date:	14 May 2020
Address:	51-57 Masons Parade POINT FREDERICK
Lot Description:	LOT: 51 DP: 732632
Parish:	Gosford
County:	Northumberland
Assessment No:	343686
Receipt No:	
Parcel No:	47742
Applicants Reference:	10827
Applicants Email:	

Part 2 - Environmental Planning and Assessment Regulation 2000

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.

State Environmental Planning Policy (Gosford City Centre) 2018

Specific Site State Environmental Planning Policies

State Environmental Planning Policy (Coastal Management) 2018 (whole of lot).

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017

General Site State Environmental Planning Policies

ZONE B4 MIXED USE UNDER STATE ENVIRONMENTAL PLANNING POLICY (GOSFORD CITY CENTRE) 2018
State Environmental Planning Policy (State and Regional Development) 2011
State Environmental Planning Policy (Affordable Rental Housing) 2009
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
State Environmental Planning Policy (Infrastructure) 2007
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007
State Environmental Planning Policy (Major Development) 2005
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004
State Environmental Planning Policy No. 65 - Design Quality of Residential Flat Development
State Environmental Planning Policy No. 64 - Advertising and Signage
State Environmental Planning Policy No. 55 - Remediation of Land
State Environmental Planning Policy No. 50 - Canal Estate Development
State Environmental Planning Policy No. 36 - Manufactured Home Estates
State Environmental Planning Policy No. 33 - Hazardous and Offensive Development
State Environmental Planning Policy No 70 - Affordable Housing (Revised Schemes)
State Environmental Planning Policy (Koala Habitat Protection) 2019 .
State Environmental Planning Policy No. 21 - Caravan Parks
State Environmental Planning Policy No. 19 - Bushland in Urban Areas
Sydney Regional Environmental Plan No. 9 - Extractive Industry (No 2-1995)
State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017
State Environmental Planning Policy (Primary Production and Rural Development) 2019.

(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).

Draft State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Draft State Environmental Planning Policy (Environment) 2017.

Draft State Environmental Planning Policy (Short-term Rental Accommodation) 2019

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

Gosford City Centre Development Control Plan 2018

2 ZONING AND LAND USE UNDER RELEVANT LOCAL ENVIRONMENTAL PLANS

(a) to (d) is the zoning of the land and the land use table for each of the zones listed, including existing and proposed Local Environmental Plans in landuse tables.

Zone B4 Mixed Use under State Environmental Planning Policy (Gosford City Centre) 2018
PERMITTED WITHOUT CONSENT
Nil
PERMITTED WITH CONSENT
Boarding houses; Centre-based child care facilities; Commercial premises; Community facilities; Educational establishments; Entertainment facilities; Function centres; Hotel or motel accommodation; Information and education facilities; Medical centres; Passenger transport facilities; Recreation facilities (indoor); Registered clubs; Respite day care centres; Restricted premises; Roads; Seniors housing; Shop top housing; Any other development not specified in Permitted without consent or Prohibited
PROHIBITED
Agriculture; Air transport facilities; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Correctional centres; Crematoria; Depots; Dual occupancies; Dwelling houses; Eco-tourist facilities; Electricity generating works; Environmental facilities; Environmental protection works; Exhibition homes; Exhibition villages; Extractive industries; Farm buildings; Flood mitigation works; Forestry; Freight transport facilities; Group homes (transitional); Heavy industrial storage establishments; Highway service centres; Home-based child care; Home businesses; Home occupations (sex services); Hospitals; Hostels; Industrial retail outlets; Industries; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Recreation facilities (major); Recreation facilities (outdoor); Research stations; Resource recovery facilities; Rural industries; Rural workers

dwellings; Secondary dwellings; Semi-detached dwellings; Service stations; Sewage treatment plants; Sex services premises; Storage premises; Transport depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste disposal facilities; Water recreation structures; Water recycling facilities; Water supply systems; Wholesale supplies

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

No.

(f) whether the land includes or comprises critical habitat,

None

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

No.

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

No.

2A ZONING AND LAND USE UNDER SEPP (SYDNEY REGIONAL GROWTH CENTRES) 2006

Not applicable

3 COMPLYING DEVELOPMENT

General Housing Code

Complying development under the General Housing Code may not be carried out on the land. The land is affected by specific land exemptions: The land is identified on an Acid Soils Map as being Class 1 or 2. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

Rural Housing Code

Complying development under the Rural Housing Code may not be carried out on the land. The land is affected by specific land exemptions: The land is identified on an Acid Soils Map as being Class 1 or 2. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

Housing Alterations Code

Complying development under the Housing Alterations Code may be carried out on the land under Clauses 1.17A & 1.19. This information needs to be read in conjunction with the whole of the SEPP.

General Development Code

Complying development under the General Development Code may be carried out on the land under Clauses 1.17A & 1.19. This information needs to be read in conjunction with the whole of the SEPP.

Subdivision Code

Complying development under the Subdivision Code may be carried out on the land under Clauses 1.17A & 1.19. This information needs to be read in conjunction with the whole of the SEPP.

Demolition Code

Complying development under the Demolition Code may be carried out on the land under Clauses 1.17A & 1.19. This information needs to be read in conjunction with the whole of the SEPP.

Commercial and Industrial (New Buildings and Additions) Code

Complying development under the Commercial and Industrial (New Buildings and Additions) Code may not be carried out on the land. The land is affected by specific land exemptions: The land is identified on an Acid Soils Map as being Class 1 or 2. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

Commercial and Industrial Alterations Code

Complying development under the Commercial and Industrial Alterations Code may be carried out on the land under Clauses 1.17A & 1.19. This information needs to be read in conjunction with the whole of the SEPP.

Fire Safety Code

Complying development under the Fire Safety Code may be carried out on the land under Clauses 1.17A & 1.19. This information needs to be read in conjunction with the whole of the SEPP.

Low Rise Medium Density Housing Code

The Low Rise Medium Density Housing Code does not apply to Central Coast local government area until 1 July 2020.

Greenfield Housing Code

The Greenfield Housing Code is not applicable to this land.

4 (Repealed)

4A (Repealed)

4B Annual Charges for coastal protection services under *Local Government Act 1993*

None

5 MINE SUBSIDENCE

The land is not within a Mine Subsidence District declared under section 20 of the *Coal Mine Subsidence Compensation Act 2017*.

6 ROAD WIDENING AND ROAD RE-ALIGNMENT

Whether or not the land is affected by any road widening or road alignment.

The property is adjacent to a State Road under the control of Transport for NSW (TfNSW) and may be affected by an existing road widening scheme.

Enquiries regarding this matter should be directed to the TfNSW Hunter Region Property Office on (02) 4908 7552.

7 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS *(No, unless a message is listed below)*

Chapter 6.4 of Gosford Development Control Plan (Geotechnical Requirements) applies to the land and the land may be subject to slip. When considering a development application, each circumstance will be considered and development may be restricted.

The subject property has been identified as being Class 2 - (Works below the ground surface; Works by which the watertable is likely to be lowered) on the Acid Sulfate Soil Planning Maps held by Council.

7A FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

Is development on the land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling house or residential flat buildings (excluding group homes or seniors housing) subject to flood related development controls.

Yes.

Is development on the land or part of the land for any other purpose subject to flood related development controls.

Yes.

8 LAND RESERVED FOR ACQUISITION

No.

9 CONTRIBUTION PLANS

Gosford City Council Section 94A Development Contributions Plan - Gosford City Centre

9A BIODIVERSITY CERTIFIED LAND

Is the land biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*?

No.

10 BIODIVERSITY STEWARDSHIP SITES

Is the land a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016*?

No.

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).

None.

11 BUSHFIRE PRONE LAND

The land is not shown as bush fire prone on Council's records.

12 PROPERTY VEGETATION PLANS

Has Council been notified by the person or body that approved the plan that the land is land to which a property vegetation plan under the *Native Vegetation Act 2003* applies?

No.

13 ORDERS UNDER TREES (DISPUTE BETWEEN NEIGHBOURS) ACT 2006

Has Council been notified that 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?

No.

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.

No.

15 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR SENIORS HOUSING

15(a) IS COUNCIL AWARE OF A CURRENT SITE COMPATIBILITY CERTIFICATE (SENIORS HOUSING) IN RESPECT OF PROPOSED DEVELOPMENT ON THE LAND?

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

No.

15(b) ARE THERE ANY CONDITIONS IMPOSED BY A CONSENT AUTHORITY IN TERMS OF CLAUSE 18 (2) OF STATE ENVIRONMENTAL PLANNING POLICY (HOUSING FOR SENIORS OR PEOPLE WITH A DISABILITY) 2004 AFTER 11 OCTOBER 2007?

No.

16 SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE

No.

17 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

17(1) IS COUNCIL AWARE OF A CURRENT SITE COMPATIBILITY CERTIFICATE (AFFORDABLE RENTAL HOUSING) IN RESPECT OF PROPOSED DEVELOPMENT ON THE LAND?

No.

17(2) ARE THERE ANY CONDITIONS IMPOSED BY A CONSENT AUTHORITY IN TERMS OF CL 17 (1) OR 37 (1) OF STATE ENVIRONMENTAL PLANNING POLICY (AFFORDABLE RENTAL HOUSING) 2009?

No.

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.

None

(2) The date of any subdivision order that applies to the land.

Nil

19 SITE VERIFICATION CERTIFICATE

There is no current site verification certificate, of which the Council is aware in respect of the land.

20 LOOSE-FILL ASBESTOS INSULATION

NSW Fair Trading has not identified any residential dwellings erected within Central Coast Council Local Government Area as containing loose-fill asbestos ceiling insulation, as per the Loose-Fill Asbestos Insulation Register.

21 AFFECTED BUILDING NOTICES AND BUILDING PRODUCT RECTIFICATION ORDERS (BUILDING PRODUCT SAFETY ACT 2017)

(1) Is there any affected building notice of which the council is aware that is in force in respect of the land?

No

(2) Is there 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?

No

(3) Is there 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.

No

Note

1 *CONTAMINATED LAND MANAGEMENT ACT 1997* NOTICES UNDER SECTION 59(2)

(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,

No.

(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,

No.

(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,

No.

(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,

No.

(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.

No.

2 ***NATION BUILDING AND JOB PLAN (STATE INFRASTRUCTURE DELIVERY) ACT 2009 EXEMPTION UNDER SECTION 23 OR AUTHORISATION UNDER SECTION 24 OF THE ACT.***

No.

The following additional information is issued under Section 10.7(5) of the *Environmental Planning and Assessment Act, 1979*

Council has fixed a foreshore building line on all lands fronting any harbour, bay, ocean, lake, estuary, lagoon or tidal river and creek.

If this land adjoins land or roads over which there is an easement for services to drain water, to drain sewage or where services, drainage, sewerage or other utilities have been installed and easements have not been created, foundations may be required such as will ensure the stability of any improvements on the subject land against any influence from use of the easement or installations over the adjoining land or roads.

The property is subject to Environmental Planning and Assessment (Special Infrastructure Contribution - Gosford City Centre) Determination 2018 made by the Minister for Planning, pursuant to section 7.23 of the Environmental Planning and Assessment Act 1979 on 12 October 2018 (enquiries to the Department of Planning and Environment).

Note: This Certificate is issued without Alteration and Erasure.

APPENDIX E

SITE PHOTOGRAPHS

Image 1 View of the site frontage, facing south east

Image 2 View of the centre of the site and residential buildings, facing south

Image 3 View of office buildings, facing north east

Image 4 View of open area surrounded by residential flats, within the south western portion of site.

Image 5 View of open area surrounded by residential flats, within the south eastern portion of site.

Image 6 View of open area surrounded near the office, within the central portion of site.

Image 7 View of driveway along the northern boundary of site

Image 8 View of 3.5t excavator at test pit TP15

Image 9 View of fill (right) and natural (left) soils encountered on site

Image 10 View of PACM within the test pit TP18

APPENDIX F

BOREHOLE LOGS

Alliance Geotechnical

Manage the earth, eliminate the risk

Alliance Geotechnical Pty Ltd
T: 1800 288 188
E: office@allgeo.com.au
W: www.allgeo.com.au

No: TP01
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E			0.5		FILL	FILL: Silty CLAY, brown, soft, moist, with rootlets and sandstone cobbles, trace sands	TP01-0.0-0.2	M		No PACM, odours or sheens observed.
			1.0		SW-SC	SAND trace Clay, grey/orange, moist, soft	TP01-0.8-1.0	M		No PACM, odours or sheens observed.
			1.5			Borehole TP01 terminated at 1.5m				

Alliance Geotechnical
Manage the earth, eliminate the risk

Alliance Geotechnical Pty Ltd
T: 1800 288 188
E: office@allgeo.com.au
W: www.allgeo.com.au

No: TP02
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E			0.5		FILL	FILL: Gravelly CLAY, brown/pale orange, soft, moist, with rootlets	TP02-0.0-0.2/ DUP01/ DUP01A	M		Terracotta fragments observed at 1.0m bgl. No PACM, odours or sheens observed.
			1.0		SW-SC	SAND trace Clay, orange, moist, soft	TP02-1.2-1.4	M		No PACM, odours or sheens observed.
			1.5							

Borehole TP02 terminated at 1.8m

Alliance Geotechnical
Manage the earth, eliminate the risk

Alliance Geotechnical Pty Ltd
T: 1800 288 188
E: office@allgeo.com.au
W: www.allgeo.com.au

No: TP03
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E			0.5		FILL	FILL: Silty CLAY, brown, soft, moist	TP03-0.0-0.2	M		No PACM, odours or sheens observed.
			1.0		FILL	FILL: Silty CLAY, dark brown, stiff to very stiff, moist	TP03-0.8-1.0	M		No PACM, odours or sheens observed.
			1.5							

Borehole TP03 terminated at 1.8m

Alliance Geotechnical
Manage the earth, eliminate the risk

Alliance Geotechnical Pty Ltd
T: 1800 288 188
E: office@allgeo.com.au
W: www.allgeo.com.au

No: TP04
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E			0.5		FILL	FILL: Silty CLAY, brown/orange, soft, moist, some sands	TP04-0.0-0.2	M		No PACM, odours or sheens observed.
			1.0		SC	Clayey SAND, brown/orange, soft, moist, with rootlets	TP04-1.0-1.2	M		No PACM, odours or sheens observed.
			1.5							

Borehole TP04 terminated at 1.8m

Alliance Geotechnical
Manage the earth, eliminate the risk

Alliance Geotechnical Pty Ltd
T: 1800 288 188
E: office@allgeo.com.au
W: www.allgeo.com.au

No: TP05
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW **Hole Location:** Refer to figure 4.
Test Pit Size: m

