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15 August 2019

13070/17532

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DA18/0221 (2018/00342140) STAGE 2 EAST WEST CONNECTOR ROAD, PENRITH CITY COUNCIL
DA-18-000561 (2018/00344346) STAGE 2 EAST WEST CONNECTOR ROAD, BLACKTOWN CITY COUNCIL

This amendment application has been prepared by Ethos Urban on behalf of St Marys Land Limited (Lendlease) in relation to two development applications currently before the Land and Environment Court, originally submitted to Penrith City Council and Blacktown City Council for the construction of Stage 2 of the East West Connector Road and Dunheved Links Road, St Marys.

The amendment seeks to add remediation of contaminated land to each of the two development applications.

This application is supported by the following documents:

- Contamination Management Plan for Stages 1 to 3 of the East West Connector Road, prepared by JBS&G (**Attachment A**);
- Phase 1 Preliminary Site Assessment East West Connector Road, prepared by JBS&G (**Attachment B**);
- Additional Targeted Assessment of Dunheved Portion (Stage 2b) of Stage 2 East West Connector Road, prepared by JBS&G (**Attachment C**);
- Remedial Action Plan Stage 2b and Stage 3 – East West Connector Road, prepared by JBS&G (**Attachment D**); and
- Interim Advice IA2 Variation Section 34 – Stages 1 to 3, East West Connector Road, prepared by Zoic Environmental (**Attachment E**).

1.0 Background

DA18/0221 was lodged with Penrith City Council on 8 March 2018, and DA-18-000561 was lodged with Blacktown City Council on 29 March 2018. These applications seek consent for the development of Stage 2 of the East West Connector Road and Dunheved Links Road that runs between the Central Precinct, Ropes Crossing and Dunheved Precinct within the St Marys ADI site, St Marys.

The proposed road and bridge passes through the Penrith and Blacktown Local Government Areas (LGA) and as such the application was submitted concurrently with both Councils. The filling of the Regional Open Space occurs entirely within the Penrith LGA.

Specifically, the applications sought consent for:

- Construction of approximately 670 metres of the East West Connector Road including;
  - Bulk earthworks and importation and reuse of material to elevate the road above flood levels;

  - Retaining walls and fauna crossings;
  - Stormwater and culvert crossings;
  - Widening of the existing road footprint;
  - Installation of road underlay;
  - Provision of new pavement and street lighting; and
  - Provision of pedestrian and cyclepaths along the road corridor.
- Construction of approximately 850 metres of the Dunheved Links Road south from the East West Connector;
  - Bulk earthworks and importation and reuse of material to elevate the road above flood levels;
  - Retaining walls and fauna crossings;
  - Stormwater and culvert crossings;
  - Widening of the existing road footprint;
  - Installation of road underlay;
  - Provision of new pavement and street lighting; and
  - Provision of pedestrian and cyclepaths along the road corridor.
- Construction of the South Creek Bridge including;
  - Installation of new bridge piers;
  - Installation of new support structures; and
  - Installation of new bridge deck including handrails.
- Bulk earthworks within the Regional Open Space;
- Temporary use of access tracks within Regional Park zoned land during construction;
- Construction of a temporary bund within the Dunheved South Development; and
- Remediation (if required).

This amendment to the existing applications has been prepared in response to contamination investigation results identifying that remediation of part of the proposed site is required and seeks to provide for Category 1 Remediation Works within the development description. Further description of the proposed amendments and environmental assessment follows below.

2.0 Amended Development Description

Based on the proposed amendments to the application, the development description is intended to be updated per below. Words proposed to be deleted are shown in **~~bold strike through~~** and words to be inserted are shown in ***bold italics***.

- Construction of approximately 670 metres of the East West Connector Road including;
  - Bulk earthworks and importation and reuse of material to elevate the road above flood levels;
  - Retaining walls and fauna crossings;
  - Stormwater and culvert crossings;
  - Widening of the existing road footprint;

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  - Installation of road underlay;
  - Provision of new pavement and street lighting; and
  - Provision of pedestrian and cyclepaths along the road corridor.
- Construction of approximately 850 metres of the Dunheved Links Road south from the East West Connector;
  - Bulk earthworks and importation and reuse of material to elevate the road above flood levels;
  - Retaining walls and fauna crossings;
  - Stormwater and culvert crossings;
  - Widening of the existing road footprint;
  - Installation of road underlay;
  - Provision of new pavement and street lighting; and
  - Provision of pedestrian and cyclepaths along the road corridor.
- Construction of the South Creek Bridge including;
  - Installation of new bridge piers;
  - Installation of new support structures; and
  - Installation of new bridge deck including handrails.
- Bulk earthworks within the Regional Open Space;
- Temporary use of access tracks within Regional Park zoned land during construction;
- Construction of a temporary bund within the Dunheved South Development; and
- ***Category 1*** Remediation ~~**(if required)**~~ ***within the DA boundary***.

2.1 Amended Proposal Lot Descriptions

At the time of lodgement, the Stage 2 of the East West Connector Road and Dunheved Link Road affected the following lots:

- Lot 2 DP1203565 (Blacktown);
- Lot 5 DP1203565 (Blacktown);
- Lot 6 DP1203565 (Blacktown);
- Lot 3 DP1133301 (Blacktown);
- Lot 1 DP1132380 (Penrith); and
- Lot 3000 DP120974 (Penrith).

Since the lodgement of the applications, numerous lot registrations associated with the Central Precinct development have resulted in lot descriptions changing. As such, the proposed Stage 2 of the East West Connector Road and Dunheved Link Road now affects the following allotments, which supersede those listed above:

- Lot 6 DP1248480 (Penrith);
- Lot 1 DP1132380 (Penrith);
- Lot 3 DP1133301 (Blacktown); and
- Lot 102 DP1249590 (Blacktown).

Note that only part of each lot is subject to the proposed development.

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3.0 Proposed amendments to the application

The proposed amendments to the development applications comprises the clarification of the type of remediation required on the site as Category 1 Remediation under the State Environmental Planning Policy 55 – Remediation of Land (SEPP55), being remediation that requires consent. Category 1 Remediation, under Clause 9(d) of SEPP55, includes remediation work that is 'development for which another State environmental planning policy or a regional environmental plan requires development consent'.

The site is subject to the Sydney Regional Environmental Plan No.20 – Hawkesbury-Nepean River (SREP20), which under Clause 8(2), specifies:

> *Any such development that may be carried out only with development consent is indicated in the item by the words Consent required. The council of the area in which development is proposed to be carried out is the consent authority for that development for the purposes of this plan, except where the Act provides otherwise.*

Furthermore, Clause 11(4) of SREP20 provides as follows:

> *(4) Remediation of contaminated land*
> *Definition:*
> *Removing soil or other deposits from, or otherwise remediating, contaminated land. For the purposes of this definition, contaminated land means land on which hazardous substances occur at concentration levels above background levels, where an assessment (carried out in accordance with guidelines circulated to councils by the Department) has indicated the substances pose, or are likely to pose, an immediate or long-term hazard to human health or to the environment.*

As such, the proposed development involves Category 1 Remediation and therefore requires development consent.

At the time of lodgement of the applications, it was not known to what extent remediation may have been required. This has been clarified through on-site investigations by JBS&G after lodgement (refer to **Attachments A**, **B** and **C**).

4.0 Proposed Category 1 Remediation

A Phase 1 Preliminary Site Investigation (**Attachment B**) and Targeted Assessment of Stage 2b (**Attachment C**) has been undertaken by JBS&G.

The Phase 1 Investigation initially identified areas of environmental concern (AECs) and associated contaminants of potential concern (COPCs) within the roadway, and the broader site area applicable to the two applications (DA18/0221 and DA-18-000561). These are summarised in **Table 1**.

In particular, a targeted assessment of per- and poly-fluroalkyl substances (PFAS) was completed which identified PFAS within the proposed Stage 2 and Stage 3 portions of the Dunheved Link Road.

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Table 1 Contaminants

Area of Potential Concern (AEC)	Contaminants of Potential Concern (COPC)
East West Connector Road	
Fill materials underlying the road	Heavy metals, Poly aromatic hydrocarbons (PAHs), Total Recoverable Hydrocarbons (TRH)/BTEX (Benzene, toluene, ethylbenzene and Xylenes), Organochlorine pesticides (OCPs), Organophosphate pesticides (OPPs), Polychlorinated Biphenyls (PCBs), asbestos and explosives Metallic Debris – may contain explosive ordnance waste
Paved road asphalt	Heavy metals, PAHs, TRH/BTEX, asbestos and explosives, Coal Tar
Flytipping	Heavy metals, PAHs, TRH/BTEX, OCPs, OPPs, PCBs and asbestos
Dunheved Link Road	
Historical use of the site for sewage sludge and effluent storage	Heavy metals, PAHs, TRH/BTEX, OCPs, OPPs, PCBs, asbestos and PFAS
Impact associated with the Dunheved Open Channel (surface water entering site)	PFAS
Potential impact from offsite sources south of Links Road	Heavy metals, PAHs, TRH/BTEX, OCPs, OPPs, PCBs, asbestos and PFAS
Regional Open Space	
Flytipping	Heavy metals, PAHs, TPH/BTEX, OCPs, PCBs and asbestos
Building Footprints	Heavy metals, PAHs, TPH/BTEX, OCPs, PCBs, asbestos and explosives
Fill materials and impact from demolition works, use of the site as a compound	Heavy metals*, PAHs, TPH/BTEX, and asbestos

Source: JBS&G

4.1 Remediation Action Plan

The Remediation Action Plan (**Attachment D**) sets out the approach to manage the remediation of the identified PFAS within the East West Connector Road and the Dunheved Link Road footprint.

The preferred remediation options and/or management adopted by NSW EPA has been established within the NEPC (2013) Assessment of Site Contamination Policy Framework as follows:

- On-site treatment of the soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level; and
- Off-site treatment of excavated soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to the site; or

If the above options are not practicable:

- Consolidation and isolation of the soil on site with a properly designed barrier; and
- Removal of contaminated soil to an approved site or facility, followed where necessary by replacement with clean fill; or
- Where the assessment indicates remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy.

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It is proposed that impacted soils are removed from the Stage 2b and Stage 3 site and placed within the designated PFAS impacted soils stockpiling area to undergo remediation at a later stage, following EPA endorsement of the final remedial strategies.

4.1.1 Remediation Approach

The intended remediation works proposed as part of the amended applications involves the excavation of PFAS impacted area which falls within the Stage 2b and Stage 3 Dunheved Link Road alignment to an approximate depth of 1m below ground surface.

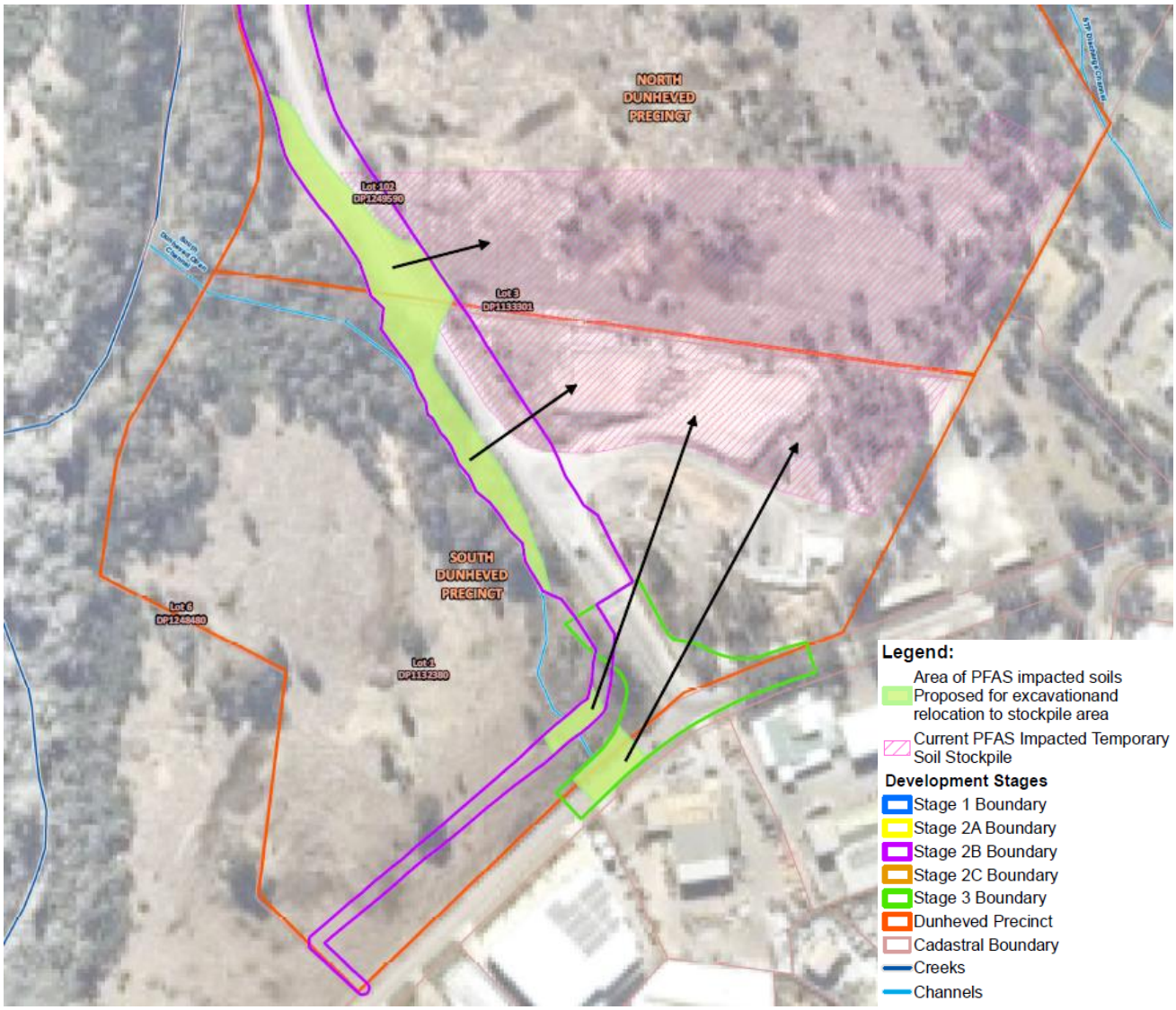


Figure 1 Extent of remediation proposed

Source: JBS&G

The excavated PFAS impacted soils will be relocated to the PFAS impacted soil stockpile located within the Dunheved Precinct to the east of the proposed road alignment (**Figure 1**). It is estimated that the excavated material is approximately 5,000m^3, covering an area of 6,000m^2.

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The materials within the PFAS impacted soils stockpile will undergo remediation at an unknown later date, following endorsement of a remedial strategy by the EPA including adoption of PFAS in soil criteria. This is anticipated to be the subject of a future development application/approval.

Within the extent of the roadway, confirmation of the remedial extent will be achieved through soil validation sampling along excavation walls and floor. Where detectable PFAS concentrations are identified in samples (above the laboratory limit of reporting) further excavation shall be required followed by collection of additional validation samples until all validation samples characterizing in situ soils are free of detectable PFAS concentrations. Preparation of a validation report to document this will be issued.

The proposed remediation methodology does not include incineration of excavated PFAS materials, and the extent of the contaminated soils is less than 3 hectares. Per above, the excavated material is approximately 5,000m^3, covering an area of 6,000m^2 across both the Stage 2 and Stage 3 application sites (noting Stage 3 is a separate development application to Penrith City Council). Therefore, the proposed remediation does not trigger the thresholds for designated development under Clause 15 Schedule 3 of the Environmental Planning and Assessment Regulation 2000. Any fill required to replace the excavated material will be obtained from elsewhere within the St Marys site or imported from outside the site, and will be validated as suitable prior to deposition to land.

It is concluded that the site can be made suitable for the proposed use in accordance with Clause 7 of SEPP 55, subject to the remedial works described above being carried out in accordance with the Remedial Action Plan (RAP).

5.0 Additional Environmental Assessment

The following provides additional environmental assessment addressing the key matters assessed in the original applications.

5.1 Flooding and Stormwater

The original assessment for flooding and stormwater concluded that the proposed East West Connector Road and Dunheved Link Road works result in an outcome consistent with, and in some parts better, than that outcome approved under the broader Bulk Earthworks DA14/1228 to Penrith City Council.

The proposed remediation works will not impact on the flooding and stormwater assessment, as no changes to the final level of the road is proposed, maintained at a 1% AEP flood immunity. No impacts on flood levels in the Regional Open Space area within the Penrith LGA (proposed to be filled) are expected with no works proposed in that location.

5.2 Flora and Fauna

Removal of trees is to be fully contained within the existing road corridor as assessed as part of the original two applications. Vegetation in this corridor was assessed as being removed to enable construction of the road, and as such the proposed remediation will not impact on the existing assessment outcomes, with no additional vegetation proposed to be removed.

5.3 Traffic and Transport

Traffic was assessed as part of the original application and identified that the impact of the East West Connector Road and Dunheved Link Road would result in all intersections on Ropes Crossing Boulevard, Dunheved Link Road and Links Road operating sufficiently. The remediation as proposed would not result in any changes to traffic outcomes.

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5.4 Heritage

There are no heritage items near to the site that would be affected by the remediation works, and no further assessment is required.

5.5 Construction Management

No change to construction hours are proposed to complete the remediation activities.

The nearest residential property to the work site is located in Ropes Crossing at the eastern end of the Connector Road, approximately 1.3km to the north-east. The location of the construction works is considered remote enough to reduce any construction noise and dust impacts on neighbouring residents, with the nearest receivers to the site being light industrial premises adjacent to Links Road, outside the St Marys site.

The work sites location away from residential receptors will reduce the impacts from noise, vibration and dust associated with the construction works. Notwithstanding, mitigation measures to reduce noise and vibration, and dust and air quality impacts as a result of construction at the site will be implemented. A Construction Environmental Management Plan will be prepared as part of construction certificate documentation.

6.0 Conclusion

The proposed amendment to the existing DA18/0221 and DA-18-000561 applications seeks to clarify that Category 1 Remediation in each proposal. Further investigations since the original lodgement of the two applications to both Penrith and Blacktown Councils identified PFAS affected areas within the alignment of the proposed Dunheved Links Road requires remediation to ensure the site is made suitable for the proposed use pursuant to Clause 7 of SEPP 55.

The remediation approach proposed involves the excavation of the affected land and placement in stockpiles within the Dunheved Precinct. Future remediation of the affected soil within the stockpiles would be subject to a separate development application, pending endorsement of remedial strategy by the EPA.

We trust that this information is sufficient to enable a prompt assessment of the applications.

Yours sincerely,



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APPENDIX A

Contamination Management Plan for Stages 1 to 3 of the East West Connector Road

JBS&G

Minter Ellison

Contamination Management Plan for Stages 1 to 3 of the East West Connector Road

St Mary's, NSW

14 August 2019

54782/123244 (Rev 0)

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Minter Ellison
Contamination Management Plan for Stages 1 to 3 of the East West Connector Road

St Mary's NSW

14 August 2019

54782/123244 (Rev 0)
JBS&G

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Abbreviations

Term	Definition
ACM	Asbestos Containing Material
AEC	Areas of Environmental Concern
B(a)P	Benzo(a)pyrene
Bgs	Below Ground Surface
COPC	Contaminants of Potential Concern
DP	Deposited Plan
EPA	NSW Environmental Protection Authority
ESA	Environmental Site Assessment
EWCR	East West Connector Road
HHERA	Human Health and Ecological Risk Assessment
JSE	Jordan Springs East
NEPC	National Environmental Pretention Measure
OCPs	Organochlorine pesticides
PAHs	Polyaromatic Hydrocarbons
PCBs	Polychlorinated biphenyls
PFAS	Per- and poly-fluoroalkyl substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
ROS	Regional Open Space
SAQP	Sampling Analysis and Quality Plan
VOCs	Volatile Organic Compounds

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1. Introduction and Background

1.1 Introduction

JBS&G Australia Pty Ltd (JBS&G) was engaged by Minter Ellison on behalf of Maryland Development Company Pty Ltd and St Mary's Land Ltd to prepared a contamination management plan (CMP) for the proposed East West Connector Road (the site) inclusive of Stages 1, 2 and 3. The EWCR is located substantially within the former ADI St Marys property ('the property') noting a portion of Stage 3 is also located within Links Road St Mary's, NSW. The corridor site is proposed to be developed into a multi lane roadway as necessary infrastructure to the Central Precinct Development site.

The EWCR is planned to comprise a roadway to connect the Jordan Springs East (JSE) Development site with the Suburb of Ropes Crossing. The EWCR corridor currently exists as a paved road dating from the site's former use as a munitions storage facility and/or as a haul road associated with the development works occurring within the overall development site. The (roadway) site is approximately 3 km in total length and is split into 3 Stages. The Regional Open Space (ROS) area is included within Stage 2 of the EWCR and comprises approximately 25 ha of proposed park land and sports field adjacent area to the JSE development. The location of the site is provided in **Figure 1**, the layout of the site including surrounding areas and the division of stages is provided in **Figures 2** to **4**.

Previous environmental investigation works conducted within the site area which falls within the St Marys ADI property includes the Southern Sector East validation reports (ADI 1996). Ultimately, this report and others lead to a number of site audit statements (SAS) being prepared and more specifically the site (portion within former ADI St Marys) is covered by three previously issued SAS prepared by HLA-Envirosciences (CHK001/1 Kidd 1999a), (CHK001/6 Kidd 1999b) and (CHK001/7 Kidd 1999c). The reports confirm that the property was suitable for proposed uses with the exception of excluded areas such as footprints of original buildings, car parks, roads and stockpiles that were inaccessible when previous works were conducted.

More recently, JBS&G has conducted a number of environmental investigations throughout the former ADI St Marys site and nearby areas to supplement the previous historical assessments. These reports have included UXO clearance (where necessary), management of pavement removal for historical road and/or building footprints, and environmental sampling with associated reporting. Reports conducted which fall within the EWCR area included:

- Phase 1 Preliminary Site Assessment East West Connector Road – East West Connector Road Jordan Springs East, NSW (Rev 2) 17 April 2019 (JBS&G 2019a[1])
- Environmental Site Assessment Stage 1 of the EWCR (JBS&G 2018a[2]);
- Environmental Site Assessment Stage 2 of the EWCR (JBS&G 2019b[3]);
- Environmental Site Assessment Stage 3 of the EWCR (JBS&G 2019c[4]);
- Environmental Site Assessment for the W Series Buildings within the Regional Open Space area of Central Precinct (JBS&G 2019d);

[1] *Phase 1 Preliminary Site Assessment East West Connector Road – East West Connector Road Jordan Springs East, NSW (Rev 2*) JBS&G Australia Pty Ltd 17 April 2019 (JBS&G 2019a)

[2] *Environmental Site Assessment and unexploded Ordnance Clearance for Stage 1 of the East West Connector Road – Ropes Crossing to Jordan Springs East, NSW (Rev A*) JBS&G Australia Pty Ltd 10 October 2018 (JBS&G 2018a)

[3] *Environmental Site Assessment and unexploded Ordnance Clearance for Stage 2 of the East West Connector Road – Ropes Crossing to Jordan Springs East, NSW (Rev 0*) JBS&G Australia Pty Ltd 6 February 2019 (JBS&G 2019a)

[4] *Phase 2 Environmental Site Assessment – Stage 3 East West Connector Road, Links Road St Mary's, NSW (Rev 0)* JBS&G Australia Pty Ltd 14 August 2019 (JBS&G 2019c)

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- Environmental Site Assessment W Series buildings within Regional Open Space Area (JBS&G 2019e[5]); and
- Additional Analytes Summary Letter for the Dunheved Industrial Precinct (JBS&G 2018b[6])

In addition, a comprehensive PFAS investigation (JBS&G 2018c[7]) was also conducted throughout the property, including creeks and tributaries that run through the site and in an area identified as Dunheved which the Dunheved Link road runs through (in proximity of Stage 2 of the EWCR).

The previous works conducted provides a detailed environmental data set to characterise the contamination status of the site. However there is a requirement for a range of management requirements with the works inclusive of; additional sampling and analysis to confirm the current environmental characterisation of the proposed roadway corridor; management of a range of materials / soils during the proposed roadway construction works inclusive of implementation of an unexpected finds protocol; management of bitumen and pavement materials; management of PFAS impacted soils; and further management of demolition / earthworks materials, with the proposed construction of the EWCR.

This CMP provides framework to allow the implementation of the management requirements for the EWCR construction works. Further to this, the management requirements have been developed in accordance with guidelines made or approved by the NSW Environment Protection Authority (EPA) and relevant Australian Standards.

The CMP is considered to fulfil Penrith City Council (PCC) and Blacktown City Council (BCC) DA consent conditions regarding the proposed EWCR development.

1.2 Characterisation of Environmental Conditions within the EWCR

Extensive sampling and analysis have been conducted throughout and within proximity of the EWCR corridor as consistent with the extent of assessments detailed in **Section 1.1**. The analytical data and sample locations as generated by these works have been provided to **Appendix C**. The site is found to be generally environmentally suitable from a contamination perspective for the proposed development. It is noted however that a portion of Stage 2 and Stage 3 areas are impacted by elevated levels of PFAS in soils. A process is currently underway to determine the significance of these levels with the NSW EPA. A strategy of interim management of PFAS impacted soils within the Dunheved precinct of the overall St Marys site is being implemented while this NSW EPA consultation process occurs. Noting the current stage of this process, all soils with detectable levels of PFAS constituents within the corridor will require to be transferred to the existing storage area with Dunheved for interim management. The required actions for these works are included in a Remedial Action Plan (RAP) developed for implementation during the development of the roadway (JBS&G 2019f[8]). This CMP will support the implementation of the RAP.

1.3 Objective

The objective of this CMP is to provide a framework to manage potential contamination issues that may be encountered during the roadway construction works.

1.4 Assessments to Support the CMP

The implementation of the CMP will include collection of additional sampling and analysis data to confirm current environmental characterisations of the site area, management of Unexpected Finds

[5] *Environmental Site Assessment – W Series Building Footprints within Regional Open Space Area – Central Precinct, NSW (Rev B*) JBS&G Australia Pty Ltd 19 July 2019 (JBS&G 2019e)
[6] *Additional analytes Summary Letter for the Dunheved Industrial Precinct, St Mary's, NSW (Rev A*) JBS&G Australia Pty Ltd 31 December 2018 (JBS&G 2018a)
[7] *PFAS Assessment at Former ADI St Mary's Development Site – St Mary's and Llandilo, NSW (rev B*). JBS&G Australia Pty Ltd November 2018 (JBS&G 2018c)
[8] *Remedial Action Plan – East West Connector Road, St Marys, NSW (Rev 0*) JBS&G Australia Pty Ltd 14 August 2019 (JBS&G 2019f)

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including potential UXO and asbestos, management requirements for stockpiles, management of bitumen pavements, and characterisation and material tracking requirements to apply during construction works of the EWCR.

It is also understood that imported fill materials will be required to create the proposed site levels during construction works. As such imported fill materials and site reused soils will be required to comply with the procedures of the existing Imported Fill Protocol (IFP).

It is additionally noted that the procedures provided for UXO will only come into operation if additional non cleared items are identified as unexpected finds during the construction works (all apparent areas as visible at the surface as paved areas / former buildings have been cleared at the time of preparation of this CMP) and/or if the existing concrete culvert at the southern extent of the ROS is removed during the construction works.

Asbestos management will only come into operation if either greater than 10 m^2 of ACM is identified or if friable asbestos (FA) or asbestos fines (AF) are encountered as unexpected finds during works.

1.5 Responsibility for CMP Implementation

The Property Owner, or their nominated representative (project manager, Principal Contractor, Superintendent, etc), is required to manage the implementation of the CMP. It is noted that where specific procedures are technical or complex in nature, appropriately qualified agents may be appointed to fulfil the requirements of the procedure and/or advise the appropriate implementation of the procedure.

1.6 Terminology

Provided in the tables below are the terminology relevant to the EWCR.

Table 1.1 Terminology

Abbreviation	Term	Definition
ACM Bonded	Asbestos Containing Materials Bonded	Bonded ACM comprises ACM which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. This term is restricted to material that cannot pass a 7 mm x 7mm sieve. Equivalent to "non-friable" asbestos in *How to Manage and control asbestos in the workplace Code of Practice* (Safe Work Australia 2017).
AF	Asbestos Fines	AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7mm sieve. Equivalent to "friable" asbestos in *How to Manage and control asbestos in the workplace Code of Practice* (Safe Work Australia 2017).
Ammunition	Ammunition	A device charged with explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological or chemical material for use in connection with defence or offence including demolitions. Certain ammunition can be used for training, ceremonial or other non-operational purposes.
AMP	Asbestos Management Plan	See **Section 4**
AOC	Area of Concern	An area identified as containing potential contamination. Also referred to as Quarantined Area.
Category A	Category A ordnance Item	An item clearly of a military nature and which might readily be recognised by a member of the public as such (e.g. in effect complete in appearance as a projectile of 20 mm calibre or greater, hand grenade, mortar, bomb, etc.) and containing explosive filling, but excluding small arms ammunition.
Category B	Category B Ordnance Item	An item clearly of a military nature and which might readily be recognised by a member of the public as such (e.g. in effect complete in appearance as a projectile of 20 mm calibre or greater, hand grenade, mortar, bomb, etc.) and not containing explosive filling, but excluding small arms ammunition.

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Abbreviation	Term	Definition
Central Precinct	Central Precinct	The Central Development site located west of the EWCR**.**
CMP	Contamination Management Plan	This plan.
Dunheved	Dunheved Industrial Precinct	The Dunheved Industrial Precinct within the property as shown on **Figure 1**.
DUXOP	Defence Unexploded Ordnance Panel	The panel of contractors and consultants from whom the Department of Defence selects remembers for UXO related tasks.
EWCR	East West Connector Road	The site as shown on **Figures 1** to **4**.
FA	Fibrous Asbestos	FA comprises friable asbestos material and includes severely weather cement sheet, insulation products and woven asbestos material. Defined as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. Equivalent to "friable" asbestos in *How to Manage and control asbestos in the workplace Code of Practice* (Safe Work Australia 2011).
IFP	Imported Fill Protocol	*Imported Fill Protocol – Central Precinct, Llandilo, NSW*. October 2015 (Rev 3i) JBS&G Australia Pty Ltd (JBS&G 2015) and *Dunheved Addendum to the Imported Fill Protocol – Central Precinct Llandilo, NSW*. 11 December 2017 (Rev 0) JBS&G Australia Pty Ltd (JBS&G 2017c)
Induction	Site Specific Induction	The *Work Health and Safety Act 2011* (WHS Act) main objective is to secure the health and safety of workers and workplaces. A site specific induction is necessary for all workers on the Central Precinct to understand the site specific risks.
Metallic Debris	Metallic Debris	Debris comprising metal (ferrous) items. May include fragments of former ordnance items.
Ordnance	Ordnance	Any item of potential military origin. See Ammunition, Category A and B Ordnance Item and UXO
PFAS Impacted Soils	PFAS Impacted Soils	Soils impacted with levels of PFAS constituents above laboratory reporting limits.
Property	Former St Marys ADI Property	The whole of the landholding formerly known as the ADI St Marys Property as shown on **Figure 1**.
Quarantined Area	Quarantined Area	Area removed from development activities due to potential contamination. Also see AOC.
Site	Site	The subject area, where potential contamination has been found.
UXO	Unexploded Ordnance	Explosive ordnance that has been primed, fused, armed or otherwise prepared for action and which has been fired, dropped, launched, projected or placed in such a manner as to constitute a hazard to operations, installations, personnel or material but remains unexploded either by malfunction or design or for any cause. UXO includes items of military ammunition or explosives removed from their original resting place for any reason, including souveniring.

2. Unexpected Finds Protocol

The St Marys ADI property inclusive of the EWCR has previously been the subject of number of environmental investigations. However, given the size of the EWCR there is potential for the presence of unexpected finds of contamination during bulk excavation. The unexpected Finds Protocol (UFP) is summarised in **Appendix B** and is detailed in the following sections.

The objective of the UFP is to provide clear guidance on the safe and appropriate actions in the event of encountering potential chemical or ordnance contamination during development works. Where such material is uncovered the UFP prescribes the quarantining of the relevant area of concern, allowing other works to proceed unhindered, while the area of concern is assessed and, if necessary, the impacted materials removed, and validated.

Areas of Concern (AOC) may be identified by the Principal Contractor, Environmental Consultant or a site worker. The AOC will be quarantined by the Principal Contractor by means of some appropriate barrier to prevent access to the area. The quarantined area/s will be communicated with workers during the daily tool box talks. The Site Auditor shall be notified of the Unexpected Find.

Two classes of potential contamination are discussed separately below: chemical (including potential asbestos containing materials) and ordnance.

Previous investigations of the development site have been undertaken to assess contaminants of potential concern. However, ground conditions between sampling points may vary, and further hazards may arise from unexpected sources and/or in unexpected locations during site earthworks. The nature of any residual hazards which may be present at the site are generally detectable through visual or olfactory means, for example:

1. >10 m^2 of ACM fragments encountered in one location (visible);
2. Fibrous asbestos material;
3. Metallic debris, potential UXO (visible);
4. Drums / bottles / containers of chemicals (visible);
5. Construction / demolition waste (visible);
6. Ash and/or slag contaminated soils / fill materials (visible);
7. Petroleum contaminated soils (staining / discolouration visible); and
8. Volatile organic compound contaminated soils (odorous).

As a precautionary measure to ensure the protection of the workforce and surrounding community, should any of the abovementioned substances be identified (or any other unexpected potentially hazardous substance), works should cease and the environmental consultant shall be notified who will advise on required assessment and/or the required removal activities. This may include implementation of **Section 3** where UXO is identified or implementation of the AMP in **Section 4** where greater than 10 m^2 of ACM or if FA/AF is encountered. The Site Auditor shall be notified by the environmental consultant and liaise with the environmental consultant in the development of a response to the Unexpected Find.

An enlarged version of the unexpected finds protocol, suitable for use on site, should be posted in the Site Office and referred to during the Site Specific Induction by the Principal Contractor.

3. Potential Explosive Ordnance Materials

3.1 State the Problem

While the site has been investigated and remediated for metallic debris and / or ordnance items the potential remains for unexpected finds of ordnance related materials during the redevelopment of the precinct that were not readily apparent at the surface at the time that the UXO clearance was undertaken. It is further noted that a culvert within the southern area of Stage 2 (as shown on **Figure 3**) has been identified as a structure which has not undergone search previously and as such, if the feature is proposed to be removed, UXO clearance as per the procedures below would be required (though UXO occurrence here would be highly unlikely).

Potential explosive ordnance material may be indicated in the field by:

- Munitions shells / projectiles;
- Flares;
- Ammunition packaging;
- Grenade components; or
- Metal debris not identifiable as non-munitions or of uncertain origin.

Should potential ordnance material be uncovered, the earthworks will cease immediately and the Principal Contractor informed. The area should be quarantined, by means of some appropriate barrier to prevent access to the area to protect the workforce from potential injury.

The Environmental Consultant shall contact an appropriately qualified Ordnance Contractor, to assess the item and/or the area.

Should the Ordnance Contractor consider the object(s) to be non-ordnance or harmless fragments of ordnance, the object(s) can be removed and disposed of appropriately. The quarantine restrictions can be lifted and the earthworks continued.

If the Ordnance Contractor identifies the object(s) as potential explosive ordnance, the Ordnance Contractor shall inform the Environmental Consultant and Principal Contractor, and arrange disposal.

Based on the nature of find, it may be recommended that a geophysical survey of the area be undertaken to establish whether the item was an individual piece, one of a number of pieces or a disposal pit. Further surveys are mandatory if the explosive ordnance is considered a Category A item or more than three readily identifiable Category B items are found at one location.

- Category A - An item clearly of a military nature and which might readily be recognised by a member of the public as such (e.g. in effect complete in appearance as a projectile of 20 mm calibre or greater, hand grenade, mortar, bomb, etc) and containing explosive filling, but excluding small arms ammunition.
- Category B - An item clearly of a military nature and which might readily be recognised by a member of the public as such (e.g. in effect complete in appearance as a projectile of 20 mm calibre or greater, hand grenade, mortar, bomb, etc) and not containing explosive filling, but excluding small arms ammunition.

Any additional ordnance surveys should be designed to characterise the extent and character of the ordnance contamination and then (or concurrently) to remove the contaminant so the area is safe for the development activities to resume. These surveys should be undertaken by an Ordnance Contractor, with the objective of characterising and delineating the extent of the explosive ordnance contamination.

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The Ordnance Contractor will prepare a report on the investigations undertaken, any removal / management works undertaken and validation surveys completed. The quarantine restrictions on the area can be removed and the earthworks resumed.

3.2 Objectives (Decision)

The principal objectives for UXO clearance are:

- Locate, remove and validate the ordnance potentially present within fill materials within the AOC.
- Confirm/validate the removal of the ordnance via review and reporting of clearance documentation.
- If required, confirm there are no items the size of a complete 20 mm projectile within 150 mm of the finished surface within the site.

3.3 Identify Inputs to the Decision

Inputs identified to determine the location of ordnance within the AOC include progress records including dig sheets, images, shallow search logs and clearance certificates covering the AOC.

3.4 Define the Study Boundaries

Each AOC identified and investigated and where required, removed, will be surveyed to provide accurate boundaries.