Rig Type: 3.5t Excavator **Hole Coordinates** , m **Driller:** Stratacore **Logged:** JW
RL Surface: m **Contractor:** AG **Bearing:** --- **Checked:** AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E					FILL	FILL: Silty CLAY, dark brown, soft, moist, with rootlets	TP05-0.0-0.2	M		No PACM, odours or sheens observed.
			0.5		FILL	FILL: Clayey SAND, orange/yellow, soft, moist	TP05-0.4-0.6	M		No PACM, odours or sheens observed.
			1.0		SW-SC	Sand trace Clay, grey/orange, moist, soft	TP05-1.0-1.2	M		No PACM, odours or sheens observed.
			1.5			Borehole TP05 terminated at 1.5m				

Alliance Geotechnical
Manage the earth, eliminate the risk

Alliance Geotechnical Pty Ltd
T: 1800 288 188
E: office@allgeo.com.au
W: www.allgeo.com.au

No: TP06
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E					FILL	FILL: Silty CLAY, dark brown, trace sands, soft, moist	TP06-0.0-0.2	M		No PACM, odours or sheens observed.
					FILL	FILL: Sandy CLAY, orange, soft, moist	TP06-0.2-0.4	M		No PACM, odours or sheens observed.
			0.5							
					FILL	FILL: Sandy CLAY, dark brown, soft	TP06-0.9-1.1	M		No PACM, odours or sheens observed.
			1.0							
			1.5							

Borehole TP06 terminated at 1.8m

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No: TP07
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW **Hole Location:** Refer to figure 4. **Test Pit Size:** m
Rig Type: 3.5t Excavator **Hole Coordinates** , m **Driller:** Stratacore **Logged:** JW
RL Surface: m **Contractor:** AG **Bearing:** --- **Checked:** AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E					FILL	FILL: Silty CLAY, brown, soft, moist, with sands	TP07-0.0-0.2	M		No PACM, odours or sheens observed.
					FILL	FILL: Clayey SAND, brown/orange, soft, moist	TP07-0.2-0.4	M		No PACM, odours or sheens observed.
			0.5							
			1.0							
					SW-SC	SAND trace Clay, brown/grey, soft, moist, fine to coarse grained	TP07-1.3-1.5	M		No PACM, odours or sheens observed.
			1.5							

Borehole TP07 terminated at 1.8m

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No: TP08
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E					FILL	FILL: Silty CLAY, brown, soft, moist, with sands	TP08-0.0-0.2	M		No PACM, odours or sheens observed.
					FILL	FILL: Road base, wet		W		No PACM, odours or sheens observed.
			0.5		SW-SC	Clayey SAND, orange/brown, soft, moist	TP08-0.5-0.7	M		No PACM, odours or sheens observed.
			1.0							
			1.5							

Borehole TP08 terminated at 1.8m

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No: TP09
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E			0.5		FILL	FILL: Sandy CLAY, brown, moist, some gravels	TP09-0.0-0.2/ DUP03/ DUP03A	M		Timber observed at 1.0m bgl. No PACM, odours or sheens observed.
			1.0		SW-SC	Clayey SAND, grey, soft, moist	TP09-1.2-1.4	M		No PACM, odours or sheens observed.
			1.5			Borehole TP09 terminated at 1.8m				

1. NON CORED BOREHOLE 10827-ER-1-1 LOGS.GPJ GINT STD AUSTRALIA.GDT 30/6/20

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No: TP10
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E					FILL	FILL: Sandy CLAY, brown, moist, some gravels	TP10-0.0-0.2	M		No PACM, odours or sheens observed.
					FILL	FILL: Roadbase, wet		W		No PACM, odours or sheens observed.
					FILL	FILL: Sandy CLAY, soft, brown, moist	TP10-0.4-0.6	M		No PACM, odours or sheens observed.
			0.5							
			1.0		FILL	FILL: Brick layer		-		Brick layer observed between 1.0-1.1m bgl. No PACM, odours or sheens observed.
					FILL	FILL: CLAY, dark brown, soft, moist, with gravels		M		No PACM, odours or sheens observed.
					CLS	Sandy CLAY, grey, soft, moist	TP10-1.2-1.4	M		No PACM, odours or sheens observed.
			1.5							

Borehole TP10 terminated at 1.8m

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No: TP11
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
E					FILL	FILL: Silty CLAY, brown, soft, moist, with rootlets	TP11-0.0-0.2	M		No PACM, odours or sheens observed.
					FILL	FILL: Roadbase, wet		W		No PACM, odours or sheens observed.
					FILL	FILL: Sandy CLAY, dark brown, moist	TP11-0.4-0.6	M		No PACM, odours or sheens observed.
			0.5							
			1.0		FILL	FILL: Brick layer		-		Brick layer observed between 1.0-1.2m bgl. No PACM, odours or sheens observed.
					CLS	Sandy CLAY, grey, soft, moist	TP11-1.2-1.4	M		No PACM, odours or sheens observed.
			1.5							

Borehole TP11 terminated at 1.8m

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No: TP12
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW **Hole Location:** Refer to figure 4.
Test Pit Size: m
Rig Type: Hand held mechanical push tube **Hole Coordinates** , m **Driller:** Stratacore **Logged:** JW
RL Surface: m **Contractor:** AG **Bearing:** --- **Checked:** AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
DT					FILL	FILL: TOPSOIL/Road Base		M		No PACM, odours or sheens observed.
					FILL	FILL: Silty CLAY, pale brown/orange, stiff, moist	TP12-0.1-0.3	M		No PACM, odours or sheens observed.
			0.5							
					SW-SC	Clayey SAND, grey, moist, stiff	TP12-0.6-0.8	M		No PACM, odours or sheens observed.
			1.0							
						Borehole TP12 terminated at 1.1m				
			1.5							

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No: TP13
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW **Hole Location:** Refer to figure 4.
Test Pit Size: m
Rig Type: Hand held mechanical push tube **Hole Coordinates** , m **Driller:** Stratacore **Logged:** JW
RL Surface: m **Contractor:** AG **Bearing:** --- **Checked:** AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
DT					FILL	FILL: TOPSOIL		M		No PACM, odours or sheens observed.
					FILL	FILL: Silty CLAY, pale brown/orange, stiff, moist	TP13-0.1-0.3	M		No PACM, odours or sheens observed.
			0.5							
					CLS	CLAY trace Sands, black, moist	TP13-0.6-0.8	M		No PACM, odours or sheens observed.
			1.0							
						Borehole TP13 terminated at 1.1m				
			1.5							

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No: TP14
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
DT			0.5		FILL	FILL: Silty CLAY, brown, trace sands, soft, moist	TP14-0.0-0.2	M		No PACM, odours or sheens observed.
			1.0		SC-SM	Clayey SAND, grey/orange, soft, moist	TP14-0.5-0.7	M		No PACM, odours or sheens observed.
			1.5							

Borehole TP14 terminated at 1.8m

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No: TP15
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW
Hole Location: Refer to figure 4.
Test Pit Size: m
Rig Type: 3.5t Excavator
Hole Coordinates , m
Driller: Stratacore
Logged: JW
RL Surface: m
Contractor: AG
Bearing: ---
Checked: AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
DT			0.5		FILL	FILL: Silty CLAY, brown, soft, moist, trace sands	TP15-0.0-0.2	M		No PACM, odours or sheens observed.
			1.0		SW-SC	SAND, trace Clay, brown/grey, soft, moist, fine to coarse grained	TP15-1.0-1.2	M		No PACM, odours or sheens observed.
			1.5							

Borehole TP15 terminated at 1.8m

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No: TP16
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW **Hole Location:** Refer to figure 4. **Test Pit Size:** m
Rig Type: Hand held mechanical push tube **Hole Coordinates** , m **Driller:** Stratacore **Logged:** JW
RL Surface: m **Contractor:** AG **Bearing:** --- **Checked:** AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
DT					FILL	FILL: TOPSOIL - Sand, soft, wet		W		No PACM, odours or sheens observed.
					CLS	Sandy CLAY, brown, soft, wet	TP16-0.1-0.3	W		No PACM, odours or sheens observed. Refusal at 0.8m bgl on tree root
			0.5							
						Borehole TP16 terminated at 0.9m				
			1.0							
			1.5							

1. NON CORED BOREHOLE 10827-ER-1-1 LOGS.GPJ GINT STD AUSTRALIA.GDT 30/6/20

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No: TP17
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW **Hole Location:** Refer to figure 4.
Test Pit Size: m
Rig Type: Hand held mechanical push tube **Hole Coordinates** , m **Driller:** AG **Logged:** JW
RL Surface: m **Contractor:** AG **Bearing:** --- **Checked:** AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
DT					FILL	FILL: TOPSOIL		M		No PACM, odours or sheens observed.
					FILL	FILL: Clayey SAND, grey/brown, soft, moist		M		No PACM, odours or sheens observed.
							TP17-0.1-0.3			
			0.5							
			1.0				TP17-0.9-1.1			
						Borehole TP17 terminated at 1.1m				
			1.5							

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No: TP18
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW **Hole Location:** Refer to figure 4.
Test Pit Size: m
Rig Type: Hand held mechanical push tube **Hole Coordinates** , m **Driller:** AG **Logged:** JW
RL Surface: m **Contractor:** AG **Bearing:** --- **Checked:** AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
DT					FILL	FILL: TOPSOIL/GRASS		M		No PACM, odours or sheens observed.
					FILL	FILL: Clayey SAND, dark brown, claystone cobbles, moist	TP18-0.1-0.3	M		PACM observed at 0.5m bgl. No odours or sheens observed.
			0.5				TP18-FCS01			
			1.0			Borehole TP18 terminated at 1.1m				
			1.5							

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No: TP19
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW **Hole Location:** Refer to figure 4. **Test Pit Size:** m
Rig Type: Hand held mechanical push tube **Hole Coordinates** , m **Driller:** AG **Logged:** JW
RL Surface: m **Contractor:** AG **Bearing:** --- **Checked:** AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
DT					FILL	FILL: TOPSOIL		M		No PACM, odours or sheens observed.
					FILL	FILL: Sandstone cobbles		M		No PACM, odours or sheens observed.
					FILL	FILL: Sandy CLAY, black/brown, wet	TP19-0.2-0.4	W		No PACM, odours or sheens observed.
			0.5							
			1.0		SC-SM	Clayey SAND, grey, soft, wet	TP19-1.0-1.1	W		No PACM, odours or sheens observed.
						Borehole TP19 terminated at 1.1m				
			1.5							

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No: TP20
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW **Hole Location:** Refer to figure 4. **Test Pit Size:** m
Rig Type: Hand held mechanical push tube **Hole Coordinates** , m **Driller:** AG **Logged:** JW
RL Surface: m **Contractor:** AG **Bearing:** --- **Checked:** AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
DT					FILL	FILL: TOPSOIL		M		No PACM, odours or sheens observed.
					FILL	FILL: Sandy CLAY, dark brown to brown, with rootlets, soft, moist	TP20-0.1-0.3	M		No PACM, odours or sheens observed.
			0.5							
			1.0		SW-SC	SAND trace Clay, grey, wet, soft	TP20-0.9-1.1	W		No PACM, odours or sheens observed.
						Borehole TP20 terminated at 1.1m				
			1.5							

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No: TP21
Sheet: 1 of 1
Job No: 10827

Test Pit Log

Client: Brisbane Waters (NSW) Legacy Club, c/o Grindley
Started: 1/6/20
Project: Detailed Site Investigation
Finished: 1/6/20
Location: 51 Masons Parade, Point Frederick NSW **Hole Location:** Refer to figure 4.
Test Pit Size: m
Rig Type: Hand held mechanical push tube **Hole Coordinates** , m **Driller:** AG **Logged:** JW
RL Surface: m **Contractor:** AG **Bearing:** --- **Checked:** AR

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
DT					FILL	FILL: TOPSOIL/GRASS		M		No PACM, odours or sheens observed.
					FILL	FILL: Sandy CLAY, black, soft, wet	TP21-0.1-0.3	W		No PACM, odours or sheens observed.
			0.5							
					SC-SM	Clayey SAND, grey, soft, wet	TP21-0.7-0.9	W		No PACM, odours or sheens observed.
			1.0							
						Borehole TP21 terminated at 1.1m				
			1.5							

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BH No: MW01
Sheet: 1 of 1
Job No: 10827

Borehole Log

Client: Brisbane Waters NSW Legacy Club
Project: Legacy Club Redevelopment
Location: 51 Masons Parade, Point Frederick, NSW

Started: 3/06/2020
Finished: 3/06/2020
Borehole Size 110 mm

Rig Type: Geoprobe 6712DT
Hole Location: Refer Drawing 10827-GR-1-A
Driller: DC
Logged: JA

RL Surface: 1.20m
Contractor: Stratacore Pty Ltd
Bearing: ---
Checked: LM

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT			1			- -	FILL: Silty Sand, fine to medium grained, dark grey, with medium to high plasticity clay, trace fine rounded gravel.	ES 0.5	M	- -	FILL
	Tidal Seepage 3/06/2020		0	1		SC	Clayey SAND, fine to medium grained, grey, with shell fragments, low to medium plasticity clay.	ES 1.0	W	VL	QUATERNARY DEPOSITS
			-1	2		SC	Clayey SAND, fine to medium grained, brown and dark grey, low to medium plasticity clay, with shell fragments.	SPT 0, 0, 0 N=0 ES 1.5 ES 2.0 ES 2.5	W	VL	
			-2	3				SPT 0, 0, 0 N=0 ES 3.0			
							Borehole MW01 terminated at 3.5m	ES 3.5			
			-3	4							
			-4	5							
			-5	6							
			-6	7							
				8							

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BH No: MW03
Sheet: 1 of 1
Job No: 10827

Borehole Log

Client: Brisbane Waters NSW Legacy Club
Project: Legacy Club Redevelopment
Location: 51 Masons Parade, Point Frederick, NSW

Started: 3/06/2020
Finished: 3/06/2020
Borehole Size 110 mm

Rig Type: Geoprobe 6712DT
Hole Location: Refer Drawing 10827-GR-1-A
Driller: DC
Logged: JA

RL Surface: 2.00m
Contractor: Stratacore Pty Ltd
Bearing: ---
Checked: LM

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT			1	1		- -	FILL: Sandy Gravel, fine to medium, dark grey, fine to medium grained sand.	ES 0.5	D	- -	FILL
						- -	SAND, fine to medium grained, pale brown.	ES 1.0	M	L	POSSIBLE FILL
								SPT 3, 3, 3 N=6 ES 1.5			
			0	2		SC	Clayey SAND, fine to medium grained, grey, with shell fragments, low to medium plasticity clay.	ES 2.0	W	VL	QUATERNARY DEPOSITS
	Tidal Seepage 3/06/2020					SC	Clayey SAND, fine to medium grained, brown and dark grey, low to medium plasticity clay, with shell fragments.	ES 2.5	W	VL	
			-1	3				SPT 2, 1, 1 N=2 ES 3.0			
							Borehole MW03 terminated at 3.5m	ES 3.5			
			-2	4							
			-3	5							
			-4	6							
			-5	7							
			-6	8							