3.5 Methodology

Shallow Search

The AOC will be marked out with rope into two one metre lanes between 20 – 40 m in length.

The area will then be searched with a MineLab F3 UXO Metal Detector with a black cap to locate all metallic objects in the top 150 mm of the ground surface. A GPS will be attached to the operator to track the walked lanes.

All metallic items of the size of a 20 mm projectile or greater will be identified, recorded and removed from the AOC.

Deep Search and Imaging

An imaging survey (deep search) utilising an EM61 Deep Metal Detector (MK1 unit) on a 0.75 to 1.0 m line spacing and a Differential Global Positioning System (DGPS) for the positioning of the digital data will be undertaken.

Data will be processed and imaged using suitable UXO data processing package.

The criteria for target investigation will be based on a clearance to a depth of one (1) metre for ordnance items such as 20 pound (lb.) projectile and greater.

The threshold for interpretation is set at 3.5 mV with lower amplitude anomalies picked at the discretion of the Processing Geophysicist.

Location Pegging

Anomalies will be pegged and investigated using an EM61 Deep Digital Metal Detector in relocation mode.

Item Removal

On removal of a metallic item from an AOC, the location will be searched again to ensure a deeper item is not being masked by the original find. This process will be repeated until the location gives no more responses.

The initial search is a 0.5 m radius around the peg. If nothing is found the search will be extended to 1.5 m radius around each peg. If after the extended search nothing is found the ordnance supervisor (or senior operator if ordnance supervisor is original searcher) will search the peg to 1.5 m radius. If nothing is found the find will be recorded as an unable to locate (UTL).

Daily calibration

F3 Minelab (Shallow Search)

The F3 MineLab is calibrated firstly by using the set procedures in the F3 Manual using the 'Test Piece' supplied by the manufacturer with the detector. This confirms that the detector is working to correct specifications to confirm the sensitivity of the unit.

Before proceeding into the field the unit is also operated over the field test site where a 20mm projectile is buried at 150 mm depth. Provided a signal is obtained over this target the unit is ready for field operations.

This information will be noted on the Daily Diary.

EM61 (Deep Search)

Prior to Geophysical data collection each day, the EM61 will be run over a test pit to confirm the successful operation of the unit as detailed below:

- A backfilled test pit will be set-up on site containing various items (equal or greater than a 20 lb) anticipated to be buried on the site.
- The items will be buried, horizontally, at varying depths of up to 1 m (from top of target) to confirm the correct operation of the EM61 Deep Metal detector and its ability to meet the specifications for the deep search.
- The EM61 will be allowed to warm up until the readings stabilises (usually 10-15 minutes).
- The EM61 will then be moved to an area determined as a 'clean' area and the instrument will be nulled.
- Once this has been completed data will be collected over the backfilled test pit.
- The ability of the equipment to detect the seeded target will be assessed by the Geophysicist in the field.
- The test data will also be stored with all other data to show evidence of the systems functionality.

This calibration method will be used to establish a cut-off for detection of the EM61 Deep Search detector.

Limit of Reporting

A trial of the response of the EM61 must give a 3.5 mV response over a 20 lb projectile, buried at a depth of 1 m prior to use on site.

All data anomalies are to be selected for investigation at a level of 3.5 mV and above. However, a small number of targets with slightly lower amplitude will also be picked at the discretion of the Processing Geophysicist.

At the completion of anomaly investigation, a 10% of area shallow search will be carried out with an appropriate Electromagnetic Detector. If during QC a metallic item is located of a size equivalent to or greater than a 20 mm projectile, the search grid will be subject to a 100% shallow search again followed by a QC search.

The survey is carried out using Digital Global Positioning System (DGPS) for positioning then the operator is to ensure at the end of each line that positional accuracy is better than 0.3 m.

At the end of the day, data will be downloaded to a processing computer and checked for inconsistencies.

Checks include rejecting noisy lines. Lines will be redone if problems are encountered.

Data will be processed and interpreted by a Geophysicist. At the completion of processing a Senior Processing Geophysicist will complete a QC review of each grid.

To assure procedures are effective, at the completion of the clearance operation a 10% of area QC check will be performed. During any of the QC checks, location of a fail-size item within the soil will trigger a 100% repeat search of that grid.

4. Asbestos Management Plan

An Asbestos Management Plan (AMP) has been developed for potential implementation if unexpected asbestos finds of greater than 10 m^2 of asbestos containing materials (ACM) asbestos impacted soils as asbestos fines (AF) or friable asbestos (FA) are encountered at the site during roadway development works. Though previous assessments have not identified asbestos containing materials, there is a potential that localised areas may be present within the extent of the proposed EWCR construction site and will require consideration as unexpected finds.

The plan requires management to ensure protection of human health of site workers, future site workers and the neighbouring community. This AMP also outlines the requirements for managing any potentially asbestos impacted fill materials identified as unexpected finds.

4.1 Objectives

The purpose of this AMP is to outline the required procedures for handling and disposing of any identified ACM and asbestos impacted soils during the bulk earthworks of the EWCR and to outline the measures required to protect the health and safety of site workers who may encounter asbestos containing materials or asbestos impacted soils whilst completing the planned works and to prevent any adverse health effects on any future workers or neighbouring community in accordance with relevant National Codes of Practice and Work Health and Safety Legislation.

Specifically, the objectives are to:

- Outline, monitor and enforce safe working condition for all workers;
- Outline, monitor and enforce safe environmental conditions for all persons outside of the Area of Concern;
- Outline, monitor and enforce procedures to manage works within asbestos impacted soils identified in the EWCR during works;
- Outline measures for the safe onsite storage and, if required, off-site disposal of asbestos materials in accordance with all relevant legal and statutory requirements; and
- Outline ongoing management requirements of the site to ensure the risk posed by any potential asbestos contamination is properly managed.

4.2 AMP Responsibilities during Redevelopment Works

4.2.1 Appointment of Principal Contractor

In accordance with the provisions of the *Work Health and Safety Regulation 2011* prepared under the *Work Health and Safety Act 2011* a "person conducting a business or undertaking" (PCBU), or Principal Contractor needs to be engaged.

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4.2.2 Responsibilities of the Principal Contractor

Responsibilities of the Principal Contractor include, but are not limited to the following; The Principal Contractor must:

- Be responsible for the proposed project work at all times until the work is completed;
- Ensure that all persons involved with proposed project work have undertaken occupational health and safety training if ACM is identified;
- Keep records of induction training for workers and any specific training;
- Ensure that any subcontractors provide safe work method statements for the activities for which they are engaged;
- Monitor any subcontractors to ensure that they are complying with the safe work method statements; and
- Maintain a hazardous substances register for all hazardous substances used or present on EWCR.

The Principal Contractor is responsible for co-ordinating health and safety activities for the project. Other responsibilities of the Principal Contractor include:

- Compliance with occupational health and safety and environmental legislation, regulations, standards, codes and the EWCR specific rules relating to safety contained in this AMP;
- Ensuring that sufficient funds are available to procure the necessary health and safety equipment such as personal protective equipment (PPE);
- Managing accident and emergency procedures;
- Managing workplace injury management and rehabilitation.

The Principal Contractor has the authority to provide for the auditing of compliance with the provisions of this AMP, suspension or modification of work practices, and administration of disciplinary actions for individuals whose conduct does not meet the requirements set forth herein.

4.2.3 Asbestos Consultant or Competent Person

An Asbestos Consultant, or Competent person, shall be engaged to assess any suspected asbestos containing materials when encountered during the redevelopment of the EWCR. The asbestos consultant or competent person shall also complete airborne asbestos monitoring and dust monitoring during any asbestos works. Where required, air monitoring will be conducted in accordance with **Section 4.6.1**.

The Asbestos Consultant shall:

- Provide on-site supervision of all potential asbestos works;
- Complete static asbestos air monitoring during any potential asbestos works and display daily results for the information of workers;
- Provide on-site advice, if required, in relation to suspected asbestos containing materials and the management of asbestos issues associated with the works; and
- Be available, if required, for consultation with regards to the conditions and requirements of this AMP.

Should asbestos be encountered during the planned excavation works, additional clearance inspections and clearance asbestos air monitoring may be required to confirm the suitability of the Area of Concern prior to works recommencing.

4.2.4 Class A/ B Licensed Asbestos Removal Contractor

A Class A (friable) or Class B (non-friable) licensed asbestos removal contractor shall be engaged if ACM is identified. The asbestos removal contractor will remove ACM or asbestos impacted soils from the Area of Concern and dispose of them to a suitably licensed waste facility. The licensed asbestos removal contractor will be the primary person responsible and in charge for works on site involving ACM or asbestos impacted soils.

Their responsibilities include:

- Complete a site walkover and 'emu-pick' to remove any observed ACM on the ground surface prior to any topsoil stripping works commencing;
- Completion of required WorkCover permits (friable asbestos removal) or notifications (non-friable asbestos removal);
- Prepare a site-specific Asbestos Removal Control Plan (ARCP) prior to any asbestos removal works being completed;
- Ensuring compliance with relevant legislation and the conditions of this AMP;
- Removal and disposal of asbestos containing materials or asbestos impacted soils from the site in accordance with relevant legislation;
- Ensure appropriate environmental and safety controls outlined in this AMP are maintained for the duration of the works;
- Assisting all site sub-contractors where required in complying with relevant legislation and the procedures outlined in this AMP; and
- Completion of a final site walkover and removal of all visible asbestos containing material from the ground surface across the site.

4.3 Summary of Contaminant Type

Friable asbestos is defined by Safe Work Australia in the Code of Practice – How to Safely Remove Asbestos (2011) as being "…material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos". This includes asbestos fibre impacted soils and asbestos fines as identified by laboratory analysis.

Non-friable asbestos material is defined by Safe Work Australia (2011) as being "…material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound." This includes bonded asbestos fragments found in soils, subject to laboratory analysis for respirable fibres.

Mechanical disturbance of the fragments may result in the release of fibres and therefore, such activities should be managed to prevent any fibres becoming airborne. The health effects of asbestos are detailed in enHealth (2005)[9] Management of Asbestos in the Non- Occupational Environment.

The primary issue associated with the asbestos contamination is inhalation of respirable fibres if the materials were to be disturbed and abraded.

A secondary issue with asbestos contamination is disposal of excess spoil that may be impacted with asbestos.

[9] *Management of Asbestos in the non-occupational environment.* enHealth, 2005 (enHealth 2005)

4.4 Health and Safety Management

4.4.1 Safe Work Method Statements

Safe work method statements must be prepared by the Principal Contractor or by subcontractors completing significant intrusive works and also covering other aspects of the proposed project works not related to significant intrusive works, are to be prepared and approved by the Principal Contractor prior to those activities commencing.

Safe Work Method Statements must:

- Describe how work is to be carried out;
- Identify the safety risks;
- Describe the control measures that must be applied to the work;
- Describe the equipment used in the work;
- Describe any standards or codes applicable to the work; and
- Training and qualifications required of persons undertaking the work.

  Safe work method statements for all workers must be reviewed and approved by the Principal Contractor.

4.4.2 Site Access Control

The Principal Contractor shall ensure if works are to occur in an area in which ACM has been identified that the construction area is securely fenced and access is controlled. Entrance to the asbestos area will be via a dedicated entry point which will contain the following features in addition to site security measures as required for a construction site as per relevant health and safety provisions:

- Readily identifiable and delineated site access / egress point. Where possible this location shall be visibly identifiable by site fencing / barricading;
- Decontamination unit for all workers to remove PPE and dispose of contaminated articles and will also include a hand wash and boot wash facility. The decontamination unit will be located in close proximity of the designated site access / egress point;
- Signage including “No Entry Without Required PPE” and a contact number for members of the public to direct any queries / complaints; and
- Emergency contact details.

The overall construction site boundary will be secured by fencing. It is anticipated if areas of ACM are identified then localised active construction site access points maybe delineated within the overall site boundaries. Access to the construction site will be controlled and permitted by the Principal Contractor only after persons entering the site have been advised of the potential contamination hazards. This shall at least include notification of the potential presence of asbestos containing materials and asbestos impacted soils.

If ACM is identified then any authorised person accessing the site should do so in accordance with health and safety requirements as indicated in this AMP. The implementation of the health, safety and environmental requirements should be administered by the Principal Contractor.

Site access will not be allowed until the workers have been inducted, have signed in, and if entering the asbestos area must have donned the required PPE (**Section 4.4.5**). Upon exiting the site, personnel must remove and dispose of/clean the PPE in the provided decontamination area.

Asbestos removal boundaries (if required) shall be determined by the Principal Contractor in consultation with the asbestos consultant and will vary according to the location and size of the required daily activities. Any asbestos removal boundaries will be designed to allow other site works not involving significant intrusive works to continue without being required to adhere to this AMP.

It may be found that the asbestos removal boundaries require to be assigned to the site boundaries, in which case all site workers must adhere to the requirements of this AMP.

4.4.3 Training and Certification

The Principal Contractor must not allow any person to carry out project works unless he/she are satisfied that the person has undergone OHS induction training.

The OHS induction training required by the Regulation is as follows:

- General occupational health and safety training for construction work;
- Work activity based health and safety training (job specific training); and
- Site-specific health and safety induction training.

For each person carrying out project works, for a period of three years, the Principal Contractor must keep a record of the following:

- A copy of relevant statements of OHS induction training, or a statement indicating that the Principal Contractor is satisfied that the relevant OHS induction training has been undertaken; and
- A brief description of the site-specific training undertaken by the person.

4.4.4 Site Safety Induction

If ACM is identified it is the responsibility of the Principal Contractor to ensure all persons carrying out construction work on site are given site-specific occupational health and safety training. The induction shall be undertaken by the Principal Contractor. The induction shall be undertaken as per a standard presentation which will address the following topics as per the requirements of this AMP:

- Identification of any site-specific hazards and risk control measures in relation to the asbestos impacted nature of the site;
- Regulatory requirements or codes of practice relevant to identified site specific hazards as restricted to asbestos impact;
- Directions on what to do if suspected asbestos containing materials or asbestos impacted soils are encountered;
- Site orientation at least including location of asbestos decontamination areas at site access / egress points; and
- Site specific safety rules in relation to asbestos.

The Principal Contractor is responsible for establishing site specific safety rules. The rules must be displayed in an easily observable location (nominally in the site office) so as to ensure that all site workers, have ready access.

At the completion of the Induction Presentation, each worker shall be required to acknowledge that they have understood the requirements for the site works and health, safety and environmental obligations by completion of a Site Induction Form.

4.4.5 Personal Protective Equipment (PPE) Requirements

Prior to any asbestos containing materials or asbestos impacted soils being encountered, no additional PPE is required above the standard construction site PPE outlined by the Principal

Contractor for the site. Should suspected ACM be identified then the supervising asbestos consultant should be contacted, the following additional items of PPE are required in addition to the standard construction site PPE outlined by the Principal Contractor for the site, and applies for any ground workers within the asbestos work area, as defined by the supervising asbestos consultant:

- Disposable 'tyvek' coverall suits must be worn;
- Disposable gloves – non disposable gloves must be cleaned within the decontamination unit in accordance with Safe Work Australia (2011);
- P2 class respirator or higher – non disposable respirators must be cleaned in the decontamination unit in accordance with Safe Work Australia (2011) and
- Laceless steel capped rubber soled work shoes or gumboots.

Plant operators must close cabin doors and windows and set air conditioning to re-circulate when operating within the asbestos work area.

4.4.6 Management of Subcontractors

If ACM is identified then workers on-site will be required to adopt the provisions of this AMP and will be advised of potential safety and environmental issues on site during site-specific induction training. This induction will include the occupational health and safety responsibilities, requirements and controls for all workers on site. All workers activities involved in asbestos works will be monitored by the Principal Contractor, the licensed asbestos removal contractor and the Asbestos Consultant to ensure compliance with the requirements of this AMP.

Workers whose work will be performed on-site, or who otherwise could be exposed to health and safety hazards, will be advised of known hazards through distribution of site information contained in this AMP.

They shall be solely responsible for the health and safety of their employees and shall comply with all applicable laws and regulations. All workers are responsible for:

- Providing their own personal protective equipment as required by the Principal
- Conditions set out in this AMP;
- Training their employees in accordance with applicable laws;
- Providing medical surveillance and obtaining medical approvals for their employees, as appropriate;
- Ensuring their employees are advised of and meet the minimum requirements of this AMP and any other additional measures required by their site activities; and
- Designating their own site safety officer.

Workers must sign an acceptance form prior to commencing work on site. Workers may only modify, and then only to improve, the conditions specified in this AMP with approval from the Principal Contractor, or his nominee.

4.5 Environmental Management

4.5.1 Asbestos Works

In the event that significant asbestos contamination is identified and intrusive works are to be carried out in the asbestos work area then the following management measures will apply:

Prior to any intrusive work commencing:

- Review of the information available for the site;
- Approval for the works must be sought from the Principal Contractor who will assess whether the works are necessary or if there is an alternative that will not result in exposure of ACM impacted soils. The Principal Contractor's must review the job specific risk assessment (JSRA) and safe work method statements (SWMS) and ensure that workers who will undertake the works are inducted into the AMP;
- The asbestos consultant must complete supervision of the significant intrusive works and complete regular inspections for the presence of visible asbestos. Static airborne asbestos monitoring must also be completed by the asbestos consultant for the duration of significant intrusive works;
- The works area must be isolated from casual entry using temporary barriers and only personnel inducted in the requirements of the AMP will be permitted to enter the works area;
- Sufficient space must be provided within the works area to allow stockpiling of spoil from excavations, if required, in accordance with **Section 4.5.4**;
- A water supply must be provided to the works area for the purpose of maintaining exposed asbestos impacted fill or soil in the excavations and stockpiles in a moist state;
- Personnel entering the works area must wear appropriate PPE in accordance with **Section 4.4.5**;
- Stockpiles of excavated spoil must be managed in accordance with **Section 4.5.4** and **4.5.5**; and
- Air monitoring requirements must be met as outlined in **Section 4.6**.

Should visible asbestos be identified by the asbestos consultant or airborne asbestos monitoring results identify airborne asbestos fibres in the vicinity of the works area, specific requirements for working with asbestos containing materials or asbestos impacted materials shall be enforced as outlined in **Section 4.5.2**.

4.5.2 Specific Requirements for Working with Asbestos Impacted Material

Asbestos may be present in non-friable or friable form. In the event that either friable or non-friable asbestos is encountered, as determined by the asbestos consultant, the following procedures shall be implemented for the remaining significant earthworks to ensure workers safety and to mitigate any potential offsite migration of contamination.

Friable and Non-Friable Asbestos

Prior to Excavation

- Workers and visitors to the asbestos work area will be made aware of the encountered soil contamination and only authorised people shall enter the asbestos work area, which must contain a perimeter barrier separate to the site boundaries to restrict entry. Where the asbestos work area boundary is also the site perimeter boundary, an exclusion zone of at least 5 m shall be erected beyond the site perimeter boundary (if practical/possible) to restrict access to the asbestos work area.
- Asbestos removal caution signs shall be placed on the perimeter barrier (or exclusion zone barrier, whichever is furthest from the asbestos removal work area), as per AS1319.

During Excavation/Transport/Disposal

- A WorkCover permit for friable asbestos removal works or WorkCover notification for non-friable asbestos removal works shall be sought by the licensed asbestos removal contractor. Friable asbestos removal permits must be submitted at least 7 days prior to any friable asbestos being disposed off-site.
- All wastes will be classified, managed and disposed in accordance with the Waste Classification Guidelines: Part 1 Classifying Waste (EPA 2014).
- Personnel within the excavation work area shall wear a Tyvek suit, respirator (e.g. half faced P2 respirator), disposable gloves and laceless steel capped rubber soled work shoes or gumboots at all times when within the asbestos work area and until clearance certification is provided by the asbestos consultant.
- Any obvious pieces of asbestos containing materials shall be picked up and placed into a labelled asbestos waste bag and set aside in a designated waste storage area for off-site disposal.
- The excavation shall be kept damp by water spraying at all times during excavation to reduce the possibility of dust generation.
- Personal protective equipment used during the works, such as disposable coverall suits and half faced respirators, shall be disposed of as asbestos waste.
- Airborne asbestos monitoring shall be conducted for the duration of the excavation works.
- Any stockpiled excavated material shall be kept moist and covered if left for more than 24 hours.
- Appropriate leak proof transport vehicles must be used to transport materials offsite.
- Transport vehicle shall be covered prior to leaving site and any material removed from wheels to prevent tracking outside the site.
- Backfill of any areas to required levels must only be completed with clean imported material classified as VENM as per Waste Classification Guidelines: Part 1 Classifying Waste (EPA

2014[10]) and can include mulch and landscaping materials and must be classified as VENM as per Waste Classification Guidelines: Part 1 Classifying Waste (EPA 2014) and can include mulch and landscaping materials.

Post Excavation

- Any excavation floor and walls shall be inspected by the asbestos consultant who is trained and experienced in the identification of asbestos. Any visible ACM shall be removed by the licensed asbestos removal contractor.
- Where friable asbestos has been encountered, validation samples shall be collected from the excavation walls and base and analysed at a NATA Accredited testing laboratory for the presence of asbestos. Clearance airborne asbestos monitoring shall also be conducted following the completion of the excavation and reinstatement works to be included in clearance certification. Clearance monitoring is not required if only non-friable asbestos is encountered.
- Upon receipt of both visual and laboratory data (where required) confirming the absence of asbestos, the asbestos work area shall be deemed suitable for reoccupation and a clearance letter shall be provided by the asbestos consultant.

4.5.3 Disposal and Storage of Asbestos Containing Materials

Where asbestos fragments or other forms of asbestos are identified either during redevelopment works or on the ground surface, these materials should be removed under the supervision of a licensed asbestos removal contractor and in accordance with Safe Work Australia (2011).

The asbestos materials should be placed into heavy-duty 200µm (minimum thickness) polythene bags that are no more than 1200 mm long and 900mm wide. The bags should be labelled as asbestos waste, sealed and placed in a designated waste area for off-site disposal.

4.5.4 Stockpile Management

Any stockpiles of excavated materials, including topsoil and grass cover, will be periodically sprayed with water to control dusts.

In the event that covers are required, they shall extend beyond the perimeter of the stockpiles and shall be secured to prevent being blown away by wind.

Stockpiles must be placed in a secure location onsite and covered if to remain for more than 24 hours.

[10] Waste Classification Guidelines Part 1: Classifying Waste. EPA November 2014

4.5.5 Dust Management

Dust levels shall be managed by ensuring:

- All stockpiles will be either periodically wetted down or covered to control dusts;
- Water sprays will be used on the excavation areas, stockpiles and haulage pathways;
- Any haulage vehicles shall be covered and leave via the designated (stabilised) site access;
- All haulage vehicles and plant and equipment shall be washed down whenever they leave the Asbestos in Soil (ASBINS) work area.
- All access roads are sufficiently maintained to ensure no visible dust at the site boundary; and
- Dust suppressors will be fitted to equipment as required.

If dust is visible at the site boundary, then additional dust control measures shall be employed, which may include:

- Temporarily suspending activities until winds speeds reduce; and/or
- Additional use of water sprays.

4.5.6 Waste Management

There shall be no wastes brought onto the site for storage, treatment, processing, reprocessing or disposal unless permitted by a licence issued under the *Protection of the Environment Operations Act 1997*.

All wastes will be classified, managed and disposed in accordance with the *Waste Classification Guidelines: Part 1 Classifying Waste* (EPA 2014).

All wastes disposed off-site will be controlled as per the EPA's requirements for waste tracking and acceptance. These are as follows:

- Obtain a written consignment authorisation number from an EPA-licensed waste disposal or treatment facility before moving waste to the facility.
- Accurately complete a waste data form signed by the consignor before the waste is dispatched.
- The waste consignor, the waste transporter and the waste facility must each keep a copy of the waste data form for up to four years for auditing purposes.
- The waste consignor must give a completed copy of the waste data form to the transporter, who must check that it is completed and then sign it. The driver must carry the waste data form in the vehicle.
- The transporter must give a completed copy of the waste data form to the waste facility on arrival at the destination. The waste facility operator must check the load details on the form. The waste data form must be signed by a representative of the waste facility on receipt of the waste at the destination.
- The waste consignor must receive from the waste facility written confirmation of receipt of the waste within 21 days of dispatch. This must be kept for up to four years for auditing purposes.

4.6 Monitoring Program

In the event that significant asbestos is found a monitoring program may be needed to ensure that the control measures being implemented at the site are effective, the following monitoring procedures will be implemented:

- Daily static airborne asbestos fibre monitoring at site boundaries during significant asbestos works; and
- Clearance monitoring (if friable asbestos is encountered only).
- Site Inspections.

4.6.1 Daily Static Airborne Asbestos Fibre Monitoring

During excavation works or any other works that may disturb significant asbestos in soil on site, airborne asbestos fibre monitoring may be undertaken by the Asbestos Consultant using calibrated portable air sampling pumps. Monitoring will be conducted at 4 locations around the site boundaries each day over an approximate 4 to 6 hour period and targeting any neighbouring sensitive receptors and with consideration to the daily location of works.

At the end of each monitoring period the pump and attached filter will be collected and analysed at a NATA-accredited laboratory in accordance with NOHSC Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition (NOHSC:3003 [2005]).

The results of air monitoring will be available on a 24-hour turnaround time basis. Daily air monitoring reports shall be displayed in a common area outside of the asbestos work area (e.g. site office or lunch shed) or be able to be produced upon request.

The following action levels will be applied upon receipt of daily results, as outlined in the Safe Work Australia (2011):

- Reading of less than 0.01 fibres/mL – control measures in place are working effectively, site works to continue;
- Reading between 0.01 and 0.02 fibres / mL – a review of control measures shall be completed in the work area; and
- Reading greater than 0.02 fibres / mL – works shall cease until the cause of contamination is identified and rectified.

It is noted that these action levels adopted are more conservative than the exposure standard for airborne asbestos (0.1 fibres/mL (TWA)) as outlined in the Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC: 1003(1995)] for an 8 hour shift.

4.6.2 Clearance Monitoring

In the event that friable asbestos is encountered during the excavation works, clearance airborne asbestos monitoring shall be required following the friable asbestos removal. Following the completion of all earthworks, backfill of the excavated area and installation of the proposed car park, clearance air monitoring will take place in the vicinity of the work area to ensure that there is no residual contamination remaining at the site.

Ambient air conditions clearance will be gained by recording airborne asbestos concentration levels in all sampling locations below 0.01 fibres / mL.

4.6.3 Site Inspections

Following the completion of any asbestos removal works, a final site walkover will be completed by the asbestos consultant to inspect the site ground surface for the presence of ACM. Any ACM observed will be removed and placed in asbestos waste bags in accordance with Safe Work Australia (2011). Once a successful inspection has been completed and both the licensed asbestos removal contractor and the asbestos consultant are satisfied there is no visible residual asbestos impacts on the ground surface, the area shall be deemed suitable for re-occupation and a clearance report issued by the asbestos consultant.

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5. Stockpile, Soil and Material Management

During works it is understood that additional sampling and analysis works to confirm the site's environmental characterisation, bitumen pavement removal and management, and cut to fill works involving reuse of site stockpiles and importation of fill for use to create site levels will occur. It is further noted that receipt and accumulation of stockpiled material has occurred within the Stage 2 ROS area associated with recent UXO clearance and demolition works.

In order to confirm the environmental characterisation of the site and to further ensure appropriate management of materials at the site to maintain the environmental characterisation, the following procedures shall be implemented during works.

5.1 Reuse of Bituminous Materials

Bituminous materials associated with former roads are understood to exist throughout the site. The majority of these materials have been ripped up and stockpiled adjacent to the former roads to allow for UXO clearance works and environmental investigation.

Previous characterisation works of bitumen pavement within Stage 1 and Stage 2a (JBS&G 2018d[11]) identified the materials as suitable for reuse within the proposed paved road portion of the site subject to material tracking procedures in **Section 6**. Prior to reuse of pavements from Stages 2b, 2c and 3, the bitumen pavement will be assessed similar to Stages 1 and 2a, and reused on site if it meets site criteria. Materials which do not meet reuse criteria will be managed as an unexpected find (see **Section 2**).

As such all bitumen materials require reuse within the paved road portion of the site including survey upon placement to meet this requirement. Material tracking and survey requirements as per **Section 6** will be required to confirm this process.

To ensure this occurs, the environmental consultant shall be notified when the materials are reused so they can confirm the appropriate requirements are met.

A survey shall be supplied to the environmental consultant following reuse to confirm the materials were reused below the paved road.

5.2 Characterisation of Soil stockpiles

As noted various stockpiles within the Stage 2c (ROS) area require to be characterised by the environmental consultant. The environmental consultant will be responsible for undertaking the required characterisation sampling based on either the *Waste Classification Guidelines Part 1: Classifying Waste* (EPA 2014) or one of NSW EPA's general exemptions[12]. Upon receipt of the analytical results the environmental consultant is responsible for providing appropriate documentation (e.g. material characterisation report, waste classification etc.) to the EWCR earthworks or other re-use by the principal contractor. It is suggested that these works are conducted prior to bulk earthworks commencing. Assessment of analytical results for materials to be re-used on-site shall be by reference to criteria nominated in **Section 5.9**.

The proposed sampling frequency and analytical schedule is presented in **Table 5.1**.

[11] *Paved Road Reuse Letter – East West Connector Road, Jordan Springs East to Ropes Crossing, NSW (Rev 1*) JBS&G Australia Pty Ltd 27 July 2018 (JBS&G 2018d)

[12] NSW EPA List of General Orders and Exemptions: http://www.epa.nsw.gov.au/wasteregulation/recovery-exemptions.htm accessed on 24/02/2015

Table 5.1: Material Characterisation – Analytical Schedule

Validation Area	Sampling Frequency	Analytes
Characterisation of material for beneficial reuse offsite (VENM, ENM or any other suitable material granted an applicable EPA Resource Recovery Order under the Protection of the Environment Operations (Waste) Regulation 2014)	VENM - minimum 1 per 1000 m^3 minimum 3 per source site up to a maximum of 10. ENM – see *Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 The excavated natural material order 2014* http://www.epa.nsw.gov.au/resources/waste/rro14-excavated-natural-material.pdf	Analytes dependent upon EPA exemption or source site characteristic. As a minimum: Heavy metals TPH/BTEX PAHs OCPs/PCBs PFAS Asbestos EC (ENM) pH (ENM) RTA T276 (276 (rubber plastic, bitumen, paper, cloth, paint and wood) (ENM)
Contaminated material requiring disposal offsite (waste classification, if identified through unexpected find)	Minimum of 1 sample per 25 m^3 of material for any chemically contaminated material. Minimum of 1 per 250 m^3 up to 200 m3 then lower rate for >200 m3 of materials for the asbestos fibre impacted areas.	TPH/BTEX, PAHs, heavy metals, OCP/PCBs, asbestos and TCLP (if required). Where Explosives and/or PFAS are a contaminant of concern within an assessment area these will also be analysed,
Imported fill material (VENM or ENM only)	VENM - minimum 1 per 1000 m^3 minimum 3 per source site up to a maximum of 10. ENM – see *Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 The excavated natural material order 2014* http://www.epa.nsw.gov.au/resources/waste/rro14-excavated-natural-material.pdf	Analytes dependent upon EPA exemption or source site characteristic. As a minimum: Heavy metals TPH/BTEX PAHs OCPs/PCBs Asbestos EC (ENM) pH (ENM) RTA T276 (276 (rubber plastic, bitumen, paper, cloth, paint and wood) (ENM)
Reuse on the Central Precinct AND/OR Characterisation of Potentially Contaminated Soils	1 sample per 25 m^3 for stockpiles less than 100 m^2. 1 sample per 100 m^2 or a minimum of 3 samples for stockpiles larger than 100 m^2. Any reduced sampling density will require approval by the auditor. If an area requires assessing sampling will be conducted in accordance with EPA 1995[13] and NEPC (2013)[14].	TPH/BTEX, PAHs, heavy metals, OCP/PCBs and asbestos, and explosives[1] and/or PFAS where an identified contaminant of concern. ----------

[1] Explosives will include, but not limited to, RDX (research department explosive), TNT (trinitrotoluene), 2,4-DNT (2,4-Dinitrotoluene) and 2,6-DNT (2,6-dinitrotoluene).

[2] It is noted that additional sampling regarding PFAS may be required but will be dependent on SP30 PFAS assessment, as discussed in **Section 5.2**

[13] *Contaminated Sites: Sampling Design Guidelines*, NSW EPA. September 1995 (EPA 1995)

[14] *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)*, National Environment Protection Council, 2013 (NEPC 2013).

Material to be moved on the site shall be tracked as per one of the following classifications:

- Contaminated material for off-site treatment and disposal / management as Hazardous Waste (if required);
- Contaminated material for off-site disposal as Restricted Waste (if required);
- Contaminated material for off-site disposal as Special Waste, co classified as Restricted Waste (if required);
- Contaminated material for off-site disposal as Special Waste, co classified as General Solid Waste;
- Contaminated material for off-site disposal as General Solid Waste;
- Contaminated material for asbestos picking / removal;
- Validated material for site re-use in the Dunheved Industrial Precinct;
- Surplus soils as excavated natural material; and/or
- Surplus soils as virgin excavated natural material.

5.3 Imported Fill

Approximately 20,000 m^2 of VENM was imported to the property between October and November 2018 by Wards Civil with materials reviewed and approved by JBS&G (further endorsed by Zoic as the Site Auditor) in accordance with the Imported Fill Protocol (IFP, JBS&G 2015[15]) and the addendum IFP JBS&G (2017[16]). These materials are understood to be temporarily stockpiled within EW7 of Central precinct and is sufficient to meet the proposed site filling requirements.

However, if additional imported fill is required, the environmental consultant must be notified and the imported fill material must comprise virgin excavated natural material (VENM[17]), or excavated natural material (ENM[18]) or meet the requirements of an applicable EPA exemption (e.g. recovered aggregate Order 2014) and have been sampled in accordance with the Imported Fill Protocol (JBS&G 2015).

Prior to importation of material onto the site, the contractor/supplier shall provide, at a minimum, the following information to the environmental consultant for prior evaluation in order to obtain an approval on the potential acceptability of the material for use at the site:

- Details of the source site history, source site address, and characteristics of the material (such as colour, soil type, odours); and
- Details of any sampling performed for purposes of certification.

Prior to and during the importation of VENM or ENM, visual inspection must be undertaken to verify the appearance of the material is consistent with the source material description. The material must be accompanied by a summary report which includes laboratory report(s) from a NATA accredited laboratory and chain of custody documentation, in additional to other QA/QC documentation to demonstrate the samples were obtained in accordance with the applicable recycled material exemption. In addition to the above information from the supplier, following the importation of the

[15] *Imported Fill Protocol – Central Precinct, Llandilo, NSW*. October 2015 (Rev 3i) JBS&G Australia Pty Ltd (JBS&G 2015)
[16] *Dunheved Addendum to the Imported Fill Protocol – Central Precinct Llandilo, NSW*. 11 December 2017 (Rev 0) JBS&G Australia Pty Ltd (JBS&G 2017c)
[17] As defined in *Waste Classification Guidelines Part 1: Classifying Waste*, EPA, November 2014 (EPA 2014)
[18] Protection of the Environment Operations (waste) Regulation 2005 – General Exemption Order Under Part 6, Clause 51 and 51A. *The excavated natural material exemption 2014* (EPA 2014)

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material a visual inspection is need to confirm there is no visible asbestos, staining or odours and that the material delivered meets, in general, the description of the source material.

5.4 Materials Requiring Offsite Disposal

Contaminated soils and ACM to be disposed off-site require a waste classification in accordance with EPA (2014) *Waste Classification Guidelines Part 1: Classifying Waste*. The presence of asbestos in fill materials must be noted in the preparation of the waste classification.

Should a works area contain explosives as a contaminant of concern, materials will still be classified as per EPA 2014. Reference will be given to the *Transport of Dangerous Goods Code* to determine if the waste exhibits any explosive properties. Should the waste be classified as a *hazardous waste* an immobilisation approval may need to be obtained from the EPA in accordance with *Waste Classification Guidelines Part 2: Immobilisation of Waste* (EPA 2014b).

5.5 Reuse of Suitable Material on the Central Precinct

Where materials are proposed to be reused within the site, these need to have either been assessed as suitable for use on-site against relevant land use criteria (see **Section 5.9** for criteria specific to the EWCR site) and in accordance with sampling regime provided in **Table 5.1**. Where previous data is available from existing reports and the material source is known, that data may be used to meet reuse suitability requirements. Available data is summarised to **Appendix C**.

Notwithstanding the analytical based criteria in **Section 5.9**, materials that are proposed within the ROS area, or otherwise other potentially accessible areas within the EWCR corridor shall be free of anthropogenic materials. Anthropogenic materials as removed during processing of soils in these areas will require to be disposed.

Material that does not meet any of the adopted land use criteria, and is therefore not suitable within any areas of the site, will be disposed off-site consistent with *Waste Classification Guidelines*, 2014, NSW EPA and current material management approaches

5.6 Additional Characterisation of Site Areas

Sampling and analysis completed to date within the bushland areas has not identified levels of environmental constituents that are considered to pose a potential health or ecological risk. Sampling has been undertaken on a coarse grid however, and there is potential uncertainty as a function of the spacing of the sample points. Additional sampling and analysis is proposed to be undertaken within these areas to confirm the findings of the existing environmental assessments as completed at each. The requirements for additional sampling and analysis is summarised following as specific to site area and/or potential site feature / contaminant.