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BH No: MW04
Sheet: 1 of 1
Job No: 10827

Borehole Log

Client: Brisbane Waters NSW Legacy Club
Project: Legacy Club Redevelopment
Location: 51 Masons Parade, Point Frederick, NSW

Started: 3/06/2020
Finished: 3/06/2020
Borehole Size 110 mm

Rig Type: Geoprobe 6712DT
Hole Location: Refer Drawing 10827-GR-1-A
Driller: DC
Logged: JA

RL Surface: 2.00m
Contractor: Stratacore Pty Ltd
Bearing: ---
Checked: LM

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT						- -	FILL: Silty Sand, fine to medium grained, dark grey, with medium to high plasticity clay, trace fine fill rounded gravel.		D	- -	FILL
						SP	Clayey SAND, fine to medium grained, brown, with shell fragments, low to medium plasticity clay.	ES 0.5	M	L	QUATERNARY DEPOSITS
			1	1			1.00m: as above, but pale brown.	ES 1.0		VL - L	
								SPT 2, 4, 4 N=8 ES 1.5			
			0	2			2.00m: as above, but grey green.	ES 2.0	W		
								ES 2.5			
			-1	3			3.00m: as above, but dark grey.	SPT 0, 0, 0 N=0 ES 3.0		VL	
								ES 3.5			
			-2	4				ES 4.0			
								SPT 0, 0, 0 N=0 ES 4.5			
			-3	5				ES 5.0			
								ES 5.5			
			-4	6							
							Borehole MW04 terminated at 6m	ES 6.0			
			-5	7							
			-6	8							

Tidal Seepage 3/06/2020

2. NON CORED BOREHOLE (NO COORD/RL) 10827 GINT.GPJ GINT STD AUSTRALIA.GDT 25/6/20

APPENDIX G

LABORATORY CERTIFICATE

Alliance Geotechnical
10 Welder Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Aidan Rooney**

Report **723334-S**
Project name POINT FREDERICK
Project ID 10827
Received Date Jun 02, 2020

Client Sample ID			**TP01-0.0-0.2**	**TP02-0.0-0.2**	**TP03-0.0-0.2**	**TP04-0.0-0.2**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S20-Jn04605**	**S20-Jn04606**	**S20-Jn04607**	**S20-Jn04608**
Date Sampled			**Jun 01, 2020**	**Jun 01, 2020**	**Jun 01, 2020**	**Jun 01, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	35	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	89	< 50	54	72
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	69
TRH C10-C36 (Total)	50	mg/kg	124	< 50	54	141
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	52	84	79	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	120	< 100	< 100	120
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	120	< 100	< 100	120
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP01-0.0-0.2	TP02-0.0-0.2	TP03-0.0-0.2	TP04-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04605	S20-Jn04606	S20-Jn04607	S20-Jn04608
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.8
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.7
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	2
2-Fluorobiphenyl (surr.)	1	%	90	84	119	77
p-Terphenyl-d14 (surr.)	1	%	96	101	INT	92
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	133	96	INT	133
Tetrachloro-m-xylene (surr.)	1	%	94	90	128	84
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP01-0.0-0.2	TP02-0.0-0.2	TP03-0.0-0.2	TP04-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04605	S20-Jn04606	S20-Jn04607	S20-Jn04608
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	100	91	INT	97
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	133	96	INT	133
Tetrachloro-m-xylene (surr.)	1	%	94	90	128	84
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	-
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	-
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	-
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	-

Client Sample ID			TP01-0.0-0.2	TP02-0.0-0.2	TP03-0.0-0.2	TP04-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04605	S20-Jn04606	S20-Jn04607	S20-Jn04608
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	-
Dinoseb	20	mg/kg	< 20	< 20	< 20	-
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	-
Phenol-d6 (surr.)	1	%	95	76	117	-
Heavy Metals						
Arsenic	2	mg/kg	16	3.1	5.7	5.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	24	11	13	16
Copper	5	mg/kg	17	7.6	8.1	11
Lead	5	mg/kg	67	19	25	38
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	17	5.5	6.3	9.1
Zinc	5	mg/kg	86	27	36	47
% Moisture	1	%	28	9.5	12	8.4
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	58	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	6.8	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	14	-	-

Client Sample ID			TP05-0.0-0.2	TP06-0.0-0.2	TP07-0.0-0.2	TP08-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04609	S20-Jn04610	S20-Jn04611	S20-Jn04612
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	80	92	84	77

Client Sample ID			TP05-0.0-0.2	TP06-0.0-0.2	TP07-0.0-0.2	TP08-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04609	S20-Jn04610	S20-Jn04611	S20-Jn04612
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	74	72	58	66
p-Terphenyl-d14 (surr.)	1	%	95	101	98	95
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TP05-0.0-0.2	TP06-0.0-0.2	TP07-0.0-0.2	TP08-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04609	S20-Jn04610	S20-Jn04611	S20-Jn04612
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	95	98	111	97
Tetrachloro-m-xylene (surr.)	1	%	82	85	70	76
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	84	80	93	77

Client Sample ID			TP05-0.0-0.2	TP06-0.0-0.2	TP07-0.0-0.2	TP08-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04609	S20-Jn04610	S20-Jn04611	S20-Jn04612
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	95	98	111	97
Tetrachloro-m-xylene (surr.)	1	%	82	85	70	76
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	-	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	-	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	-	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	-	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
2-Nitrophenol	1	mg/kg	< 1	< 1	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	-	< 5
Dinoseb	20	mg/kg	< 20	< 20	-	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	-	< 20
Phenol-d6 (surr.)	1	%	76	62	-	50
Heavy Metals						
Arsenic	2	mg/kg	4.7	7.9	2.5	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	15	23	39	8.7
Copper	5	mg/kg	11	8.9	5.9	8.9
Lead	5	mg/kg	36	24	23	21
Mercury	0.1	mg/kg	< 0.1	0.3	0.7	< 0.1
Nickel	5	mg/kg	8.7	< 5	< 5	< 5
Zinc	5	mg/kg	45	78	19	33
% Moisture	1	%	13	23	13	22

Client Sample ID			TP09-0.0-0.2	TP09-1.2-1.4	TP10-0.0-0.2	TP11-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04613	S20-Jn04614	S20-Jn04615	S20-Jn04616
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	50	93	110	110
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	80	68	84	91
p-Terphenyl-d14 (surr.)	1	%	111	104	98	86

Client Sample ID			TP09-0.0-0.2	TP09-1.2-1.4	TP10-0.0-0.2	TP11-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04613	S20-Jn04614	S20-Jn04615	S20-Jn04616
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	80	144	90	141
Tetrachloro-m-xylene (surr.)	1	%	97	87	85	92
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP09-0.0-0.2	TP09-1.2-1.4	TP10-0.0-0.2	TP11-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04613	S20-Jn04614	S20-Jn04615	S20-Jn04616
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.5	< 0.5	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	80	73	70	80
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	80	144	90	141
Tetrachloro-m-xylene (surr.)	1	%	97	87	85	92
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	-	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	-	-	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	-	-	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	-	-	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	-	-	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	-	-	< 1	-
Pentachlorophenol	1	mg/kg	-	-	< 1	-
Tetrachlorophenols - Total	10	mg/kg	-	-	< 10	-
Total Halogenated Phenol*	1	mg/kg	-	-	< 1	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	-	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	-	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	< 0.2	-
2-Nitrophenol	1	mg/kg	-	-	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	-	-	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	-	-	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	< 0.4	-
4-Nitrophenol	5	mg/kg	-	-	< 5	-
Dinoseb	20	mg/kg	-	-	< 20	-
Phenol	0.5	mg/kg	-	-	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	-	-	< 20	-
Phenol-d6 (surr.)	1	%	-	-	57	-

Client Sample ID			TP09-0.0-0.2	TP09-1.2-1.4	TP10-0.0-0.2	TP11-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04613	S20-Jn04614	S20-Jn04615	S20-Jn04616
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.5	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	6.3	< 5	5.6	31
Copper	5	mg/kg	< 5	< 5	6.8	14
Lead	5	mg/kg	7.9	< 5	17	27
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	24
Zinc	5	mg/kg	5.9	< 5	47	54
% Moisture	1	%	10	12	35	17

Client Sample ID			TP12-0.1-0.3	TP13-0.1-0.3	TP14-0.0-0.2	TP15-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04617	S20-Jn04618	S20-Jn04619	S20-Jn04620
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	90	81	100	115
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP12-0.1-0.3	TP13-0.1-0.3	TP14-0.0-0.2	TP15-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04617	S20-Jn04618	S20-Jn04619	S20-Jn04620
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	80	74	82	94
p-Terphenyl-d14 (surr.)	1	%	91	85	87	91
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.2
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.2
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	81	91	78	70
Tetrachloro-m-xylene (surr.)	1	%	90	86	93	97
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2

Client Sample ID			TP12-0.1-0.3	TP13-0.1-0.3	TP14-0.0-0.2	TP15-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04617	S20-Jn04618	S20-Jn04619	S20-Jn04620
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	86	92	93	87
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	81	91	78	70
Tetrachloro-m-xylene (surr.)	1	%	90	86	93	97
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	-	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	-	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	-	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	-	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	-	< 1

Client Sample ID			TP12-0.1-0.3	TP13-0.1-0.3	TP14-0.0-0.2	TP15-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04617	S20-Jn04618	S20-Jn04619	S20-Jn04620
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
2-Nitrophenol	1	mg/kg	< 1	< 1	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	-	< 5
Dinoseb	20	mg/kg	< 20	< 20	-	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	-	< 20
Phenol-d6 (surr.)	1	%	91	91	-	89
Heavy Metals						
Arsenic	2	mg/kg	5.0	6.7	2.9	2.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	14	11	< 5
Copper	5	mg/kg	< 5	6.2	< 5	< 5
Lead	5	mg/kg	12	9.7	16	53
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	8.3	23	16	23
% Moisture	1	%	10	13	15	13

Client Sample ID			TP16-0.1-0.3	TP17-0.1-0.3	TP18-0.1-0.3	TP19-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04621	S20-Jn04622	S20-Jn04623	S20-Jn04624
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	90	85	88	78
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID			TP16-0.1-0.3	TP17-0.1-0.3	TP18-0.1-0.3	TP19-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04621	S20-Jn04622	S20-Jn04623	S20-Jn04624
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	88	96	93	94
p-Terphenyl-d14 (surr.)	1	%	87	94	89	95
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1

Client Sample ID			TP16-0.1-0.3	TP17-0.1-0.3	TP18-0.1-0.3	TP19-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04621	S20-Jn04622	S20-Jn04623	S20-Jn04624
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	75	63	86	129
Tetrachloro-m-xylene (surr.)	1	%	97	108	96	98
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.5	< 0.5	< 0.5
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	87	77	77	106
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP16-0.1-0.3	TP17-0.1-0.3	TP18-0.1-0.3	TP19-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04621	S20-Jn04622	S20-Jn04623	S20-Jn04624
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	75	63	86	129
Tetrachloro-m-xylene (surr.)	1	%	97	108	96	98
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	-	< 1	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	-	< 1	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	< 1	-
Pentachlorophenol	1	mg/kg	-	< 1	< 1	-
Tetrachlorophenols - Total	10	mg/kg	-	< 10	< 10	-
Total Halogenated Phenol*	1	mg/kg	-	< 1	< 1	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	< 0.2	-
2-Nitrophenol	1	mg/kg	-	< 1	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	< 0.4	-
4-Nitrophenol	5	mg/kg	-	< 5	< 5	-
Dinoseb	20	mg/kg	-	< 20	< 20	-
Phenol	0.5	mg/kg	-	< 0.5	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	< 20	-
Phenol-d6 (surr.)	1	%	-	88	89	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	9.9	6.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.7	< 0.4
Chromium	5	mg/kg	6.6	8.8	21	9.8
Copper	5	mg/kg	< 5	8.3	61	61
Lead	5	mg/kg	8.4	32	300	76
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.3	0.2
Nickel	5	mg/kg	< 5	< 5	8.0	< 5
Zinc	5	mg/kg	6.3	53	430	110
% Moisture	1	%	12	13	19	15

Client Sample ID			TP20-0.1-0.3	TP21-0.1-0.3	TP01-0.8-1.0	TP03-0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04625	S20-Jn04626	S20-Jn04627	S20-Jn04629
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	25	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	90	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	90	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	205	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	85	87	89	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	140	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	140	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	95	90	89	97
p-Terphenyl-d14 (surr.)	1	%	91	87	102	113

Client Sample ID			TP20-0.1-0.3	TP21-0.1-0.3	TP01-0.8-1.0	TP03-0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04625	S20-Jn04626	S20-Jn04627	S20-Jn04629
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	-	-
Dibutylchlorendate (surr.)	1	%	74	72	-	-
Tetrachloro-m-xylene (surr.)	1	%	99	89	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	-
Bolstar	0.2	mg/kg	< 0.2	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	-
Coumaphos	2	mg/kg	< 2	< 2	-	-
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	-	-
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	-	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-	-
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-	-
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-	-
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-	-
EPN	0.2	mg/kg	< 0.2	< 0.2	-	-
Ethion	0.2	mg/kg	< 0.2	< 0.2	-	-
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-	-
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	-
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-	-
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-	-
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-	-
Malathion	0.2	mg/kg	< 0.2	< 0.2	-	-
Merphos	0.2	mg/kg	< 0.2	< 0.2	-	-

Client Sample ID			TP20-0.1-0.3	TP21-0.1-0.3	TP01-0.8-1.0	TP03-0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04625	S20-Jn04626	S20-Jn04627	S20-Jn04629
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	-
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-	-
Monocrotophos	2	mg/kg	< 2	< 2	-	-
Naled	0.2	mg/kg	< 0.5	< 0.2	-	-
Omethoate	2	mg/kg	< 2	< 2	-	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	-
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	-	-
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-	-
Terbufos	0.2	mg/kg	< 0.2	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	-	-
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	-	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	98	95	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	74	72	-	-
Tetrachloro-m-xylene (surr.)	1	%	99	89	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	-	-
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	-	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	-	-
Pentachlorophenol	1	mg/kg	< 1	< 1	-	-
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	-	-
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	-	-
2-Nitrophenol	1	mg/kg	< 1	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	-	-
4-Nitrophenol	5	mg/kg	< 5	< 5	-	-
Dinoseb	20	mg/kg	< 20	< 20	-	-
Phenol	0.5	mg/kg	< 0.5	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	-	-
Phenol-d6 (surr.)	1	%	89	90	-	-

Client Sample ID			TP20-0.1-0.3	TP21-0.1-0.3	TP01-0.8-1.0	TP03-0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04625	S20-Jn04626	S20-Jn04627	S20-Jn04629
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	9.4	< 2	< 2	28
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	14	< 5	< 5	25
Copper	5	mg/kg	6.1	< 5	< 5	10
Lead	5	mg/kg	100	44	< 5	24
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	8.0
Zinc	5	mg/kg	60	47	< 5	87
% Moisture	1	%	24	14	16	33

Client Sample ID			TP04-1.0-1.2	TP05-1.0-1.2	TP06-0.2-0.4	TP06-0.9-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04630	S20-Jn04632	S20-Jn04633	S20-Jn04634
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	22	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	60	< 50	< 50	62
TRH C29-C36	50	mg/kg	54	< 50	< 50	50
TRH C10-C36 (Total)	50	mg/kg	136	< 50	< 50	112
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	79	95	99	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP04-1.0-1.2	TP05-1.0-1.2	TP06-0.2-0.4	TP06-0.9-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04630	S20-Jn04632	S20-Jn04633	S20-Jn04634
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	85	91	87	97
p-Terphenyl-d14 (surr.)	1	%	100	107	104	106
Heavy Metals						
Arsenic	2	mg/kg	10	3.2	< 2	17
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	25	< 5	5.9	28
Copper	5	mg/kg	12	< 5	< 5	13
Lead	5	mg/kg	26	5.6	8.7	26
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	9.1	< 5	< 5	9.8
Zinc	5	mg/kg	17	< 5	5.3	21
% Moisture	1	%	30	16	14	31
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	12	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	5.7	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	5.0	-

Client Sample ID			TP07-0.2-0.4	TP07-1.3-1.5	TP10-0.4-0.6	TP10-1.2-1.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04635	S20-Jn04636	S20-Jn04638	S20-Jn04639
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	87	79	79	-

Client Sample ID			TP07-0.2-0.4	TP07-1.3-1.5	TP10-0.4-0.6	TP10-1.2-1.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04635	S20-Jn04636	S20-Jn04638	S20-Jn04639
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	86	81	90	-
p-Terphenyl-d14 (surr.)	1	%	114	101	89	-
Heavy Metals						
Arsenic	2	mg/kg	2.3	< 2	2.3	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	6.8	< 5	7.3	-
Copper	5	mg/kg	< 5	< 5	< 5	-
Lead	5	mg/kg	8.5	9.0	9.0	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	< 5	< 5	< 5	-
Zinc	5	mg/kg	6.1	< 5	< 5	-
% Moisture	1	%	13	14	12	11
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	-	19
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	-	5.1
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	1.9

Client Sample ID			TP15-1.0-1.2	TP17-0.9-1.1	TP19-1.0-1.1	TP21-0.7-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04645	S20-Jn04646	S20-Jn04647	S20-Jn04649
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	84	75	91	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	102	104	104	105
p-Terphenyl-d14 (surr.)	1	%	98	95	101	99

Client Sample ID			TP15-1.0-1.2	TP17-0.9-1.1	TP19-1.0-1.1	TP21-0.7-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04645	S20-Jn04646	S20-Jn04647	S20-Jn04649
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.8	3.6	3.4	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	10	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	12	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	11	15	< 5
% Moisture	1	%	12	16	12	12

Client Sample ID			DUP01	DUP02	DUP03	TRIP SPIKE
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn04651	S20-Jn04652	S20-Jn04653	S20-Jn04655
Date Sampled			Jun 01, 2020	Jun 01, 2020	Jun 01, 2020	Jun 01, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	-	110
BTEX						
Benzene	0.1	mg/kg	-	-	-	110
Toluene	0.1	mg/kg	-	-	-	100
Ethylbenzene	0.1	mg/kg	-	-	-	110
m&p-Xylenes	0.2	mg/kg	-	-	-	110
o-Xylene	0.1	mg/kg	-	-	-	110
Xylenes - Total*	0.3	mg/kg	-	-	-	110
4-Bromofluorobenzene (surr.)	1	%	-	-	-	74
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	-	100
TRH C6-C10	20	mg/kg	-	-	-	110
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	2.8	2.0	2.1	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	8.4	11	5.9	-
Copper	5	mg/kg	< 5	< 5	< 5	-
Lead	5	mg/kg	15	23	7.6	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	< 5	< 5	< 5	-
Zinc	5	mg/kg	21	22	< 5	-
% Moisture	1	%	8.9	15	11	-

Client Sample ID			BLANK
Sample Matrix			**Soil**
Eurofins Sample No.			**S20-Jn04656**
Date Sampled			**Jun 01, 2020**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 04, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jun 04, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 04, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Jun 04, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 04, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 04, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Sydney	Jun 04, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Sydney	Jun 04, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Jun 04, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins | mgt Suite B15			
Organochlorine Pesticides	Sydney	Jun 04, 2020	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jun 04, 2020	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Jun 04, 2020	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Sydney	Jun 03, 2020	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Jun 10, 2020	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Jun 11, 2020	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Jun 09, 2020	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			

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ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
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Murarrie QLD 4172
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2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
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Address: 10 Welder Road
Seven Hills
NSW 2147

Project Name: POINT FREDERICK
Project ID: 10827

Order No.:
Report #: 723334
Phone: 1800 288 188
Fax: 02 9675 1888

Received: Jun 2, 2020 5:25 PM
Due: Jun 10, 2020
Priority: 5 Day
Contact Name: Aidan Rooney

Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	TP01-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04605	X					X	X			X	
2	TP02-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04606	X			X		X	X	X		X	
3	TP03-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04607	X					X	X			X	
4	TP04-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04608	X					X	X		X		
5	TP05-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04609	X					X	X			X	
6	TP06-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04610	X					X	X			X	
7	TP07-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04611	X					X	X		X		
8	TP08-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04612	X					X	X			X	
9	TP09-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04613	X					X	X		X		
10	TP09-1.2-1.4	Jun 01, 2020		Soil	S20-Jn04614	X					X	X		X		

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ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
11	TP10-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04615	X					X	X			X	
12	TP11-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04616	X					X	X		X		
13	TP12-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04617	X					X	X			X	
14	TP13-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04618	X					X	X			X	
15	TP14-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04619	X					X	X		X		
16	TP15-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04620	X					X	X			X	
17	TP16-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04621	X					X	X		X		
18	TP17-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04622	X					X	X			X	
19	TP18-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04623	X					X	X			X	
20	TP19-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04624	X					X	X		X		
21	TP20-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04625	X					X	X			X	
22	TP21-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04626	X					X	X			X	
23	TP01-0.8-1.0	Jun 01, 2020		Soil	S20-Jn04627	X						X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
24	TP02-1.2-1.4	Jun 01, 2020		Soil	S20-Jn04628			X								
25	TP03-0.8-1.0	Jun 01, 2020		Soil	S20-Jn04629	X						X		X		
26	TP04-1.0-1.2	Jun 01, 2020		Soil	S20-Jn04630	X						X		X		
27	TP05-0.4-0.6	Jun 01, 2020		Soil	S20-Jn04631			X								
28	TP05-1.0-1.2	Jun 01, 2020		Soil	S20-Jn04632	X						X		X		
29	TP06-0.2-0.4	Jun 01, 2020		Soil	S20-Jn04633	X			X			X	X	X		
30	TP06-0.9-1.1	Jun 01, 2020		Soil	S20-Jn04634	X						X		X		
31	TP07-0.2-0.4	Jun 01, 2020		Soil	S20-Jn04635	X						X		X		
32	TP07-1.3-1.5	Jun 01, 2020		Soil	S20-Jn04636	X						X		X		
33	TP08-0.5-0.7	Jun 01, 2020		Soil	S20-Jn04637			X								
34	TP10-0.4-0.6	Jun 01, 2020		Soil	S20-Jn04638	X						X		X		
35	TP10-1.2-1.4	Jun 01, 2020		Soil	S20-Jn04639				X			X	X			
36	TP11-0.4-0.6	Jun 01, 2020		Soil	S20-Jn04640			X								

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
37	TP11-1.2-1.4	Jun 01, 2020		Soil	S20-Jn04641			X								
38	TP12-0.6-0.8	Jun 01, 2020		Soil	S20-Jn04642			X								
39	TP13-0.6-0.8	Jun 01, 2020		Soil	S20-Jn04643			X								
40	TP14-0.5-0.7	Jun 01, 2020		Soil	S20-Jn04644			X								
41	TP15-1.0-1.2	Jun 01, 2020		Soil	S20-Jn04645	X						X		X		
42	TP17-0.9-1.1	Jun 01, 2020		Soil	S20-Jn04646	X						X		X		
43	TP19-1.0-1.1	Jun 01, 2020		Soil	S20-Jn04647	X						X		X		
44	TP20-0.9-1.1	Jun 01, 2020		Soil	S20-Jn04648			X								
45	TP21-0.7-0.9	Jun 01, 2020		Soil	S20-Jn04649	X						X		X		
46	TP18-FCS01	Jun 01, 2020		Building Materials	S20-Jn04650		X									
47	DUP01	Jun 01, 2020		Soil	S20-Jn04651					X		X				
48	DUP02	Jun 01, 2020		Soil	S20-Jn04652					X		X				