Consistent with **Section 5.2**, it is recommended that these works are undertaken prior to, or other preliminary stages, of earthworks.

5.6.1 Bushland Area in Stage 2c

Additional sampling and analysis are proposed to be undertaken at the bushland area as located at the south of the ROS. An additional 27 (approximately 1 per hectare) sample locations shall be undertaken throughout this area as consistent with the sample locations as shown on **Figure 5**. Other potential contamination such as stockpiled materials will be sampled as per **Section 5.6.2** below. If potential areas of contamination are identified such as anthropogenic material in fill, sample locations will be targeted towards those areas. Sample locations shall be undertaken by testpitting using an excavator to a depth of at least 0.3 m into natural materials (bgs) at all locations. Sampling by hand may be conducted in heavily vegetated areas, where hand methods are conducted intrusion into natural materials shall also be required. Both excavator and hand methods will be required to recover sufficient sample volume so asbestos quantification can occur via the procedure below.

A near surface soil sample shall be obtained from each location and analysed for the potential contaminants of concern, noting PFAS has not been identified in this area:

- Heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni and Zn);
- Total recoverable hydrocarbons (TRH);
- Volatile organic compounds (VOCs);
- Polycyclic aromatic hydrocarbons (PAHs);
- Organochlorine pesticides (OCPs); and
- Polychlorinated biphenyls (PCBs).

An additional bulk sample of at least a volume of 10 L shall be collected from each location and sieved through a 7 mm sieve. The oversize through the sieve shall be inspected for the presence of asbestos containing materials (ACM). A volume of 500 ml of the undersize materials shall be sub-sampled for asbestos analysis.

5.6.2 Stockpiles within Stage 2c

A number of stockpiles are present in proximity of the Munitions Bund area as shown on **Figure 6**. The stockpiles have been previously inspected by JBS&G and observed to be substantially present as excavated natural materials, generally free of significant anthropogenic materials or otherwise other indicators of contamination. The stockpiles require formal sampling and analysis to confirm the visual observations of the absence of contamination.

This shall be undertaken by collection of a minimum of 3 samples or one sample per 25m^3 for stockpile volumes less than 200m^3, and sampling of any larger stockpiles at a rate of one sample per 250 m^3 with a minimum of 10 samples collected for stockpiles over 200m^3 to allow for the calculation of the 95% UCL value (if required). Samples shall be collected by excavator with representative sample location collected throughout the stockpiles. Excavation of testpits will allow thorough inspection of stockpiled soils/materials for anthropogenic inclusions. Should unexpected contamination such as petroleum hydrocarbons or unusual odours sampling densities and analytical suite will be modified as per the unexpected find protocol (**Section 2**). It is noted that soils/stockpiles with anthropogenic inclusions will not be suitable for use within ROS areas. Additionally, sampling of stockpile footprints may also be required depending on the characterisation results of stockpiles. Stockpile samples shall be analysed for: heavy metals; TRH; VOCs; PAHs; PFAS; OCPs; PCBs and asbestos as per **Section 5.6.1**. A bulk sample shall be further collected and assessed for asbestos consistent with the methodology in **Section 5.6.1**.

It is also noted that amongst these stockpiles are a number of mulch stockpiles, as shown on **Figure 6**. Based on the generally low levels of contamination identified on the site and mulch stockpiled being made up of surface vegetation, mulch or organic plant materials are not proposed to be sampled. Visual inspection of the mulch for anthropogenic inclusions and asbestos is proposed to be conducted. Inspection will be undertaken with the aid of an excavator to inspect materials at the centre of stockpiles. Photographic record will be maintained.

5.6.3 Culvert at South of Regional Open Space

An existing concrete culvert is present at the south of the ROS area. The whole of the EWCR corridor has been assessed for UXO's apart from the area of this culvert. On the basis of the assessments completed to date it is considered highly unlikely that the area under the culvert is affected by UXO.

Where the concrete culvert is required to be removed by EWCR construction works, the opportunity shall be taken to conduct a UXO survey at this area to confirm the absence of UXO's or otherwise metallic debris. The survey shall be undertaken consistent with the provisions of **Section 3**. The presence of the concrete culvert precludes this assessment from currently being undertaken.

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UXO's do not pose a potential risk where the concrete culvert is retained in position, however, given the requirement for development including filling, it is recommended that the culvert is removed and cleared to allow for a final Site Audit report to be prepared.

5.6.4 Stage 2b and Stage 3 Data Gap Assessment

A low potential for contamination has been identified within Stage 2b and Stage 3 of the EWCR, as shown on **Figures 2** and **3**. Consistent with this low potential, limited sampling and analysis has been completed in these areas.

The requirements for this Data Gap assessment including sampling and analytical program is provided in **Section 5.4** of the Stage 2b and Stage 3 EWCR RAP (JBS&G 2019f). The proposed approximate sampling locations for this assessment is provided in **Figures 7** and **8**.

5.6.5 Fill Depth and Potential Occurrence of Asbestos

The investigations completed to date within the EWCR corridor have generally found minimal depths of fill materials as present within the corridor (generally less than 0.3 m bgs). Fill materials have further been found to be generally free of anthropogenic materials, inclusive of ACM. Therefore, while the presence of asbestos is unlikely it is possible, and additional assessment along the length of the corridor is proposed to be undertaken in conjunction with Stage 2b and Stage 3 Data Gap Assessment (**Section 5.6.4**) to confirm previous characterisation of fill materials, and to further characterise absence of ACM.

It is proposed to undertake testpits along the length of the corridor to a depth of at least 500 mm below the observed depth of fill materials. The testpits are proposed to be undertaken on a 20 m spacing, as shown by the proposed sample locations in **Figure 8**. The rate of sampling is considered conservative in relation to the "possible" presence of asbestos and Table 1 of the WA DoH (2009) guidance. Each location shall be inspected to confirm the depth of the fill. A 10 L sample shall be further collected at each location and assessed for the presence of potential ACM by sieving through a 7 mm aperture sieve and inspection of the oversize for potential ACM. A volume of 500 ml of the undersize materials shall be sub-sampled for asbestos analysis.

If locations are identified during this assessment that have ACM present or otherwise have deeper depths of fill materials, then these areas shall be managed consistent with the provisions to **Sections 2** and **4** of this CMP.

5.6.6 PFAS Sampling beneath South Creek Bridge (Stage 2a)

In order to characterise the potential for PFAS impact to be moving through South Creek, directly beneath the South Creek bridge in Stage 2a, it is proposed to collect 4 soil samples within the South Creek banks directly beneath the bridge.

Two samples shall be collected as close to the creek bank/water interchange, with the second two samples collected approximately 5 m further back from the water on either side.

5.7 Soil Sampling Methodology

Characterisation samples required to be collected of as from the areas discussed in previous sections shall require.

5.7.1 Soil Sampling

The soil sampling method shall be determined by the Field Scientist as consistent with the observations of the site sub-surface and appropriate to generate representative samples.

Where sample locations are placed by boreholes, undisturbed samples, as collected by push tube is preferred where able to be effectively implemented. Otherwise samples may be recovered from solid flight augers, hand tools or via test pitting. Re-usable equipment shall require to be decontaminated between sampling locations.

Where asbestos quantification is required, sufficient sample volume to obtain a 10 L sample will be requires, as such test pits are the preferred approach where asbestos quantification is conducted.

5.7.2 Soil Sample Containers and Preservation

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indications of contamination shall be noted on field reporting sheets/field logs.

Soil samples collected for PFAS analysis will be required to be conducted as per *PFAS National Environmental Management Plan (January 2018)* and will require appropriate 250mL HDPE jars supplied by the laboratory. Sample labelling shall use of a ball-point pen.

The sample labels shall record sample identification number and date and time of sampling. Sample containers shall be transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form shall be completed and forwarded with the samples to the testing laboratory.

5.8 Quality Assurance / Quality Control

A quality assurance / quality control (QA/QC) program shall be undertaken with each of the data collection tasks nominated in the CMP, to allow calculation of data quality indicators (DQI's) to assess data reliability. Subject to the works being completed the QA/QC program shall comprise:

- Preparation and analysis of blind and split duplicate samples at a frequency of at least one duplicate(s) per 20 primary samples;
- Preparation and submission of trip blank samples;
- Preparation of rinsate blank samples from non-disposable sampling equipment;
- Request, retention and submission of trip spike samples for analysis;
- Collection of samples by appropriately trained and experienced JBS&G staff and transfer of samples to new laboratory supplied sample containers;
- Assessment of analysis of samples within holding times;
- Submission of samples for analysis by a NATA accredited laboratory; and
- Laboratory QA/QC check s inclusive of surrogate spikes, laboratory blanks, laboratory duplicates, laboratory control samples and matrix spikes.

5.9 Assessment of Soil Data

Soils data shall be compared to commercial / industrial criteria as advised to *National Environment Protection Assessment of Site Contamination) Measure*, 1999 (as amended 2013), National Environment Protection Council (NEPC 2013) to determine environmental suitability for use within the roadway corridor. PFAS constituents shall be assessed to the laboratory reporting limit in lieu of an agreed criteria, typically 0.005 mg/kg. The soil criteria is below the current national human health based and ecological guidance values (NEMP 2018) and the proposed draft values, and the criteria is considered sufficiently conservative for the intended land use (roadway and regional sports precinct) prior to site specific criteria being agreed with the NSW EPA.

Statistical analysis of data sets (except asbestos) may be undertaken to facilitate comparison of a 95% UCL_{avg} estimate of a contaminant levels to adopted criteria where a statistically defensible dataset can be prepared. In these cases, reference should be made to guidance in NEPC (2013) and *Sampling Design Guidelines*, 1995, NSW EPA.

5.10 Requirement for Groundwater Assessment

No beneficial use of groundwater is proposed within the extent of the water table. No portions of site works as proposed within the EWCR construction is anticipated to intercept groundwater.

Levels of site constituents as assessed within the site have not been found to pose a potential risk of groundwater contamination apart from PFAS sources from areas outside the roadway corridor. The removal of PFAS impacted soils in accordance with the RAP (JBS&G 2019f) will mitigate impacts to groundwater.

At this stage, it is not proposed to formerly assess groundwater within the extent of the EWCR corridor. This shall be revised where soil contamination is identified by the extent of works as described throughout **Section 5**, or otherwise as identified through an unexpected find in **Section 2**. The implementation of any groundwater assessment shall be undertaken consistent with the general guidance in **Section 2**, as it shall be as the result of an otherwise unexpected find.

It is noted that ongoing liaison is occurring with the NSW EPA as low level PFAS contamination in groundwater in proximity of the south-east of Stage 2 and Stage 3 of the EWCR corridor as consistent with the process described in **Section 5.7**. A summary of groundwater conditions and management requirements for groundwater are provided in the broader scale RAP for the former St Marys Development Site (JBS&G 2019g[19]). The proposed construction of the roadway, and the extent of the EWCR site noting the management works as otherwise being undertaken in **Section 5.7**, is not anticipated to affect the remedial approach as is currently being determined with the EPA.

[19] *Remedial Action Plan – Former ADI St Marys Development Site, St Marys and Llandilo, NSW (Rev D*) JBS&G Australia Pty Ltd 21 June 2019 (JBS&G 2019g)

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6. Material Tracking

The movement of all bulk quantities of construction materials (including earthworks derived material, PFAS impacted materials, bituminous materials form demolition works and/or any pavement materials) on the site during any remedial or construction activities is required to be subject to a material tracking system. The material tracking system shall be administered by the Principal Contractor and reviewed by JBS&G for inclusion in the post fill validation reports.

Material tracking shall be required for all materials moved / excavated from a location on the site and not wholly replaced in the same locations on the same day of material movement (i.e. soils excavated for testpitting / assessment do not require material tracking, however all other material does).

6.1 Material Tracking Data

To this extent, all excavation and filling works as undertaken with all reused site materials, relocated PFAS impacted materials and bituminous materials shall require the following information to be recorded by the consultant based only on information provided by the contractor and verified by the consultant, with respect to material placement activities:

- Date;
- Estimated volume (cubic metres);
- Type of material;
- Depth of placement (RL) if required (i.e. if material is only suitable for placement at a specified depth due to aesthetic, human health or ecological consideration). Or otherwise approximate elevation of placement where PFAS impacted soils are added to the current stockpile of PFAS impacted soils within the Dunheved site;
- Source (from) information in terms of MGA56 co-ordinates as established by site GPS and/or survey and/or the site specific grid location (grid system to be supplied in SRAP);
- Placement (to) information in terms of MGA56 co-ordinates as established by site GPS and/or survey and/or the site specific grid location;
- Reference document (where necessary, i.e. ESA report, characterisation report and/or validation report or virgin excavated natural material / excavated natural material classification);
- Purpose of placement (surplus to site requirements, interim management of PFAS impacted soils etc); and
- Comments (when required).

In addition to the above, it is suggested the consultant is on hand to record these activities as necessary, including the generation of a photographic log detailing placement/fill etc.

To ensure the materials are suitable for the final placement location proposed land use, material which has been removed for the purposes of environmental management / processing (i.e. removal of anthropogenic materials from stockpiles / soils at the ROS), and is proposed to be moved again subsequent to the completion / validation of environmental management / processing works:

- Material tracking forms for the replacement of the material shall make reference to the initial material tracking forms generated by the excavation of the materials for management / processing; and
- Reference all associated environmental data.

As part of the validation of the material tracking forms, mass / material balances shall be assessed at each stage where additional material tracking forms are generated for particular site material.

It is the responsibility of the Principal Contractor to ensure the material tracking record sheet(s) are completed and submitted to the Environmental Consultant regularly. The Environmental Consultant has ownership of the material tracking system on receipt of all the necessary information from the contractor.

The Environmental Consultant is required to review the submitted material tracking record sheet(s) and to investigate/resolve any discrepancies. Following this review, a copy of the material tracking record sheet(s) is to be forwarded to the Principal Contractor. Ideally this would occur within two days of the Environmental Consultant verifying the material tracking record sheet(s) from the contractor.

6.2 Material Characterisation Forms and Sheets

Following characterisation works, a material characterisation form will be provided by the environmental consultant to the Principal contractor and will include conditions on reuse requirements if any. Material Characterisation form is provided in **Appendix B**.

Additionally, a material taking sheet including information such as time/date, truck registration, load quantity and MCF registration number will need to be kept. Material tracking sheets are also provided in **Appendix B**.

7. Reporting

A range of environmental sampling and analysis, records of physical observations and material tracking data will be generated through the implementation of this CMP. A EWCR Contamination Management Summary Report shall be required to be prepared at the cessation of the earthworks as undertaken with the construction of the EWCR. This report shall contain as a minimum:

- All field notes as collected by the environmental consultant;
- Full incident descriptions of any unexpected finds;
- Environmental sampling and analysis as specific to each of the areas nominated in **Sections 5.6.1**, **5.6.2**, **5.6.4**, **5.6.5** and **5.7**;
- Any additional UXO clearances as required by works described in **Section 5.6.3**, or otherwise required in response to an Unexpected Find;
- Any environmental and/or occupational monitoring as required in response to observation of asbestos / ACM;
- All material tracking records;
- All waste disposal documentation as require din response to surplus soils generated by site works;
- Assessment of QA/QC and data reliability; and
- On the basis of the extent of data historically available and that additionally collected under the requirements of the CMP, a characterisation of the environmental status of the roadway corridor and a statement of suitability as to use as a roadway.

8. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

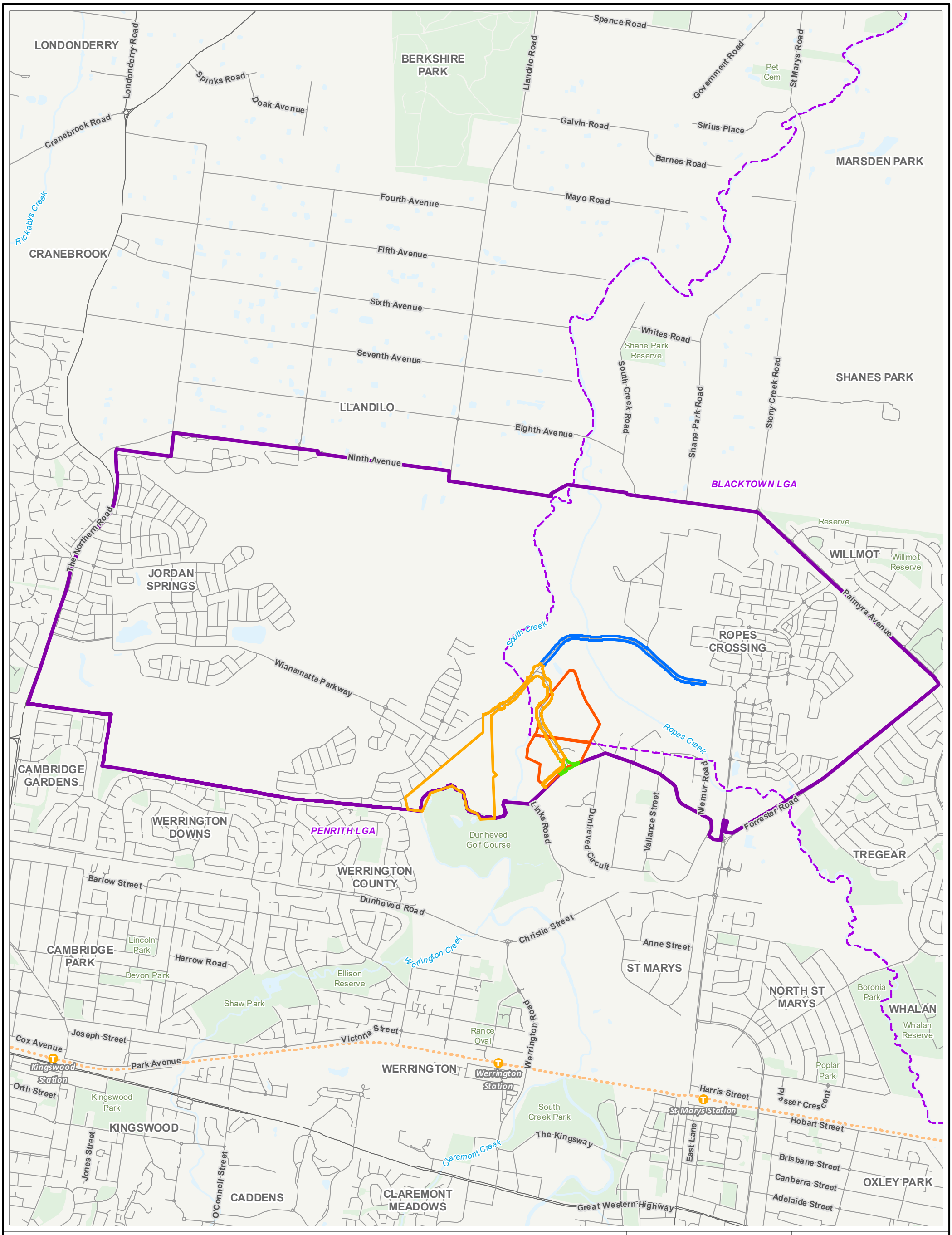
Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Legend:

- Former ADI St Marys Property
- Dunheved Precinct

East West Connector Road Site

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary

- LGA boundary
- Parks and reserves
- Waterbody area
- Waterway
- Primary Road
- Local Road
- Train Line
- Train Station

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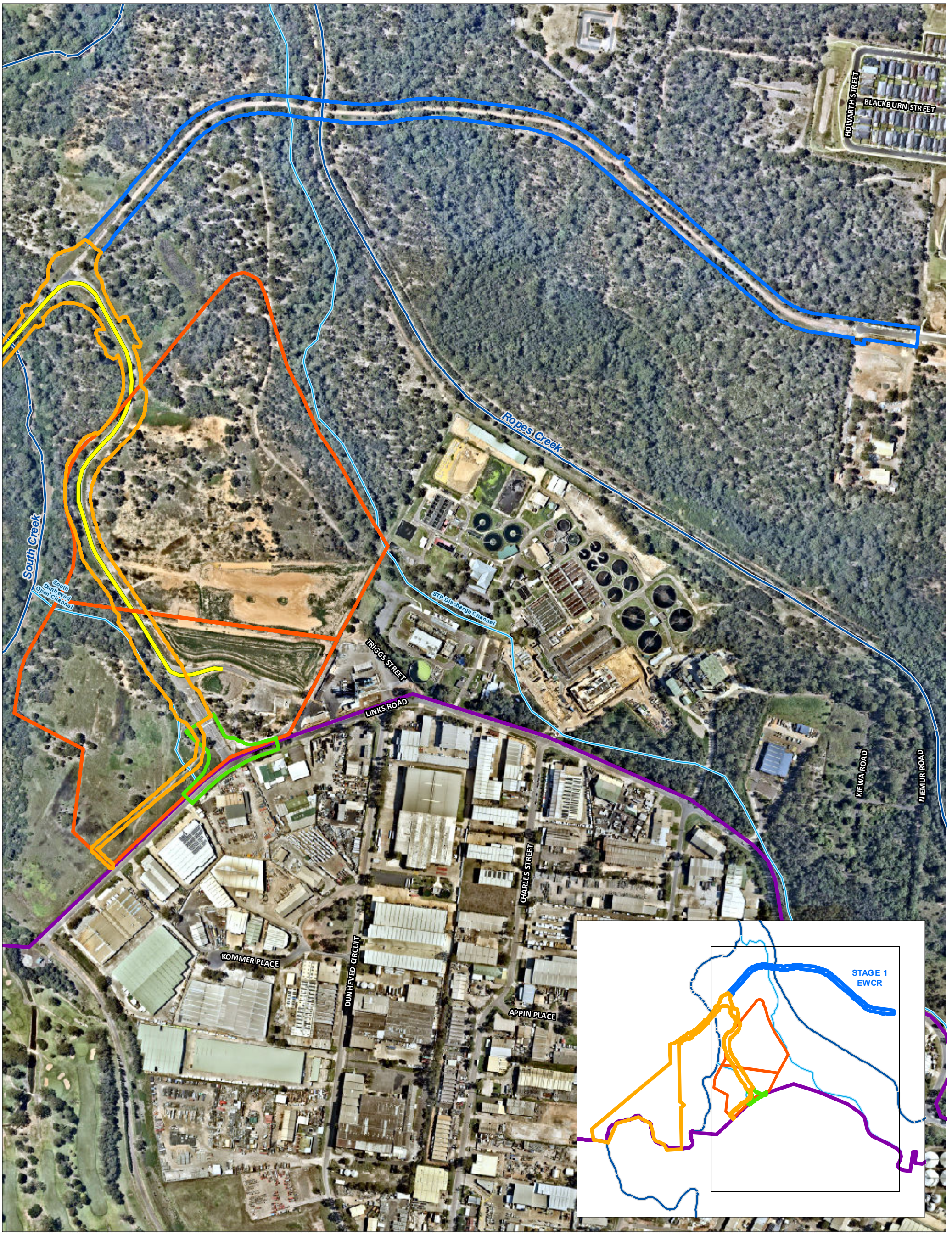
0 375 750 metres

Central Precinct

SITE LOCATION

Job No: 54782		Scale: 1:27,500		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: R06 Rev B	Date: 25-Jul-2019	**FIGURE 1**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R06 Rev B\54782_01_Site_Location.mxd
Time Saved: 30/07/2019 20:07:30 By: rfinucane



Legend:

- Former ADI St Marys Property
- Dunheved Precinct

East West Connector Road Site

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Haulage Road
- Channels
- Creeks

JBS&G

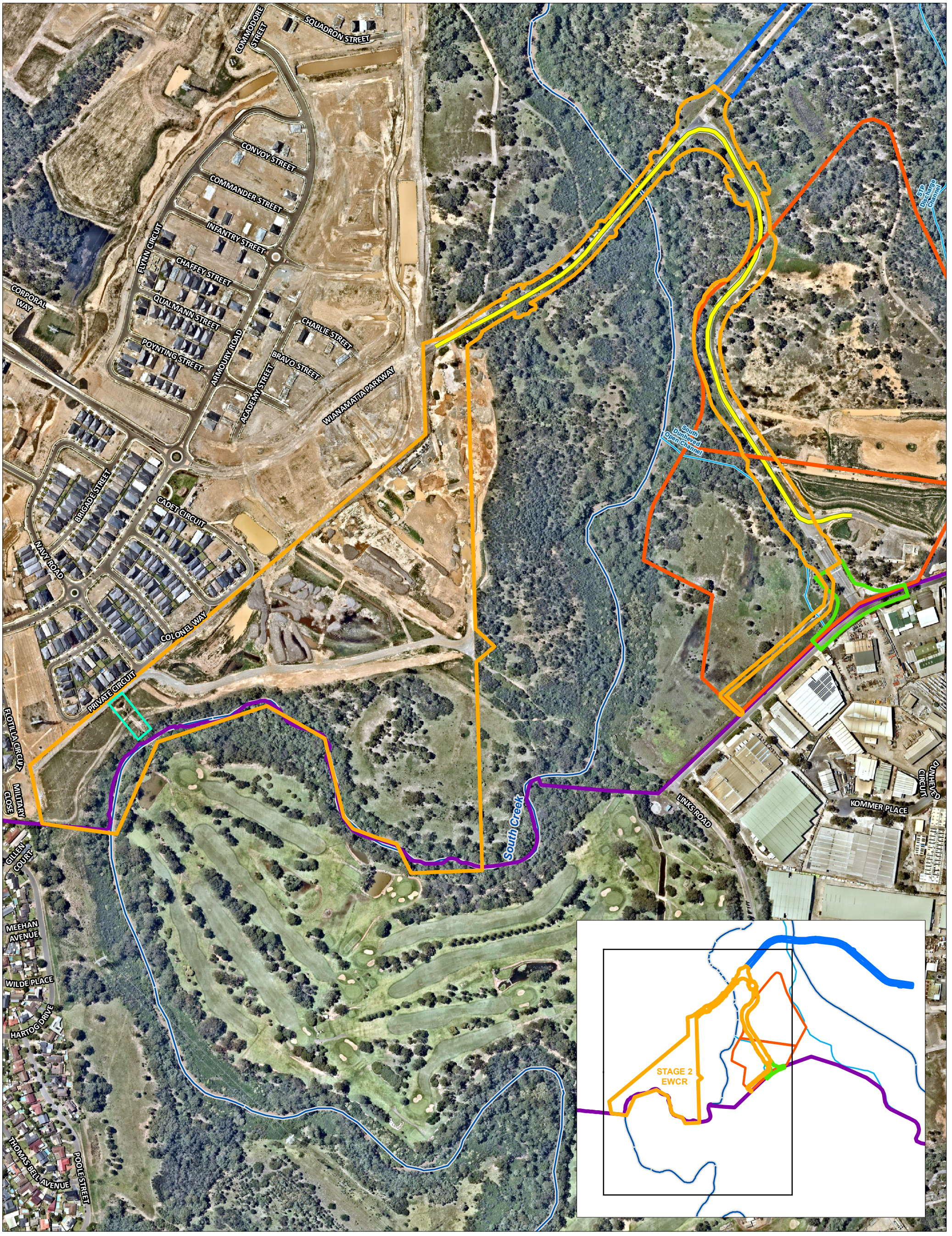
0 75 150
metres

Central Precinct

STAGE1 OF THE EAST WEST CONNECTOR ROAD (EWCR) SITE LAYOUT

Job No: 54782		Scale: 1:5,500		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: R06 Rev B	Date: 25-Jul-2019	**FIGURE 2**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R06 Rev B\54782_02_Stage1_EWCR_Site_Layout.mxd
Time Saved: 29/07/2019 18:12:29



Legend:

- Former ADI St Marys Property
- Dunheved Precinct

East West Connector Road Site

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Haulage Road
- Culvert which requires UXO search
- Channels
- Creeks

JBS&G

0 75 150
metres

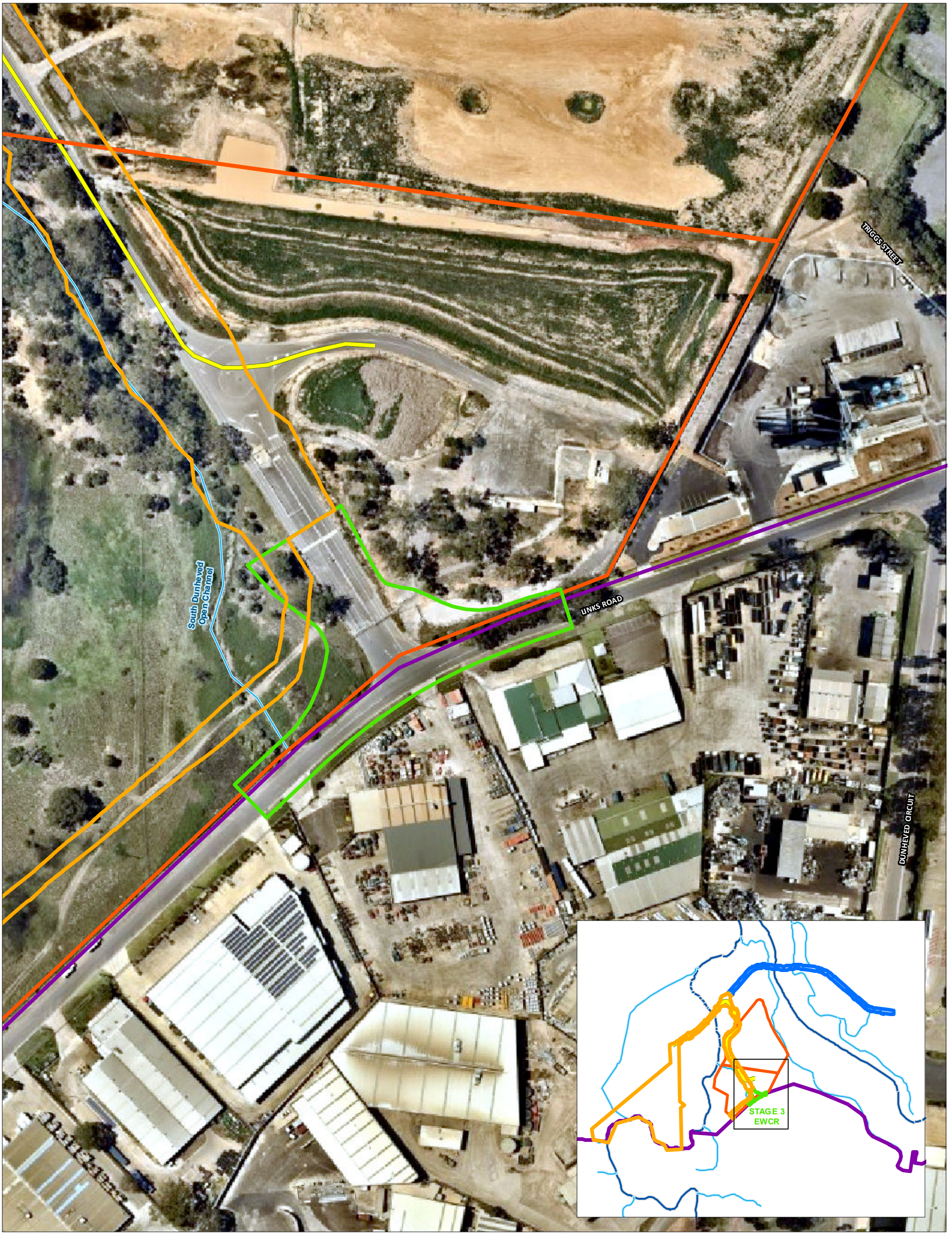
Central Precinct

STAGE 2 OF THE EAST WEST CONNECTOR ROAD (EWCR) SITE LAYOUT

Job No: 54782		Scale: 1:5,500		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: AS	Checked By: GB	Version: R06 Rev B	Date: 09-Aug-2019	**FIGURE 3**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R06 Rev B\54782_03_Stage2_EWCR_Site_Layout.mxd
Created on: 29/08/2019 by: 20181229

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Legend:

- Former ADI St Marys Property
- Dunheved Precinct

East West Connector Road Site

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Haulage Road
- Channels
- Creeks

JBS&G

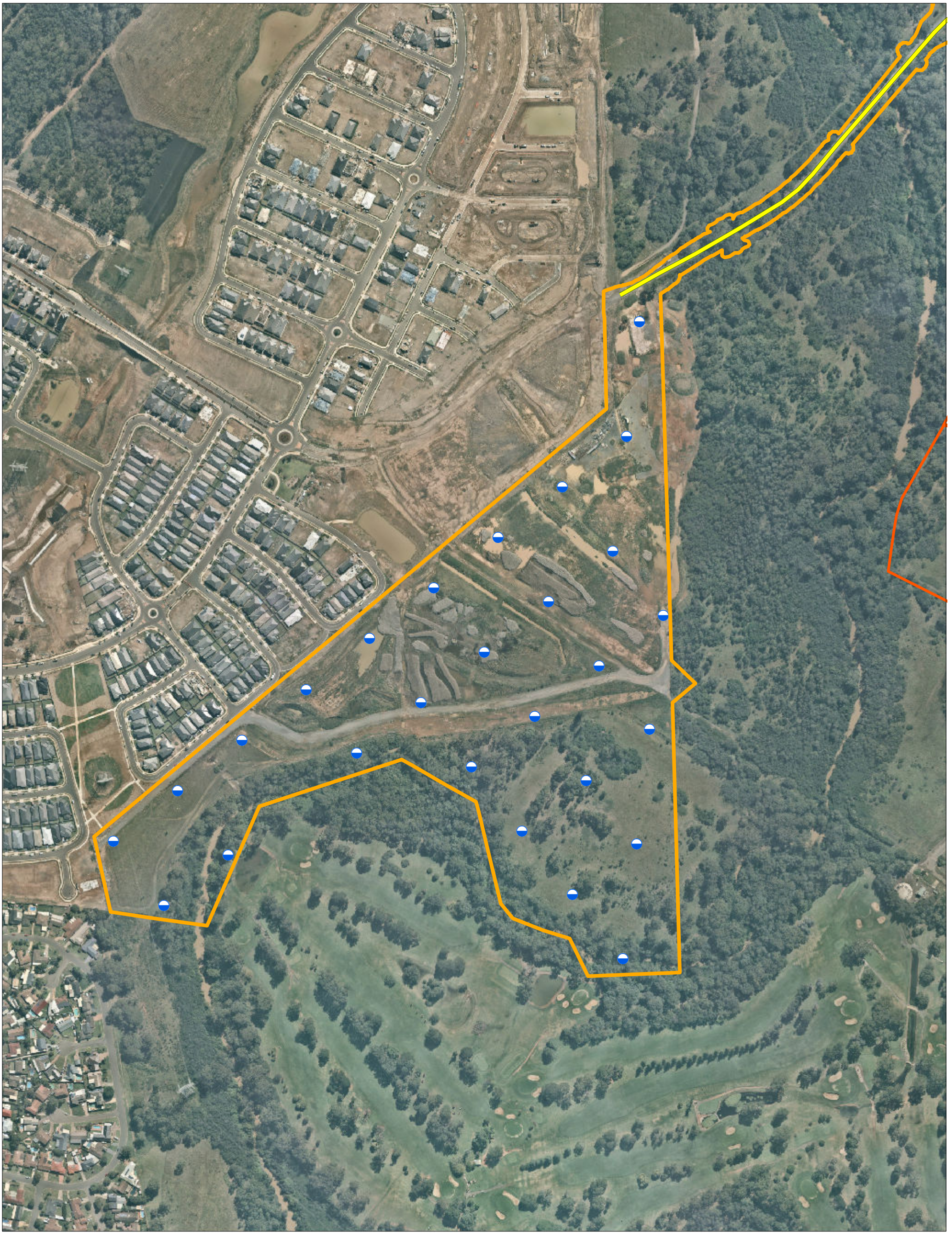
0 20 40 metres

Central Precinct

STAGE 3 OF THE EAST WEST CONNECTOR ROAD (EWCR) SITE LAYOUT

Job No: 54782		Scale: 1:1,564		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: R06 Rev B	Date: 25-Jul-2019	**FIGURE 4**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R06 Rev B\54782_04_Stage3_EWCR_Site_Layout.mxd
Time Saved: 29/07/2019 18:12:29



Legend:

- Dunheved Precinct
- Stage 2 Boundary
- Haulage Road
- Proposed Sample Location

Note: Samples may be eliminated if areas has been assessed previously

JBS&G

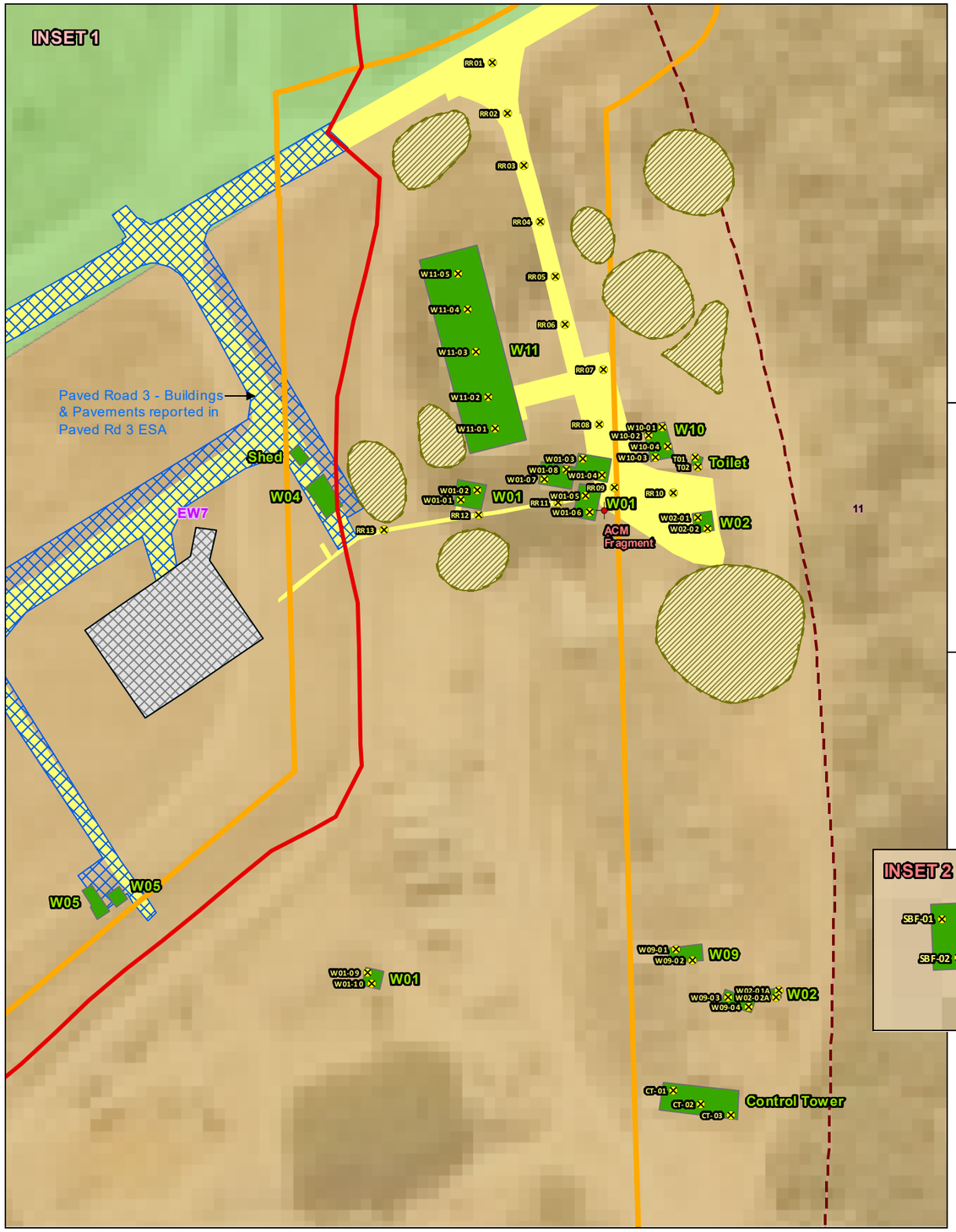
0 50 100
metres

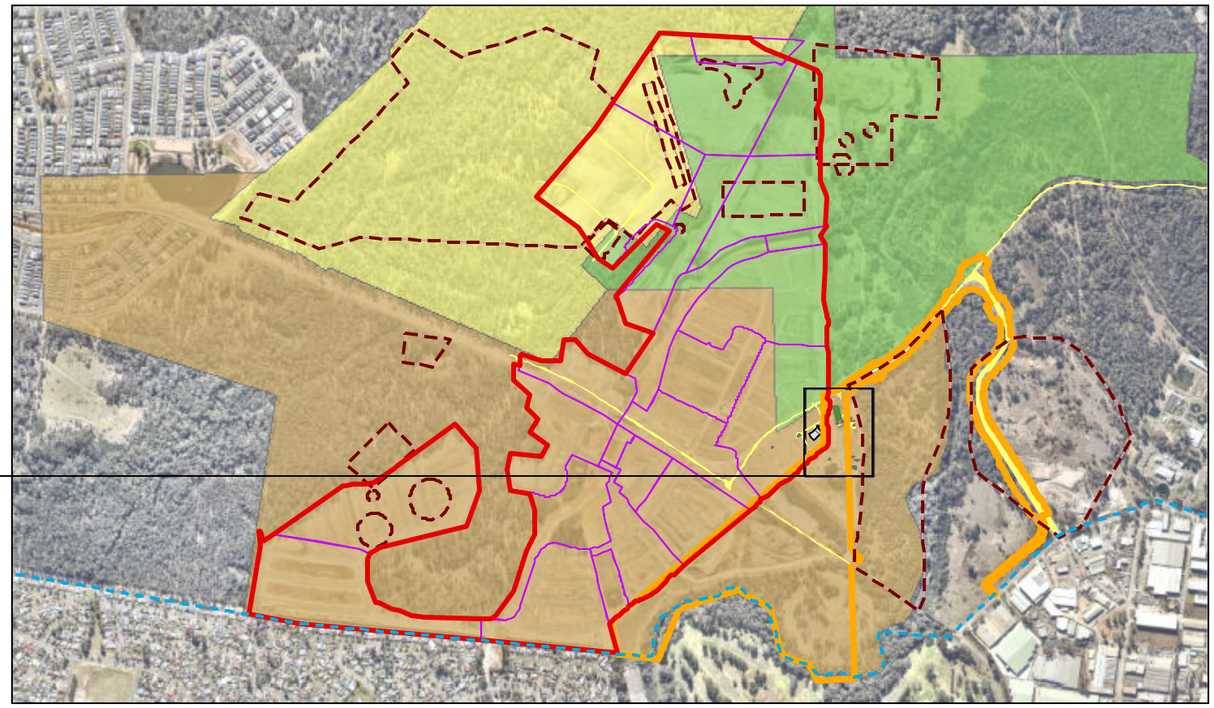
Central Precinct

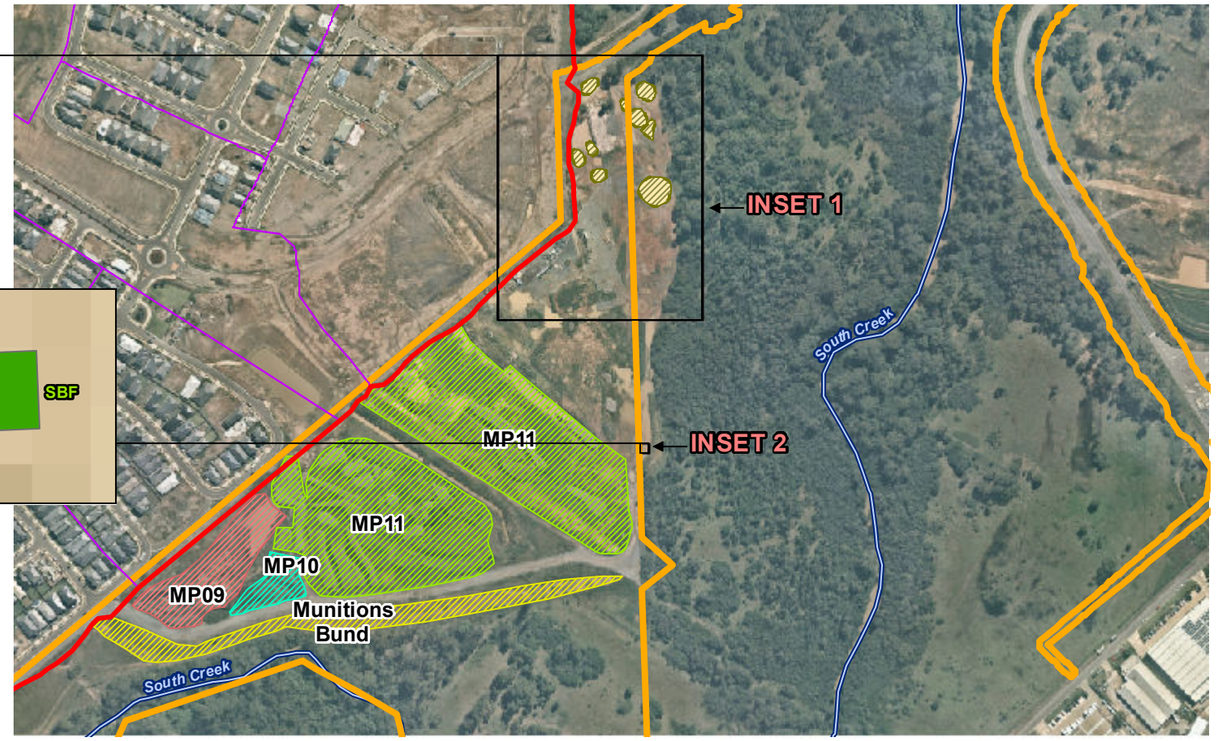
STAGE 2C - INFILL SAMPLING LOCATIONS

Job No: 54782		Scale: 1:4,250		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: R06 Rev B	Date: 25-Jul-2019	**FIGURE 5**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R06 Rev B\54782_05_Stage2c_InfillSampleLocations.mxd
Time Saved: 29/07/2019 18:12:29









Source: Base Image - © Near Map www.nearmap.com, imagery date 22-07-2017

© 2019 JBS&G

0 10 20 40 m

Scale: 1:1,100

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
B	Original Issue - R06	RF	25-07-2019

Legend:

- CHK001/1 Audit Statement Boundary
- Former Areas of Environmental Concern (Approximate Locations)
- Central Precinct
- Earthworks Boundary
- CHK001/6 Building Extent (IW Building Series)
- CHK001/6 Concrete Building Footprint (IW Building Series)
- CHK001/6 Bitumen Roads
- Paved Road 3
- Central Sector West
- North Western Sector
- Southern Sector West

East West Connector Road Site

- Stage 2 Boundary
- Stockpile Locations

Additional Stockpiles

- MP09 - Soil Stockpile
- MP10 - Soil Stockpile
- MP11 - Mulch Stockpile
- Munitions Bund

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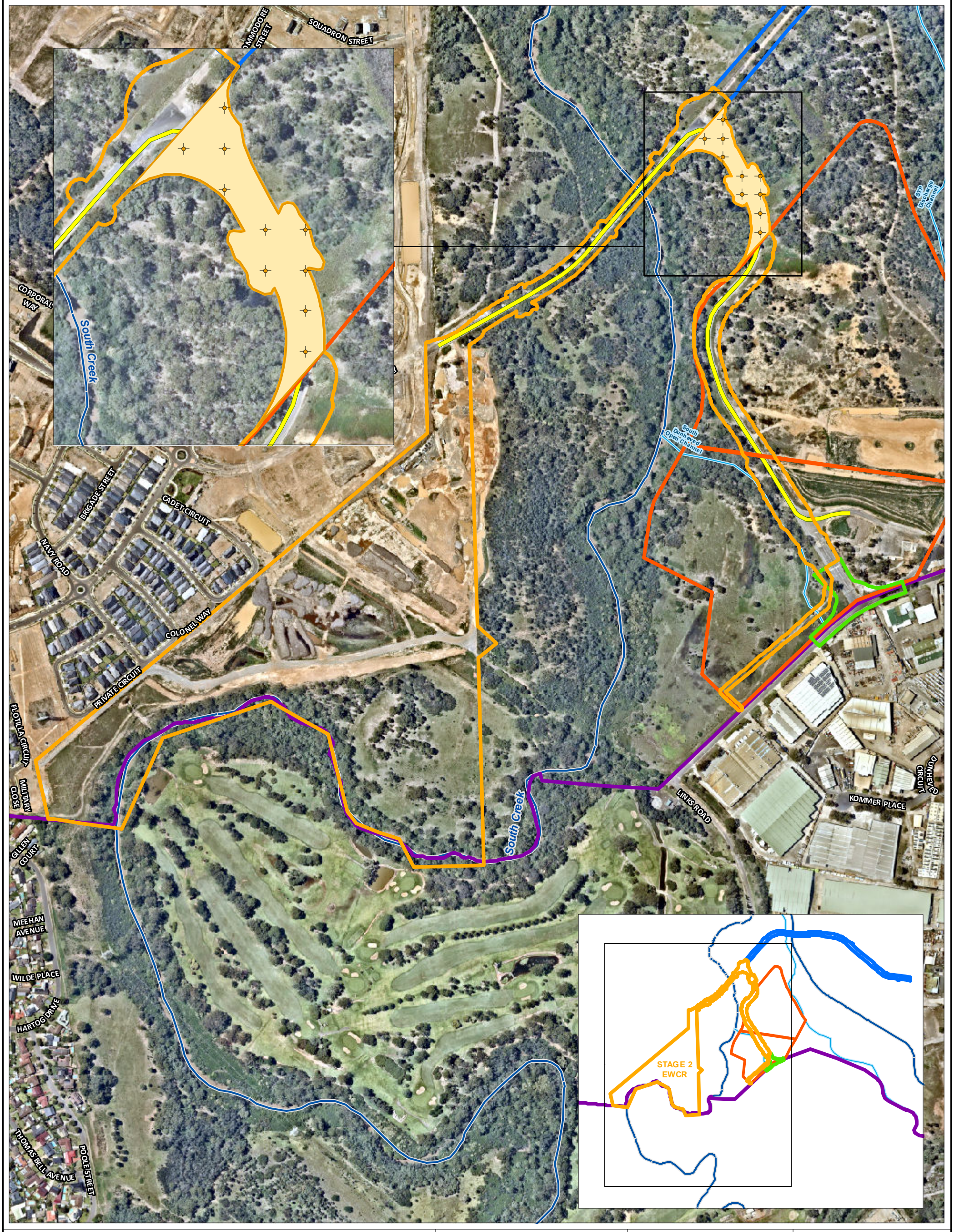
Figure 6: Stage 2c Stockpile Locations and Munitions Bund

Client: Minter Ellsion

Project: Central Precinct

Job No: 54782 File Name: 54782_06

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Legend:

- Former ADI St Marys Property
- Dunheved Precinct

East West Connector Road Site

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Haulage Road
- Channels
- Creeks
- Stage 2 - Area of Additional Characterisation
- Stage 2 - Additional Characterisation Sample Locations

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0 75 150 metres

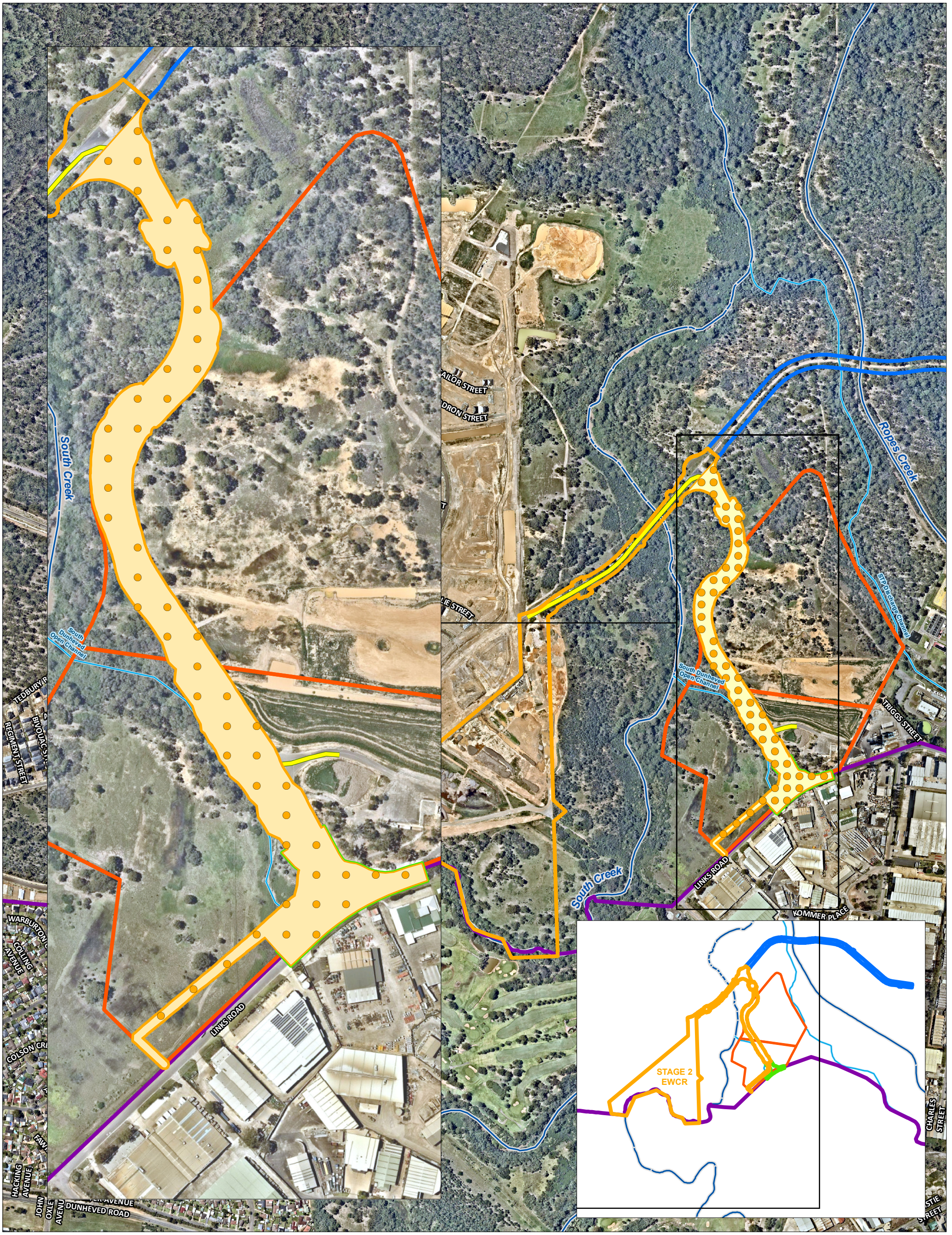
Central Precinct

STAGE 2B ADDTIONAL CHARACTERISATION SAMPLE LOCATIONS

Job No: 54782		Scale: 1:5,500		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: R06 Rev B	Date: 25-Jul-2019	**FIGURE 7**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R06 Rev B\54782_07_Stage2b_AdditionalCharacterisationSamples.mxd
Last Saved: 20181229

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Legend:

- Former ADI St Marys Property
- Dunheved Precinct

East West Connector Road Site

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Haulage Road
- Channels
- Creeks
- Stage 2b and 3 Area of Fill and Asbestos Quantifiaction

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0 120 240 metres

Central Precinct

STAGE 2B AND STAGE 3 DATA GAP ASSESSMENT LOCATIONS

Job No: 54782		Scale: 1:8,500		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: R06 Rev B	Date: 14-Aug-2019	**FIGURE 8**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R06 Rev B\54782_08_Stage2b_3_Fill_AsbestosQuantificationSamples.mxd
Created on: 14/08/2019 by: RF

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Appendix A Unexpected Finds Protocol

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

BE AWARE

UNEXPECTED HAZARDS MAY BE PRESENT





asbestos

Chemical bottles



Blood stains



odours





ash / slag



demolition waste

if you <u>SEE</u> or <u>SMELL</u> anything unusual

<u>STOP WORK</u> & contact the Site Foreman

do not restart working before the area has been investigated and cleared by an Environmental Consultant

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Appendix B Material Tracking Sheets

MCF Form

Material Details	
Completed by	
Date	
Material Identification (physical properties and inclusion)	
Summary of Material Classification	
JBS&G Material Classification Reference	**MCF Number: 001** This unique number is required to be recorded on materials tracking documentation
Source Location Site won material (grid reference and RL) Source site address	
Volume of Material	
Land Use Suitability (this material is suitable, from a contamination perspective, for use in the following areas)	
Reuse onsite without any further requirements	√ YES □ NO
Reuse onsite at a depth of 2 m or more below final surface levels	√ YES □ NO
Reuse onsite at a depth of 0.1 m or more below final surface levels	√ YES □ NO
Within Road Roadways	√ YES □ NO
Off-Site Disposal	□ YES □ NO √ N/A

Material Tracking Sheet

Materials Tracking Form Part A (Materials Received, Excavated, Stored or Placed)										
Completed by:										
Date:										
Comment (Are there any visual or olfactory indicators of contamination):										
# of Loads.	**Time**	**Truck Rego / Plant ID**	**Load Quantity (m^3)**	**MCF Reference No**	**Source Location**	**Temporary Stockpiled Y/N and ID**	**Final Placement Location Y/N**	**Placement location (grid reference)**	**Reduced level of placement m AHD (final placement only)**	**GPS Coordinates (final placement only)**

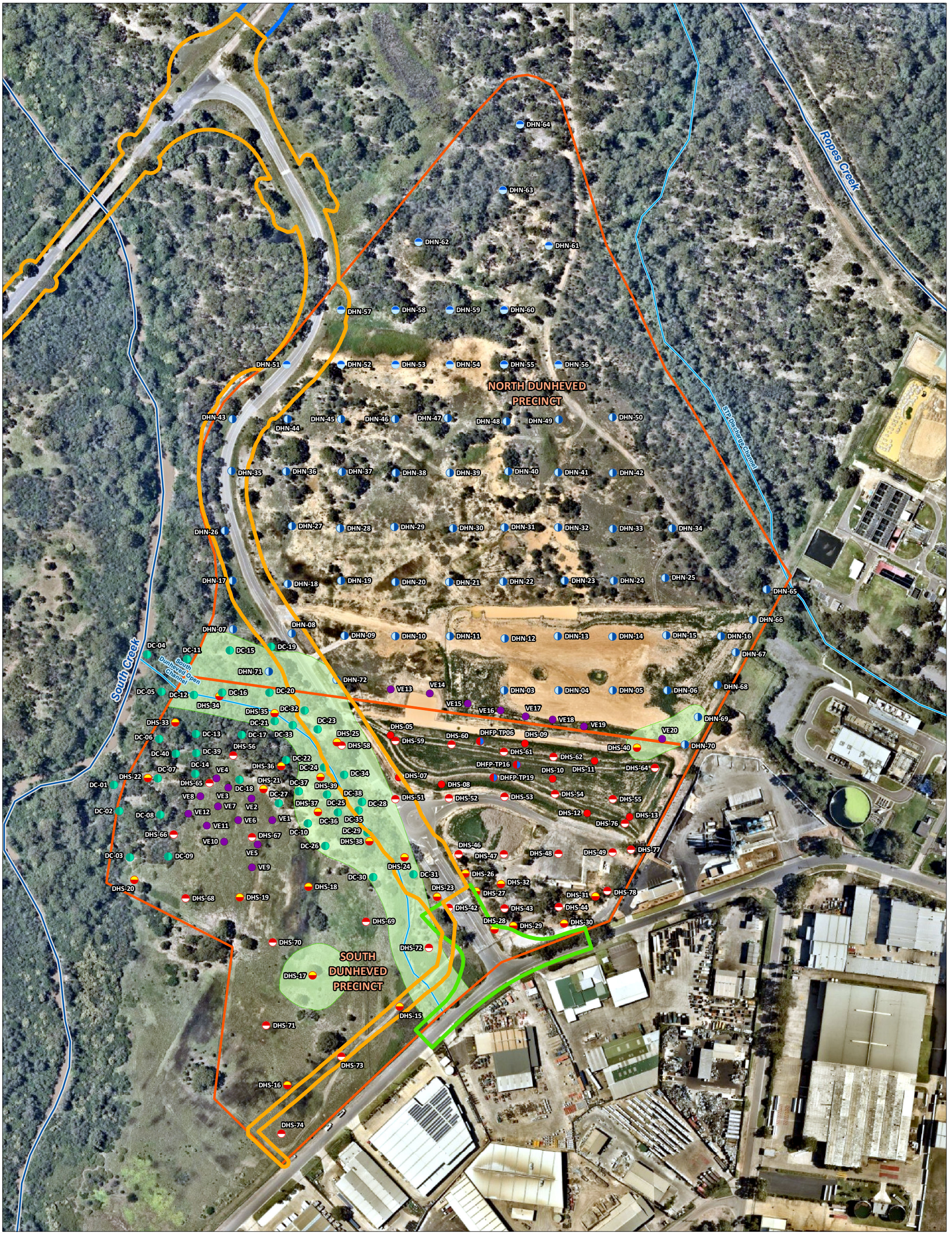
Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Appendix C Summary of Environmental Data held for EWCR Corridor

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Stage 2b Data

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Legend:

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct
- Creeks
- Channels
- Proposed PFAS Remediation Areas

Soil Sample Location

- Dunheved South - Dec 2017
- Dunheved South - Sep 2017
- Dunheved South - Feb 2018
- Dunheved South - May 2018
- Dunheved North - May 2018
- Material Characterisation Dunheved May 2018
- Adjoining Dunheved South - July 2018
- Dunheved North - Nov 2018

JBS&G

0 40 80
metres

Central Precinct

SOIL SAMPLE LOCATIONS DUNHEVED

Job No: 54782		Scale: 1:3,000		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: FH	Checked By: GB	Version: R03 Rev B	Date: 12-Apr-2019	**FIGURE 3**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R04 Rev A\54782_03_Sample_locations.mxd
Time saved: 10:44 AM 20191228

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

South Creek

South Dunheved Open Channel

ST2-01

ST2-02

ST2-03

ST2-04

ST2-06

ST2-07

ST2-08

NORTH DUNHEVED PRECINCT

SOUTH DUNHEVED PRECINCT

LINKS ROAD

Legend:

- Former ADI St Marys Property
- Dunheved Precinct
- Stage 2 Boundary
- Proposed PFAS Remediation Areas
- Creeks
- Channels
- Soil Sample Location - Stage 2

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0 20 40
metres

Central Precinct

SOIL SAMPLING LOCATIONS

Job No: 54782		Scale: 1:1,750		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: L20 Rev 0	Date: 15-Jul-2019	**FIGURE 1**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\L20 Rev 0\54782_01_Soil_Sampling_Locations.mxd
Data Source: LPI Web Services 20191228 © Department of Finance, Services & Innovation 2017

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Table A - Soil Analytical Results
Project Number: 54020
Project Name: Dunheved Investigation

	Explosives in Soil										Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)						BTEXN											
	PETN	Nitroglycerine	4-&2-AM-DNT(Isomeric Mixture)	Tetryl	4-Amino-2,6-dinitrotoluene	2-Amino-4,6-dinitrotoluene	HMX	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	GL-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C16 less Naphthalene (F2)	GL-C10 Fraction	GL-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene	Acenaphthene	Acenaphthylene	Anthrazene	Benz(a)anthracene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL								0.1	0.1	0.1	2	0.4	1	1	1	0.1	1	1	20	20	50	50	50	50	100	100	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1
NEPM 2013 EIL - Commercial Industrial (Site Specific)											160		850	310	1800		350	770																	370				
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																									1700	3300	170		215	75	165	135			180					
NEPM 2013 Soil HIL D											3000	900	3600	240000	1500	730	6000	400000																						
NEPM 2013 Soil HSL D - Sensitive Setting																											-		250	3	-	-			230	-				
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																																								
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																								
Field ID	**Date**	**Report Number**																																							
Dunheved South																																								
DHS-07	13-Dec-17	577258	-	-	-	-	-	-	-	<1	<0.5	<0.5	7.3	<0.4	23	19	17	<0.1	13	29	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
QA20171212-01	13-Dec-17	577258	-	-	-	-	-	-	-	<1	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20171212-01	13-Dec-17	182018	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	<0.4	17	15	13	<0.1	8	21	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1
DHS-15-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	2.9	<0.4	130	44	11	<0.1	120	67	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
DHS-23-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	5.7	<0.4	20	8.5	14	<0.1	5.4	10	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
DHS-24-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	8.5	<0.4	28	13	17	<0.1	6.2	18	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
DHS-25-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHS-26-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	7.9	<0.4	32	9.8	21	<0.1	8.6	21	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
Dunheved North																																									
DHN-8 0-0.1	04-May-18	597159	-	-	-	-	-	-	-	-	-	-	5.1	<0.4	19	15	19	0.1	6.7	22	<20	<20	<50	59	59	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
DHN-26_0.4-0.5	07-May-18	597366	-	-	-	-	-	-	-	-	-	-	9.5	<0.4	26	17	24	<0.1	18	39	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
DHN-35 0-0.1	08-May-18	597594	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHN-71 0.4-0.5	08-May-18	597594	-	-	-	-	-	-	-	-	-	-	4.3	<0.4	20	13	14	<0.1	9.3	26	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5

Data Comments

#1 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#2 ESDAT Combined with Non-Detect Multiplier of 0.5.
#5 Chrysotile asbestos detected.
#6 Organic fibres detected.
#7 ESDAT Combined.
#8 50x35x3

Table A - Soil Analytical Results
Project Number: 54020
Project Name: Dunheved Investigation

| | | | Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | Organochlorine Pesticides | | | | | | | | | | | | | | |

Table A - Soil Analytical Results
Project Number: 54020
Project Name: Dunheved Investigation

			Polychlorinated Biphenyls						Chlorinated Benzenes	Nitrobenzenes			Nitrotoluenes				Ionic Balance		
			Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	Hexachlorobenzene	1,3,5-trinitrobenzene	1,3-dinitrobenzene	Nitrobenzene	2,4,6-trinitrotoluene	2,4-dinitrotoluene	2-nitrotoluene	3-nitrotoluene	Cation Exchange Capacity	EC 1:5 soil:water	pH 1:5 soil:water
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	µS/cm	ph Units
EQL			0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1		0.1	0.1	0.05	10	0.1
NEPM 2013 EIL - Commercial Industrial (Site Specific)																			
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																			
NEPM 2013 Soil HIL D								7	80										
NEPM 2013 Soil HSL D - Sensitive Setting																			
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																			
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																			
Field ID	**Date**	**Report Number**																	
Dunheved South																			
DHS-07	13-Dec-17	577258	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<1	<0.5	<0.5	<1	-	<0.5	<0.5	17	64	5.2
QA20171212-01	13-Dec-17	577258	-	-	-	-	-	-	-	<1	<0.5	<0.5	<1	-	<0.5	<0.5	-	-	-
QC20171212-01	13-Dec-17	182018	<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	-	-	-
DHS-15-0-0.1	12-Feb-18	584878	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-
DHS-23-0-0.1	12-Feb-18	584878	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-
DHS-24-0-0.1	12-Feb-18	584878	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-
DHS-25-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHS-26-0-0.1	12-Feb-18	584878	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	9.4	64	8.1
Dunheved North																			
DHN-8 0-0.1	04-May-18	597159	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	-	-	-	-	-	-	-	-	-
DHN-26_0.4-0.5	07-May-18	597366	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-
DHN-35 0-0.1	08-May-18	597594	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHN-71 0.4-0.5	08-May-18	597594	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-

Data Comments

#1 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#2 ESDAT Combined with Non-Detect Multiplier of 0.5.
#5 Chrysotile asbestos detected.
#6 Organic fibres detected.
#7 ESDAT Combined.
#8 50x35x3

Table B: Asbestos in Soil Results
Job Number: 54020
Job Name: Dunheved Investigation

			Asbestos Field					Asbestos Laboratory													Asbestos - Trace Analysis				
			Approximate Volume of Soil	Approx. Sample Mass#1	Mass ACM	Mass Asbestos in ACM#2	Asbestos from ACM in soil#3	Approx. Sample Mass	Asbestos from ACM in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Asbestos from FA & AF in Soil	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Total Asbestos#1	ACM>7 mm Estimation	FA and AF Estimation*#2	ACM - Comment	FA - Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
			L	g	g	g	%w/w	g	%w/w	g	g	g	g	%w/w	g	g	g	g/kg	%w/w	%(w/w)	Comment	Comment	Comment	Comment	Comment
EQL																									
NEPM 2013 Soil HIL D							0.05		0.05					0.001					0.01	0.001					
NEPM 2013 Soil HSL D - Sensitive Setting																									
South Dunheved																									
DHS-07	13-Dec-17	577258	10	16300	0	0	0	643	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
QA20171212-01	13-Dec-17	577258	10	16300	0	0	0	669	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
QC20171212-01	13-Dec-17	182018	10	16300	0	0	0	583	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHS-15-0-0.1	12-Feb-18	584878	10	16300	0	0	0	1114	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHS-23-0-0.1	12-Feb-18	584878	10	16300	0	0	0	755	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHS-24-0-0.1	12-Feb-18	584878	10	16300	0	0	0	735	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHS-25-0-0.1	12-Feb-18	584878	10	16300	0	0	0	902	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHS-26-0-0.1	12-Feb-18	584878	10	16300	0	0	0	711	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
North Dunheved																									
DHN-8 0-0.1	04-May-18	597159	10	16300	0	0	0	459	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHN-26_0.4-0.5	07-May-18	597366	10	16300	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHN-35 0-0.1	08-May-18	597594	10	16300	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHN-71 0.4-0.5	08-May-18	597594	10	16300	0	0	0	498	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected

Table App C PFAS Analytical Results for Stage 2b EWCR
Job number - 54782
Job Name - PFAS Assessment former St Mary's ADI Site

			PFAS																																						
			2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoropentanoic acid (PFPeA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorononanoic acid (PFNA)	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of PFASs (n=28)	Sum of WA DER PFAS (n=10)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Z-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	N-ethyl-perfluorooctanesulfonamidoacetic-acid	N-methyl-perfluorooctanesulfonamidoacetic_acid
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
HEPA (2018) Ecological Indirect exposure - Residential																															0.01	0.01										
HEPA (2018) Human Health Screening Levels - Residential with Garden accessible Soils																0.1															0.009	0.009										
HEPA (2018) Human Health Screening Levels - Public Open Space																10															1	1										
HEPA (2018) Human Health Screening Levels - Commercial/Industrial																100															20	20										
HEPA (2018) Soil Indirect - Commercial and Industrial																															0.14	0.14										
OEH/NSW Health (2017) Soil Direct Toxicity - Commercial and Industrial																48															60	60										
HEPA (2018) Soil Direct Toxicity - Public Open Space																10															1	1										
Field_ID		**Sampled_Date-Time**																																								
Dunheved North																																									
DHN-17 0-0.1	DHN-17 0-0.1	08-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0097	0.0097	<0.05	<0.01	0.0097	0.0097	-	-	-
DHN-26_0-0.1	DHN-26_0-0.1	07-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHN-35 0-0.1	DHN-35 0-0.1	08-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHN-43 0-0.1	DHN-43 0-0.1	08-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHN-51 0-0.1	DHN-51 0-0.1	10-09-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHN-57 0-0.1	DHN-57 0-0.1	10-09-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.013	0.013	0.013	0.013	0.013	0.013	-	-	-
DHN-72 0.3-0.5	DHN-72 0.3-0.5	08-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0077	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.017	0.017	<0.05	0.0247	0.0247	0.0247	-	-	-
DHN-72 0-0.1	DHN-72 0-0.1	08-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.011	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0087	<0.005	0.28	0.2887	0.2997	0.2997	0.291	0.2997	-	-	-
DHN-72_0-0.1	DHN-72_0-0.1	07-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHN-8 0-0.1	DHN-8 0-0.1	04-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
Dunheved South																																									
DHS-07		13-12-17	-	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-
DHS-15-0-0.1		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0052	<0.005	<0.005	0.0052	<0.05	<0.01	-	-	-	-	-
DHS-23-0-0.1		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	-	-	-	-	-
DHS-24-0-0.1		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	-	-	-	-	-
QA2010212-02		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	-	-	-	-	-
QC20180212-02		12-02-18	-	-	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	0.0002	-	-	-	-	-	-	-	-	-	-	-	0.0006	-	0.0005	0.0011	-	-	-	-	-	-	-
DHS-25-0-0.1		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	-	-	-	-	-
DHS-26-0-0.1		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	-	-	-	-	-
DHS-51-5.2-5.3	DHS-51-5.2-5.3	01-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHS-58 0-0.1	DHS-58 0-0.1	04-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHS-73 0-0.1	DHS-73 0-0.1	04-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
Adjoining Dunheved South																																									
DC-19 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.015	0.015	<0.05	0.015	0.015	0.015	-	-	-
QA20180703-02	DC-19 0.0-0.1	03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.018	0.018	<0.05	0.018	0.018	0.018	-	-	-
QC20180703-02	QC20180703-02	03-07-18	-	-	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	0.0011	-	-	-	-	-	-	-	-	-	-	-	0.0023	-	0.015	0.0173	0.018	-	-	-	-	-	-
DC-19 0.3-0.4		02-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0052	<0.005	<0.005	0.0052	<0.05	<0.01	<0.005	0.0052	-	-	-
DC-23 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0057	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0099	<0.005	0.13	0.1399	0.1456	0.1456	0.1357	0.1456	-	-	-
DC-23 0.3-0.4		02-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.029	0.029	<0.05	0.029	0.029	0.029	-	-	-
DC-23 0.6-0.8	DC-23 0.6-0.8	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-23 1.4-1.6	DC-23 1.4-1.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-23 2.4-2.6	DC-23 2.4-2.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-23 3.4-3.6	DC-23 3.4-3.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0093	0.0093	<0.05	<0.01	0.0093	0.0093			
DC-23 4.6-4.8	DC-23 4.6-4.8	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0069	0.0069	<0.05	<0.01	0.0069	0.0069			
DC-23 5.6-5.8	DC-23 5.6-5.8	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-23 6.3-6.5	DC-23 6.3-6.5	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-28 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.11	0.11	0.11	0.11	0.11	0.11	-	-	-
DC-29 0.0-0.1		02-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0073	0.0073	<0.05	<0.01	0.0073	0.0073	-	-	-
DC-31 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DC-32 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0057	0.0057	<0.05	<0.01	0.0057	0.0057	-	-	-
DC-34 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.027	0.027	<0.05	0.027	0.027	0.027	-	-	-
DC-34 0.3-0.4		02-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.025	<0.005	0.28	0.305	0.305	0.305	0.28	0.305	-	-	-
DC-34 0.6-0.8	DC-34 0.6-0.8	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.13	0.13	0.13	0.13	0.13	0.13			
DC-34 1.4-1.6	DC-34 1.4-1.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.051	0.051	0.051	0.051	0.051	0.051			
DC-34 2.4-2.6	DC-34 2.4-2.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.035	0.035	<0.05	0.035	0.035	0.035			
DC-34 3.4-3.6	DC-34 3.4-3.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
QA20180802-02	DC-34 3.4-3.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.015	0.015	<0.05	0.015	0.015	0.015			
QC20180802-02		02-08-18	-	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	0.0002	0.0006	-	-	-	-	-	-	-	-	-	-	0.0018	-	0.0057	0.0075	-	-	-	-	-	-	-
DC-34 4.4-4.6	DC-34 4.4-4.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-34 5.0-5.2	DC-34 5.0-5.2	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-35 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.034	0.034	<0.05	0.034	0.034	0.034	-	-	-
QA/QC																																									

Table App C PFAS Analytical Results for Stage 2b EWCR
Job number - 54782
Job Name - PFAS Assessment former St Mary's ADI Site

	PFAS																																		
	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoropentanoic acid (PFPeA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorononanoic acid (PFNA)	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of PFASs (n=28)	Sum of WA DER PFAS (n=10)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Z-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	N-ethyl-perfluorooctanesulfonamidoacetic-acid	N-methyl-perfluorooctanesulfonamidoacetic_acid
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01			
HEPA (2018) Ecological Indirect exposure - Residential																													0.01	0.01							
HEPA (2018) Human Health Screening Levels - Residential with Garden accessible Soils														0.1															0.009	0.009							
HEPA (2018) Human Health Screening Levels - Public Open Space														10															1	1							
HEPA (2018) Human Health Screening Levels - Commercial/Industrial														100															20	20							
HEPA (2018) Soil Indirect - Commercial and Industrial																													0.14	0.14							
OEH/NSW Health (2017) Soil Direct Toxicity - Commercial and Industrial														48															60	60							
HEPA (2018) Soil Direct Toxicity - Public Open Space														10															1	1							
Field_ID		**Sampled_Date-Time**																																			
TRIP BLANK	596738	02-05-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	597159	04-05-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	597366	07-05-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	597594	08-05-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	597692	09-05-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	605971	03-07-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	610490	02-08-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TB	621017	03-10-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01			
TB	624659	25-10-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01			
TB	624659	25-10-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01			

Notes
* It is noted that the SP30 footprint samples included are of the current surface level and following additional scrape up

Surface samples beneath SP30 which were scraped up and relocated to Dunheved, ie not representative of the current SP30 footprint surface

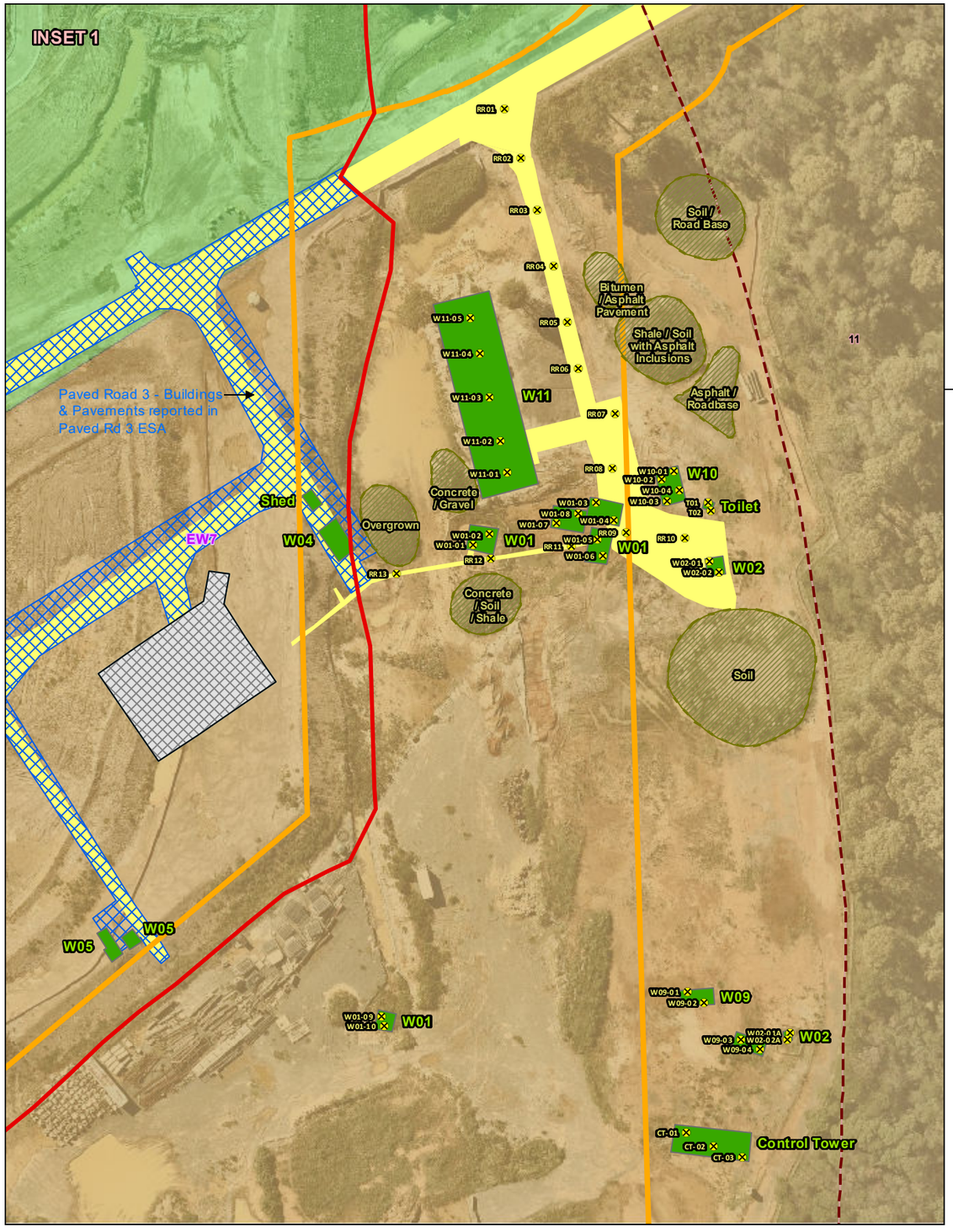
Table A - Stage 2 Assessment
Project Number: 54782
Project Name: Stage 2 - Jordan Springs PFAS Assessment

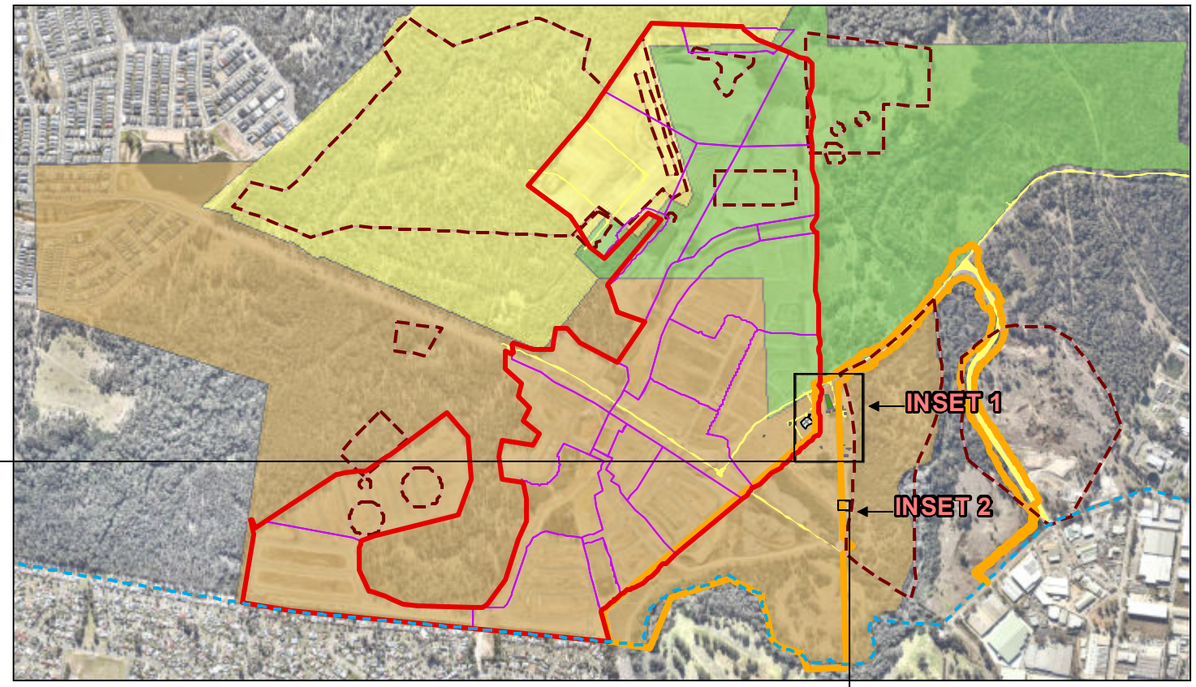
			PFAS																																			Other
			2-(N-methylperfluoro-1-octane sulfonamido)-ethanol	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoroundecanoic acid (PFUnA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorododecanoic acid (PFDoA)	N-methyl-perfluorooctanesulfonamidoacetic acid	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorooctanesulfonamide (FOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroundecanesulfonic acid (PFUnS)	Perfluorododecanesulfonic acid (PFDoS)	Perfluorotridecanesulfonic acid (PFTrS)	Perfluorotetradecanesulfonic acid (PFTeS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of WA DER PFAS (n=10)	Sum of PFASs (n=28)	% Moisture 103oC
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
EQL			0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	1
NEMP 2018 PFAS Human Health Screening Values - Industrial/Commercial																					50										20					20	20			
NEPM 2018 PFAS Ecological Indirect Exposure - Industrial/Commercial																																0.01						
Sample ID	**Sample Date**	**Laboratory Report Number**																																				
ST201 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	19
ST201 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	11
QA20190707-02	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	15
QC20190707-02	7/07/2019	221253	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.0001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	0.0006	-	-	-	-	-
ST202 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	13
ST202 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	15
ST203 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	9.5
ST203 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	18
ST204 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0088[#1]	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0088	<0.005	0.0088	<0.01	<0.05	15
ST204 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	14
ST206 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	9.9
ST206 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	19
ST207 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	13
ST207 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	11
ST208 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	15
ST208 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	17

Data Comments
#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.

Stage 2c Data

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019







Source: Base Image - © Near Map www.nearmap.com, imagery date 22-07-2017

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0 10 20 40 m

Scale: 1:1,100

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
A	Original Issue - R16	RF	18-07-2019

Legend:

- CHK001/1 Audit Statement Boundary
- Former Areas of Environmental Concern (Approximate Locations)
- Central Precinct
- Earthworks Boundary
- CHK001/6 Building Extent (IW Building Series)
- CHK001/6 Concrete Building Footprint (IW Building Series)
- CHK001/6 Bitumen Roads
- Paved Road 3
- Central Sector West
- North Western Sector
- Southern Sector West

East West Connector Road Site

- Stage 2 Boundary
- Stockpile Locations

JBS&G

Figure 3: Building Footprints and Sample Locations

Client: Marylands Development Company

Project: Central Precinct

Job No: 54020 File Name: 54020_03

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Table A: Soil Analytical Results
Project Number: 54020
Project Name: W Series Buildings - Central Precinct

				Asbestos										Heavy Metal								Micro		OCP																									
				Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	E.coli	Salmonella Volume/Mass Tested	Hexachlorobenzene	4,4-DDE	Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	alpha-Chlordane	gamma-Chlordane	Chlordane	DDD	DDT	Dieldrin	DDT+DDE+DDD (Sum of Total)	delta-BHC	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor
				g	%w/w	%w/w	g	g	g	g	g	g	g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MPN/G	g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL														2	0.4	5	5	5	0.1	5	5	1		0.05	0.05	0.05	0.05	0.05	0.05			0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
NEPM 2013 EIL - Urban Residential (generic)														100		410	230	1100		270	770												180													
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																														
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A					0.01																																									
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL						0.001																																									
NEPM 2013 Soil HIL A														100	20	100	6000	300	40	400	7400			10			6					50				240					10			6
NEPM 2013 Soil HSL A - Sensitive Setting																																														

Field_ID	LocCode	Sampled_Date-Time	Matrix_Description	Lab_Report_Number																																												
RR-01 0-0.1	RR-01 0-0.1	06-05-19	Paved Roads	654586	674	0	<0.001	0	0	0	0	0	0	0	11	<0.4	28	17	19	<0.1	14	36	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RR-02 0-0.1	RR-02 0-0.1	06-05-19	Paved Roads	654586	560	0	<0.001	0	0	0	0	0	0	0	6.7	<0.4	18	16	17	<0.1	12	33	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RR-03 0-0.1	RR-03 0-0.1	06-05-19	Paved Roads	654586	573	0	<0.001	0	0	0	0	0	0	0	7.5	<0.4	17	15	19	<0.1	10	28	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RR-04 0.2-0.3	RR-04 0.2-0.3	06-05-19	Paved Roads	654586	669	0	<0.001	0	0	0	0	0	0	0	8	<0.4	16	17	20	<0.1	12	29	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RR-07 0-0.1	RR-07 0-0.1	06-05-19	Paved Roads	654586	688	0	<0.001	0	0	0	0	0	0	0	4.7	<0.4	18	20	13	<0.1	17	43	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
QC20190506-01	RR-07 0-0.1	06-05-19		654586	512	0	<0.001	0	0	0	0	0	-	0	5	<0.4	16	19	15	<0.1	17	47	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
QA20190506-01	QA20190506-01	06-05-19		217148	648	0	<0.001	-	-	-	-	-	-	-	4	<0.4	12	19	14	<0.1	14	47	-	-	<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
RR08 0-0.1	RR08 0-0.1	07-05-19	Paved Roads	654586	570	0	<0.001	0	0	0	0	0	0	0	5.2	<0.4	14	16	15	<0.1	12	35	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RR09 0.2-0.3	RR09 0.2-0.3	07-05-19	Paved Roads	654586	479	0	<0.001	0	0	0	0	0	0	0	4	<0.4	12	9.3	14	<0.1	11	28	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
QC20190507-01	RR09 0.2-0.3	07-05-19		654586	428	0	<0.001	0	0	0	0	0	-	0	4.2	<0.4	12	11	14	<0.1	9.8	21	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
QA20190507-01	QA20190507-01	07-05-19		217148	505	0	<0.001	-	-	-	-	-	-	-	<4	<0.4	12	9	16	<0.1	9	18	-	-	<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
RR09 0-0.1	RR09 0-0.1	07-05-19	Paved Roads	654586	514	0	<0.001	0	0	0	0	0	0	0	9.4	<0.4	26	17	19	<0.1	14	35	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RR11 0-0.1	RR11 0-0.1	07-05-19	Paved Roads	654586	530	0	<0.001	0	0	0	0	0	0	0	12	<0.4	22	25	24	<0.1	12	42	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RR13 0-0.1	RR13 0-0.1	07-05-19	Paved Roads	654586	611	0	<0.001	0	0	0	0	0	0	0	5.4	<0.4	14	12	21	<0.1	6.8	19	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W01-01 0.2-0.3	W01-01 0.2-0.3	06-05-19	W01 Buildings	654586	627	0	<0.001	0	0	0	0	0	0	0	5.4	<0.4	14	13	19	<0.1	8.4	22	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W01-01 0-0.1	W01-01 0-0.1	06-05-19	W01 Buildings	654586	687	0	<0.001	0	0	0	0	0	0	0	5.6	<0.4	15	17	19	<0.1	11	100	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W01-02 0-0.1	W01-02 0-0.1	06-05-19	W01 Buildings	654586	479	0	<0.001	0	0	0	0	0	0	0	7.8	<0.4	23	14	15	<0.1	9.4	34	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W01-03 0-0.1	W01-03 0-0.1	06-05-19	W01 Buildings	654586	700	0	<0.001	0	0	0	0	0	0	0	4.6	<0.4	11	16	14	<0.1	9.8	62	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W01-04 0-0.1	W01-04 0-0.1	06-05-19	W01 Buildings	654586	502	0	<0.001	0	0	0	0	0	0	0	4.4	<0.4	11	14	14	<0.1	8.7	190	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W01-05 0-0.1	W01-05 0-0.1	06-05-19	W01 Buildings	654586	591	0	<0.001	0	0	0	0	0	0	0	7	<0.4	18	23	25	<0.1	12	64	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
QC20190506-02	W01-05 0-0.1	06-05-19		654586	684	0	<0.001	0	0	0	0	0	-	0	7.2	<0.4	17	23	23	<0.1	10	45	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
QA20190506-02	QA20190506-02	06-05-19		217148	676	0	<0.001	-	-	-	-	-	-	-	5	<0.4	13	21	21	<0.1	8	46	-	-	<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
W01-06 0.5-0.6	W01-06 0.5-0.6	06-05-19	W01 Buildings	654586	753	0	<0.001	0	0	0	0	0	0	0	5.5	<0.4	16	11	18	<0.1	6.1	18	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W01-06 0-0.1	W01-06 0-0.1	06-05-19	W01 Buildings	654586	841	0	<0.001	0	0	0	0	0	0	0	2.6	<0.4	140	56	8.4	<0.1	130	88	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W01-07 0-0.1	W01-07 0-0.1	06-05-19	W01 Buildings	654586	701	0	<0.001	0	0	0	0	0	0	0	7.4	<0.4	17	19	19	<0.1	11	46	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W01-08 0-0.1	W01-08 0-0.1	06-05-19	W01 Buildings	654586	501	0	<0.001	0	0	0	0	0	0	0	8.9	<0.4	19	22	22	<0.1	14	68	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W01-09 0-0.1	W01-09 0-0.1	07-05-19	W01 Buildings	654586	702	0	<0.001	0	0	0	0	0	0	0	5.6	<0.4	15	13	16	<0.1	9.1	22	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
QC20190507-02	W01-09 0-0.1	07-05-19		654586	671	0	<0.001	0	0	0	0	0	-	0	5.3	<0.4	15	13	14	<0.1	8.5	21	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
QA20190507-02	QA20190507-02	07-05-19		217148	614	0	<0.001	-	-	-	-	-	-	-	4	<0.4	13	12	15	<0.1	8	17	-	-	<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
W01-10 0-0.1	W01-10 0-0.1	07-05-19	W01 Buildings	654586	714	0	<0.001	0	0	0	0	0	0	0	5.3	<0.4	15	11	16	<0.1	10	20	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W11-01 0.4-0.5	W10-01 0.4-0.5	15-07-19	W11 Buildings	665740	886	0	<0.001	0	0	0	0	0	0	0	<2	<0.4	6.4	<5	<5	<0.1	<5	13	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W11-01 0-0.1	W10-01 0-0.1	15-07-19	W11 Buildings	665740	854	0	<0.001	0	0	0	0	0	0	0	<2	<0.4	7	<5	<5	<0.1	<5	16	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W11-02 0-0.1	W10-02 0-0.1	15-07-19	W11 Buildings	665740	749	0	<0.001	0	0	0	0	0	0	0	<2	<0.4	7.1	<5	8.3	<0.1	<5	14	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W11-02 0.4-0.5	W10-03 0.2-0.3	15-07-19	W11 Buildings	665740	898	0	<0.001	0	0	0	0	0	0	0	<2	<0.4	9.8	6.6	15	<0.1	<5	25	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W11-03 0-0.1	W10-03 0-0.1	15-07-19	W11 Buildings	665740	829	0	<0.001	0	0	0	0	0	0	0	2.8	<0.4	11	6.2	13	<0.1	5.4	31	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W11-03 0.4-0.5	W10-04 0-0.1	15-07-19	W11 Buildings	665740	686	0	<0.001	0	0	0	0	0	0	0	<2	<0.4	6.7	<5	8.3	<0.1	<5	13	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W11-04 0-0.1	W10-01 0.4-0.5	15-07-19	W11 Buildings	665740	765	0	<0.001	0	0	0	0	0	0	0	<2	<0.4	5.7	<5	8.5	<0.1	<5	13	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W11-04 0.4-0.5	W10-01 0-0.1	15-07-19	W11 Buildings	665740	795	0	<0.001	0	0	0	0	0	0	0	2.8	<0.4	6.9	<5	6.9	<0.1	<5	12	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W11-05 0-0.1	W10-02 0-0.1	15-07-19	W11 Buildings	665740	832	0	<0.001	0	0	0	0	0	0	0	<2	<0.4	8.5	6.9	11	<0.1	<5	19	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
W11-05 0.4-0.5	W10-03 0.2-0.3	15-07-19	W11 Buildings	665740	744	0	<0.001	0	0	0	0	0	0	0	<2	<0.4	10	5.6	13	<0.1	<5	18	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

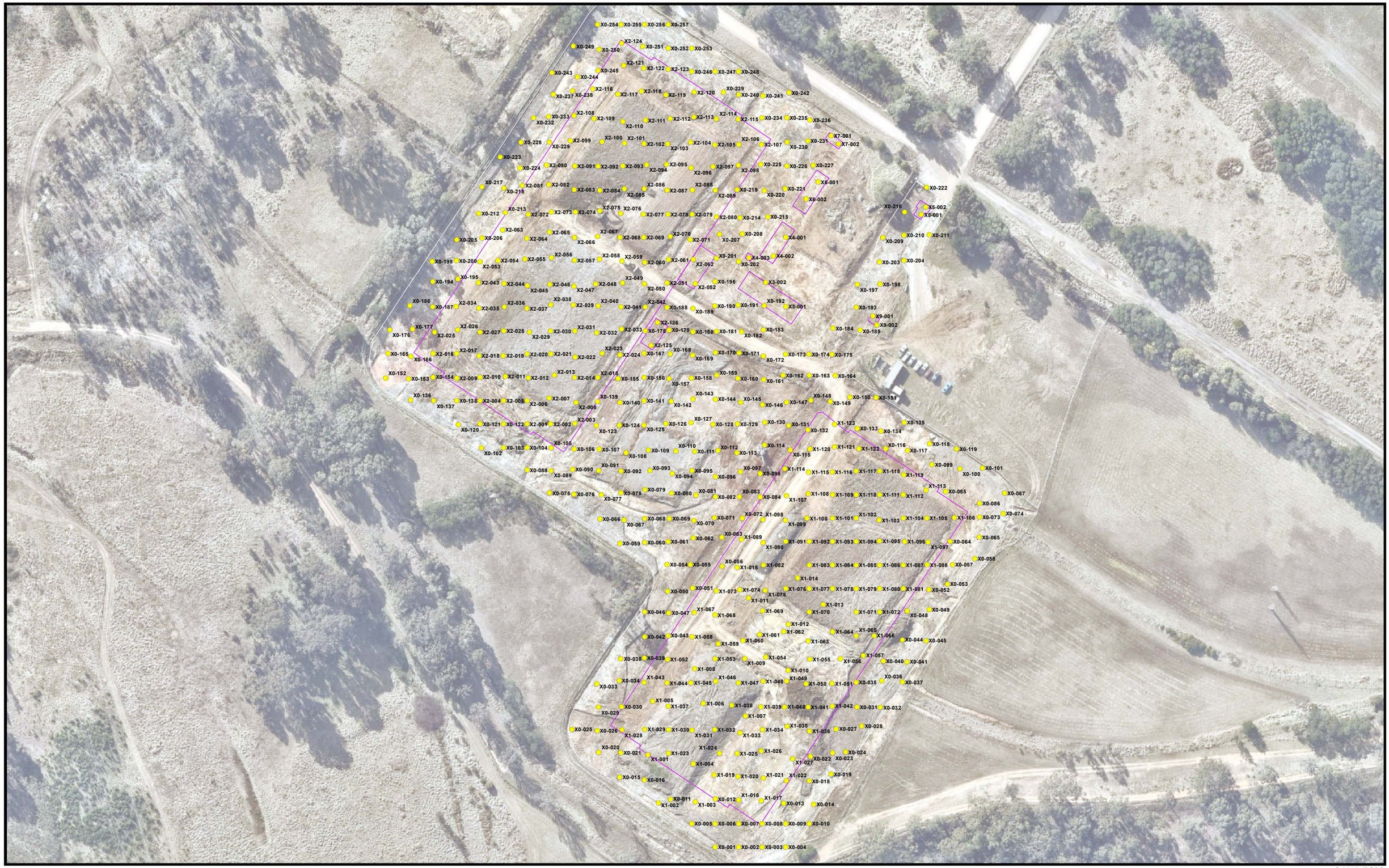
Table A: Soil Analytical Results
Project Number: 54020
Project Name: W Series Buildings - Central Precinct

								Organic																				PAH							
								Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene	Organochlorine Pesticides EPAVic	Other Organochlorine Pesticides EPAVic	C6-C9 Fraction	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)	Naphthalene	1,3,5-trinitrobenzene	1,3-dinitrobenzene	Nitrobenzene	2,4-dinitrotoluene	2,6-Dinitrotoluene	2,4,6-trinitrotoluene	2-nitrotoluene	3-nitrotoluene	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Carcinogenic PAHs as B(a)P TEQ	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene
								mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL								0.05	0.05	0.05	1	0.1	0.1	20	50	100	100	100	50	20	20	0.5	1	0.5	0.5			1	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5
NEPM 2013 EIL - Urban Residential (generic)																						170																							
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																300	2800		120		180																						0.7			
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																																													
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																													
NEPM 2013 Soil HIL A										300	20																															3	3	3	3		
NEPM 2013 Soil HSL A - Sensitive Setting																					110		45	3																						
Field_ID	**LocCode**	**Sampled_Date-Time**	**Matrix_Description**	**Lab_Report_Number**																																									
RR-01 0-0.1	RR-01 0-0.1	06-05-19	Paved Roads	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
RR-02 0-0.1	RR-02 0-0.1	06-05-19	Paved Roads	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
RR-03 0-0.1	RR-03 0-0.1	06-05-19	Paved Roads	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
RR-04 0.2-0.3	RR-04 0.2-0.3	06-05-19	Paved Roads	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
RR-07 0-0.1	RR-07 0-0.1	06-05-19	Paved Roads	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
QC20190506-01	RR-07 0-0.1	06-05-19		654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	-	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	<0.5
QA20190506-01	QA20190506-01	06-05-19		217148	<0.1	<0.1	<0.1	-	-	-	<25	<25	<100	<100	<50	<50	-	<25	<1	-	-	<1	<1	<1	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1
RR08 0-0.1	RR08 0-0.1	07-05-19	Paved Roads	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
RR09 0.2-0.3	RR09 0.2-0.3	07-05-19	Paved Roads	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
QC20190507-01	RR09 0.2-0.3	07-05-19		654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	-	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	<0.5
QA20190507-01	QA20190507-01	07-05-19		217148	<0.1	<0.1	<0.1	-	-	-	<25	<25	<100	<100	<50	<50	-	<25	<1	-	-	<1	<1	<1	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1
RR09 0-0.1	RR09 0-0.1	07-05-19	Paved Roads	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
RR11 0-0.1	RR11 0-0.1	07-05-19	Paved Roads	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
RR13 0-0.1	RR13 0-0.1	07-05-19	Paved Roads	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W01-01 0.2-0.3	W01-01 0.2-0.3	06-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W01-01 0-0.1	W01-01 0-0.1	06-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W01-02 0-0.1	W01-02 0-0.1	06-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W01-03 0-0.1	W01-03 0-0.1	06-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W01-04 0-0.1	W01-04 0-0.1	06-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W01-05 0-0.1	W01-05 0-0.1	06-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
QC20190506-02	W01-05 0-0.1	06-05-19		654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	-	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	<0.5
QA20190506-02	QA20190506-02	06-05-19		217148	<0.1	<0.1	<0.1	-	-	-	<25	<25	<100	<100	<50	<50	-	<25	<1	-	-	<1	<1	<1	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1
W01-06 0.5-0.6	W01-06 0.5-0.6	06-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W01-06 0-0.1	W01-06 0-0.1	06-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W01-07 0-0.1	W01-07 0-0.1	06-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W01-08 0-0.1	W01-08 0-0.1	06-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W01-09 0-0.1	W01-09 0-0.1	07-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
QC20190507-02	W01-09 0-0.1	07-05-19		654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	-	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	<0.5
QA20190507-02	QA20190507-02	07-05-19		217148	<0.1	<0.1	<0.1	-	-	-	<25	<25	<100	<100	<50	<50	-	<25	<1	-	-	<1	<1	<1	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1
W01-10 0-0.1	W01-10 0-0.1	07-05-19	W01 Buildings	654586	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	<1	<0.5	<0.5	-	-	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W11-01 0.4-0.5	W10-01 0.4-0.5	15-07-19	W11 Buildings	665740	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W11-01 0-0.1	W10-01 0-0.1	15-07-19	W11 Buildings	665740	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W11-02 0-0.1	W10-02 0-0.1	15-07-19	W11 Buildings	665740	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W11-02 0.4-0.5	W10-03 0.2-0.3	15-07-19	W11 Buildings	665740	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W11-03 0-0.1	W10-03 0-0.1	15-07-19	W11 Buildings	665740	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W11-03 0.4-0.5	W10-04 0-0.1	15-07-19	W11 Buildings	665740	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W11-04 0-0.1	W10-01 0.4-0.5	15-07-19	W11 Buildings	665740	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W11-04 0.4-0.5	W10-01 0-0.1	15-07-19	W11 Buildings	665740	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W11-05 0-0.1	W10-02 0-0.1	15-07-19	W11 Buildings	665740	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5
W11-05 0.4-0.5	W10-03 0.2-0.3	15-07-19	W11 Buildings	665740	<0.05	<0.05	<0.05	<1	<0.1	<0.1	<20	<50	<100	<100	<100	<50	<20	<20	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1.21	<0.5	<0.5

Table A: Soil Analytical Results
Project Number: 54020
Project Name: W Series Buildings - Central Precinct

												PCB								TPH				Volatile					
	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	PAHs (Total)	Pyrene	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	20	50	50	50	0.1	0.1	0.1	0.1	0.2	0.3
NEPM 2013 EIL - Urban Residential (generic)							170																					
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																							50	70	85			105
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																												
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																												
NEPM 2013 Soil HIL A									300									1							160			
NEPM 2013 Soil HSL A - Sensitive Setting							3																0.5	55				40

Field_ID	LocCode	Sampled_Date-Time	Matrix_Description	Lab_Report_Number																										
RR-01 0-0.1	RR-01 0-0.1	06-05-19	Paved Roads	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
RR-02 0-0.1	RR-02 0-0.1	06-05-19	Paved Roads	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
RR-03 0-0.1	RR-03 0-0.1	06-05-19	Paved Roads	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
RR-04 0.2-0.3	RR-04 0.2-0.3	06-05-19	Paved Roads	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
RR-07 0-0.1	RR-07 0-0.1	06-05-19	Paved Roads	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QC20190506-01	RR-07 0-0.1	06-05-19		654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QA20190506-01	QA20190506-01	06-05-19		217148	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<50	<100	<100	-	<0.2	<1	<0.5	<1	<2	<1
RR08 0-0.1	RR08 0-0.1	07-05-19	Paved Roads	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
RR09 0.2-0.3	RR09 0.2-0.3	07-05-19	Paved Roads	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QC20190507-01	RR09 0.2-0.3	07-05-19		654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QA20190507-01	QA20190507-01	07-05-19		217148	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<50	<100	<100	-	<0.2	<1	<0.5	<1	<2	<1
RR09 0-0.1	RR09 0-0.1	07-05-19	Paved Roads	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
RR11 0-0.1	RR11 0-0.1	07-05-19	Paved Roads	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
RR13 0-0.1	RR13 0-0.1	07-05-19	Paved Roads	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W01-01 0.2-0.3	W01-01 0.2-0.3	06-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W01-01 0-0.1	W01-01 0-0.1	06-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W01-02 0-0.1	W01-02 0-0.1	06-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W01-03 0-0.1	W01-03 0-0.1	06-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W01-04 0-0.1	W01-04 0-0.1	06-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W01-05 0-0.1	W01-05 0-0.1	06-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QC20190506-02	W01-05 0-0.1	06-05-19		654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QA20190506-02	QA20190506-02	06-05-19		217148	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<50	<100	<100	-	<0.2	<1	<0.5	<1	<2	<1
W01-06 0.5-0.6	W01-06 0.5-0.6	06-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W01-06 0-0.1	W01-06 0-0.1	06-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W01-07 0-0.1	W01-07 0-0.1	06-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W01-08 0-0.1	W01-08 0-0.1	06-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W01-09 0-0.1	W01-09 0-0.1	07-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QC20190507-02	W01-09 0-0.1	07-05-19		654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QA20190507-02	QA20190507-02	07-05-19		217148	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<50	<100	<100	-	<0.2	<1	<0.5	<1	<2	<1
W01-10 0-0.1	W01-10 0-0.1	07-05-19	W01 Buildings	654586	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W11-01 0.4-0.5	W10-01 0.4-0.5	15-07-19	W11 Buildings	665740	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W11-01 0-0.1	W10-01 0-0.1	15-07-19	W11 Buildings	665740	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W11-02 0-0.1	W10-02 0-0.1	15-07-19	W11 Buildings	665740	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W11-02 0.4-0.5	W10-03 0.2-0.3	15-07-19	W11 Buildings	665740	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W11-03 0-0.1	W10-03 0-0.1	15-07-19	W11 Buildings	665740	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W11-03 0.4-0.5	W10-04 0-0.1	15-07-19	W11 Buildings	665740	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W11-04 0-0.1	W10-01 0.4-0.5	15-07-19	W11 Buildings	665740	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W11-04 0.4-0.5	W10-01 0-0.1	15-07-19	W11 Buildings	665740	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W11-05 0-0.1	W10-02 0-0.1	15-07-19	W11 Buildings	665740	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
W11-05 0.4-0.5	W10-03 0.2-0.3	15-07-19	W11 Buildings	665740	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3



Source: Base Image - © Near Map 28-07-2015

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0 15 30 60 m

Scale: 1:1,480

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
A	Original Issue - R01	SE	20-11-2015

Legend:

- CHK001/6 Buildings
- CHK001/6 Building Concrete Footprint
- In-Site Sampling Locations

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Figure 5A: X Series Compound Layout and In-Situ Sample Locations