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
49	DUP03	Jun 01, 2020		Soil	S20-Jn04653					X		X				
50	RIN-1	Jun 01, 2020		Water	S20-Jn04654					X						
51	TRIP SPIKE	Jun 01, 2020		Soil	S20-Jn04655											X
52	BLANK	Jun 01, 2020		Soil	S20-Jn04656											X
53	SPIKE LAB	Jun 01, 2020		Soil	S20-Jn04691											X
Test Counts						35	1	9	3	4	22	39	3	21	14	3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB*	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	84			70-130	Pass	
TRH C10-C14	%	78			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	87			70-130	Pass	
Toluene	%	84			70-130	Pass	
Ethylbenzene	%	82			70-130	Pass	
m&p-Xylenes	%	78			70-130	Pass	
o-Xylene	%	78			70-130	Pass	
Xylenes - Total*	%	78			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	85			70-130	Pass	
Naphthalene	%	90			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C10	%	84			70-130	Pass	
TRH C6-C10	%	82			70-130	Pass	
TRH >C10-C16	%	80			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	108			70-130	Pass	
Acenaphthylene	%	109			70-130	Pass	
Anthracene	%	107			70-130	Pass	
Benz(a)anthracene	%	102			70-130	Pass	
Benzo(a)pyrene	%	94			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g.h.i)perylene	%	103			70-130	Pass	
Benzo(k)fluoranthene	%	95			70-130	Pass	
Chrysene	%	97			70-130	Pass	
Dibenz(a.h)anthracene	%	102			70-130	Pass	
Fluoranthene	%	97			70-130	Pass	
Fluorene	%	106			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	100			70-130	Pass	
Naphthalene	%	100			70-130	Pass	
Phenanthrene	%	108			70-130	Pass	
Pyrene	%	91			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	116			70-130	Pass	
4.4'-DDD	%	126			70-130	Pass	
4.4'-DDE	%	122			70-130	Pass	
4.4'-DDT	%	90			70-130	Pass	
a-BHC	%	116			70-130	Pass	
Aldrin	%	118			70-130	Pass	
b-BHC	%	114			70-130	Pass	
d-BHC	%	120			70-130	Pass	
Dieldrin	%	128			70-130	Pass	
Endosulfan I	%	120			70-130	Pass	
Endosulfan II	%	112			70-130	Pass	
Endosulfan sulphate	%	125			70-130	Pass	
Endrin	%	130			70-130	Pass	
Endrin aldehyde	%	104			70-130	Pass	
Endrin ketone	%	112			70-130	Pass	
g-BHC (Lindane)	%	125			70-130	Pass	
Heptachlor	%	126			70-130	Pass	
Heptachlor epoxide	%	100			70-130	Pass	
Hexachlorobenzene	%	109			70-130	Pass	
Methoxychlor	%	71			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	111			70-130	Pass	
Dimethoate	%	116			70-130	Pass	
Ethion	%	107			70-130	Pass	
Fenitrothion	%	124			70-130	Pass	
Methyl parathion	%	126			70-130	Pass	
Mevinphos	%	94			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	123			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	%	79			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	108			30-130	Pass	
2.4-Dichlorophenol	%	115			30-130	Pass	
2.4.5-Trichlorophenol	%	88			30-130	Pass	
2.4.6-Trichlorophenol	%	103			30-130	Pass	
2.6-Dichlorophenol	%	110			30-130	Pass	
4-Chloro-3-methylphenol	%	129			30-130	Pass	
Pentachlorophenol	%	124			30-130	Pass	
Tetrachlorophenols - Total	%	92			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	118			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	119			30-130	Pass	
2-Methylphenol (o-Cresol)	%	111			30-130	Pass	
2-Nitrophenol	%	127			30-130	Pass	
2.4-Dimethylphenol	%	101			30-130	Pass	
2.4-Dinitrophenol	%	103			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	114			30-130	Pass	
4-Nitrophenol	%	88			30-130	Pass	
Dinoseb	%	129			30-130	Pass	
Phenol	%	116			30-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			70-130	Pass	
Cadmium	%	103			70-130	Pass	
Chromium	%	103			70-130	Pass	
Copper	%	102			70-130	Pass	
Lead	%	102			70-130	Pass	
Mercury	%	96			70-130	Pass	
Nickel	%	103			70-130	Pass	
Zinc	%	101			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	N20-Jn06784	NCP	%	70			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S20-Jn04304	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	S20-Jn15098	NCP	%	108			70-130	Pass	
Dieldrin	S20-Jn15098	NCP	%	77			70-130	Pass	
Endosulfan II	S20-Jn15098	NCP	%	116			70-130	Pass	
Methoxychlor	S20-My45872	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S20-Jn04609	CP	%	99			70-130	Pass	
Acenaphthylene	S20-Jn04609	CP	%	94			70-130	Pass	
Anthracene	S20-Jn04609	CP	%	90			70-130	Pass	
Benz(a)anthracene	S20-Jn04609	CP	%	91			70-130	Pass	
Benzo(a)pyrene	S20-Jn04609	CP	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	S20-Jn04609	CP	%	94			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g.h.i)perylene	S20-Jn04609	CP	%	86			70-130	Pass	
Benzo(k)fluoranthene	S20-Jn04609	CP	%	85			70-130	Pass	
Chrysene	S20-Jn04609	CP	%	88			70-130	Pass	
Dibenz(a.h)anthracene	S20-Jn04609	CP	%	85			70-130	Pass	
Fluoranthene	S20-Jn04609	CP	%	85			70-130	Pass	
Fluorene	S20-Jn04609	CP	%	93			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S20-Jn04609	CP	%	87			70-130	Pass	
Naphthalene	S20-Jn04609	CP	%	90			70-130	Pass	
Phenanthrene	S20-Jn04609	CP	%	95			70-130	Pass	
Pyrene	S20-Jn04609	CP	%	86			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S20-Jn04609	CP	%	102			70-130	Pass	
4.4'-DDE	S20-Jn04609	CP	%	120			70-130	Pass	
4.4'-DDT	S20-Jn04609	CP	%	130			70-130	Pass	
a-BHC	S20-Jn04609	CP	%	108			70-130	Pass	
Aldrin	S20-Jn04609	CP	%	110			70-130	Pass	
b-BHC	S20-Jn04609	CP	%	102			70-130	Pass	
d-BHC	S20-Jn04609	CP	%	119			70-130	Pass	
Endosulfan I	S20-Jn04609	CP	%	126			70-130	Pass	
Endosulfan sulphate	S20-Jn04609	CP	%	130			70-130	Pass	
Endrin	S20-Jn04609	CP	%	120			70-130	Pass	
Endrin aldehyde	S20-Jn04609	CP	%	121			70-130	Pass	
Endrin ketone	S20-Jn04609	CP	%	126			70-130	Pass	
g-BHC (Lindane)	S20-Jn04609	CP	%	100			70-130	Pass	
Heptachlor	S20-Jn04609	CP	%	112			70-130	Pass	
Heptachlor epoxide	S20-Jn04609	CP	%	111			70-130	Pass	
Hexachlorobenzene	S20-Jn04609	CP	%	114			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S20-Jn04609	CP	%	100			70-130	Pass	
Dimethoate	S20-Jn04609	CP	%	73			70-130	Pass	
Ethion	S20-Jn04609	CP	%	106			70-130	Pass	
Fenitrothion	S20-Jn04609	CP	%	101			70-130	Pass	
Methyl parathion	S20-Jn04609	CP	%	105			70-130	Pass	
Mevinphos	S20-Jn04609	CP	%	100			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S20-Jn04609	CP	%	101			70-130	Pass	
Aroclor-1260	S20-Jn04609	CP	%	106			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	S20-Jn04609	CP	%	89			30-130	Pass	
2.4-Dichlorophenol	S20-Jn04609	CP	%	81			30-130	Pass	
2.4.5-Trichlorophenol	S20-Jn04609	CP	%	86			30-130	Pass	
2.6-Dichlorophenol	S20-Jn04609	CP	%	77			30-130	Pass	
4-Chloro-3-methylphenol	S20-Jn04609	CP	%	82			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	S20-Jn04609	CP	%	117			30-130	Pass	
2-Methyl-4.6-dinitrophenol	S20-Jn04609	CP	%	113			30-130	Pass	
2-Methylphenol (o-Cresol)	S20-Jn04609	CP	%	75			30-130	Pass	
2-Nitrophenol	S20-Jn04609	CP	%	104			30-130	Pass	
2.4-Dinitrophenol	S20-Jn04609	CP	%	125			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
3&4-Methylphenol (m&p-Cresol)	S20-Jn04609	CP	%	89			30-130	Pass	
4-Nitrophenol	S20-Jn04609	CP	%	70			30-130	Pass	
Dinoseb	S20-Jn04609	CP	%	107			30-130	Pass	
Phenol	S20-Jn04609	CP	%	91			30-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Jn04613	CP	%	121			70-130	Pass	
Cadmium	S20-Jn04613	CP	%	121			70-130	Pass	
Chromium	S20-Jn04613	CP	%	120			70-130	Pass	
Copper	S20-Jn04613	CP	%	118			70-130	Pass	
Lead	S20-Jn04613	CP	%	124			70-130	Pass	
Mercury	S20-Jn04613	CP	%	117			70-130	Pass	
Nickel	S20-Jn04613	CP	%	117			70-130	Pass	
Zinc	S20-Jn04613	CP	%	116			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2.4.6-Trichlorophenol	S20-My43545	NCP	%	92			30-130	Pass	
Pentachlorophenol	S20-My43545	NCP	%	71			30-130	Pass	
Tetrachlorophenols - Total	S20-My43545	NCP	%	90			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2.4-Dimethylphenol	S20-My43545	NCP	%	94			30-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S20-Jn04620	CP	%	103			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S20-Jn04620	CP	%	90			70-130	Pass	
Toluene	S20-Jn04620	CP	%	101			70-130	Pass	
Ethylbenzene	S20-Jn04620	CP	%	109			70-130	Pass	
m&p-Xylenes	S20-Jn04620	CP	%	114			70-130	Pass	
o-Xylene	S20-Jn04620	CP	%	110			70-130	Pass	
Xylenes - Total*	S20-Jn04620	CP	%	113			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S20-Jn04620	CP	%	108			70-130	Pass	
TRH C6-C10	S20-Jn04620	CP	%	100			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Jn04635	CP	%	98			70-130	Pass	
Cadmium	S20-Jn04635	CP	%	95			70-130	Pass	
Chromium	S20-Jn04635	CP	%	97			70-130	Pass	
Copper	S20-Jn04635	CP	%	98			70-130	Pass	
Lead	S20-Jn04635	CP	%	97			70-130	Pass	
Mercury	S20-Jn04635	CP	%	93			70-130	Pass	
Nickel	S20-Jn04635	CP	%	99			70-130	Pass	
Zinc	S20-Jn04635	CP	%	97			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Toxaphene	S20-Jn15104	NCP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S20-Jn15104	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1221	S20-Jn15104	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S20-Jn15104	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S20-Jn15104	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S20-Jn15104	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S20-Jn15104	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S20-Jn15104	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Total PCB*	S20-Jn15104	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	M20-Jn16278	NCP	uS/cm	440	410	5.5	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S20-Jn04019	NCP	pH Units	6.8	6.7	Pass	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S20-Jn04608	CP	mg/kg	< 20	21	15	30%	Pass	
TRH C15-C28	S20-Jn04608	CP	mg/kg	72	51	34	30%	Fail	Q15
TRH C29-C36	S20-Jn04608	CP	mg/kg	69	59	16	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S20-Jn04608	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S20-Jn04608	CP	mg/kg	120	< 100	28	30%	Pass	
TRH >C34-C40	S20-Jn04608	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S20-Jn04609	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S20-Jn04609	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S20-Jn04609	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S20-Jn04609	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S20-Jn04609	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S20-Jn04609	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S20-Jn04609	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S20-Jn04609	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S20-Jn04609	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-Jn04611	CP	%	13	15	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Jn04612	CP	mg/kg	< 2	2.0	9.0	30%	Pass	
Cadmium	S20-Jn04612	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-Jn04612	CP	mg/kg	8.7	9.5	9.0	30%	Pass	
Copper	S20-Jn04612	CP	mg/kg	8.9	9.5	7.0	30%	Pass	
Lead	S20-Jn04612	CP	mg/kg	21	23	5.0	30%	Pass	
Mercury	S20-Jn04612	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-Jn04612	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S20-Jn04612	CP	mg/kg	33	36	7.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-Jn04621	CP	%	12	12	2.0	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S20-Jn04622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S20-Jn04622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S20-Jn04622	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethoprop	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S20-Jn04622	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Omethoate	S20-Jn04622	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S20-Jn04622	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	S20-Jn04622	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S20-Jn04622	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S20-Jn04622	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S20-Jn04622	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S20-Jn04622	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S20-Jn04622	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S20-Jn04622	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	S20-Jn04622	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	S20-Jn04622	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S20-Jn04622	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	S20-Jn04622	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S20-Jn04622	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	S20-Jn04622	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Jn04622	CP	mg/kg	< 2	3.0	42	30%	Fail	Q15
Cadmium	S20-Jn04622	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-Jn04622	CP	mg/kg	8.8	17	66	30%	Fail	Q15
Copper	S20-Jn04622	CP	mg/kg	8.3	11	26	30%	Pass	
Lead	S20-Jn04622	CP	mg/kg	32	38	18	30%	Pass	
Mercury	S20-Jn04622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-Jn04622	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S20-Jn04622	CP	mg/kg	53	63	17	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S20-Jn04630	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S20-Jn04630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S20-Jn04630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S20-Jn04630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S20-Jn04630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S20-Jn04630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S20-Jn04630	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S20-Jn04630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S20-Jn04630	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-Jn04633	CP	%	14	13	7.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Jn04634	CP	mg/kg	17	18	8.0	30%	Pass	
Cadmium	S20-Jn04634	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-Jn04634	CP	mg/kg	28	29	5.0	30%	Pass	
Copper	S20-Jn04634	CP	mg/kg	13	14	5.0	30%	Pass	
Lead	S20-Jn04634	CP	mg/kg	26	27	4.0	30%	Pass	
Mercury	S20-Jn04634	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-Jn04634	CP	mg/kg	9.8	9.9	1.0	30%	Pass	
Zinc	S20-Jn04634	CP	mg/kg	21	23	8.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S20-Jn04649	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S20-Jn04649	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S20-Jn04649	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S20-Jn04649	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S20-Jn04649	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S20-Jn04649	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S20-Jn04649	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S20-Jn04649	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S20-Jn04649	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-Jn04651	CP	%	8.9	10	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Jn04653	CP	mg/kg	2.1	< 2	23	30%	Pass	
Cadmium	S20-Jn04653	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-Jn04653	CP	mg/kg	5.9	< 5	25	30%	Pass	
Copper	S20-Jn04653	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S20-Jn04653	CP	mg/kg	7.6	7.5	2.0	30%	Pass	
Mercury	S20-Jn04653	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-Jn04653	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S20-Jn04653	CP	mg/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Inorganic (NSW)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Certificate of Analysis

eurofins | Environment Testing

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Alliance Geotechnical
10 Welder Road
Seven Hills
NSW 2147

Attention:	Aidan Rooney
Report	723334-AID
Project Name	POINT FREDERICK
Project ID	10827
Received Date	Jun 02, 2020
Date Reported	Jun 12, 2020

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name POINT FREDERICK
Project ID 10827
Date Sampled Jun 01, 2020
Report 723334-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP01-0.0-0.2	20-Jn04605	Jun 01, 2020	Approximate Sample 497g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP02-0.0-0.2	20-Jn04606	Jun 01, 2020	Approximate Sample 578g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP03-0.0-0.2	20-Jn04607	Jun 01, 2020	Approximate Sample 446g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP04-0.0-0.2	20-Jn04608	Jun 01, 2020	Approximate Sample 527g Sample consisted of: Brown coarse-grained soil, rocks and cement	ACM: Chrysotile asbestos detected in fibre cement fragments. Approximate raw weight of ACM = 3.2g Total estimated asbestos content in ACM = 0.32g* Total estimated asbestos concentration in ACM = 0.060% w/w* Organic fibre detected. No trace asbestos detected.
TP05-0.0-0.2	20-Jn04609	Jun 01, 2020	Approximate Sample 431g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP06-0.0-0.2	20-Jn04610	Jun 01, 2020	Approximate Sample 561g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP07-0.0-0.2	20-Jn04611	Jun 01, 2020	Approximate Sample 620g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP08-0.0-0.2	20-Jn04612	Jun 01, 2020	Approximate Sample 472g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP09-0.0-0.2	20-Jn04613	Jun 01, 2020	Approximate Sample 611g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP09-1.2-1.4	20-Jn04614	Jun 01, 2020	Approximate Sample 746g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP10-0.0-0.2	20-Jn04615	Jun 01, 2020	Approximate Sample 483g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP11-0.0-0.2	20-Jn04616	Jun 01, 2020	Approximate Sample 577g Sample consisted of: Brown coarse-grained sandy soil, rocks and bituminous material	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP12-0.1-0.3	20-Jn04617	Jun 01, 2020	Approximate Sample 637g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP13-0.1-0.3	20-Jn04618	Jun 01, 2020	Approximate Sample 566g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP14-0.0-0.2	20-Jn04619	Jun 01, 2020	Approximate Sample 592g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP15-0.0-0.2	20-Jn04620	Jun 01, 2020	Approximate Sample 524g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP16-0.1-0.3	20-Jn04621	Jun 01, 2020	Approximate Sample 589g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP17-0.1-0.3	20-Jn04622	Jun 01, 2020	Approximate Sample 545g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP18-0.1-0.3	20-Jn04623	Jun 01, 2020	Approximate Sample 601g Sample consisted of: Brown coarse-grained sandy soil, rocks, brick and cement	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP19-0.0-0.2	20-Jn04624	Jun 01, 2020	Approximate Sample 479g Sample consisted of: Brown coarse-grained soil and rocks	FA: Chrysotile asbestos detected in weathered fibre cement fragments. Approximate raw weight of FA = 0.49g Estimated asbestos content in FA = 0.15g* Total estimated asbestos concentration in FA = 0.031% w/w* Organic fibre detected. No trace asbestos detected.
TP20-0.1-0.3	20-Jn04625	Jun 01, 2020	Approximate Sample 441g Sample consisted of: Brown coarse-grained soil, rocks and plaster-like material	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP21-0.1-0.3	20-Jn04626	Jun 01, 2020	Approximate Sample 532g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP01-0.8-1.0	20-Jn04627	Jun 01, 2020	Approximate Sample 704g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP03-0.8-1.0	20-Jn04629	Jun 01, 2020	Approximate Sample 354g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP04-1.0-1.2	20-Jn04630	Jun 01, 2020	Approximate Sample 468g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP05-1.0-1.2	20-Jn04632	Jun 01, 2020	Approximate Sample 492g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP06-0.2-0.4	20-Jn04633	Jun 01, 2020	Approximate Sample 481g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP06-0.9-1.1	20-Jn04634	Jun 01, 2020	Approximate Sample 487g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP07-0.2-0.4	20-Jn04635	Jun 01, 2020	Approximate Sample 637g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP07-1.3-1.5	20-Jn04636	Jun 01, 2020	Approximate Sample 694g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP10-0.4-0.6	20-Jn04638	Jun 01, 2020	Approximate Sample 720g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP15-1.0-1.2	20-Jn04645	Jun 01, 2020	Approximate Sample 765g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP17-0.9-1.1	20-Jn04646	Jun 01, 2020	Approximate Sample 561g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP19-1.0-1.1	20-Jn04647	Jun 01, 2020	Approximate Sample 268g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP21-0.7-0.9	20-Jn04649	Jun 01, 2020	Approximate Sample 703g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP18-FCS01	20-Jn04650	Jun 01, 2020	Approximate Sample 6g / 40x25x5mm Sample consisted of: Grey fibre cement material	Chrysotile asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jun 03, 2020	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Jun 03, 2020	Indefinite