Client: Maryland Development Company

Project: Central Precinct

Job No: 50374 File Name: 50374_05A

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

					Metals & Metalloids								Polycyclic Aromatic Hydrocarbons																				Polychlorinated Biphenyls									
					Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (WHO)	Benzo(b,j)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k,)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Carcinogenic PAHs as BaP TPE	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	Total Positive PAHs	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	4,4-DDE	Aldrin
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					2.00	0.40	1.00	1.00	1.00	0.05	1.00	1.00	0.10	0.10	0.10	0.10	0.05	0.50	0.50	0.50		0.50		0.10	0.50	0.10	0.10	0.10	0.10		0.10	0.10	0.50			0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.05
NEPC 2013 EIL, EILs Aged Sediment (Ecological Significance)					40		140	85	470		50	230																			10													
NEPC 2013 EIL, EILs Aged Sediment (Urban Residential)					100		410	230	1100		270	770																			170													
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																	0.7[20]																									
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																	0.7[20]																									
NEPM 2013 Soil HIL A					100[20]	20	100[20]	6000	300[20]	40[21]	400	7400						3[20]													3[20]				300[20a]							1[20]		
Site Specific Criteria									230			200						3																									
NEPM 2013 Soil HSL A - Sensitive Setting																															3[20]												
Field_ID	Date	SampleCode	Lab Number	Depth																																							
40-001_0-0.2	10-06-15	515-800331	463565	0-0.2	5.6	<0.4	23	27	45	<0.1	25	89	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-002 0-0-0.1	10-06-15	515-5405371	471226	0-0.1	5.7	<0.4	15	17	9.6	0.7	8.7	36	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	0.7	<0.5	1.3	<0.5	0.6095[20]	<0.5	<0.5	<0.5	<0.5	1.1	3.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-002 0.2-0.4	10-06-15	515-5405372	471226	0.2-0.4	4.6	<0.4	11	15	14	0.5	<5	12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-003_0-0.1	10-06-15	515-800334	463565	0-0.1	10	<0.4	26	18	24	<0.1	6.5	38	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-004 0.0-0.2	10-06-15	515-5405373	471226	0-0.2	4.6	<0.4	14	15	15	0.3	5.1	42	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-004 0.3-0.5	10-06-15	515-5405374	471226	0.3-0.5	6.2	<0.4	14	17	14	0.3	<5	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-005_0-0.3	10-06-15	515-4001017	463565	0-0.3	3.5	<0.4	61	83	15	<0.1	53	82	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
~~40-006_0-7.0-8~~	~~10-06-15~~	~~515-4000389~~	~~463565~~	~~0-7.0-8~~	~~18~~	~~<0.4~~	~~26~~	~~25~~	~~820~~	~~<0.1~~	~~5.2~~	~~64~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~0.6~~	~~1.2~~	~~-~~	~~<0.5~~	~~-~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<1.21[20]~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~-~~	~~<0.1~~	~~-~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.05~~	~~<0.05~~
40-006_0-3.0.5	10-06-15	515-800342	463565	0.3-0.5	3.1	<0.4	47	25	8.8	<0.1	40	59	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-006_0-0.2	10-06-15	515-800341	463565	0-0.2	6.8	<0.4	30	20	14	<0.1	17	81	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-007 0.0-0.1	01-09-15	515-5401484	470781	0-0.1	18	<0.4	15	20	20	<0.1	6.9	27	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-007 0.1-0.3	01-09-15	515-5401485	470781	0.1-0.3	7.5	<0.4	11	19	12	<0.1	5.1	17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-008 0.0-0.15	01-09-15	515-5401486	470781	0-0.15	9.8	<0.4	12	13	7.9	<0.1	<5	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-008 0.4-0.6	01-09-15	515-5401488	470781	0.4-0.6	7.2	<0.4	12	12	12	<0.1	5.9	190	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-009 0.15-0.3	01-09-15	515-5401491	470781	0.15-0.3	20	<0.4	25	16	29	<0.1	<5	17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-009 0.4-0.6	01-09-15	515-5401492	470781	0.4-0.6	13	<0.4	16	12	15	<0.1	<5	42	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-010 0.0-0.1	01-09-15	515-5401494	470781	0-0.1	9	<0.4	10	30	12	<0.1	16	52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-010 0.3-0.5	01-09-15	515-5401495	470781	0.3-0.5	15	<0.4	18	19	11	<0.1	6.4	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-011 0.0-0.1	01-09-15	515-5401496	470781	0-0.1	8.7	<0.4	16	32	14	<0.1	18	53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-011 0.3-0.5	01-09-15	515-5401497	470781	0.3-0.5	13	<0.4	15	18	15	<0.1	<5	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-012 0.0-0.1	01-09-15	515-5401498	470781	0-0.1	11	<0.4	13	16	7.3	<0.1	<5	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-012 0.2-0.4	01-09-15	515-5401499	470781	0.2-0.4	14	<0.4	13	20	15	<0.1	<5	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-013 0.15-0.3	03-09-15	515-5405376	471226	0.15-0.3	5.4	<0.4	14	15	9.2	0.2	7.7	25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC97	03-09-15	515-5405445	471226	0.15-0.3	10	<0.4	32	19	11	<0.1	22	29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC97A	03-09-15	133730-4	133730		<4	<0.4	33	14	5	<0.1	29	47	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.172[20]	<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
40-013 0.3-0.5	03-09-15	515-5405377	471226	0.3-0.5	6.4	<0.4	25	20	9.6	0.2	19	53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-014 0.0-0.2	03-09-15	515-5405379	471226	0-0.2	7.5	<0.4	29	19	13	0.3	22	51	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-014 0.3-0.5	03-09-15	515-5405380	471226	0.3-0.5	6.5	<0.4	13	23	12	0.1	5	17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-015 0.0-0.1	01-09-15	515-5405502	470781	0-0.1	8.2	<0.4	12	15	10	<0.1	<5	15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-015 0.7-0.9	01-09-15	515-5405503	470781	0.7-0.9	8.3	<0.4	11	15	12	<0.1	<5	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-016 0.0-0.1	01-09-15	515-5405500	470781	0-0.1	7.7	<0.4	20	17	11	<0.1	14	33	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-016 0.5-0.7	01-09-15	515-5405501	470781	0.5-0.7	12	<0.4	15	24	13	<0.1	5.4	19	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-018 0.0-0.1	03-09-15	515-5405381	471226	0-0.1	6.7	<0.4	16	16	33	0.1	<5	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-018 0.2-0.4	03-09-15	515-5405382	471226	0.2-0.4	5.8	<0.4	12	15	8.5	<0.1	<5	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-019 0.0-0.1	03-09-15	515-5405383	471226	0-0.1	6.9	<0.4	16	18	9	<0.1	<5	16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-019 0.1-0.3	03-09-15	515-5405384	471226	0.1-0.3	6.5	<0.4	12	20	34	<0.1	6.9	29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
~~40-020 0.0-0.5~~	~~01-09-15~~	~~515-5405504~~	~~470781~~	~~0-0.5~~	~~28~~	~~<0.4~~	~~44~~	~~65~~	~~28~~	~~<0.1~~	~~8.4~~	~~149~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~0.6~~	~~1.2~~	~~-~~	~~<0.5~~	~~-~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<1.21[20]~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~<0.5~~	~~-~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.05~~	~~<0.05~~
40-020 0.2-0.4	01-09-15	515-5405505	470781	0.2-0.4	9.7	<0.4	13	23	6.2	<0.1	7.2	28	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-021 0-0.15	15-10-15	515-Cc11255	476042	0-0.15	6.8	<0.4	26	18	14	<0.1	17	59	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-021 0.15-0.35	15-10-15	515-Cc11256	476042	0.15-0.35	6.5	<0.4	30	18	12	<0.1	21	65	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-022 0.0-0.1	03-09-15	515-5405385	471226	0-0.1	4.9	<0.4	11	14	20	<0.1	6.2	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-022 0.1-0.3	03-09-15	515-5405386	471226	0.1-0.3	8.1	<0.4	11	18	14	<0.1	8.4	32	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-023 0.0-0.15	03-09-15	515-5405387	471226	0-0.15	5.8	<0.4	15	18	9.4	<0.1	7.8	20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-023 0.15-0.3	03-09-15	515-5405388	471226	0.15-0.3	5.5	<0.4	13	15	7.7	<0.1	5.4	17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-024 0.0-0.2	03-09-15	515-5405390	471226	0-0.2	4	<0.4	13	12	<5	0.1	5.8	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-024 0.2-0.4	03-09-15	515-5405391	471226	0.2-0.4	7.3	<0.4	11	18	6.1	<0.1	8.8	32	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-025 0.0-0.2	03-09-15	515-5405507	470781	0-0.2	6.8	<0.4	15	13	24	<0.1	6.7	17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-025 0.3-0.5	01-09-15	515-5405507	470781	0.3-0.5	10	<0.4	23	23	18	<0.1	21	53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[20]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
40-026 0.0-0.2	01-09-15	515-5405508	470781	0-0.2	6.8	<0.4	15	12	17	<0.1	9.5	150	<0.5

Table App C
Project Number 54782
Stage 2c Samples within X series

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Table App C
Project Number 54782
Stage 2c Samples within X series

					Metals & Metalloids							Polycyclic Aromatic Hydrocarbons																				Polychlorinated Biphenyls											
					Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benzo[a]pyrene	Benzo[a]pyrene TEQ (lower bound)*	Benzo[a]pyrene TEQ (medium bound) *	Benzo[a]pyrene TEQ (upper bound)*	Benzo[a]pyrene TEQ (WHO)	Benzo[b,j]fluoranthene	Benzo[b,k]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Carcinogenic PAHs as BaP TPE	Indeno[1,2,3-c,d]pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	Total Positive PAHs	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	4,4'-DDE	Aldrin
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					2.00	0.40	1.00	1.00	1.00	0.05	1.00	1.00	0.10	0.10	0.10	0.10	0.05	0.50	0.50	0.50	0.50	0.50	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.05
NEPC 2013 EIL, ElLs Aged Sediment (Ecological Significance)					40		140	85	470		50	230																				10											
NEPC 2013 EIL, ElLs Aged Sediment (Urban Residential)					100		410	230	1100		270	770																				170											
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																	0.7[m]																									
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																	0.7[m]																									
NEPM 2013 Soil HIL A					100[n]	20	100[n]	6000	300[m]	40[r]	400	7400						3[m]													8[m]					300[m]						1[m]		
Site Specific Criteria									250			200						3																									
NEPM 2013 Soil HSL A - Sensitive Setting																																3[m]											
Field_ID	Date	SampleCode	Lab Number	Depth																																						
A0_099 0.0-0.15	06-08-15	515-Au05881	468034	0-0.15	7.4	<0.4	16	19	15	<0.1	6.5	31	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A0_099 0.15-0.35	06-08-15	515-Au05882	468034	0.15-0.35	4	<0.4	11	16	23	<0.1	5.1	22	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A0-099 0.15-0.3	31-08-15	515-Au26584	470534	0.15-0.3	6.1	<0.4	11	9.3	8.9	<0.1	6.4	8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A0-099 0-0.15	31-08-15	515-Au26583	470534	0-0.15	4.8	<0.4	11	8.9	14	<0.1	6.2	8.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC70	31-08-15	515-Au26704	470534	0-0.15	6.6	<0.4	16	9.5	13	<0.1	<5	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QCA70	31-08-15	133542-1	133542		5	<0.4	16	9	21	<0.1	7	11	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.172[m]	<0.1	<0.1	<0.1	<0.1	-	0[m]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A0-100 0.15-0.3	31-08-15	515-Au26590	470534	0.15-0.3	4.2	<0.4	11	13	8.1	<0.1	6.3	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A0-100 0-0.15	31-08-15	515-Au26589	470534	0-0.15	5.6	<0.4	24	24	7.4	<0.1	23	66	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A0-101 0.4-0.6	31-08-15	515-Au26588	470534	0.4-0.6	8.5	<0.4	14	24	13	<0.1	15	38	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	1.2	-	0.5	-	0.6	0.6	0.6	<0.5	1.4	<0.5	0.697[m]	0.5	<0.5	3	1.2	5.4	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A0-101 0-0.15	31-08-15	515-Au26586	470534	0-0.15	8	<0.4	13	24	14	<0.1	15	45	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-01 0-0.1	12-02-15	515-Fe09298	447301	0-0.1	4	<0.4	79	29	13	<0.05	68	69	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05
A1-02 0-0.1	12-02-15	515-Fe09300	447301	0-0.1	5.6	<0.4	23	31	22	<0.05	25	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-03 0-0.1	12-02-15	515-Fe09302	447301	0-0.1	4.5	<0.4	13	13	12	<0.05	<5	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-04 0-0.1	12-02-15	515-Fe09304	447301	0-0.1	5.3	<0.4	20	18	11	<0.05	13	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
A1-05 0-0.2	12-02-15	515-Fe09306	447301	0-0.2	6.2	<0.4	21	13	38	<0.05	5.4	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-06 0-0.1	12-02-15	515-Fe09308	447301	0-0.1	5.3	<0.4	27	18	11	<0.05	19	46	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
A1-07 0-0.1	12-02-15	515-Fe09310	447301	0-0.1	6.6	<0.4	22	17	88	<0.05	11	23	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
A1-08 0.2-0.4	12-02-15	515-Fe09313	447301	0.2-0.4	4.9	<0.4	16	15	12	<0.05	<5	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-09 0-0.1	12-02-15	515-Fe09315	447301	0-0.1	6.5	<0.4	16	16	10	<0.05	<5	22	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
A1-10 0-0.1	12-02-15	515-Fe09317	447301	0-0.1	5.3	<0.4	15	18	12	<0.05	<5	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
A1-11 0-0.1	12-02-15	515-Fe09319	447301	0-0.1	5	<0.4	15	17	11	<0.05	6	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-12 0-0.1	12-02-15	515-Fe09321	447301	0-0.1	6.7	<0.4	23	19	16	<0.05	7.8	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05
QC01	12-02-15	515-Fe09330	447301	0-0.1	4.9	<0.4	14	15	11	<0.05	<5	15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
QC01A	12-02-15	123610-1	123610		4	<0.4	11	14	11	<0.1	2	12	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.172[m]	<0.1	<0.1	<0.1	<0.1	-	0[m]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A1-13 0-0.1	12-02-15	515-Fe09323	447301	0-0.1	4.1	<0.4	12	13	9	<0.05	<5	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
A1-14 0-0.1	12-02-15	515-Fe09325	447301	0-0.1	7.1	<0.4	34	17	14	<0.05	18	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-15 0-0.3	12-02-15	515-Fe09328	447301	0-0.3	9.2	<0.4	27	20	32	<0.05	<5	21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
A1-016_0-0.2	30-06-15	515-J003541	463565	0-0.2	6.4	<0.4	15	15	11	<0.1	<5	22	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-017 0.1-0.3	03-09-15	515-Se05392	471226	0.1-0.3	4.9	<0.4	14	15	12	<0.1	5.7	29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-017 0.3-0.5	03-09-15	515-Se05393	471226	0.3-0.5	4.9	<0.4	13	14	11	<0.1	5.1	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-018 0.0-0.1	03-09-15	515-Se05394	471226	0-0.1	7.3	<0.4	13	15	7.3	<0.1	<5	17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-019 0.2-0.4	03-09-15	515-Se05395	471226	0.2-0.4	7.9	<0.4	17	17	21	<0.1	6.8	23	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-020 0.0-0.1	03-09-15	515-Se05396	471226	0-0.1	13	<0.4	26	17	39	<0.1	<5	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-020 0.2-0.4	03-09-15	515-Se05397	471226	0.2-0.4	4.9	<0.4	15	17	12	<0.1	7.7	25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-021 0.0-0.1	03-09-15	515-Se05398	471226	0-0.1	4.1	<0.4	19	15	7.5	<0.1	13	19	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-021 0.2-0.4	03-09-15	515-Se05399	471226	0.2-0.4	4.4	<0.4	12	14	8.1	<0.1	<5	11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC96	03-09-15	515-Se05444	471226	0.2-0.4	4.9	<0.4	8.6	14	15	<0.1	<5	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC96A	03-09-15	133730-3	133730		4	<0.4	13	13	11	<0.1	4	14	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.172[m]	<0.1	<0.1	<0.1	<0.1	-	0[m]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A1-022 0.0-0.1	03-09-15	515-Se05400	471226	0-0.1	6.6	<0.4	21	17	8.6	<0.1	14	45	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-022 0.2-0.4	03-09-15	515-Se05401	471226	0.2-0.4	5.6	<0.4	12	14	13	<0.1	<5	12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-023 0.1-0.3	15-10-15	515-Cv11258	476042	0.1-0.3	7.1	<0.4	17	17	8.9	<0.1	<5	23	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-023 0-0.1	15-10-15	515-Cv11257	476042	0-0.1	7.7	<0.4	17	17	8.6	<0.1	14	45	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-024 0.2-0.4	03-09-15	515-Se05402	471226	0.2-0.4	4.9	<0.4	13	14	11	<0.1	5.1	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-025 0.0-0.1	03-09-15	515-Se05406	471226	0-0.1	6	<0.4	22	16	9.7	<0.1	14	30	<0.5	<0.5	<0.5	0.9	3.3	1.7	2	2.2	-	1.3	-	0.7	1.1	1.1	<0.5	1.3	<0.5	1.958[m]	0.6	<0.5	<0.5	1.4	9.7	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC95	03-09-15	515-Se05443	471226	0-0.1	4.6	<0.4	30	17	13	<0.1	22	39	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC95A	03-09-15	133730-2	133730		<4	<0.4	16	14	9	<0.1	11	19	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.172[m]	<0.1	<0.1	<0.1	<0.1	-	0[m]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A1-026 0.2-0.4	03-09-15	515-Se05407	471226	0.2-0.4	7.8	<0.4	13	15	24	<0.1	6.3	19	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-026 0.0-0.15	03-09-15	515-Se05408	471226	0-0.15	9.2	<0.4	31	20	15	<0.1	17	29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-027 0.0-0.1	03-09-15	515-Se05410	471226	0-0.1	8.8	<0.4	16	17	14	<0.1	<5	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-027 0.3-0.5	03-09-15	515-Se05411	471226	0.3-0.5	6.2	<0.4	9.9	15	9.3	<0.1	<5	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-028 0.0-0.2	21-09-15	515-Se05553	470781	0-0.2	7.5	<0.4	12	16	9.7	<0.1	6.9	21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-028 0.3-0.5	21-09-15	515-Se05554	470781	0.3-0.5	8.7	<0.4	11	28	13	<0.1	11	35	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-029 0.2-0.4	15-10-15	515-Cv11261	476042	0.2-0.4	5.5	<0.4	14	14	7.8	<0.1	5.3	20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[m]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
A1-029 0-0.2	15-10-15	515-Cv11260	476042	0-0.2	6.6	<0.4	20	16	13	<0.1	14	27	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5

Table App C
Project Number 54782
Stage 2c Samples within X series

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			Metals & Metalloids								Polycyclic Aromatic Hydrocarbons																				Polychlorinated Biphenyls											
			Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benzo[a]pyrene	Benzo[a]pyrene TEQ (lower bound)*	Benzo[a]pyrene TEQ (medium bound) *	Benzo[a]pyrene TEQ (upper bound)*	Benzo[a]pyrene TEQ (WHO)	Benzo[b,j]fluoranthene	Benzo[b,k]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Carcinogenic PAHs as BaP* TPE	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	Total Positive PAHs	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	4,4'-DDE	Aldrin
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2.00	0.40	1.00	1.00	1.00	0.05	1.00	1.00	0.10	0.10	0.10	0.10	0.05	0.50	0.50	0.50		0.50									0.10	0.10	0.10	0.50		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.05
NEPC 2013 ESL, Eltis Aged Sediment (Ecological Significance)			40		140	85	470		50	230																				10											
NEPC 2013 ESL, Eltis Aged Sediment (Urban Residential)			100		410	230	1100		270	770																				170											
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil															0.7[m]																									
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil															0.7[m]																									
NEPM 2013 Soil HIL A			100[a]	20	100[d]	6000	300[e]	40[c]	400	7400						3[m]												3[n]				300[m]								1[m]		
Site Specific Criteria							230			200						3																									
NEPM 2013 Soil HSL A - Sensitive Setting																														3[m]											
Field_ID	Date	SampleCode	Lab Number	Depth																																					
X1-094 0.3-0.5	27-08-15	MES-Au24439	470301	0.3-0.5	8.1	<0.4	27	25	12	<0.1	22	42	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-094 1.7-1.9	27-08-15	MES-Au24440	470301	1.7-1.9	7.3	<0.4	15	11	19	<0.1	9.3	27	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-095 0.15-0.3	27-08-15	MES-Au24437	470301	0.15-0.3	7	<0.4	22	25	24	<0.1	19	39	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-095 1.2-1.4	27-08-15	MES-Au24438	470301	1.2-1.4	10	<0.4	29	17	12	<0.1	7.6	39	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-096 0.0-0.15	27-08-15	MES-Au24435	470301	0-0.15	5.4	<0.4	18	16	7.2	<0.1	6.1	23	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-096 0.8-1.0	27-08-15	MES-Au24436	470301	0.8-1	5.6	<0.4	25	22	17	<0.1	22	39	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-097 0.15-0.3	27-08-15	MES-Au24433	470301	0.15-0.3	6.7	<0.4	18	17	14	<0.1	12	27	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-097 0.8-1.0	27-08-15	MES-Au24434	470301	0.8-1	8.6	<0.4	24	20	17	<0.1	8.5	31	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-098 0.0-0.15	02-09-15	SES-Se031580	470781	0-0.15	8.5	<0.4	22	19	11	<0.1	14	21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-098 0.2-0.4	01-09-15	SES-Se031581	470781	0.2-0.4	7.2	<0.4	14	17	10	<0.1	8.6	17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-099 0.0-0.2	02-09-15	SES-Se031575	470968	0-0.2	7	<0.4	15	16	18	<0.1	9.8	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC90	02-09-15	SES-Se031307	470968	0-0.2	7.5	<0.4	21	22	16	<0.1	12	22	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC90A	02-09-15	133709-2	133709		5	<0.4	16	14	21	<0.1	9	25	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.172[o]	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[o]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1
X1-099 0.5-0.7	02-09-15	SES-Se031576	470968	0.5-0.7	5.6	<0.4	13	17	21	<0.1	11	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-100 0.0-0.15	01-09-15	SES-Se031582	470781	0-0.15	8.3	<0.4	18	17	14	<0.1	9.7	21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-100 0.15-0.3	01-09-15	SES-Se031583	470781	0.15-0.3	9	<0.4	15	11	<0.1	<5	19	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-101 0.0-0.15	01-09-15	MES-Au24431	470301	0-0.15	5.7	<0.4	15	16	14	<0.1	7.8	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-101 0.8-1.0	27-08-15	MES-Au24432	470301	0.8-1	7.8	<0.4	29	22	12	<0.1	21	39	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-102 0.15-0.3	27-08-15	MES-Au24429	470301	0.15-0.3	6.1	<0.4	22	18	13	<0.1	12	33	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-102 0.8-1.0	27-08-15	MES-Au24430	470301	0.8-1	5.7	<0.4	19	18	12	<0.1	14	40	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-103 0.3-0.5	27-08-15	MES-Au24427	470301	0.3-0.5	4.7	<0.4	22	18	12	<0.1	15	31	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-103 1.1-1.3	27-08-15	MES-Au24428	470301	1.1-1.3	6.2	<0.4	20	17	19	<0.1	7.1	25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-104 0.0-0.15	01-09-15	MES-Au24425	470301	0-0.15	6.2	<0.4	29	19	11	<0.1	20	46	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-104 1.2-1.5	27-08-15	MES-Au24426	470301	1.2-1.5	6.3	<0.4	24	18	12	<0.1	16	67	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<1.21[o]	<0.5	<0.5	<0.5	0.5	1.2	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-105 0.0-0.2	27-08-15	MES-Au24423	470301	0-0.2	5.8	<0.4	17	16	12	<0.1	13	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-105 0.5-0.7	27-08-15	MES-Au24424	470301	0.5-0.7	6.2	<0.4	21	17	12	<0.1	13	30	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-106 0.3-0.5	31-08-15	SES-Au26611	470534	0.3-0.5	5.2	<0.4	14	13	11	<0.1	7.1	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-106 0-0.2	31-08-15	SES-Au26610	470534	0-0.2	4.7	<0.4	14	14	11	<0.1	8.8	77	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-107 0.0-0.2	01-09-15	SES-Se031585	470781	0-0.2	8.3	<0.4	21	18	10	<0.1	14	22	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-107 0.2-0.4	01-09-15	SES-Se031586	470781	0.2-0.4	10	<0.4	15	18	23	<0.1	7.5	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC84	01-09-15	SES-Se031654	470781	0.2-0.4	9.8	<0.4	15	18	18	<0.1	7.9	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC84A	01-09-15	133623-4	133623		5	<0.4	15	14	20	<0.1	7	23	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.172[o]	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[o]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1
X1-108 0.0-0.2	01-09-15	SES-Se031587	470781	0-0.2	6.7	<0.4	19	18	13	<0.1	11	30	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-108 0.2-0.4	01-09-15	SES-Se031588	470781	0.2-0.4	7.7	<0.4	18	18	20	<0.1	11	32	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-109 0.3-0.5	27-08-15	MES-Au24421	470301	0.3-0.5	6.4	<0.4	21	18	16	<0.1	11	31	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-109 0.7-0.9	27-08-15	MES-Au24422	470301	0.7-0.9	6.7	<0.4	22	18	16	<0.1	8.1	26	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-110 0.0-0.15	02-09-15	SES-Se032419	470781	0-0.15	5.1	<0.4	21	15	13	<0.1	16	44	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-110 0.6-0.8	27-08-15	MES-Au24420	470301	0.6-0.8	5.7	<0.4	23	18	11	<0.1	15	35	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-111 0.15-0.3	27-08-15	MES-Au24417	470301	0.15-0.3	6.4	<0.4	21	23	15	<0.1	15	37	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-111 0.8-1.0	27-08-15	MES-Au24418	470301	0.8-1	6.3	<0.4	17	12	14	<0.1	12	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-112 0.15-0.3	27-08-15	MES-Au24415	470301	0.15-0.3	6.3	<0.4	24	17	13	<0.1	15	40	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-112 0.8-1.0	27-08-15	MES-Au24414	470301	0.8-1	5.8	<0.4	20	19	11	<0.1	11	29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-113 0.0-0.3	31-08-15	SES-Au26619	470534	0.0-0.3	5.4	<0.4	21	8	9	<0.1	5.2	8.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-113 0-0.1	31-08-15	SES-Au26578	470534	0-0.1	2.9	<0.4	27	11	7.9	<0.1	15	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC72	31-08-15	SES-Au26706	470534	0-0.1	4.9	<0.4	20	7.4	8.9	<0.1	<5	11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
QC72	31-08-15	133542-3	133542		<4	<0.4	18	13	12	<0.1	6	17	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.172[o]	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[o]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1
X1_114 0.0-0.15	06-08-15	SES-Au05915	468034	0-0.15	8.2	<0.4	16	19	16	<0.1	7.7	38	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1_114 0.15-0.3	06-08-15	SES-Au05916	468034	0.15-0.3	6.1	<0.4	14	17	21	<0.1	6.8	29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-115 0.0-0.15	01-09-15	SES-Se031590	470781	0-0.15	8	<0.4	18	19	14	<0.1	11	35	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-115 0.2-0.4	01-09-15	SES-Se031591	470781	0.2-0.4	7.7	<0.4	16	19	12	<0.1	9	28	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
X1-116 0.0-0.1	01-09-15	SES-Se031592	470781	0-0.1	6.5	<0.4	19	19	12	<0.1	11	30	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[o]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1

Table App C
Project Number 54782
Stage 2c Samples within X series

					Organochlorine Pesticides																					TPHs (NEPC 1999)					TRHs (NEPC 2013)						BTEX						Nitrobenzenes	
					Aldrin + Dieldrin (Sum of Total)	Dieldrin	DDD	DDT	Alpha-BHC	DDT+DDE+DDD (Sum of Total)	beta-BHC	delta-BHC	alpha-Chlordane	gamma-Chlordane	Chlordane	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Hexachlorobenzene	Lindane	Methoxychlor	Toxaphene	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C16-C34 Fraction	>C34-C40 Fraction	>C16-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C16 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	1,3,5-trinitrobenzene	1,3-dinitrobenzene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.05	0.05	0.05	0.05	0.05		0.05	0.05			0.10	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.00	20.00	20.00	50.00	50.00	50.00	50.00	100.00	100.00	50.00	20.00	20.00	0.10	0.10	0.10	0.20	0.10	0.30	0.10	0.10
NEPC 2013 EIL, ElLs Aged Sediment (Ecological Significance)								3																																					
NEPC 2013 EIL, ElLs Aged Sediment (Urban Residential)								180																																					
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																																260[A]			25[A]	125[A]	125[A]	10[A]	1.5[A]	10[A]			10[A]		
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																120[A]	300[A]	2800[A]	120[A]	100[A]	180[A]	10[A]	30[A]	85[A]			105[A]		
NEPM 2013 Soil HSL A		6								240					50				10			6		10		300	20				280			260	50	50	0.7	NL	480			110		
Site Specific Criteria		6																															4500	6300										
NEPM 2013 Soil HSL A - Sensitive Setting																																			110[HSL]		45[HSL]	0.5[B]	55[B]			40[B]		
Field_ID	Date	SampleCode	Lab Number	Depth																																									
					XG Samples																																									
XI-001_0-0.2	10-06-15	515-X00331	463565	0-0.2	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-002 0-0-0.1	03-09-15	515-Sx05371	471226	0-0.1	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-002 0.2-0.4	03-09-15	515-Sx05372	471226	0.2-0.4	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-003_0-0.1	10-06-15	515-X00334	463565	0-0.1	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-004 0.0-0.2	03-09-15	515-Sx05373	471226	0-0.2	0.085[B]	0.06	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-004 0.3-0.5	03-09-15	515-Sx05374	471226	0.3-0.5	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-005_0.1-0.3	10-06-15	515-X00337	463565	0.1-0.3	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
~~XI-005_0.7-0.8~~	~~10-06-15~~	~~515-X00339~~	~~463565~~	~~0.7-0.8~~	~~<0.1[B]~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.1[B]~~	~~<0.05~~	~~<0.05~~	~~-~~	~~-~~	~~<0.1~~	~~<0.05~~	~~-~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<1~~	~~<20~~	~~<20~~	~~<50~~	~~<50~~	~~<50~~	~~<50~~	~~<100~~	~~<100~~	~~<50~~	~~<20~~	~~<20~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.2~~	~~<0.1~~	~~<0.3~~	~~<1~~	~~<0.5~~
XI-006_0-3-0.5	10-06-15	515-X00342	463565	0.3-0.5	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-006_0-0.2	10-06-15	515-X00341	463565	0-0.2	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-007 0.0-0.1	01-09-15	515-Sx01484	470781	0-0.1	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-007 0.1-0.3	01-09-15	515-Sx01485	470781	0.1-0.3	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-008 0.0-0.15	03-09-15	515-Sx05376	471226	0-0.15	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-008 0.4-0.6	01-09-15	515-Sx01488	470781	0.4-0.6	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-009 0.15-0.3	01-09-15	515-Sx01491	470781	0.15-0.3	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-009 0.4-0.6	01-09-15	515-Sx01492	470781	0.4-0.6	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-010 0.0-0.1	01-09-15	515-Sx01494	470781	0-0.1	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	0.1	1.8	0.2	2	<1	<0.5
XI-010 0.3-0.5	01-09-15	515-Sx01495	470781	0.3-0.5	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-011 0.0-0.1	01-09-15	515-Sx01496	470781	0-0.1	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	76	61	140	<50	110	<100	<50	<20	<20	<0.1	<0.1	<0.1	0.5	<0.1	0.6	<1	<0.5
XI-011 0.3-0.5	01-09-15	515-Sx01497	470781	0.3-0.5	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-012 0.0-0.1	01-09-15	515-Sx01498	470781	0-0.1	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-012 0.2-0.4	01-09-15	515-Sx01499	470781	0.2-0.4	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-013 0.15-0.3	03-09-15	515-Sx05376	471226	0.15-0.3	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC97	03-09-15	515-Sx06445	471226	0.15-0.3	0.085[B]	0.06	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC97A	03-09-15	133730-4	133730		<0.2[B]	<0.1	<0.1	<0.1	<0.1	<0.3[B]	<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	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
XI-013 0.3-0.5	03-09-15	515-Sx05377	471226	0.3-0.5	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-014 0.0-0.2	03-09-15	515-Sx05379	471226	0-0.2	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-014 0.3-0.5	03-09-15	515-Sx05380	471226	0.3-0.5	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-015 0.0-0.1	01-09-15	515-Sx01502	470781	0-0.1	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-015 0.7-0.9	01-09-15	515-Sx01503	470781	0.7-0.9	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-016 0.0-0.1	01-09-15	515-Sx01500	470781	0-0.1	0.085[B]	0.06	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-016 0.5-0.7	01-09-15	515-Sx01501	470781	0.5-0.7	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-018 0.0-0.1	03-09-15	515-Sx05381	471226	0-0.1	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-018 0.2-0.4	03-09-15	515-Sx05382	471226	0.2-0.4	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-019 0.0-0.1	03-09-15	515-Sx05383	471226	0-0.1	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-019 0.1-0.3	03-09-15	515-Sx05384	471226	0.1-0.3	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
~~XI-020 0.0-0.1~~	~~10-06-15~~	~~515-X00504~~	~~470781~~	~~0-0.1~~	~~<0.1[B]~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.1[B]~~	~~<0.05~~	~~<0.05~~	~~-~~	~~-~~	~~<0.1~~	~~<0.05~~	~~-~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<0.05~~	~~<1~~	~~<20~~	~~<20~~	~~<50~~	~~<50~~	~~<50~~	~~<50~~	~~<100~~	~~<100~~	~~<50~~	~~<20~~	~~<20~~	~~<0.1~~	~~<0.1~~	~~<0.1~~	~~<0.2~~	~~<0.1~~	~~<0.3~~	~~<1~~	~~<0.5~~
XI-020 0.2-0.4	01-09-15	515-Sx01505	470781	0.2-0.4	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-021 0-0.15	15-10-15	515-Cx11255	476042	0-0.15	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-021 0.15-0.35	15-10-15	515-Cx11256	476042	0.15-0.35	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-022 0.0-0.1	03-09-15	515-Sx05385	471226	0-0.1	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-022 0.1-0.3	03-09-15	515-Sx05386	471226	0.1-0.3	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-023 0.0-0.15	03-09-15	515-Sx05387	471226	0-0.15	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-023 0.15-0.3	03-09-15	515-Sx05388	471226	0.15-0.3	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-024 0.0-0.2	03-09-15	515-Sx05390	471226	0-0.2	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-024 0.2-0.4	03-09-15	515-Sx05391	471226	0.2-0.4	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-025 0.0-0.2	01-09-15	515-Sx01506	470781	0-0.2	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-025 0.3-0.5	01-09-15	515-Sx01507	470781	0.3-0.5	0.495[B]	0.47	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-026 0.0-0.2	01-09-15	515-Sx01508	470781	0-0.2	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-026 0.3-0.5	01-09-15	515-Sx01509	470781	0.3-0.5	<0.1[B]	<0.05	<0.05	<0.05	<0.05	<0.1[B]	<0.05	<0.05	-	-	<0.1	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
XI-027 0.0-0.15	02-09-15	515-Sx02229

Table App C
Project Number 54782
Stage 2c Samples within X series

				Organochlorine Pesticides																								TPHs (NEPC 1999)				TRHs (NEPC 2013)						BTEX							Nitrobenzenes	
				Aldrin + Dieldrin (Sum of Total)	Dieldrin	DDD	DDT	alpha-BHC	DDT+DDE+DDD (Sum of Total)	beta-BHC	delta-BHC	alpha-Chlordane	Chlordane	Endosulfan alpha	gamma-Chlordane	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Hexachlorobenzene	Lindane	Methoxychlor	Toxaphene	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C16 - C16 Fraction	>C10 - C16 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	1,3,5-trinitrobenzene	1,3-dinitrobenzene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.05	0.05	0.05	0.05	0.05		0.05	0.05		0.10	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.00	20.00	20.00	50.00	50.00	50.00	50.00	100.00	100.00	50.00	20.00	20.00	0.10	0.10	0.10	0.20	0.10	0.30	0.10	0.10
NEPC 2013 ESL; Ecological Soil Sediment (Ecological Significance)							3																																						
NEPC 2013 ESL; ESLs Aged Sediment (Urban Residential)							180																																						
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																																	25[R]		25[R]	125[R]	125[R]	10[R]	1.5[C]	10[R]			10[C]		
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																	120[R]	300[C]	2800[R]	120[R]	180[R]	180[R]	50[C]	70[R]	85[C]			105[R]		
NEPM 2013 Soil HIL A		6							240				50						10				6		10		300	20					280		280	50	50	0.7	NL	480			110		
Site Specific Criteria		6																																4500		6300										
NEPM 2013 Soil HSL A - Sensitive Setting																																			1100[HSL]		45[HSL]	0.5[R]	55[R]			40[R]			

Field_ID	Date	SampleCode	Lab Number	Depth																																											
40-051 0.2-0.4	20-08-15	515-Au17036	469476	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-052 0-0.15	31-08-15	515-Au26615	470534	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	0.5	<0.1	0.6	<1	<0.5
40-052 015-0.3	31-08-15	515-Au26616	470534	0.15-0.3	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-053 0.3-0.5	31-08-15	515-Au26625	470534	0.3-0.5	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-053 0-0.2	31-08-15	515-Au26624	470534	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-054 0.0-0.2	20-08-15	515-Au17038	469476	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-054 0.2-0.4	20-08-15	515-Au17039	469476	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40_055 0.0-0.15	06-08-15	515-Au05851	468034	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40_055 0.2-0.4	06-08-15	515-Au05852	468034	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40_056 0.2-0.4	06-08-15	515-Au05854	468034	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40_056 0.5-0.7	06-08-15	515-Au05855	468034	0.5-0.7	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-057 0.2-0.4	31-08-15	515-Au26629	470534	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-057 0-0.2	31-08-15	515-Au26628	470534	0-0.2	0.165[R]	0.14	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC77	31-08-15	515-Au26711	470534	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QCA77	31-08-15	133542-8	133542		<0.2[R]	<0.1	<0.1	<0.1	<0.1	<0.3[R]	<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	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
40-058 0.3-0.5	31-08-15	515-Au26606	470534	0.3-0.5	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-058 0-0.2	31-08-15	515-Au26605	470534	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	0.3	<0.1	<0.3	<1	<0.5
40-059 0.0-0.15	20-08-15	515-Au17040	469476	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	0.3	<0.1	<0.3	<1	<0.5
40-059 0.15-0.3	20-08-15	515-Au17041	469476	0.15-0.3	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-060 0.0-0.15	20-08-15	515-Au17043	469476	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-060 0.2-0.4	20-08-15	515-Au17044	469476	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-061 0.0-0.1	20-08-15	515-Au17045	469476	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-061 0.2-0.4	20-08-15	515-Au17046	469476	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40_062 0.1-0.35	06-08-15	515-Au05857	468034	0.15-0.35	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40_062 0.5-0.7	06-08-15	515-Au05858	468034	0.5-0.7	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40_063 0.0-0.15	06-08-15	515-Au05859	468034	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40_063 0.3-0.5	06-08-15	515-Au05861	468034	0.3-0.5	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40_063 1.0-1.2	06-08-15	515-Au05863	468034	1-1.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-064 0.2-0.4	31-08-15	515-Au26631	470534	0.2-0.4	0.095[R]	0.07	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-064 0-0.2	31-08-15	515-Au26630	470534	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-065 0.2-0.4	31-08-15	515-Au26613	470534	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-065 0-0.2	31-08-15	515-Au26612	470534	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-066 0.0-0.2	20-08-15	515-Au17047	469476	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-066 0.2-0.4	20-08-15	515-Au17048	469476	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-067 0.15-0.3	20-08-15	515-Au17051	469476	0.15-0.3	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	0.2	<0.1	<0.3	<1	<0.5
40-067 0.3-0.5	20-08-15	515-Au17052	469476	0.3-0.5	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-068 0.0-0.2	20-08-15	515-Au17054	469476	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-068 0.2-0.4	20-08-15	515-Au17055	469476	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-069 0.0-0.15	20-08-15	515-Au17056	469476	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-069 0.3-0.5	20-08-15	515-Au17058	469476	0.3-0.5	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-070 0.2-0.4	04-08-15	515-Au02468	467573	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-070 0-0.15	04-08-15	515-Au02467	467573	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-071 0.0-0.2	20-08-15	515-Au17059	469476	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-071 0.2-0.4	20-08-15	515-Au17060	469476	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-072 0.0-0.2	20-08-15	515-Au17061	469476	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-072 0.2-0.4	20-08-15	515-Au17062	469476	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-073 0.0-0.15	20-08-15	515-Au17063	469476	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-073 0.15-0.3	20-08-15	515-Au17066	469476	0.15-0.3	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-077 0-0.2	18-08-15	M15-Au14221	469118	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	74	63	140	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
40-077 0.2-0.4	18-08-15	M15-Au14222	469118	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	21	700	640	1400	<50	1200	150	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC26	18-08-15	M15-Au14307	469118	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[HSL]	<0.05	<0.05	-	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	160	100	260	<50	250	<200	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC26A	18-08-15	132954-4	132954		<0.2[R]	<0.1	<0.1	<0.1	<0.1	<0.3[R]	<0.1	<0.1	<0.1	-	<0.1

Table App C
Project Number 54782
Stage 2c Samples within X series

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Table App C
Project Number 54782
Stage 2c Samples within X series

				Organochlorine Pesticides																								TPHs (NEPC 1999)				TRHs (NEPC 2013)					BTEX							Nitrobenzenes	
				Aldrin + Dieldrin (Sum of Total)	Dieldrin	DDD	DDT	alpha-BHC	DDT+DDE+DDD (Sum of Total)	beta-BHC	delta-BHC	alpha-Chlordane	Chlordane	Endosulfan alpha	gamma-Chlordane	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Hexachlorobenzene	Lindane	Methoxychlor	Toxaphene	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C16-C18 Fraction	>C10 - C16 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	1,3,5-trinitrobenzene	1,3-dinitrobenzene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.05	0.05	0.05	0.05		0.05	0.05		0.10	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.00	20.00	20.00	50.00	50.00	50.00	50.00	100.00	100.00	50.00	20.00	20.00	0.10	0.10	0.10	0.20	0.10	0.30	0.10	0.10
NEPC 2013 ESL; Ecological Significance)							3																																						
NEPC 2013 ESL; ESLs Aged Sediment (Urban Residential)							180																																						
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																																												
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																												
NEPM 2013 Soil HIL A				6					240				50					10				6		10	300	20																			
Site Specific Criteria				6																																								
NEPM 2013 Soil HSL A - Sensitive Setting																																												

Field_ID	Date	SampleCode	Lab Number	Depth																																										
QC01A-15/10	15-10-15	135939-1	135939		1.3[R]	0.4	<0.1	<0.1	<0.1	<0.3[R]	<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	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
01-050 0.4-0.6	31-08-15	515-Au26644	470534	0.4-0.6	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-054 0-0.1	31-08-15	515-Au26643	470534	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-055 0.3-0.5	31-08-15	515-Au26648	470534	0.3-0.5	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-055 0-0.1	31-08-15	515-Au26647	470534	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	66	66	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-056 0.3-0.5	31-08-15	515-Au26652	470534	0.3-0.5	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-056 0-0.2	31-08-15	515-Au26651	470534	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-057 0.9-1.1	31-08-15	515-Au26650	470534	0.9-1.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-057 0-0.1	31-08-15	515-Au26649	470534	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC79	31-08-15	515-Au26713	470534	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QCA79	31-08-15	133542-10	133542		<0.2[R]	<0.1	<0.1	<0.1	<0.1	<0.3[R]	<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	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
01-058 0.0-0.1	01-09-15	515-Sa01561	470781	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-058 0.1-0.3	01-09-15	515-Sa01562	470781	0.1-0.3	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-059 0.3-0.5	31-08-15	515-Au26640	470534	0.3-0.5	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-059 0-0.1	31-08-15	515-Au26639	470534	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-060 0.1-0.3	31-08-15	515-Au26634	470534	0.1-0.3	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-060 0-0.1	31-08-15	515-Au26633	470534	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-061 0.1-0.3	31-08-15	515-Au26636	470534	0.1-0.3	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-061 0-0.1	31-08-15	515-Au26635	470534	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-062 0.4-0.6	31-08-15	515-Au26638	470534	0.4-0.6	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-062 0-0.1	31-08-15	515-Au26637	470534	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-063 0.5-0.7	31-08-15	515-Au26642	470534	0.5-0.7	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-063 0-0.1	31-08-15	515-Au26641	470534	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-064 0.4-0.6	31-08-15	515-Au26646	470534	0.4-0.6	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-064 0-0.2	31-08-15	515-Au26645	470534	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-065 0.0-0.15	27-08-15	M15-Au24475	470301	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	260	<50	260	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC58	27-08-15	M15-Au24523	470301	0-0.15	0.125[R]	0.1	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC58A	27-08-15	133384-4	133384		<0.2[R]	<0.1	<0.1	<0.1	<0.1	<0.3[R]	<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	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
01-065 0.3-0.5	27-08-15	M15-Au24476	470301	0.3-0.5	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	430	<50	430	<50	390	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-066 0.2-0.8	31-08-15	515-Au26623	470534	0.2-0.8	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-066 0-0.2	31-08-15	515-Au26622	470534	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-067 0.0-0.15	01-09-15	515-Sa01563	470781	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC86	01-09-15	515-Sa01656	470781	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC86A	01-09-15	133623-6	133623		<0.2[R]	<0.1	<0.1	<0.1	<0.1	<0.3[R]	<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	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
01-067 0.2-0.4	01-09-15	515-Sa01564	470781	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-068 0.0-0.1	01-09-15	515-Sa01565	470781	0-0.1	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-068 0.1-0.3	01-09-15	515-Sa01566	470781	0.1-0.3	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-069 0.0-0.2	01-09-15	515-Sa01567	470781	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC85	01-09-15	515-Sa01655	470781	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	0.2	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC85A	01-09-15	133623-5	133623		<0.2[R]	<0.1	<0.1	<0.1	<0.1	<0.3[R]	<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	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
01-069 0.2-0.4	01-09-15	515-Sa01568	470781	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-070 0.15-0.3	27-08-15	M15-Au24473	470301	0.15-0.3	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	22	160	<50	180	<50	140	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-070 0-0.2	27-08-15	M15-Au24474	470301	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	36	78	<50	110	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-071 0.2-0.4	27-08-15	M15-Au24471	470301	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	21	310	<50	330	<50	270	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC59	27-08-15	M15-Au24524	470301	0.2-0.4	0.115[R]	0.13	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	130	<50	130	<50	120	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC59A	27-08-15	133384-5	133384		<0.2[R]	<0.1	<0.1	<0.1	<0.1	<0.3[R]	<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	-	<25	<50	180	<100	-	<50	180	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
01-071 1.4-1.6	27-08-15	M15-Au24472	470301	1.4-1.6	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-072 0.0-0.15	27-08-15	M15-Au24469	470301	0-0.15	0.076[R]	0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	600	<50	600	<50	540	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC64	27-08-15	M15-Au24529	470301	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC64A	27-08-15	133384-10	133384		<0.2[R]	<0.1	<0.1	<0.1	<0.1	<0.3[R]	<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	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
01-073 0.8-1.0	27-08-15	M15-Au24470	470301	0.8-1	0.071[R]	0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-073 0.0-0.15	01-09-15	515-Sa01570	470781	0-0.15	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-073 0.2-0.4	01-09-15	515-Sa01571	470781	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-074 0.0-0.2	01-09-15	515-Sa01572	470781	0-0.2	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-074 0.2-0.4	01-09-15	515-Sa01573	470781	0.2-0.4	<0.1[R]	<0.05	<0.05	<0.05	<0.05	<0.15[R]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1

Table App C
Project Number 54782
Stage 2c Samples within X series

					Organochlorine Pesticides																								TPHs (NEPC 1999)					TRHs (NEPC 2013)					BTEX							Nitrobenzenes	
					Aldrin + Dieldrin (Sum of Total)	Dieldrin	DDD	DDT	alpha-BHC	DDT+DDE+DDD (Sum of Total)	beta-BHC	delta-BHC	alpha-Chlordane	Chlordane	Endosulfan alpha	gamma-Chlordane	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Hexachlorobenzene	Lindane	Methoxychlor	Toxaphene	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C16-C34 Fraction	>C10 - C16 Fraction	>C10 - C16 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	1,3,5-trinitrobenzene	1,3-dinitrobenzene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.05	0.05	0.05	0.05			0.05	0.05		0.10	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.00	20.00	20.00	50.00	50.00	50.00	50.00	100.00	100.00	50.00	100.00	20.00	20.00	0.10	0.10	0.10	0.20	0.10	0.30	0.10	0.10
NEPC 2013 ESL, Ecological Significance)								3																																							
NEPC 2013 ESL, ESLs Aged Sediment (Urban Residential)								180																																							
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																																														
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																														
NEPM 2013 Soil HIL A					6					240				50				10				6		10		300	20																				
Site Specific Criteria					6																																										
NEPM 2013 Soil HSL A - Sensitive Setting																																															
Field_ID	Date	SampleCode	Lab Number	Depth																																											
01-094 0.3-0.5	27-08-15	M15-Au24439	470301	0.3-0.5	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	160	<50	160	<50	160	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-094 1.7-1.9	27-08-15	M15-Au24440	470301	1.7-1.9	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-095 0.15-0.3	27-08-15	M15-Au24427	470301	0.15-0.3	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-095 1.2-1.4	27-08-15	M15-Au24438	470301	1.2-1.4	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-096 0.0-0.15	27-08-15	M15-Au24435	470301	0-0.15	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-096 0.8-1.0	27-08-15	M15-Au24436	470301	0.8-1	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	160	<50	160	<50	170	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-097 0.15-0.3	27-08-15	M15-Au24433	470301	0.15-0.3	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-097 0.8-1.0	27-08-15	M15-Au24434	470301	0.8-1	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-098 0.0-0.15	01-09-15	S15-Se01580	470781	0-0.15	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-098 0.2-0.4	01-09-15	S15-Se01581	470781	0.2-0.4	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-099 0.0-0.2	02-09-15	S15-Se01275	470968	0-0.2	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC90	02-09-15	S15-Se01307	470968	0-0.2	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC90A	02-09-15	133709-2	133709		<0.2[#]	<0.1	<0.1	<0.1	<0.1	<0.3[#2]	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
01-099 0.5-0.7	02-09-15	S15-Se01276	470968	0.5-0.7	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-100 0.0-0.15	01-09-15	S15-Se01582	470781	0-0.15	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-100 0.15-0.3	01-09-15	S15-Se01583	470781	0.15-0.3	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-101 0.0-0.15	27-08-15	M15-Au24431	470301	0-0.15	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-101 0.8-1.0	27-08-15	M15-Au24432	470301	0.8-1	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	100	<50	100	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-102 0.15-0.3	27-08-15	M15-Au24429	470301	0.15-0.3	0.085[#]	0.06	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	51	<50	51	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	0.7	<0.1	0.8	<1	<0.5
01-102 0.8-1.0	27-08-15	M15-Au24430	470301	0.8-1	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-103 0.3-0.5	27-08-15	M15-Au24427	470301	0.3-0.5	0.085[#]	0.06	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-103 1.1-1.3	27-08-15	M15-Au24428	470301	1.1-1.3	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-104 0.0-0.15	27-08-15	M15-Au24425	470301	0-0.15	0.085[#]	0.06	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	660	<50	660	50	620	<100	50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-104 0.3-0.5	27-08-15	M15-Au24426	470301	0.3-0.5	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	65	<50	65	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-105 0.0-0.2	27-08-15	M15-Au24423	470301	0-0.2	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	65	<50	65	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-105 0.5-0.7	27-08-15	M15-Au24424	470301	0.5-0.7	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	310	<50	310	<50	280	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-106 0.3-0.5	31-08-15	S15-Au26611	470534	0.3-0.5	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-106 0-0.2	31-08-15	S15-Au26610	470534	0-0.2	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-107 0.0-0.2	01-09-15	S15-Se01585	470781	0-0.2	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-107 0.2-0.4	01-09-15	S15-Se01586	470781	0.2-0.4	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC84	01-09-15	S15-Se01654	470781	0.2-0.4	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC84A	01-09-15	133623-4	133623		<0.2[#]	<0.1	<0.1	<0.1	<0.1	<0.3[#2]	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
01-108 0.0-0.2	01-09-15	S15-Se01587	470781	0-0.2	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-108 0.2-0.4	01-09-15	S15-Se01588	470781	0.2-0.4	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-109 0.3-0.5	27-08-15	M15-Au24421	470301	0.3-0.5	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-109 0.7-0.9	27-08-15	M15-Au24422	470301	0.7-0.9	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-110 0.0-0.15	27-08-15	M15-Au24419	470301	0-0.15	0.075[#]	0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	77	<50	77	<50	100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-110 0.6-0.8	27-08-15	M15-Au24420	470301	0.6-0.8	0.095[#]	0.07	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-111 0.15-0.3	27-08-15	M15-Au24417	470301	0.15-0.3	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-111 0.8-1.0	27-08-15	M15-Au24418	470301	0.8-1	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-112 0.15-0.3	27-08-15	M15-Au24415	470301	0.15-0.3	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	0.3	<0.1	0.4	<1	<0.5
01-112 0.8-1.0	27-08-15	M15-Au24416	470301	0.8-1	0.085[#]	0.06	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-113 0.3-0.5	31-08-15	S15-Au26579	470534	0.3-0.5	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-113 0-0.1	31-08-15	S15-Au26578	470534	0-0.1	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC72	31-08-15	S15-Au26706	470534	0-0.1	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC72	31-08-15	133542-3	133542		<0.2[#]	<0.1	<0.1	<0.1	<0.1	<0.3[#2]	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<2	<1	-	<0.1	<0.1
01_114 0.0-0.15	06-08-15	S15-Au05915	468034	0-0.15	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01_114 0.15-0.3	06-08-15	S15-Au05916	468034	0.15-0.3	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-115 0.0-0.15	01-09-15	S15-Se01590	470781	0-0.15	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-115 0.2-0.4	01-09-15	S15-Se01591	470781	0.2-0.4	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
01-116 0.0-0.1	01-09-15	S15-Se01592	470781	0-0.1	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC83	01-09-15	S15-Se01653	470781	0-0.1	<0.1[#]	<0.05	<0.05	<0.05	<0.05	<0.15[#2]	<0.05	<0.05	-	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<20	<20	<50	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<1	<0.5
QC83A	01-09-15	133623-3	133623		<0.2[#]	<0.1	<0.1	<0.1	<0.1	<0.3[#2]	<0.1	<0.1	<0.1	-	<0.1	<0.1

Table App C
Project Number 54782
Stage 2c Samples within X series

							Nitrotoluenes					Explosives in Soil										
							Nitrobenzene	1,3,5-trinitrotoluene	1,3-dinitrotoluene	2-nitrotoluene	3-nitrotoluene	PETN	Nitroglycerine	4-&2-AM-DNT(Isomeric Mixture)	2,6-Dinitrotoluene	4-Amino-2,6-dinitrotoluene	Tetryl	2-Amino-4,6-dinitrotoluene	HMX	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.10	0.10		0.10	0.10									0.10	0.10	0.10
NEPC 2013 ESL, ElLs Aged Sediment (Ecological Significance)																						
NEPC 2013 ESL, ElLs Aged Sediment (Urban Residential)																						
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																						
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																						
NEPM 2013 Soil HIL A								15												1.5		10
Site Specific Criteria																						
NEPM 2013 Soil HSL A - Sensitive Setting																						
Field_ID	Date	SampleCode	Lab Number	Depth																		
A0-001_0-0.2	10-06-15	515-800331	463565	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-002 0.0-0.1	03-09-15	515-5e05371	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-002 0.2-0.4	03-09-15	515-5e05372	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-003_0-0.1	10-06-15	515-800334	463565	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-004 0.0-0.2	03-09-15	515-5e05373	471226	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-004 0.3-0.5	03-09-15	515-5e05374	471226	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-005_0.1-0.3	10-06-15	515-800337	463565	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
~~A0-005_0.7-0.8~~	~~10-06-15~~	~~515-800339~~	~~463565~~	~~0.7-0.8~~	~~<0.5~~	~~<1~~	--	~~<0.5~~	~~<0.5~~	--	--	--	--	--	--	--	--	--	~~<1~~	~~<0.5~~	~~<0.5~~
A0-006_0.3-0.5	10-06-15	515-800342	463565	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-006_0-0.2	10-06-15	515-800341	463565	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-007 0.0-0.1	01-09-15	515-5e01484	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-007 0.1-0.3	01-09-15	515-5e01485	470781	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-008 0.0-0.15	03-09-15	515-5e05486	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-008 0.4-0.6	01-09-15	515-5e01488	470781	0.4-0.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-009 0.15-0.3	01-09-15	515-5e01491	470781	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-009 0.4-0.6	03-09-15	515-5e05492	470781	0.4-0.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-010 0.0-0.1	01-09-15	515-5e01494	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-010 0.3-0.5	01-09-15	515-5e01495	470781	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-011 0.0-0.1	01-09-15	515-5e01496	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-011 0.3-0.5	03-09-15	515-5e05497	470781	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-012 0.0-0.1	01-09-15	515-5e01498	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-012 0.2-0.4	01-09-15	515-5e01499	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-013 0.15-0.3	03-09-15	515-5e05376	471226	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC97	03-09-15	515-5e05445	471226	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC97A	03-09-15	133730-4	133730		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A0-013 0.3-0.5	03-09-15	515-5e05377	471226	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-014 0.0-0.2	03-09-15	515-5e05379	471226	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-014 0.3-0.5	03-09-15	515-5e05380	471226	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-015 0.0-0.1	01-09-15	515-5e01502	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-015 0.7-0.9	03-09-15	515-5e05503	470781	0.7-0.9	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-016 0.0-0.1	01-09-15	515-5e01500	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-016 0.5-0.7	01-09-15	515-5e01501	470781	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-018 0.0-0.1	03-09-15	515-5e05381	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-018 0.2-0.4	03-09-15	515-5e05382	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-019 0.0-0.1	03-09-15	515-5e05383	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-019 0.1-0.3	03-09-15	515-5e05384	471226	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
~~A0-020 0.0-0.1~~	~~01-09-15~~	~~515-5e01504~~	~~470781~~	~~0-0.1~~	~~<0.5~~	~~<1~~	--	~~<0.5~~	~~<0.5~~	--	--	--	--	--	--	--	--	--	~~<1~~	~~<0.5~~	~~<0.5~~
A0-020 0.2-0.4	01-09-15	515-5e01505	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-021 0-0.15	15-10-15	515-Oc11255	476042	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-021 0.15-0.35	15-10-15	515-Oc11256	476042	0.15-0.35	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-022 0.0-0.1	03-09-15	515-5e05385	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-022 0.1-0.3	03-09-15	515-5e05386	471226	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-023 0.0-0.15	03-09-15	515-5e05387	471226	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-023 0.15-0.3	03-09-15	515-5e05388	471226	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-024 0.0-0.2	03-09-15	515-5e05390	471226	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-024 0.2-0.4	03-09-15	515-5e05391	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-025 0.0-0.2	01-09-15	515-5e01506	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-025 0.3-0.5	01-09-15	515-5e01507	470781	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-026 0.0-0.2	01-09-15	515-5e01508	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-026 0.3-0.5	01-09-15	515-5e01509	470781	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-027 0.0-0.15	02-09-15	515-5e03229	470968	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC92	02-09-15	515-5e03309	470968	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC92A	02-09-15	133709-4	133709		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A0-027 0.5-0.7	02-09-15	515-5e03230	470968	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-028 0.0-0.1	02-09-15	515-5e03231	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-028 0.2-0.4	02-09-15	515-5e03232	470968	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-029 0.0-0.15	01-09-15	515-5e01510	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-029 0.15-0.3	01-09-15	515-5e01511	470781	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-030 0.0-0.15	01-09-15	515-5e01513	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC88	02-09-15	515-5e01658	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC88A	02-09-15	133623-8	133623		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A0-030 0.2-0.4	01-09-15	515-5e01514	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-031 0.0-0.1	02-09-15	515-5e03233	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-031 0.2-0.4	02-09-15	515-5e03234	470968	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-032 0.0-0.2	02-09-15	515-5e03235	470968	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-032 0.2-0.4	02-09-15	515-5e03236	470968	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-033 0.0-0.2	01-09-15	515-5e01515	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-033 0.2-0.4	01-09-15	515-5e01516	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-034 0.15-0.3	01-09-15	515-5e01518	470781	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-034 0.3-0.5	01-09-15	515-5e01519	470781	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-035 0.0-0.1	02-09-15	515-5e03238	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-035 0.3-0.5	02-09-15	515-5e03239	470968	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-036 0.0-0.15	02-09-15	515-5e03240	470968	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-036 0.15-0.3	02-09-15	515-5e03241	470968	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-037 0.0-0.1	02-09-15	515-5e03243	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-037 0.2-0.4	02-09-15	515-5e03244	470968	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-038 0.0-0.15	01-09-15	515-5e01521	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-038 0.15-0.3	01-09-15	515-5e01522	470781	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-039 0.0-0.15	01-09-15	515-5e01524	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-039 0.2-0.4	01-09-15	515-5e01525	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-040 0.3-0.5	31-08-15	515-Au26660	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-040 0-0.2	31-08-15	515-Au26659	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-041 0.15-0.3	31-08-15	515-Au26656	470534	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-041 0-0.15	31-08-15	515-Au26655	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-042 0.0-0.1	01-09-15	515-5e01526	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-042 0.1-0.3	01-09-15	515-5e01527	470781	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-043 0.0-0.2	01-09-15	515-5e01528	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-043 0.2-0.4	01-09-15	515-5e01529	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-044 0.4-0.6	31-08-15	515-Au26654	470534	0.4-0.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-044 0-0.2	31-08-15	515-Au26653	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-045 0.0-0.2	02-09-15	515-5e03245	470968	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-045 0.3-0.5	02-09-15	515-5e03246	470968	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-046 0.0-0.15	01-09-15	515-5e01530	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-046 0.15-0.3	01-09-15	515-5e01531	470781	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-047 0.0-0.1	01-09-15	515-5e01533	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-047 0.1-0.3	01-09-15	515-5e01534	470781	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-048 0.15-0.3	31-08-15	515-Au26627	470534	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-048 0-0.15	31-08-15	515-Au26626	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC78	31-08-15	515-Au26712	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QCA78	31-08-15	133542-9	133542		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A0-049 0.3-0.5	31-08-15	515-Au26619	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-049 0-0.2	31-08-15	515-Au26618	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-050 0.0-0.15	20-08-15	515-Au17030	469476	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-050 0.3-0.5	20-08-15	515-Au17032	469476	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-051 0.0-0.2	20-08-15	515-Au17035	469476	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5

Table App C
Project Number 54782
Stage 2c Samples within X series

						Nitrotoluenes					Explosives in Soil										
						Nitrobenzene	2,4,6-trinitrotoluene	2,4-dinitrotoluene	2-nitrotoluene	3-nitrotoluene	PETN	Nitroglycerine	4-&2-AM-DNT(Isomeric Mixture)	2,6-Dinitrotoluene	4-Amino-2,6-dinitrotoluene	Tetryl	2-Amino-4,6-dinitrotoluene	HMX	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.10	0.10			0.10	0.10								0.10	0.10	0.10
NEPC 2013 ESL, ESLs Aged Sediment (Ecological Significance)																					
NEPC 2013 ESL, ESLs Aged Sediment (Urban Residential)																					
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																					
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																					
NEPM 2013 Soil HIL A							15												1.5		10
Site Specific Criteria																					
NEPM 2013 Soil HSL A - Sensitive Setting																					
Field_ID	Date	SampleCode	Lab Number	Depth																	
40-051 0.2-0.4	20-08-15	515-Au17036	469476	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-052 0-0.15	31-08-15	515-Au26615	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-052 015-0.3	31-08-15	515-Au26616	470534	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-053 0.3-0.5	31-08-15	515-Au26625	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-053 0-0.2	31-08-15	515-Au26624	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-054 0.0-0.2	20-08-15	515-Au17038	469476	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-054 0.2-0.4	20-08-15	515-Au17039	469476	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_055 0.0-0.15	06-08-15	515-Au05851	468034	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_055 0.2-0.4	06-08-15	515-Au05852	468034	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_056 0.2-0.4	06-08-15	515-Au05854	468034	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_056 0.5-0.7	06-08-15	515-Au05855	468034	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-057 0.2-0.4	31-08-15	515-Au26629	470534	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-057 0-0.2	31-08-15	515-Au26628	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC77	31-08-15	515-Au26711	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QCA77	31-08-15	133542-8	133542		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
40-058 0.3-0.5	31-08-15	515-Au26606	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-058 0-0.2	31-08-15	515-Au26605	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-059 0.0-0.15	20-08-15	515-Au17040	469476	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-059 0.15-0.3	20-08-15	515-Au17041	469476	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-060 0.0-0.15	20-08-15	515-Au17043	469476	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-060 0.2-0.4	20-08-15	515-Au17044	469476	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-061 0.0-0.1	20-08-15	515-Au17045	469476	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-061 0.2-0.4	20-08-15	515-Au17046	469476	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_062 0.15-0.35	06-08-15	515-Au05857	468034	0.15-0.35	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_062 0.5-0.7	06-08-15	515-Au05858	468034	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_063 0.0-0.15	06-08-15	515-Au05859	468034	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_063 0.3-0.5	06-08-15	515-Au05861	468034	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_063 1.0-1.2	06-08-15	515-Au05863	468034	1-1.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-064 0.2-0.4	31-08-15	515-Au26631	470534	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-064 0-0.2	31-08-15	515-Au26630	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-065 0.2-0.4	31-08-15	515-Au26613	470534	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-065 0-0.2	31-08-15	515-Au26612	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-066 0.0-0.2	20-08-15	515-Au17047	469476	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-066 0.2-0.4	20-08-15	515-Au17048	469476	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-067 0.15-0.3	20-08-15	515-Au17051	469476	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-067 0.3-0.5	20-08-15	515-Au17052	469476	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-068 0.0-0.2	20-08-15	515-Au17054	469476	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-068 0.2-0.4	20-08-15	515-Au17055	469476	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-069 0.0-0.15	20-08-15	515-Au17056	469476	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-069 0.3-0.5	20-08-15	515-Au17058	469476	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-070 0.2-0.4	04-08-15	515-Au02468	467573	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-070 0-015	04-08-15	515-Au02467	467573	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_071 0.0-0.15	06-08-15	515-Au05864	468034	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_071 0.2-0.4	06-08-15	515-Au05865	468034	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_072 0.0-0.2	06-08-15	515-Au05866	468034	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_072 0.5-0.7	06-08-15	515-Au05867	468034	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-073 0.15-0.3	31-08-15	515-Au26602	470534	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC75	31-08-15	515-Au26709	470534	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QCA75	31-08-15	133542-6	133542		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
40-073 0.0-0.15	31-08-15	515-Au26601	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-074 0.3-0.5	31-08-15	515-Au26608	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-074 0-0.2	31-08-15	515-Au26607	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-075 0.15-0.3	20-08-15	515-Au17062	469476	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-075 0.5-0.7	20-08-15	515-Au17064	469476	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-076 0.0-0.15	20-08-15	515-Au17065	469476	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-076 0.15-0.3	20-08-15	515-Au17066	469476	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-077_0-0.2	18-08-15	M15-Au14221	469118	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-077_0.2-0.4	18-08-15	M15-Au14222	469118	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC26	18-08-15	M15-Au14307	469118	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC26A	18-08-15	132954-4	132954		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
40-078_0.0-0.15	18-08-15	M15-Au14223	469118	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-078_0.15-0.3	18-08-15	M15-Au14224	469118	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_79 0.4-0.6	31-07-15	515-Au01700	467448	0.4-0.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_79 0-0.15	31-07-15	515-Au01698	467448	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-080 0.2-0.35	04-08-15	515-Au02470	467573	0.2-0.35	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-080 0.4-0.6	04-08-15	515-Au02471	467573	0.4-0.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-081 0.3-0.5	04-08-15	515-Au02473	467572	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-081 0-0.2	04-08-15	515-Au02472	467573	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_082 0.0-0.15	06-08-15	515-Au05868	468034	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_082 0.7-0.9	06-08-15	515-Au05871	468034	0.7-0.9	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_083 0.0-0.2	06-08-15	515-Au05872	468034	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_083 0.5-0.7	06-08-15	515-Au05874	468034	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_084 0.0-0.15	06-08-15	515-Au05875	468034	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_084 0.4-0.6	06-08-15	515-Au05877	468034	0.4-0.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-085 0.3-0.5	31-08-15	515-Au26593	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-085 0-0.2	31-08-15	515-Au26592	470534	0-0.25	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-086 0.2-0.4	31-08-15	515-Au26595	470534	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-086 0-0.2	31-08-15	515-Au26594	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-087 0.3-0.5	31-08-15	515-Au26599	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-087 0-0.15	31-08-15	515-Au26597	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC74	31-08-15	515-Au26708	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QCA74	31-08-15	133542-5	133542		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
40-088_0.0-0.1	18-08-15	M15-Au14225	469118	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-088_0.1-0.3	18-08-15	M15-Au14226	469118	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC25	18-08-15	M15-Au14306	469118	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC25A	18-08-15	132954-3	132954		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
40-089_0.0-0.2	19-08-15	515-Au15547	469287	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-090_0.0-0.15	19-08-15	515-Au15549	469287	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
~~QC80~~	~~19-08-15~~	~~515-Au15574~~	~~469287~~	~~0-0.15~~	~~<0.5~~	~~<1~~	~~-~~	~~<0.5~~	~~<0.5~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~<1~~	~~<0.5~~	~~<0.5~~
QC80A	19-08-15	133148-3	133148		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40-090_0.3-0.5	19-08-15	515-Au15551	469287	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-091_0.0-0.2	18-08-15	M15-Au14227	469118	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-091_0.3-0.5	18-08-15	M15-Au14228	469118	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_092 0.15-0.3	31-07-15	515-Au01702	467448	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_092 0.6-0.8	31-07-15	515-Au01704	467448	0.6-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_092 0-0.15	31-07-15	515-Au01701	467448	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC02	31-07-15	515-Au01714	467448	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC02A	31-07-15	132200-1	132200		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
40_093 0.15-0.3	31-07-15	515-Au01706	467448	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_093 0-0.15	31-07-15	515-Au01705	467448	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-094 0.2-0.3	04-08-15	515-Au02475	467573	0.2-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-094 0.3-0.5	04-08-15	515-Au02476	467573	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-095 0.15-0.25	04-08-15	515-Au02478	467573	0.15-0.25	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-095 0-0.15	04-08-15	515-Au02477	467573	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-096 0.3-0.5	04-08-15	515-Au02482	467573	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40-096 0-0.15	04-08-15	515-Au02480	467573	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_097 0.0-0.15	06-08-15	515-Au05878	468034	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
40_097 0.2-0.4	06-08-15	515-Au05879	468034	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5

Table App C
Project Number 54782
Stage 2c Samples within X series

						Nitrotoluenes					Explosives in Soil										
						Nitrobenzene	2,4,6-trinitrotoluene	2,4-dinitrotoluene	2-nitrotoluene	3-nitrotoluene	PETN	Nitroglycerine	4-&2-AM-DNT(Isomeric Mixture)	2,6-Dinitrotoluene	4-Amino-2,6-dinitrotoluene	Tetryl	2-Amino-4,6-dinitrotoluene	HMX	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.10	0.10			0.10	0.10								0.10	0.10	0.10
NEPC 2013 ESL, ESLs Aged Sediment (Ecological Significance)																					
NEPC 2013 ESL, ESLs Aged Sediment (Urban Residential)																					
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																					
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																					
NEPM 2013 Soil HIL A							15												1.5		10
Site Specific Criteria																					
NEPM 2013 Soil HSL A - Sensitive Setting																					
Field_ID	Date	SampleCode	Lab Number	Depth																	
A0_099 0.0-0.15	06-08-15	515-Au05881	468034	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0_098 0.15-0.35	06-08-15	515-Au05882	468034	0.15-0.35	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-099 0.15-0.3	31-08-15	515-Au26584	470534	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-099 0-0.15	31-08-15	515-Au26583	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC70	31-08-15	515-Au26704	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QCA70	31-08-15	133542-1	133542		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A0-100 0.15-0.3	31-08-15	515-Au26590	470534	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-100 0-0.15	31-08-15	515-Au26589	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-101 0.4-0.6	31-08-15	515-Au26588	470534	0.4-0.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A0-101 0-0.15	31-08-15	515-Au26586	470534	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-01 0-0.1	12-02-15	515-Fa09298	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-02 0-0.1	12-02-15	515-Fa09300	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-03 0-0.1	12-02-15	515-Fa09302	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-04 0-0.1	12-02-15	515-Fa09304	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-05 0-0.2	12-02-15	515-Fa09306	447301	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-06 0-0.1	12-02-15	515-Fa09308	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-07 0-0.1	12-02-15	515-Fa09310	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-08 0.2-0.4	12-02-15	515-Fa09313	447301	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-09 0-0.1	12-02-15	515-Fa09315	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-10 0-0.1	12-02-15	515-Fa09317	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-11 0-0.1	12-02-15	515-Fa09319	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-12 0-0.1	12-02-15	515-Fa09321	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	12-02-15	515-Fa09330	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01A	12-02-15	123610-1	123610		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-13 0-0.1	12-02-15	515-Fa09323	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-14 0-0.1	12-02-15	515-Fa09325	447301	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-15 0-0.3	12-02-15	515-Fa09328	447301	0-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1-016_0-0.2	30-06-15	515-J003345	463565	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-017 0.0-0.1	03-09-15	515-Se05392	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-017 0.3-0.5	03-09-15	515-Se05393	471226	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-019 0.0-0.1	03-09-15	515-Se05394	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-019 0.2-0.4	03-09-15	515-Se05395	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-020 0.0-0.1	03-09-15	515-Se05396	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-020 0.2-0.4	03-09-15	515-Se05397	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-021 0.0-0.1	03-09-15	515-Se05398	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-021 0.2-0.4	03-09-15	515-Se05399	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC96	03-09-15	515-Se05444	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC96A	03-09-15	133730-3	133730		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A1-022 0.0-0.1	03-09-15	515-Se05400	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-022 0.2-0.4	03-09-15	515-Se05401	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-023 0.1-0.3	15-10-15	515-Oc11259	476042	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-023 0-0.1	15-10-15	515-Oc11258	476042	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-024 0.15-0.3	03-09-15	515-Se05403	471226	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-024 0.3-0.5	03-09-15	515-Se05404	471226	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-025 0.0-0.1	03-09-15	515-Se05406	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC95	03-09-15	515-Se05443	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC95A	03-09-15	133730-2	133730		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A1-025 0.2-0.4	03-09-15	515-Se05407	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-026 0.0-0.15	03-09-15	515-Se05408	471226	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-026 0.2-0.4	03-09-15	515-Se05409	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-027 0.0-0.1	03-09-15	515-Se05410	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-027 0.3-0.5	03-09-15	515-Se05411	471226	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-028 0.0-0.2	01-09-15	515-Se01553	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-028 0.3-0.5	01-09-15	515-Se01554	470781	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-029 0.2-0.4	15-10-15	515-Oc11261	476042	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-029 0-0.2	15-10-15	515-Oc11260	476042	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-030 0.5-0.7	15-10-15	515-Oc11263	476042	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-030 0-0.1	15-10-15	515-Oc11262	476042	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-031 0.3-0.5	15-10-15	515-Oc11266	476042	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-031 0-0.15	15-10-15	515-Oc11264	476042	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-032 0.1-0.3	15-10-15	515-Oc11268	476042	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-032 0-0.1	15-10-15	515-Oc11267	476042	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-033 0.0-0.2	03-09-15	515-Se05412	471226	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-033 0.2-0.4	03-09-15	515-Se05413	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-034 0.0-0.1	03-09-15	515-Se05414	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-034 0.2-0.4	03-09-15	515-Se05415	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-035 0.0-0.1	03-09-15	515-Se05416	471226	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-035 0.2-0.4	03-09-15	515-Se05417	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-036 0.0-0.15	03-09-15	515-Se05418	471226	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC94	03-09-15	515-Se05442	471226	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC94A	03-09-15	133730-1	133730		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A1-036 0.2-0.4	03-09-15	515-Se05419	471226	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-038 0.1-0.3	15-10-15	515-Oc11270	476042	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-038 0-0.1	15-10-15	515-Oc11269	476042	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-039 0.0-0.1	02-09-15	515-Se03257	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-039 0.6-0.8	02-09-15	515-Se03258	470968	0.6-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-040 0.0-0.1	02-09-15	515-Se03259	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-040 0.5-0.7	02-09-15	515-Se03260	470968	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-041 0.0-0.1	02-09-15	515-Se03261	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-041 0.6-0.8	02-09-15	515-Se03262	470968	0.6-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-042 0.0-0.1	02-09-15	515-Se03263	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-042 0.2-0.4	02-09-15	515-Se03264	470968	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-043 0.0-0.2	01-09-15	515-Se01555	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC87	01-09-15	515-Se01657	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC87A	01-09-15	133623-7	133623		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
A1-043 0.2-0.4	01-09-15	515-Se01556	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-044 0.0-0.1	01-09-15	515-Se01557	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-044 0.3-0.5	01-09-15	515-Se01558	470781	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-045 0.1-0.3	15-10-15	515-Oc11272	476042	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-045 0-0.1	15-10-15	515-Oc11271	476042	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-046 0.2-0.4	15-10-15	515-Oc11274	476042	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-046 0-0.1	15-10-15	515-Oc11273	476042	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-047 0.1-0.3	15-10-15	515-Oc11276	476042	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-047 0-0.1	15-10-15	515-Oc11275	476042	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-048 0.0-0.1	02-09-15	515-Se03265	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-048 0.2-0.4	02-09-15	515-Se03266	470968	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-048 0.0-0.2	02-09-15	515-Se03267	470968	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-049 0.3-0.5	02-09-15	515-Se03268	470968	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-050 0.0-0.1	02-09-15	515-Se03269	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-050 0.1-0.3	02-09-15	515-Se03270	470968	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-051 0.0-0.1	02-09-15	515-Se03271	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-051 0.1-0.3	02-09-15	515-Se03272	470968	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-052 0.0-0.1	01-09-15	515-Se01559	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-052 0.2-0.4	01-09-15	515-Se01560	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-053 0.1-0.3	15-10-15	515-Oc11278	476042	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
A1-053 0-0.1	15-10-15	515-Oc11277	476042	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC01-15/10	15-10-15	515-Oc11279	476042	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5