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ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
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Dandenong South VIC 3175
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Site # 1254 & 14271

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Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

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Seven Hills
NSW 2147

Project Name: POINT FREDERICK
Project ID: 10827

Order No.:
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Phone: 1800 288 188
Fax: 02 9675 1888

Received: Jun 2, 2020 5:25 PM
Due: Jun 10, 2020
Priority: 5 Day
Contact Name: Aidan Rooney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins | mgt Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B7	Eurofins | mgt Suite B7A	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	TP01-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04605	X					X	X			X	
2	TP02-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04606	X			X		X	X	X		X	
3	TP03-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04607	X					X	X			X	
4	TP04-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04608	X					X	X		X		
5	TP05-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04609	X					X	X			X	
6	TP06-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04610	X					X	X			X	
7	TP07-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04611	X					X	X		X		
8	TP08-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04612	X					X	X			X	
9	TP09-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04613	X					X	X		X		
10	TP09-1.2-1.4	Jun 01, 2020		Soil	S20-Jn04614	X					X	X		X		

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ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
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Dandenong South VIC 3175
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NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
11	TP10-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04615	X					X	X			X	
12	TP11-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04616	X					X	X		X		
13	TP12-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04617	X					X	X			X	
14	TP13-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04618	X					X	X			X	
15	TP14-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04619	X					X	X		X		
16	TP15-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04620	X					X	X			X	
17	TP16-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04621	X					X	X		X		
18	TP17-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04622	X					X	X			X	
19	TP18-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04623	X					X	X			X	
20	TP19-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04624	X					X	X		X		
21	TP20-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04625	X					X	X			X	
22	TP21-0.1-0.3	Jun 01, 2020		Soil	S20-Jn04626	X					X	X			X	
23	TP01-0.8-1.0	Jun 01, 2020		Soil	S20-Jn04627	X						X		X		

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New Zealand

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35 O'Rorke Road
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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
24	TP02-1.2-1.4	Jun 01, 2020		Soil	S20-Jn04628			X								
25	TP03-0.8-1.0	Jun 01, 2020		Soil	S20-Jn04629	X						X		X		
26	TP04-1.0-1.2	Jun 01, 2020		Soil	S20-Jn04630	X						X		X		
27	TP05-0.4-0.6	Jun 01, 2020		Soil	S20-Jn04631			X								
28	TP05-1.0-1.2	Jun 01, 2020		Soil	S20-Jn04632	X						X		X		
29	TP06-0.2-0.4	Jun 01, 2020		Soil	S20-Jn04633	X			X			X	X	X		
30	TP06-0.9-1.1	Jun 01, 2020		Soil	S20-Jn04634	X						X		X		
31	TP07-0.2-0.4	Jun 01, 2020		Soil	S20-Jn04635	X						X		X		
32	TP07-1.3-1.5	Jun 01, 2020		Soil	S20-Jn04636	X						X		X		
33	TP08-0.5-0.7	Jun 01, 2020		Soil	S20-Jn04637			X								
34	TP10-0.4-0.6	Jun 01, 2020		Soil	S20-Jn04638	X						X		X		
35	TP10-1.2-1.4	Jun 01, 2020		Soil	S20-Jn04639				X			X	X			
36	TP11-0.4-0.6	Jun 01, 2020		Soil	S20-Jn04640			X								

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
37	TP11-1.2-1.4	Jun 01, 2020		Soil	S20-Jn04641			X								
38	TP12-0.6-0.8	Jun 01, 2020		Soil	S20-Jn04642			X								
39	TP13-0.6-0.8	Jun 01, 2020		Soil	S20-Jn04643			X								
40	TP14-0.5-0.7	Jun 01, 2020		Soil	S20-Jn04644			X								
41	TP15-1.0-1.2	Jun 01, 2020		Soil	S20-Jn04645	X						X		X		
42	TP17-0.9-1.1	Jun 01, 2020		Soil	S20-Jn04646	X						X		X		
43	TP19-1.0-1.1	Jun 01, 2020		Soil	S20-Jn04647	X						X		X		
44	TP20-0.9-1.1	Jun 01, 2020		Soil	S20-Jn04648			X								
45	TP21-0.7-0.9	Jun 01, 2020		Soil	S20-Jn04649	X						X		X		
46	TP18-FCS01	Jun 01, 2020		Building Materials	S20-Jn04650		X									
47	DUP01	Jun 01, 2020		Soil	S20-Jn04651					X		X				
48	DUP02	Jun 01, 2020		Soil	S20-Jn04652					X		X				

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Australia

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
49	DUP03	Jun 01, 2020		Soil	S20-Jn04653					X		X				
50	RIN-1	Jun 01, 2020		Water	S20-Jn04654					X						
51	TRIP SPIKE	Jun 01, 2020		Soil	S20-Jn04655											X
52	BLANK	Jun 01, 2020		Soil	S20-Jn04656											X
Test Counts						35	1	9	3	4	22	39	3	21	14	2

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to “non-bonded / friable”.
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess degree of friability.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

S20-Jn04605, S20-Jn04607, S20-Jn04609, S20-Jn04612, S20-Jn04615, S20-Jn04624, S20-Jn04625, S20-Jn04629, S20-Jn04630, S20-Jn04632, S20-Jn04633, S20-Jn04634, S20-Jn04647: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

☑ Sydney Laboratory — Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066 — 02 9900 8400 — EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory — Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172 — 07 3902 4600 — EnviroSampleQLD@eurofins.com

☐ Perth Laboratory — Unit 2, 91 Leach Highway, Kewdale WA 6105 — 08 9251 9600 — EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory — 2 Kingston Town Close, Oakleigh, VIC 3166 — 03 8564 5000 — EnviroSampleVic@eurofins.com

Company	ALLIANCE GEOTECHNICAL	Project №	10827
Address	10 WELDER ROAD, SEVEN HILLS NSW	Project Name	Point Frederick
Contact Name		Project Manager	Aidan Rooney
Phone №	0424066612	EDD Format (ESdat, EQuIS, Custom)	
Special Directions	1/3	Sampler(s)	Jacob Walker
Purchase Order		Handed over by	
Quote ID №		Email for Invoice	Enviro@allgeo.com.au
		Email for Results	Enviro@allgeo.com.au

Analyses (Note: Where metals are requested, please specify "total" or "filtered"; SUITE code must be used to attract SUITE pricing)

Containers: 1L Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL VOA vial; 500mL PFAS Bottle; Jar (Glass or HDPE); Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT) Requirements (Default will be 5 days if not fil…)

☐ Overnight (9am)* ☐ 1 Day* ☐ 2 Day* ☐ 3 Day* ☑ 5 Day ☐ Other (* Surcharges apply

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	TRH	BTEX	PAHs	OCP / OPP	PCBs	HEAVY METALS (8)	PEHOLS	ASBESTOS IN SOIL (NEPM WA)	CEC	pH	Sample Comments / Dangerous Goods Hazard Warning
1	TP01-0.0-0.2	1/06/20	S	X	X	X	X	X	X	X	X			
2	TP01-0.8-1.0	1/06/20	S	X	X	X			X		X			
3	TP02-0.0-0.2	1/06/20	S	X	X	X	X	X	X	X	X	X	X	
4	TP02-1.2-1.4	1/06/20	S											
5	TP03-0.0-0.2	1/06/20	S	X	X	X	X	X	X	X	X			
6	TP03-0.8-1.0	1/06/20	S	X	X	X			X		X			
7	TP04-0.0-0.2	1/06/20	S	X	X	X	X	X	X		X			
8	TP04-1.0-1.2	1/06/20	S	X	X	X			X		X			
9	TP05-0.0-0.2	1/06/20	S	X	X	X	X	X	X	X	X			
10	TP05-0.4-0.6	1/06/20	S											
11	TP05-1.0-1.2	1/06/20	S	X	X	X			X		X			
12	TP06-0.0-0.2	1/06/20	S	X	X	X	X	X	X	X	X			
13	TP06-0.2-0.4	1/06/20	S	X	X	X			X		X	X	X	
14	TP06-0.9-1.1	1/06/20	S	X	X	X			X		X			
15	TP07-0.0-0.2	1/06/20	S	X	X	X	X	X	X		X			
16	TP07-0.2-0.4	1/06/20	S	X	X	X			X		X			
17	TP07-1.3-1.5	1/06/20	S	X	X	X			X		X			
18	TP08-0.0-0.2	1/06/20	S	X	X	X	X	X	X	X	X			
19	TP08-0.5-0.7	1/06/20	S											
20	TP09-0.0-0.2	1/06/20	S	X	X	X	X	X	X		X			
		Total Counts		17	17	17	9	9	17	6	17	#		

Method of Shipment: ☑ Courier (#) ☐ Hand Delivered ☐ Postal — Name: Jacob Walker — Signature — Date — Time

Eurofins | mgt Laboratory Use Only						
Received By	Luca D	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date 01/06	Time 5:25 pm	Temperature 12.5°C
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date / /	Time :	Report № 723334

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

☑ Sydney Laboratory — Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066 — 02 9900 8400 — EnviroSampleNSW@eurofins.com

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☐ Perth Laboratory — Unit 2, 91 Leach Highway, Kewdale WA 6105 — 08 9251 9600 — EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory — 2 Kingston Town Close, Oakleigh, VIC 3166 — 03 8564 5000 — EnviroSampleVic@eurofins.com

Company	ALLIANCE GEOTECHNICAL	Project №	10827
Address	10 WELDER ROAD, SEVEN HILLS NSW	Project Name	Point Frederick
Contact Name		Project Manager	Aidan Rooney
Phone №	0424066612	EDD Format (ESdat, EQuIS, Custom)	
Special Directions	2/3	Sampler(s)	Jacob Walker
Purchase Order		Handed over by	
Quote ID №		Email for Invoice	Enviro@allgeo.com.au
		Email for Results	Enviro@allgeo.com.au

Analyses (Note: Where metals are requested please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing)

Containers: 1L Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL VOA vial; 500mL PFAS Bottle; Jar (Glass or HDPE); Other (Asbestos AS4964 WA Guidelines)

Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)

☐ Overnight (9am)* ☐ 1 Day* ☐ 2 Day* ☐ 3 Day* ☑ 5 Day * Surcharges apply ☐ Other (

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	TRH	BTEX	PAHs	OCP / OPP	PCBs	HEAVY METALS (8)	PEHOLS	ASBESTOS IN SOIL (NEPM WA)	CEC	pH	Sample Comments / Dangerous Goods Hazard Warning
1	TP09-1.2-1.4	1/06/20	S	X	X	X	X	X	X		X			
2	TP10-0.0-0.2	1/06/20	S	X	X	X	X	X	X	X	X			
3	TP10-0.4-0.6	1/06/20	S	X	X	X			X		X			
4	TP10-1.2-1.4	1/06/20	S									X	X	
5	TP11-0.0-0.2	1/06/20	S	X	X	X	X	X	X		X			
6	TP11-0.4-0.6	1/06/20	S											
7	TP11-1.2-1.4	1/06/20	S											
8	TP12-0.1-0.3	1/06/20	S	X	X	X	X	X	X	X	X			
9	TP12-0.6-0.8	1/06/20	S											
10	TP13-0.1-0.3	2/06/20	S	X	X	X	X	X	X	X	X			
11	TP13-0.6-0.8	2/06/20	S											
12	TP14-0.0-0.2	1/06/20	S	X	X	X	X	X	X		X			
13	TP14-0.5-0.7	1/06/20	S											
14	TP15-0.0-0.2	1/06/20	S	X	X	X	X	X	X	X	X			
15	TP15-1.0-1.2	1/06/20	S	X	X	X			X		X			
16	TP16-0.1-0.3	2/06/20	S	X	X	X	X	X	X		X			
17	TP17-0.1-0.3	2/06/20	S	X	X	X	X	X	X	X	X			
18	TP17-0.9-1.1	2/06/20	S	X	X	X			X		X			
19	TP18-0.1-0.3	2/06/20	S	X	X	X	X	X	X	X	X			
20	TP19-0.0-0.2	2/06/20	S	X	X	X	X	X	X		X			
	Total Counts			14	14	14	11	11	14	6	14	#		

Method of Shipment: ☑ Courier (#) ☐ Hand Delivered ☐ Postal — Name: Jacob Walker — Signature — Date — Time

Eurofins | mgt Laboratory Use Only

Received By	Lina D	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date 02/06	Time 5:25 pm	Temperature 12.5°C
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date / /	Time :	Report № 723334

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

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☐ Melbourne Laboratory — 2 Kingston Town Close, Oakleigh, VIC 3166 — 03 8564 5000 — EnviroSampleVic@eurofins.com

Company	ALLIANCE GEOTECHNICAL	Project №	10827	Project Manager	Aidan Rooney
Address	10 WELDER ROAD, SEVEN HILLS NSW	Project Name	Point Frederick	EDD Format (ESdat, EQuIS, Custom)	
Contact Name				Sampler(s)	Jacob Walker
Phone №	0424066612			Handed over by	
Special Directions	3/3			Email for Invoice	Enviro@allgeo.com.au
Purchase Order				Email for Results	Enviro@allgeo.com.au
Quote ID №					

Analyses (Note: Where metals are requested, please specify "Total" or "Filtered"; SUITE code must be used to attract SUITE pricing)

Containers: 1L Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL VOA vial; 500mL PFAS Bottle; Jar (Glass or HDPE); Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)

☐ Overnight (9am)* ☐ 1 Day* ☐ 2 Day* ☐ 3 Day* ☑ 5 Day * Surcharges apply ☐ Other (

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	TRH	BTEX	PAHs	OCP / OPP	PCBs	HEAVY METALS (8)	PEHOLS	ASBESTOS IN SOIL (NEPM WA)	Asbestos ID	Sample Comments / Dangerous Goods Hazard Warning
1	TP19-1.0-1.1	2/06/20	S	X	X	X			X		X		
2	TP20-0.1-0.3	2/06/20	S	X	X	X	X	X	X	X	X		
3	TP20-0.9-1.1	2/06/20	S										
4	TP21-0.1-0.3	2/06/20	S	X	X	X	X	X	X	X	X		
5	TP21-0.7-0.9	2/06/20	S	X	X	X			X		X		
6	TP18-FCS01	2/06/20	S									X	
7	DUP01								X				
8	DUP01A								X				PLEASE SEND TO ALS
9	DUP02								X				
10	DUP02A								X				PLEASE SEND TO ALS
11	DUP03								X				
12	DUP03A								X				PLEASE SEND TO ALS
13	RIN-1								X				
14	TRIP SPIKE				X	X							
15	TRIP BLANK				X	X							
16													
17													
18													
19													
20													
	Total Counts			4	6	6	2	2	11	2	4	#	

Method of Shipment: ☑ Courier (#) ☐ Hand Delivered ☐ Postal — Name: Jacob Walker — Signature — Date — Time

Eurofins | mgt Laboratory Use Only

Received By: [signature] SYD | BNE | MEL | PER | ADL | NTL | DRW — Signature — Date 02/06 — Time 5:25 PM — Temperature 12.5°C

Received By: SYD | BNE | MEL | PER | ADL | NTL | DRW — Signature — Date / / — Time : — Report № 723334

Alliance Geotechnical
10 Welder Road
Seven Hills
NSW 2147

Attention: **Aidan Rooney**

Report **725316-W**
Project name POINT FREDERICK GROUND WATER
Project ID 10827
Received Date Jun 11, 2020

Client Sample ID			**GWM1**	**GWM3**	**GWM4**	**DUP01**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S20-Jn21475**	**S20-Jn21535**	**S20-Jn21536**	**S20-Jn21537**
Date Sampled			**Jun 11, 2020**	**Jun 11, 2020**	**Jun 11, 2020**	**Jun 11, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	108	106	101	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			GWM1	GWM3	GWM4	DUP01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn21475	S20-Jn21535	S20-Jn21536	S20-Jn21537
Date Sampled			Jun 11, 2020	Jun 11, 2020	Jun 11, 2020	Jun 11, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	72	73	70	-
p-Terphenyl-d14 (surr.)	1	%	93	104	80	-
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Toxaphene	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibutylchlorendate (surr.)	1	%	108	83	INT	-
Tetrachloro-m-xylene (surr.)	1	%	58	82	84	-
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Chlorfenvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Chlorpyrifos	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Demeton-S	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	-

Client Sample ID			GWM1	GWM3	GWM4	DUP01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn21475	S20-Jn21535	S20-Jn21536	S20-Jn21537
Date Sampled			Jun 11, 2020	Jun 11, 2020	Jun 11, 2020	Jun 11, 2020
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Omethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Triphenylphosphate (surr.)	1	%	91	89	83	-
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1221	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Total PCB*	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibutylchlorendate (surr.)	1	%	108	83	INT	-
Tetrachloro-m-xylene (surr.)	1	%	58	82	84	-
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-

Client Sample ID			GWM1	GWM3	GWM4	DUP01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn21475	S20-Jn21535	S20-Jn21536	S20-Jn21537
Date Sampled			Jun 11, 2020	Jun 11, 2020	Jun 11, 2020	Jun 11, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	-
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Phenol-d6 (surr.)	1	%	44	43	39	-
Chloride	1	mg/L	1100	-	1400	-
Sulphate (as SO4)	5	mg/L	190	-	260	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	170	-	120	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	-	< 10	-
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	-	< 20	-
Total Alkalinity (as CaCO3)	20	mg/L	170	-	120	-
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.003	0.013	0.003	0.003
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	0.002	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.013	0.031	0.020	0.018
Lead (filtered)	0.001	mg/L	< 0.001	0.003	0.001	0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.019	0.021	0.027	0.013
Zinc (filtered)	0.005	mg/L	3.2	0.11	0.14	0.79
Alkali Metals						
Calcium	0.5	mg/L	120	-	150	-
Magnesium	0.5	mg/L	97	-	73	-
Potassium	0.5	mg/L	14	-	20	-
Sodium	0.5	mg/L	460	-	680	-

Client Sample ID			DUP01A	TRIP SPIKE	TRIP BLANK
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-Jn21538	S20-Jn21539	S20-Jn21540
Date Sampled			Jun 11, 2020	Jun 11, 2020	Jun 11, 2020
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	-	-	< 0.02
BTEX					
Benzene	0.001	mg/L	-	-	< 0.001
Toluene	0.001	mg/L	-	-	< 0.001
Ethylbenzene	0.001	mg/L	-	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	-	< 0.002
o-Xylene	0.001	mg/L	-	-	< 0.001
Xylenes - Total*	0.003	mg/L	-	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	-	87

Client Sample ID			DUP01A	TRIP SPIKE	TRIP BLANK
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-Jn21538	S20-Jn21539	S20-Jn21540
Date Sampled			Jun 11, 2020	Jun 11, 2020	Jun 11, 2020
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01
TRH C6-C10	0.02	mg/L	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02
TRH C6-C10	1	%	-	71	-
Heavy Metals					
Arsenic (filtered)	0.001	mg/L	0.003	-	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	-	-
Copper (filtered)	0.001	mg/L	< 0.001	-	-
Lead (filtered)	0.001	mg/L	< 0.001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	-	-
Nickel (filtered)	0.001	mg/L	0.003	-	-
Zinc (filtered)	0.005	mg/L	0.72	-	-
Total Recoverable Hydrocarbons					
Naphthalene	1	%	-	90	-
TRH C6-C9	1	%	-	71	-
BTEX					
Benzene	1	%	-	120	-
Ethylbenzene	1	%	-	96	-
m&p-Xylenes	1	%	-	110	-
o-Xylene	1	%	-	99	-
Toluene	1	%	-	100	-
Xylenes - Total	1	%	-	100	-
4-Bromofluorobenzene (surr.)	1	%	-	109	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 12, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jun 12, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 12, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Jun 12, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 12, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 12, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Jun 12, 2020	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jun 12, 2020	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Jun 12, 2020	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8 filtered	Sydney	Jun 12, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins | mgt Suite B11C: Na/K/Ca/Mg	Melbourne	Jun 15, 2020	180 Days
- Method: LTM-MET-3010 Alkali Metals by ICP-AES			
Phenols (Halogenated)	Sydney	Jun 12, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Sydney	Jun 12, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Eurofins | mgt Suite B11E: Cl/SO4/Alkalinity			
Chloride	Melbourne	Jun 15, 2020	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Sulphate (as SO4)	Melbourne	Jun 15, 2020	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Jun 15, 2020	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Alliance Geotechnical
Address: 10 Welder Road
Seven Hills
NSW 2147

Project Name: POINT FREDERICK GROUND WATER
Project ID: 10827

Order No.:
Report #: 725316
Phone: 1800 288 188
Fax: 02 9675 1888

Received: Jun 11, 2020 6:40 PM
Due: Jun 19, 2020
Priority: 5 Day
Contact Name: Aidan Rooney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8 filtered	Phenols (IWRG 621)	BTEX	Total Recoverable Hydrocarbons	BTEXN and Volatile TRH	Eurofins | mgt Suite B11E: Cl/SO4/Alkalinity	BTEXN and Volatile TRH	Eurofins | mgt Suite B11C: Na/K/Ca/Mg
Melbourne Laboratory - NATA Site # 1254 & 14271															X		X
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X		X	
Brisbane Laboratory - NATA Site # 20794																	
Perth Laboratory - NATA Site # 23736																	
External Laboratory																	
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
1	GWM1	Jun 11, 2020		Water	S20-Jn21475	X	X	X	X	X	X	X	X		X		X
2	GWM3	Jun 11, 2020		Water	S20-Jn21535	X	X	X	X	X	X	X	X				
3	GWM4	Jun 11, 2020		Water	S20-Jn21536	X	X	X	X	X	X	X	X		X		X
4	DUP01	Jun 11, 2020		Water	S20-Jn21537					X							
5	DUP01A	Jun 11, 2020		Water	S20-Jn21538					X							
6	TRIP SPIKE	Jun 11, 2020		Water	S20-Jn21539											X	
7	TRIP BLANK	Jun 11, 2020		Water	S20-Jn21540									X			
Test Counts						3	3	3	3	5	3	3	3	1	2	1	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram | **mg/L:** milligrams per litre | **ug/L:** micrograms per litre

ppm: Parts per million | **ppb:** Parts per billion | **%:** Percentage

org/100mL: Organisms per 100 millilitres | **NTU:** Nephelometric Turbidity Units | **MPN/100mL:** Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.02			0.02	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1221	mg/L	< 0.001			0.001	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB*	mg/L	< 0.001			0.001	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Chloride	mg/L	< 1			1	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	91			70-130	Pass	
TRH C10-C14	%	90			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	86			70-130	Pass	
Ethylbenzene	%	91			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
o-Xylene	%	91			70-130	Pass	
Xylenes - Total*	%	91			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	83			70-130	Pass	
TRH C6-C10	%	91			70-130	Pass	
TRH >C10-C16	%	93			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	105			70-130	Pass	
Anthracene	%	99			70-130	Pass	
Benz(a)anthracene	%	122			70-130	Pass	
Benzo(a)pyrene	%	114			70-130	Pass	
Benzo(b&j)fluoranthene	%	114			70-130	Pass	
Benzo(g.h.i)perylene	%	126			70-130	Pass	
Benzo(k)fluoranthene	%	116			70-130	Pass	
Chrysene	%	117			70-130	Pass	
Dibenz(a.h)anthracene	%	103			70-130	Pass	
Fluoranthene	%	105			70-130	Pass	
Fluorene	%	105			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	110			70-130	Pass	
Naphthalene	%	98			70-130	Pass	
Phenanthrene	%	103			70-130	Pass	
Pyrene	%	101			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	72			70-130	Pass	
4.4'-DDD	%	91			70-130	Pass	
4.4'-DDE	%	90			70-130	Pass	
a-BHC	%	76			70-130	Pass	
Aldrin	%	73			70-130	Pass	
d-BHC	%	77			70-130	Pass	
Dieldrin	%	78			70-130	Pass	
Endosulfan I	%	72			70-130	Pass	
Endosulfan II	%	74			70-130	Pass	
Endrin	%	84			70-130	Pass	
Endrin aldehyde	%	104			70-130	Pass	
Endrin ketone	%	71			70-130	Pass	
g-BHC (Lindane)	%	85			70-130	Pass	
Heptachlor	%	83			70-130	Pass	
Heptachlor epoxide	%	112			70-130	Pass	
Hexachlorobenzene	%	88			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	81			70-130	Pass	
Dimethoate	%	117			70-130	Pass	
Ethion	%	70			70-130	Pass	
Fenitrothion	%	72			70-130	Pass	
Methyl parathion	%	74			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mevinphos	%	76			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	98			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	126			30-130	Pass	
2.4-Dichlorophenol	%	110			30-130	Pass	
2.6-Dichlorophenol	%	88			30-130	Pass	
4-Chloro-3-methylphenol	%	103			30-130	Pass	
Pentachlorophenol	%	114			30-130	Pass	
Tetrachlorophenols - Total	%	128			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Methyl-4.6-dinitrophenol	%	106			30-130	Pass	
2-Methylphenol (o-Cresol)	%	118			30-130	Pass	
2-Nitrophenol	%	99			30-130	Pass	
2.4-Dimethylphenol	%	95			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	108			30-130	Pass	
4-Nitrophenol	%	54			30-130	Pass	
Phenol	%	66			30-130	Pass	
LCS - % Recovery							
Chloride	%	92			70-130	Pass	
Sulphate (as SO4)	%	100			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	%	84			70-130	Pass	
Carbonate Alkalinity (as CaCO3)	%	83			70-130	Pass	
Total Alkalinity (as CaCO3)	%	91			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	101			70-130	Pass	
Cadmium (filtered)	%	97			70-130	Pass	
Chromium (filtered)	%	102			70-130	Pass	
Copper (filtered)	%	100			70-130	Pass	
Lead (filtered)	%	101			70-130	Pass	
Mercury (filtered)	%	95			70-130	Pass	
Nickel (filtered)	%	101			70-130	Pass	
Zinc (filtered)	%	101			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	89			70-130	Pass	
Magnesium	%	81			70-130	Pass	
Potassium	%	87			70-130	Pass	
Sodium	%	92			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S20-Jn19777	NCP	%	90			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S20-Jn19777	NCP	%	88			70-130	Pass	
Toluene	S20-Jn19777	NCP	%	85			70-130	Pass	
Ethylbenzene	S20-Jn19777	NCP	%	89			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
m&p-Xylenes	S20-Jn19777	NCP	%	86			70-130	Pass	
o-Xylene	S20-Jn19777	NCP	%	84			70-130	Pass	
Xylenes - Total*	S20-Jn19777	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S20-Jn19777	NCP	%	79			70-130	Pass	
TRH C6-C10	S20-Jn19777	NCP	%	88			70-130	Pass	
Spike - % Recovery									
				Result 1					
Sulphate (as SO4)	P20-Jn16056	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	W20-Jn21169	NCP	%	95			70-130	Pass	
Cadmium (filtered)	W20-Jn21169	NCP	%	97			70-130	Pass	
Chromium (filtered)	W20-Jn21169	NCP	%	96			70-130	Pass	
Copper (filtered)	W20-Jn21169	NCP	%	95			70-130	Pass	
Lead (filtered)	W20-Jn21169	NCP	%	96			70-130	Pass	
Mercury (filtered)	W20-Jn21169	NCP	%	90			70-130	Pass	
Nickel (filtered)	W20-Jn21169	NCP	%	96			70-130	Pass	
Zinc (filtered)	W20-Jn21169	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	M20-Jn19290	NCP	%	98			70-130	Pass	
Magnesium	M20-Jn19290	NCP	%	98			70-130	Pass	
Potassium	M20-Jn17821	NCP	%	94			70-130	Pass	
Sodium	M20-Jn19290	NCP	%	108			70-130	Pass	
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Bicarbonate Alkalinity (as CaCO3)	S20-Jn21536	CP	%	126			70-130	Pass	
Total Alkalinity (as CaCO3)	S20-Jn21536	CP	%	126			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S20-Jn19776	NCP	mg/L	0.02	< 0.02	12	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S20-Jn19776	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S20-Jn19776	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S20-Jn19776	NCP	mg/L	0.002	0.001	<1	30%	Pass	
m&p-Xylenes	S20-Jn19776	NCP	mg/L	0.002	< 0.002	<1	30%	Pass	
o-Xylene	S20-Jn19776	NCP	mg/L	0.002	0.002	<1	30%	Pass	
Xylenes - Total*	S20-Jn19776	NCP	mg/L	0.004	0.004	5.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S20-Jn19776	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S20-Jn19776	NCP	mg/L	0.03	0.02	20	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S20-Jn20951	NCP	mg/L	12000	12000	1.0	30%	Pass	
Sulphate (as SO4)	S20-Jn20951	NCP	mg/L	740	740	<1	30%	Pass	

Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	S20-Jn21475	CP	mg/L	170	190	10	30%	Pass	
Carbonate Alkalinity (as CaCO3)	S20-Jn21475	CP	mg/L	< 10	< 10	<1	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	S20-Jn21475	CP	mg/L	< 20	< 20	<1	30%	Pass	
Total Alkalinity (as CaCO3)	S20-Jn21475	CP	mg/L	170	190	10	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S20-Jn21475	CP	mg/L	0.003	0.002	7.0	30%	Pass	
Cadmium (filtered)	S20-Jn21475	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Jn21475	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Jn21475	CP	mg/L	0.013	0.013	1.0	30%	Pass	
Lead (filtered)	S20-Jn21475	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S20-Jn21475	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Jn21475	CP	mg/L	0.019	0.019	<1	30%	Pass	
Zinc (filtered)	S20-Jn21475	CP	mg/L	3.2	3.2	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	M20-Jn19290	NCP	mg/L	57	57	4.0	30%	Pass	
Magnesium	M20-Jn19290	NCP	mg/L	120	120	5.0	30%	Pass	
Potassium	M20-Jn17821	NCP	mg/L	8.0	8.1	1.0	30%	Pass	
Sodium	M20-Jn19290	NCP	mg/L	410	400	5.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Andrew Black	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

☑ Sydney Laboratory — Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066 — 02 9900 8400 — EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory — Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172 — 07 3902 4600 — EnviroSampleQLD@eurofins.com

☐ Perth Laboratory — Unit 2, 91 Leach Highway, Kewdale WA 6105 — 08 9251 9600 — EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory — 2 Kingston Town Close, Oakleigh, VIC 3166 — 03 8564 5000 — EnviroSampleVic@eurofins.com

Company	ALLIANCE GEOTECHNICAL	Project №	10827	Project Manager	Aidan Rooney
Address	10 WELDER ROAD, SEVEN HILLS NSW	Project Name	Point Frederick Ground Water	EDD Format (ESdat, EQuIS, Custom)	
Contact Name				Sampler(s)	Isabelle Figatowski
Phone №	0424066612			Handed over by	
Special Directions				Email for Invoice	Enviro@allgeo.com.au
Purchase Order				Email for Results	Enviro@allgeo.com.au
Quote ID №					

Analyses (Note: Where metals are requested, please specify "Total" or "Filtered"). SUITE code must be used to attract SUITE pricing

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	TRH	BTEX	PAHs	OCP / OPP	PCBs	HEAVY METALS (8, FIELD FILTERED)	PEHOLS	CATIONS AND ANIONS													Sample Comments / Dangerous Goods Hazard Warning
1	GWM1	11/06/20	W	X	X	X	X	X	X	X	X													
2	GWM3	11/06/20	W	X	X	X	X	X	X	X	X													
3	GWM3	11/06/20	W	X	X	X	X	X	X	X	X													
4	DUP01	11/06/20	W						X															
5	DUP01A	11/06/20	W						X															
6	TRIP SPIKE / BLANK	11/06/20	W	X	X																			
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
	Total Counts			4	4	3	3	3	5	3	3													

Containers: 1L Plastic | 250mL Plastic | 125mL Plastic | 200mL Amber Glass | 40mL VOA vial | 500mL PFAS Bottle | Jar (Glass or HDPE) | Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT) Requirements (Default will be 5 days if not tic

- ☐ Overnight (9am)*
- ☐ 1 Day*
- ☐ 2 Day*
- ☐ 3 Day*
- ☑ 5 Day
- * Surcharges appl
- ☐ Other (

Method of Shipment	☑ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Signature	Date	Time
Eurofins | mgt Laboratory Use Only	Received By	SYD / BNE / MEL / PER / ADL / NTL / DRW		Signature	Date 11/06/20	Time 6:40pm	Temperature 15.5°C
	Received By	SYD / BNE / MEL / PER / ADL / NTL / DRW		Signature	Date / /	Time :	Report № 715316

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2019195**	Page	: 1 of 2
Client	: **ALLIANCE GEOTECHNICAL**	Laboratory	: Environmental Division Sydney
Contact	: Jacob Walker	Contact	: Customer Services ES
Address	: 10 Welder Road, Seven Hills, NSW	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 10827 Point Frederick	Date Samples Received	: 03-Jun-2020 13:00
Order number	: ----	Date Analysis Commenced	: 09-Jun-2020
C-O-C number	: ----	Issue Date	: 10-Jun-2020 11:53
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**DUP01A**	**DUP02A**	**DUP03A**	**----**	**----**
			Client sampling date / time	02-Jun-2020 00:00	02-Jun-2020 00:00	02-Jun-2020 00:00	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**ES2019195-001**	**ES2019195-002**	**ES2019195-003**	**--------**	**--------**
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**9.0**	**16.3**	**9.4**	**----**	**----**
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	**----**	**----**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	**----**	**----**
Chromium	7440-47-3	2	mg/kg	**7**	**12**	**3**	**----**	**----**
Copper	7440-50-8	5	mg/kg	**6**	<5	<5	**----**	**----**
Lead	7439-92-1	5	mg/kg	**16**	**24**	**6**	**----**	**----**
Nickel	7440-02-0	2	mg/kg	**3**	<2	<2	**----**	**----**
Zinc	7440-66-6	5	mg/kg	**21**	**22**	<5	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	**----**	**----**

QUALITY CONTROL REPORT

Work Order	: **ES2019195**	Page	: 1 of 3
Client	: **ALLIANCE GEOTECHNICAL**	Laboratory	: Environmental Division Sydney
Contact	: Jacob Walker	Contact	: Customer Services ES
Address	: 10 Welder Road, Seven Hills, NSW	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 10827 Point Frederick	Date Samples Received	: 03-Jun-2020
Order number	: ----	Date Analysis Commenced	: 09-Jun-2020
C-O-C number	: ----	Issue Date	: 10-Jun-2020
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3067287)									
ES2019157-017	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	36	31	16.6	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	32	28	12.6	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	13	12	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	11	9	14.6	No Limit
ES2019198-003	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	49	48	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3067293)									
ES2019160-001	Anonymous	EA055: Moisture Content	----	0.1	%	16.9	19.3	13.0	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3067283)									
--------		EG035T: Mercury	7439-97-6	0.1	mg/kg	----	<0.1	0.00	No Limit
ES2019198-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3067287)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	98 mg/kg	113	86.0	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	107	83.0	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	15.4 mg/kg	120	76.0	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	48 mg/kg	116	86.0	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	50 mg/kg	114	80.0	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	12.4 mg/kg	112	87.0	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	115 mg/kg	110	80.0	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3067283)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.0847 mg/kg	82.4	70.0	105

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3067287)							
ES2019157-017	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	101	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.8	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	114	70.0	130
		EG005T: Copper	7440-50-8	250 mg/kg	111	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	103	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	112	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3067283)							
ES2019066-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	95.7	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2019195**	Page	: 1 of 4
Client	: **ALLIANCE GEOTECHNICAL**	Laboratory	: Environmental Division Sydney
Contact	: Jacob Walker	Telephone	: +61-2-8784 8555
Project	: 10827 Point Frederick	Date Samples Received	: 03-Jun-2020
Site	: ----	Issue Date	: 10-Jun-2020
Sampler	: ----	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Moisture Content	1	17	5.88	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
DUP01A, DUP02A, DUP03A	**02-Jun-2020**	**----**	----	----	**09-Jun-2020**	16-Jun-2020	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
DUP01A, DUP02A, DUP03A	**02-Jun-2020**	**09-Jun-2020**	29-Nov-2020	✓	**09-Jun-2020**	29-Nov-2020	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
DUP01A, DUP02A, DUP03A	**02-Jun-2020**	**09-Jun-2020**	30-Jun-2020	✓	**10-Jun-2020**	30-Jun-2020	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	17	**5.88**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 6.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)

APPENDIX H

DATA QUALITY ASSESSMENT

H. Data Quality Assessment

H.1 Completeness

An assessment of the completeness of data collected was undertaken, and the results presented in **Table H-1**.

Table H-1 Completeness DQI

Field Considerations	Target	Actual	Comment
Critical locations sampled	95%	100%	Performance against indicator considered acceptable.
Critical samples collected	95%	100%	Performance against indicator considered acceptable.
SOPs appropriate and complied with	100%	100%	Performance against indicator considered acceptable.
Field documentation complete	All sampling point logs, calibration logs and chain of custody forms	All sampling point logs, calibration logs and chain of custody forms	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Critical samples analysed according to DQO	Refer Section 7.5	100%	Performance against indicator considered acceptable.
Analytes analysed according to DQO	Refer Section 7.5	100%	Performance against indicator considered acceptable.
Appropriate laboratory analytical methods and LORs	Refer Section 7.5	100%	Performance against indicator considered acceptable.
Sample documentation complete	All sample receipt advices, all certificates of analysis	100%	Performance against indicator considered acceptable.
Sample extraction and holding times complied with	Refer Section 7.5	100%	Performance against indicator considered acceptable.

The data collected is considered to be complete and within the objectives and constraints of the project.

H.2 Comparability

An assessment of the comparability of data collected was undertaken, and the results presented in **Table H-2**.

Table H-2 Comparability DQI

Field Considerations	Target	Actual	Comment
Same SOPs used on each occasion	100%	100%	Performance against indicator considered acceptable.
Climatic conditions	Samples stored in insulated containers with ice, immediately after collection	100%	Performance against indicator considered acceptable.
Same types of samples collected, and handled/preserved in same manner	All soil samples same size, all stored in insulated containers with ice	100%	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Same analytical methods used by primary laboratory	Refer Section 7.5	100%	Performance against indicator considered acceptable.
Same LORs at primary laboratory	Refer Section 7.5	100%	Performance against indicator considered acceptable.
Same laboratory for primary sample analysis	All primary samples to Eurofins | mgt	100%	Performance against indicator considered acceptable.
Same analytical measurement units	Refer Section 7.5	100%	Performance against indicator considered acceptable.

The data collected is considered to be adequately comparable and within the objectives and constraints of the project.

H.3 Representativeness

An assessment of the representativeness of data collected was undertaken, and the results presented in **Table H-3**.

Table H-3 Representativeness DQI

Field Considerations	Target	Actual	Comment
Appropriate media sampled according to DQO	Refer Section 7.1	100%	Performance against indicator considered acceptable.
Media identified in DQO sampled	Refer Section 7.1	100%	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Samples analysed according to DQO	Refer Section 7.5	Refer comments	Performance against indicator considered acceptable.

The data collected is considered to be adequately complete within the objectives and constraints of the project.

H.4 Precision

An assessment of the precision of data collected was undertaken, and the results presented in **Table H-4.**

Table H-4 Precision DQI

Field Considerations	Target	Actual	Comment
Field duplicate / triplicate RPD	Minimum 5% duplicates and triplicates No limit for analytical results <10 times LOR 50% for analytical results 10-20 times LOR 30% for analytical results >20 times LOR	11.42 % duplicates and 11.42 % triplicates Nil Nil Nil	Parent duplicate/triplicate relationships are as follows: ▪ DUP01/DUP01A – TP04-0.0-0.2. ▪ DUP02/DUP02A – TP14-0.0-0.2 ▪ DUP03/DUP03A – TP09-0.0-0.2 ▪ DUP01(W)/DUP01A(W) – GMW01 No exceedances were recorded for RPD's for soil, however due to a transcription error, the triplicate groundwater sample was not forwarded to ALS (secondary laboratory) for analysis. As the sample was analysed at the primary laboratory, a comparison can still be made between primary, duplicate and triplicate samples, as well as taking into account the laboratories QA/QC records. As the analytical results are all within minor margins of each other, and as all internal laboratory QA/QC assessments passed, AG considers that the performance against the indicator considered acceptable. Refer to Table LAR3.
SOPs appropriate and complied with	100%	100%	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Laboratory duplicates	No exceedances of laboratory acceptance criteria	No exceedances	Performance against indicator considered acceptable.

The data collected is considered to be adequately precise within the objectives and constraints of the project.

H-5 Accuracy

An assessment of the precision of data collected was undertaken, and the results presented in **Table H-5**.

Table H-5 Accuracy DQI

Field Considerations	Target	Actual	Comment
Rinsate blanks	Less than laboratory limit of reporting	Less than laboratory limit of reporting	Performance against indicator considered acceptable.
Field trip spikes	Recoveries between 60% and 140%	N/A	Performance against indicator considered acceptable.
Field trip blanks	Analyte concentration <LOR	N/A	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Laboratory method blank	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.
Matrix spike recovery	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.
Surrogate spike recovery	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.
Laboratory control sample recovery	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.

The data collected is considered to be adequately accurate and within the objectives and constraints of the project.

APPENDIX I

ProUCL Output

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.130/06/2020 9:42:35 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

C0

General Statistics

Total Number of Observations	35	Number of Distinct Observations	27
		Number of Missing Observations	0
Minimum	2.5	Mean	41.05
Maximum	430	Median	21
SD	73.4	Std. Error of Mean	12.41
Coefficient of Variation	1.788	Skewness	4.631

Normal GOF Test

Shapiro Wilk Test Statistic	0.489	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.3	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.148	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.03	95% Adjusted-CLT UCL (Chen-1995)	71.84
		95% Modified-t UCL (Johnson-1978)	63.65

Gamma GOF Test

A-D Test Statistic	0.757	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.79	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.111	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.155	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.728	k star (bias corrected MLE)	0.684
Theta hat (MLE)	56.41	Theta star (bias corrected MLE)	59.98
nu hat (MLE)	50.95	nu star (bias corrected)	47.91
MLE Mean (bias corrected)	41.05	MLE Sd (bias corrected)	49.62
		Approximate Chi Square Value (0.05)	33.03
Adjusted Level of Significance	0.0425	Adjusted Chi Square Value	32.44

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	59.56	95% Adjusted Gamma UCL (use when n<50)	60.64

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.943	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.934	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.103	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.148	Data appear Lognormal at 5% Significance Level

	A	B	C	D	E	F	G	H	I	J	K	L
56	**Data appear Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59					Minimum of Logged Data	0.916				Mean of logged Data		2.889
60					Maximum of Logged Data	6.064				SD of logged Data		1.328
61												
62	**Assuming Lognormal Distribution**											
63					95% H-UCL	83.76				90% Chebyshev (MVUE) UCL		76.23
64					95% Chebyshev (MVUE) UCL	91.95				97.5% Chebyshev (MVUE) UCL		113.8
65					99% Chebyshev (MVUE) UCL	156.7						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
69												
70	**Nonparametric Distribution Free UCLs**											
71					95% CLT UCL	61.46				95% Jackknife UCL		62.03
72					95% Standard Bootstrap UCL	61.26				95% Bootstrap-t UCL		89.15
73					95% Hall's Bootstrap UCL	141.7				95% Percentile Bootstrap UCL		63.13
74					95% BCA Bootstrap UCL	78.56						
75					90% Chebyshev(Mean, Sd) UCL	78.27				95% Chebyshev(Mean, Sd) UCL		95.13
76					97.5% Chebyshev(Mean, Sd) UCL	118.5				99% Chebyshev(Mean, Sd) UCL		164.5
77												
78	**Suggested UCL to Use**											
79					95% Adjusted Gamma UCL	60.64						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												