Table App C
Project Number 54782
Stage 2c Samples within X series

						Nitrotoluenes					Explosives in Soil										
						Nitrobenzene	2,4,6-trinitrotoluene	2,4-dinitrotoluene	2-nitrotoluene	3-nitrotoluene	PETN	Nitroglycerine	4-&2-AM-DNT(Isomeric Mixture)	2,6-Dinitrotoluene	4-Amino-2,6-dinitrotoluene	Tetryl	2-Amino-4,6-dinitrotoluene	HMX	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.10	0.10	-	-	0.10	-	-	-	-	-	-	-	-	0.10	0.10	0.10
NEPC 2013 ESL, ESLs Aged Sediment (Ecological Significance)																					
NEPC 2013 ESL, ESLs Aged Sediment (Urban Residential)																					
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																					
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																					
NEPM 2013 Soil HIL A							15												1.5		10
Site Specific Criteria																					
NEPM 2013 Soil HSL A - Sensitive Setting																					
Field_ID	Date	SampleCode	Lab Number	Depth																	
QC01A-15/10	15-10-15	135939-1	135939		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-054 0.4-0.6	31-08-15	515-Au26644	470534	0.4-0.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-054 0-0.1	31-08-15	515-Au26643	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-055 0.3-0.5	31-08-15	515-Au26648	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-055 0-0.1	31-08-15	515-Au26647	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-056 0.3-0.5	31-08-15	515-Au26652	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-056 0-0.2	31-08-15	515-Au26651	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-057 0.9-1.1	31-08-15	515-Au26650	470534	0.9-1.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-057 0-0.1	31-08-15	515-Au26649	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC79	31-08-15	515-Au26753	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QCA79	31-08-15	133542-10	133542		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-058 0.0-0.1	01-09-15	515-Su01581	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-058 0.1-0.3	01-09-15	515-Su01582	470781	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-059 0.3-0.5	31-08-15	515-Au26640	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-059 0-0.1	31-08-15	515-Au26639	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-060 0.1-0.3	31-08-15	515-Au26634	470534	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-060 0-0.1	31-08-15	515-Au26633	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-061 0.1-0.3	31-08-15	515-Au26636	470534	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-061 0-0.1	31-08-15	515-Au26635	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-062 0.4-0.6	31-08-15	515-Au26638	470534	0.4-0.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-062 0-0.1	31-08-15	515-Au26637	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-063 0.5-0.7	31-08-15	515-Au26642	470534	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-063 0-0.1	31-08-15	515-Au26641	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-064 0.4-0.6	31-08-15	515-Au26646	470534	0.4-0.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-064 0-0.2	31-08-15	515-Au26645	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-065 0.0-0.15	27-08-15	M15-Au24475	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC58	27-08-15	M15-Au24523	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC58A	27-08-15	133384-4	133384		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-065 0.3-0.5	27-08-15	M15-Au24476	470301	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-066 0.2-0.8	31-08-15	515-Au26623	470534	0.2-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-066 0-0.2	31-08-15	515-Au26622	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-067 0.0-0.15	01-09-15	515-Su01563	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC86	01-09-15	515-Su01656	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC86A	01-09-15	133623-6	133623		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-067 0.2-0.4	01-09-15	515-Su01564	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-068 0.0-0.1	01-09-15	515-Su01565	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-068 0.1-0.3	01-09-15	515-Su01566	470781	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-069 0.0-0.2	01-09-15	515-Su01567	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC85	01-09-15	515-Su01655	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC85A	01-09-15	133623-5	133623		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-069 0.2-0.4	01-09-15	515-Su01568	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-070 0.15-0.3	27-08-15	M15-Au24473	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-070 0.6-0.8	27-08-15	M15-Au24474	470301	0.6-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-071 0.2-0.4	27-08-15	M15-Au24471	470301	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC59	27-08-15	M15-Au24524	470301	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC59A	27-08-15	133384-5	133384		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-071 1.4-1.6	27-08-15	M15-Au24472	470301	1.4-1.6	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-072 0.0-0.15	27-08-15	M15-Au24469	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC64	27-08-15	M15-Au24529	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC64A	27-08-15	133384-10	133384		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-072 0.8-1.0	27-08-15	M15-Au24470	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-073 0.0-0.15	01-09-15	515-Su01570	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-073 0.2-0.4	01-09-15	515-Su01571	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-074 0.0-0.2	01-09-15	515-Su01572	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-074 0.2-0.4	01-09-15	515-Su01573	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-075 0.33-0.3	01-09-15	515-Su01575	470781	0.33-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-075 0.3-0.5	01-09-15	515-Su01576	470781	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-076 0.3-0.5	27-08-15	M15-Au24467	470301	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC55	27-08-15	M15-Au24520	470301	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC55A	27-08-15	133384-1	133384		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
QC55A - TRIPLICATE	27-08-15	133384-16	133384		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01-076 1.0-1.2	27-08-15	M15-Au24468	470301	1-1.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-077 0.15-0.3	27-08-15	M15-Au24465	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-077 0.7-0.9	27-08-15	M15-Au24466	470301	0.7-0.9	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-078 0.0-0.15	27-08-15	M15-Au24463	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC60	27-08-15	M15-Au24525	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC60A	27-08-15	133384-6	133384		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-078 1.2-1.4	27-08-15	M15-Au24464	470301	1.2-1.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-079 0.15-0.3	27-08-15	M15-Au24461	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC63	27-08-15	M15-Au24528	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC63A	27-08-15	133384-9	133384		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-079 0.6-0.8	27-08-15	M15-Au24462	470301	0.6-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-080 0.0-0.15	27-08-15	M15-Au24459	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-080 0.6-0.8	27-08-15	M15-Au24460	470301	0.6-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC65	27-08-15	M15-Au24530	470301	0.6-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC65A	27-08-15	133384-11	133384		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-081 0.15-0.3	27-08-15	M15-Au24457	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-081 1.1-1.3	27-08-15	M15-Au24458	470301	1.1-1.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-082 0.0-0.2	02-09-15	515-Su03273	470968	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-082 0.2-0.4	02-09-15	515-Su03274	470968	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-083 0.15-0.3	27-08-15	M15-Au24455	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-083 0.6-0.8	27-08-15	M15-Au24456	470301	0.6-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-084 0.0-0.15	27-08-15	M15-Au24453	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC62	27-08-15	M15-Au24527	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC62A	27-08-15	133384-8	133384		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-084 0.8-1.0	27-08-15	M15-Au24454	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-085 0.0-0.15	27-08-15	M15-Au24451	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-085 1.0-1.2	27-08-15	M15-Au24452	470301	1-1.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-086 0.0-0.15	27-08-15	M15-Au24449	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-086 0.8-1.0	27-08-15	M15-Au24450	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC67	27-08-15	M15-Au24532	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC67A	27-08-15	133384-13	133384		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-087 0.0-0.15	27-08-15	M15-Au24447	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-087 0.3-0.5	27-08-15	M15-Au24448	470301	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC69	27-08-15	M15-Au24534	470301	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
QC69A	27-08-15	133384-15	133384		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
01-088 0.2-0.4	31-08-15	515-Au26621	470534	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-088 0-0.2	31-08-15	515-Au26620	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01_089 0.0-0.2	06-08-15	515-Au05913	468034	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01_089 0.2-0.4	06-08-15	515-Au05914	468034	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-090 0.0-0.2	01-09-15	515-Su01578	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-090 0.2-0.4	01-09-15	515-Su01579	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-091 0.0-0.15	27-08-15	M15-Au24445	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-091 0.8-1.0	27-08-15	M15-Au24446	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-092 0.0-0.15	27-08-15	M15-Au24443	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-092 0.6-0.8	27-08-15	M15-Au24444	470301	0.6-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-093 0.15-0.3	27-08-15	M15-Au24441	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5
01-093 0.8-1.0	27-08-15	M15-Au24442	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<1	<0.5	<0.5

Table App C
Project Number 54782
Stage 2c Samples within X series

					Nitrotoluenes					Explosives in Soil											
					Nitrobenzene	2,4,6-trinitrotoluene	2,4-dinitrotoluene	2-nitrotoluene	3-nitrotoluene	PETN	Nitroglycerine	4-&2-AM-DNT(Isomeric Mixture)	2,6-Dinitrotoluene	4-Amino-2,6-dinitrotoluene	Tetryl	2-Amino-4,6-dinitrotoluene	HMX	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.10	0.10	-	0.10	0.10	-	-	-	-	-	-	-	-	0.10	0.10	0.10
NEPC 2013 ESL, ESLs Aged Sediment (Ecological Significance)																					
NEPC 2013 ESL, ESLs Aged Sediment (Urban Residential)																					
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																					
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																					
NEPM 2013 Soil HIL A						15												1.5		10	
Site Specific Criteria																					
NEPM 2013 Soil HSL A - Sensitive Setting																					
Field_ID	**Date**	**SampleCode**	**Lab Number**	**Depth**																	
X1-094 0.3-0.5	27-08-15	MS5-Au24439	470301	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-094 1.7-1.9	27-08-15	MS5-Au24440	470301	1.7-1.9	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-095 0.15-0.3	27-08-15	MS5-Au24427	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-095 1.2-1.4	27-08-15	MS5-Au24438	470301	1.2-1.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-096 0.0-0.15	27-08-15	MS5-Au24435	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-096 0.8-1.0	27-08-15	MS5-Au24436	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-097 0.15-0.3	27-08-15	MS5-Au24433	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-097 0.8-1.0	27-08-15	MS5-Au24434	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-098 0.0-0.15	01-09-15	SS5-Se01580	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-098 0.2-0.4	01-09-15	SS5-Se01581	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-099 0.0-0.2	02-09-15	SS5-Se03275	470968	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC90	02-09-15	SS5-Se03307	470968	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC90A	02-09-15	133709-2	133709		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
X1-099 0.5-0.7	02-09-15	SS5-Se03276	470968	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-100 0.0-0.15	01-09-15	SS5-Se01582	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-100 0.15-0.3	01-09-15	SS5-Se01583	470781	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-101 0.0-0.15	27-08-15	MS5-Au24431	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-101 0.8-1.0	27-08-15	MS5-Au24432	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-102 0.15-0.3	27-08-15	MS5-Au24429	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-102 0.8-1.0	27-08-15	MS5-Au24430	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-103 0.3-0.5	27-08-15	MS5-Au24427	470301	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-103 1.1-1.3	27-08-15	MS5-Au24428	470301	1.1-1.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-104 0.0-0.15	27-08-15	MS5-Au24425	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-104 0.3-0.5	27-08-15	MS5-Au24426	470301	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-105 0.0-0.2	27-08-15	MS5-Au24423	470301	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-105 0.5-0.7	27-08-15	MS5-Au24424	470301	0.5-0.7	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-106 0.3-0.5	31-08-15	SS5-Au29611	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-106 0-0.2	31-08-15	SS5-Au29610	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-107 0.0-0.2	01-09-15	SS5-Se01585	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-107 0.2-0.4	01-09-15	SS5-Se01586	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC84	01-09-15	SS5-Se01654	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC84A	01-09-15	133623-4	133623		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
X1-108 0.0-0.2	01-09-15	SS5-Se01587	470781	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-108 0.2-0.4	01-09-15	SS5-Se01588	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-109 0.3-0.5	27-08-15	MS5-Au24421	470301	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-109 0.7-0.9	27-08-15	MS5-Au24422	470301	0.7-0.9	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-110 0.0-0.15	27-08-15	MS5-Au24419	470301	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-110 0.6-0.8	27-08-15	MS5-Au24420	470301	0.6-0.8	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-111 0.15-0.3	27-08-15	MS5-Au24417	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-111 0.8-1.0	27-08-15	MS5-Au24418	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-112 0.15-0.3	27-08-15	MS5-Au24415	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-112 0.8-1.0	27-08-15	MS5-Au24416	470301	0.8-1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-113 0.3-0.5	31-08-15	SS5-Au29579	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-113 0-0.1	31-08-15	SS5-Au29578	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC72	31-08-15	SS5-Au29706	470534	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QCA72	31-08-15	133542-3	133542		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
X1_114 0.0-0.15	06-08-15	SS5-Au05915	468034	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1_114 0.15-0.3	06-08-15	SS5-Au05916	468034	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-115 0.0-0.15	01-09-15	SS5-Se01590	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-115 0.2-0.4	01-09-15	SS5-Se01591	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-116 0.0-0.1	01-09-15	SS5-Se01592	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC83	01-09-15	SS5-Se01653	470781	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC83A	01-09-15	133623-3	133623		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
X1-116 0.1-0.3	01-09-15	SS5-Se01593	470781	0.1-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-117 0.15-0.3	27-08-15	MS5-Au24413	470301	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-117 1.0-1.2	27-08-15	MS5-Au24414	470301	1-1.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-118 0.0-0.2	27-08-15	MS5-Au24411	470301	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-118 1.0-1.2	27-08-15	MS5-Au24412	470301	1-1.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-119 0.3-0.5	31-08-15	SS5-Au29662	470534	0.3-0.5	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-119 0-0.2	31-08-15	SS5-Au29661	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC71	31-08-15	SS5-Au29705	470534	0-0.2	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QCA71	31-08-15	133542-2	133542		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
X1-120 0.0-0.15	01-09-15	SS5-Se01594	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC82	01-09-15	SS5-Se01652	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC82A	01-09-15	133623-2	133623		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
X1-120 0.2-0.4	01-09-15	SS5-Se01595	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-121 0.0-0.15	01-09-15	SS5-Se01596	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC81	01-09-15	SS5-Se01651	470781	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC81A	01-09-15	133623-1	133623		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
X1-123 0.2-0.4	01-09-15	SS5-Se01597	470781	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-122 0.0-0.15	02-09-15	SS5-Se03277	470968	0-0.15	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-122 0.15-0.3	02-09-15	SS5-Se03278	470968	0.15-0.3	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
X1-123 0.0-0.1	02-09-15	SS5-Se03280	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC89	02-09-15	SS5-Se03306	470968	0-0.1	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	
QC89A	02-09-15	133709-1	133709		<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
X1-123 0.2-0.4	02-09-15	SS5-Se03281	470968	0.2-0.4	<0.5	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	<1	<0.5	<0.5	

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
Field_ID	**Date**	**SampleCode**	**Lab Number**	**Depth**																						
X0-001_0-0.3			463565	0-0.3	-	-	-	-	-	916	0	0	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-002 0.0-0.1	03-09-15	S15-Se05420	471226	0-0.1	-	-	-	-	-	616	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-003_0-0.2			463565	0-0.2	-	-	-	-	-	883	0	0	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-004 0.0-0.2	03-09-15	S15-Se05421	471226	0-0.2	-	-	-	-	-	847	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-005_0-0.6			463565	0-0.6	-	-	-	-	-	1130	0	0	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-006_0-0.6			463565	0-0.6	-	-	-	-	-	649	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-007 0.0-0.1	01-09-15	S15-Se01600	470781	0-0.1	-	-	-	-	-	860	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-008 0.0-0.6	01-09-15	S15-Se01601	470781	0-0.6	-	-	-	-	-	812	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-009 0.0-0.6	01-09-15	S15-Se01602	470781	0-0.6	-	-	-	-	-	764	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-010 0.0-0.1	01-09-15	S15-Se01603	470781	0-0.1	-	-	-	-	-	956	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-011 0.0-0.1	01-09-15	S15-Se01604	470781	0-0.1	-	-	-	-	-	967	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-012 0.0-0.1	01-09-15	S15-Se01605	470781	0-0.1	-	-	-	-	-	1016	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-013 0.0-0.5	03-09-15	S15-Se05422	471226	0-0.5	-	-	-	-	-	790	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-014 0.0-0.2	03-09-15	S15-Se05423	471226	0-0.2	-	-	-	-	-	868	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-015 0.0-0.1	01-09-15	S15-Se01607	470781	0-0.1	-	-	-	-	-	1019	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-016 0.0-0.1	01-09-15	S15-Se01606	470781	0-0.1	-	-	-	-	-	1077	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-018 0.0-0.1	03-09-15	S15-Se05424	471226	0-0.1	-	-	-	-	-	641	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-019 0.0-0.1	03-09-15	S15-Se05425	471226	0-0.1	-	-	-	-	-	665	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-020 0.0-0.1	01-09-15	S15-Se01608	470781	0-0.1	-	-	-	-	-	944	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-021 0-0.35	15-10-15	S15-Oc11280	476042	0-0.35	-	-	-	-	-	792	0	0	0	0	0	0	0	0	1	2	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-022 0.0-0.1	03-09-15	S15-Se05426	471226	0-0.1	-	-	-	-	-	746	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-023 0.0-0.3	03-09-15	S15-Se05427	471226	0-0.3	-	-	-	-	-	865	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-024 0.0-0.2	03-09-15	S15-Se05428	471226	0-0.2	-	-	-	-	-	827	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
X0-025 0.0-0.2	01-09-15	S15-Se01609	470781	0-0.2	-	-	-	-	-	813	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-026 0.0-0.2	01-09-15	S15-Se01610	470781	0-0.2	-	-	-	-	-	882	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-027 0.0-0.1	02-09-15	S15-Se03282	470968	0-0.1	-	-	-	-	-	797	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-028 0.0-0.1	02-09-15	S15-Se03283	470968	0-0.1	-	-	-	-	-	811	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-029 0.0-0.3	01-09-15	S15-Se01611	470781	0-0.3	-	-	-	-	-	739	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-030 0.0-0.15	01-09-15	S15-Se01612	470781	0-0.15	-	-	-	-	-	723	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC88	01-09-15	S15-Se01658	470781	0-0.15	-	-	-	-	-	699	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC88A	01-09-15	133623-8	133623		-	-	-	-	-	809	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X0-031 0.0-0.1	02-09-15	S15-Se03284	470968	0-0.1	-	-	-	-	-	926	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-032 0.0-0.4	02-09-15	S15-Se03285	470968	0-0.4	-	-	-	-	-	886	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-033 0.0-0.2	01-09-15	S15-Se01613	470781	0-0.2	-	-	-	-	-	924	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-034 0.0-0.5	01-09-15	S15-Se01614	470781	0-0.5	-	-	-	-	-	822	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-035 0.0-0.1	02-09-15	S15-Se03286	470968	0-0.1	-	-	-	-	-	707	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-036 0.0-0.3	02-09-15	S15-Se03287	470968	0-0.3	-	-	-	-	-	889	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-037 0.0-0.1	02-09-15	S15-Se03288	470968	0-0.1	-	-	-	-	-	794	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC93	02-09-15	S15-Se03310	470968	0-0.1	-	-	-	-	-	912	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC93A	02-09-15	133709-5	133709		-	-	-	-	-	834	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X0-038 0.0-0.3	01-09-15	S15-Se01615	470781	0-0.3	-	-	-	-	-	937	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-039 0.0-0.15	01-09-15	S15-Se01616	470781	0-0.15	-	-	-	-	-	750	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-040 0-0.2	31-08-15	S15-Au26698	470534	0-0.2	-	-	-	-	-	811	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-041 0-0.5	31-08-15	S15-Au26697	470534	0-0.5	-	-	-	-	-	929	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-042 0.0-0.1	01-09-15	S15-Se01617	470781	0-0.1	-	-	-	-	-	826	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-043 0.0-0.2	01-09-15	S15-Se01618	470781	0-0.2	-	-	-	-	-	1049	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-044 0-0.2	31-08-15	S15-Au26696	470534	0-0.2	-	-	-	-	-	690	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
X0-045 0.0-0.2	02-09-15	S15-Se03289	470968	0-0.2	-	-	-	-	-	981	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-046 0.0-0.3	01-09-15	S15-Se01619	470781	0-0.3	-	-	-	-	-	917	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-047 0.0-0.1	01-09-15	S15-Se01620	470781	0-0.1	-	-	-	-	-	757	0	0	0	0	0	0.0041	0.0041	0.0041	-	-	0.0005	No asbestos detected at the reporting limit of 0.001% w/w.*	Chrysotile asbestos detected in the form of loose fibre bundles.	NIL	Organic fibre detected.	NIL
X0-048 0-0.15	31-08-15	S15-Au26683	470534	0-0.15	-	-	-	-	-	819	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-049 0-0.2	31-08-15	S15-Au26679	470534	0-0.2	-	-	-	-	-	953	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-050 0.0-1.0	20-08-15	S15-Au17130	469476	0-1	-	-	-	-	-	939	0	0	0	0	0	0.0012	0.0012	0.0012	-	-	0.0001	No asbestos detected at the reporting limit of 0.001% w/w.*	Amosite asbestos detected in the form of loose fibre bundles.	NIL	Organic fibre detected.	NIL
X0-051 0.0-0.4	20-08-15	S15-Au17131	469476	0-0.4	-	-	-	-	-	758	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-052 0-0.3	31-08-15	S15-Au26678	470534	0-0.3	-	-	-	-	-	816	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-053 0-0.2	31-08-15	S15-Au26682	470534	0-0.2	-	-	-	-	-	880	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-054 0.0-0.2	20-08-15	S15-Au17132	469476	0-0.2	-	-	-	-	-	506	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_055 0.0-0.15	06-08-15	S15-Au05918	468034	0-0.15	-	-	-	-	-	877	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_056 0.0-0.45	06-08-15	S15-Au05919	468034	0-0.45	-	-	-	-	-	841	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-057 0-0.2	31-08-15	S15-Au26684	470534	0-0.2	-	-	-	-	-	754	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-058 0-0.2	31-08-15	S15-Au26674	470534	0-0.2	-	-	-	-	-	1188	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-059 0.0-0.3	20-08-15	S15-Au17133	469476	0-0.3	-	-	-	-	-	703	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-060 0.0-0.15	20-08-15	S15-Au17134	469476	0-0.15	-	-	-	-	-	652	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-061 0.0-0.1	20-08-15	S15-Au17135	469476	0-0.1	-	-	-	-	-	605	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_062 0.0-0.35	06-08-15	S15-Au05920	468034	0-0.35	-	-	-	-	-	742	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_063 0.0-1.0	06-08-15	S15-Au05921	468034	0-1	-	-	-	-	-	727	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-064 0-0.4	31-08-15	S15-Au26685	470534	0-0.4	-	-	-	-	-	946	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC76	31-08-15	S15-Au26710	470534	0-0.4	-	-	-	-	-	1052	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QCA76	31-08-15	133542-7	133542		-	-	-	-	-	947	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X0-065 0-0.4	31-08-15	S15-Au26677	470534	0-0.4	-	-	-	-	-	1260	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-066 0.0-0.4	20-08-15	S15-Au17136	469476	0-0.4	-	-	-	-	-	782	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.

Table App C
Job Number 54782
Project Stage 2c X series samples - asbestos

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
X0-067 0.0-0.5	20-08-15	S15-Au17137	469476	0-0.5	-	-	-	-	-	938	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-068 0.0-0.2	20-08-15	S15-Au17138	469476	0-0.2	-	-	-	-	-	500	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-069 0.0-1.0	20-08-15	S15-Au17139	469476	0-1	-	-	-	-	-	702	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-070 0-0.15	04-08-15	S15-Au02501	467573	0-0.15	-	-	-	-	-	605	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_071 0.0-0.15	06-08-15	S15-Au05922	468034	0-0.15	-	-	-	-	-	865	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_072 0.0-0.2	06-08-15	S15-Au05923	468034	0-0.2	-	-	-	-	-	844	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-073 0-0.5	31-08-15	S15-Au26673	470534	0-0.5	-	-	-	-	-	837	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-074 0-0.5	31-08-15	S15-Au26675	470534	0-0.5	-	-	-	-	-	1031	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-075 0.0-0.5	20-08-15	S15-Au17140	469476	0-0.5	-	-	-	-	-	811	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-076 0.0-0.3	20-08-15	S15-Au17141	469476	0-0.3	-	-	-	-	-	639	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-077_0.0-0.4	18-08-15	M15-Au14276	469118	0-0.4	-	-	-	-	-	605	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-078_0.0-0.3	18-08-15	M15-Au14277	469118	0-0.3	-	-	-	-	-	696	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_079 0-0.4	31-07-15	S15-Au01721	467448	0-0.4	-	-	-	-	-	1004	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-080 0-0.35	04-08-15	S15-Au02502	467573	0-0.35	-	-	-	-	-	857	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-081 0-0.2	04-08-15	S15-Au02503	467573	0-0.2	-	-	-	-	-	642	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_082 0.0-0.55	06-08-15	S15-Au05924	468034	0-0.55	-	-	-	-	-	685	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_083 0.0-0.4	06-08-15	S15-Au05925	468034	0-0.4	-	-	-	-	-	737	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_084 0.0-0.35	06-08-15	S15-Au05926	468034	0-0.35	-	-	-	-	-	819	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-085 0-0.25	31-08-15	S15-Au26670	470534	0-0.25	-	-	-	-	-	864	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-086 0-0.4	31-08-15	S15-Au26671	470534	0-0.4	-	-	-	-	-	943	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-087 0-0.5	31-08-15	S15-Au26672	470534	0-0.5	-	-	-	-	-	960	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-088_0.0-0.1	18-08-15	M15-Au14278	469118	0-0.1	-	-	-	-	-	543	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-089_0.0-0.2	19-08-15	S15-Au15676	469287	0-0.2	-	-	-	-	-	532	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-090_0.0-0.25	19-08-15	S15-Au15677	469287	0-0.25	-	-	-	-	-	528	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.

Table App C
Job Number 54782
Project Stage 2c X series samples - asbestos

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
X0-091_0.0-0.5	18-08-15	M15-Au14279	469118	0-0.5	-	-	-	-	-	649	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_092 0-0.5	31-07-15	S15-Au01720	467448	0-0.5	-	-	-	-	-	717	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_093 0-0.3	31-07-15	S15-Au01719	467448	0-0.3	-	-	-	-	-	1127	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-094 0-0.3	04-08-15	S15-Au02504	467573	0-0.3	-	-	-	-	-	1058	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-095 0-0.25	04-08-15	S15-Au02505	467573	0-0.25	-	-	-	-	-	876	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-096 0-0.3	04-08-15	S15-Au02506	467573	0-0.3	-	-	-	-	-	681	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_097 0.0-0.4	06-08-15	S15-Au05927	468034	0-0.4	-	-	-	-	-	780	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0_098 0.0-0.35	06-08-15	S15-Au05928	468034	0-0.35	-	-	-	-	-	849	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-099 0-0.3	31-08-15	S15-Au26667	470534	0-0.3	-	-	-	-	-	923	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X0-100 0-0.3	31-08-15	S15-Au26669	470534	0-0.3	-	-	-	-	-	972	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC73	31-08-15	S15-Au26707	470534	0-0.3	-	-	-	-	-	765	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QCA73	31-08-15	133542-4	133542		-	-	-	-	-	938	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X0-101 0-0.35	31-08-15	S15-Au26668	470534	0-0.35	-	-	-	-	-	970	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-01 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	746	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-02 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	737	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-03 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	576	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-04 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	679	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-05 0-0.2	31-08-24	0-0.2	447301	0-0.2	-	-	-	-	-	568	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-06 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	581	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-07 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	637	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-08 0.2-0.4	31-08-24	2-0.4	447301	2-0.4	-	-	-	-	-	567	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-09 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	587	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-10 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	525	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-11 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	616	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.

Table App C
Job Number 54782
Project Stage 2c X series samples - asbestos

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
X1-12 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	788	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC01	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	85	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC01A			123610		-	-	-	-	-	708	0	0	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-13 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	627	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-14 0-0.1	31-08-24	0-0.1	447301	0-0.1	-	-	-	-	-	91	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-15 0-0.3	31-08-24	0-0.3	447301	0-0.3	-	-	-	-	-	556	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-016_0-0.2	12-03-69	0-0.2	463565	0-0.2	-	-	-	-	-	610	0	0	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-017 0.0-0.1	03-09-15	S15-Se05429	471226	0-0.1	-	-	-	-	-	854	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-019 0.0-0.1	03-09-15	S15-Se05430	471226	0-0.1	-	-	-	-	-	793	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-020 0.0-0.1	03-09-15	S15-Se05431	471226	0-0.1	-	-	-	-	-	771	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-021 0.0-0.1	03-09-15	S15-Se05432	471226	0-0.1	-	-	-	-	-	724	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-022 0.0-0.1	03-09-15	S15-Se05433	471226	0-0.1	-	-	-	-	-	762	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-023 0-0.1	15-10-15	S15-Oc11281	476042	0-0.1	-	-	-	-	-	877	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-024 0.0-0.5	03-09-15	S15-Se05434	471226	0-0.5	-	-	-	-	-	853	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-025 0.0-0.1	03-09-15	S15-Se05435	471226	0-0.1	-	-	-	-	-	851	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC95	03-09-15	S15-Se05443	471226	0-0.1	-	-	-	-	-	767	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC95A	03-09-15	133730-2	133730		-	-	-	-	-	886	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-026 0.0-0.15	03-09-15	S15-Se05436	471226	0-0.15	-	-	-	-	-	861	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-027 0.0-0.1	03-09-15	S15-Se05437	471226	0-0.1	-	-	-	-	-	705	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-028 0.0-0.2	01-09-15	S15-Se01631	470781	0-0.2	-	-	-	-	-	883	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-029 0-0.2	15-10-15	S15-Oc11282	476042	0-0.2	-	-	-	-	-	861	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-030 0-0.1	15-10-15	S15-Oc11283	476042	0-0.1	-	-	-	-	-	819	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-031 0-0.3	15-10-15	S15-Oc11284	476042	0-0.3	-	-	-	-	-	846	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-032 0-0.1	15-10-15	S15-Oc11285	476042	0-0.1	-	-	-	-	-	707	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.

Table App C
Job Number 54782
Project Stage 2c X series samples - asbestos

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
X1-033 0.0-0.2	03-09-15	S15-Se05438	471226	0-0.2	-	-	-	-	-	798	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-034 0.0-0.1	03-09-15	S15-Se05439	471226	0-0.1	-	-	-	-	-	730	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-035 0.0-0.1	03-09-15	S15-Se05440	471226	0-0.1	-	-	-	-	-	759	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-036 0.0-0.15	03-09-15	S15-Se05441	471226	0-0.15	-	-	-	-	-	776	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC94	03-09-15	S15-Se05442	471226	0-0.15	-	-	-	-	-	719	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC94A	03-09-15	133730-1	133730		-	-	-	-	-	805	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-038 0-0.1	15-10-15	S15-Oc11286	476042	0-0.1	-	-	-	-	-	810	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-039 0.0-0.1	02-09-15	S15-Se03294	470968	0-0.1	-	-	-	-	-	765	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC91	02-09-15	S15-Se03308	470968	0-0.1	-	-	-	-	-	746	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC91A	02-09-15	133709-3	133709		-	-	-	-	-	664	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-040 0.0-0.1	02-09-15	S15-Se03295	470968	0-0.1	-	-	-	-	-	771	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-041 0.0-0.1	02-09-15	S15-Se03296	470968	0-0.1	-	-	-	-	-	788	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-042 0.0-0.1	02-09-15	S15-Se03297	470968	0-0.1	-	-	-	-	-	854	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-043 0.0-0.2	01-09-15	S15-Se01632	470781	0-0.2	-	-	-	-	-	814	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC87	01-09-15	S15-Se01657	470781	0-0.2	-	-	-	-	-	728	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC87A	01-09-15	133623-7	133623		-	-	-	-	-	703	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-044 0.0-0.1	01-09-15	S15-Se01633	470781	0-0.1	-	-	-	-	-	742	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-045 0-0.1	15-10-15	S15-Oc11287	476042	0-0.1	-	-	-	-	-	774	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-046 0-0.1	15-10-15	S15-Oc11288	476042	0-0.1	-	-	-	-	-	864	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-047 0-0.1	15-10-15	S15-Oc11289	476042	0-0.1	-	-	-	-	-	928	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-048 0.0-0.1	02-09-15	S15-Se03298	470968	0-0.1	-	-	-	-	-	762	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-049 0.0-0.2	02-09-15	S15-Se03299	470968	0-0.2	-	-	-	-	-	838	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-050 0.0-0.1	02-09-15	S15-Se03300	470968	0-0.1	-	-	-	-	-	845	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-051 0.0-0.1	02-09-15	S15-Se03301	470968	0-0.1	-	-	-	-	-	851	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.

Table App C
Job Number 54782
Project Stage 2c X series samples - asbestos

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
X1-052 0.0-0.1	01-09-15	S15-Se01634	470781	0-0.1	-	-	-	-	-	705	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-053 0-0.1	15-10-15	S15-Oc11290	476042	0-0.1	-	-	-	-	-	829	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC02-15/10	15-10-15	S15-Oc11291	476042	0-0.1	-	-	-	-	-	914	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC02-15/10	15-10-15		135939		-	-	-	-	-	905	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-054 0-0.1	31-08-15	S15-Au26691	470534	0-0.1	-	-	-	-	-	835	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-055 0-0.1	31-08-15	S15-Au26693	470534	0-0.1	-	-	-	-	-	923	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-056 0-0.2	31-08-15	S15-Au26695	470534	0-0.2	-	-	-	-	-	811	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC80	31-08-15	S15-Au26714	470534	0-0.2	-	-	-	-	-	894	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QCA80	31-08-15	133542-11	133542		-	-	-	-	-	930	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-057 0-0.1	31-08-15	S15-Au26694	470534	0-0.1	-	-	-	-	-	766	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-058 0.0-0.1	01-09-15	S15-Se01635	470781	0-0.1	-	-	-	-	-	711	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-059 0-0.1	31-08-15	S15-Au26689	470534	0-0.1	-	-	-	-	-	902	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-060 0-0.1	31-08-15	S15-Au26686	470534	0-0.1	-	-	-	-	-	774	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-061 0-0.1	31-08-15	S15-Au26687	470534	0-0.1	-	-	-	-	-	818	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-062 0-0.1	31-08-15	S15-Au26688	470534	0-0.1	-	-	-	-	-	789	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-063 0-0.1	31-08-15	S15-Au26690	470534	0-0.1	-	-	-	-	-	872	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-064 0-0.2	31-08-15	S15-Au26692	470534	0-0.2	-	-	-	-	-	763	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-065 0.0-1.0	27-08-15	M15-Au24519	470301	0-1	-	-	-	-	-	812	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-066 0-0.2	31-08-15	S15-Au26681	470534	0-0.2	-	-	-	-	-	1063	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-067 0.0-0.15	01-09-15	S15-Se01636	470781	0-0.15	-	-	-	-	-	880	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC86	01-09-15	S15-Se01656	470781	0-0.15	-	-	-	-	-	806	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC86A	01-09-15	133623-6	133623		-	-	-	-	-	816	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-068 0.0-0.1	01-09-15	S15-Se01637	470781	0-0.1	-	-	-	-	-	801	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-069 0.0-0.2	01-09-15	S15-Se01638	470781	0-0.2	-	-	-	-	-	785	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
X1-070 0.0-0.8	27-08-15	M15-Au24518	470301	0-0.8	-	-	-	-	-	827	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC57	27-08-15	M15-Au24522	470301	0-0.8	-	-	-	-	-	927	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC57A	27-08-15	133384-3	133384		-	-	-	-	-	798	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-071 0.0-1.0	27-08-15	M15-Au24516	470301	0-1	-	-	-	-	-	766	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-071 1.0-1.3	27-08-15	M15-Au24517	470301	1-1.3	-	-	-	-	-	898	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-072 0.0-0.7	27-08-15	M15-Au24515	470301	0-0.7	-	-	-	-	-	903	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-073 0.0-0.15	01-09-15	S15-Se01639	470781	0-0.15	-	-	-	-	-	745	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-074 0.0-0.2	01-09-15	S15-Se01640	470781	0-0.2	-	-	-	-	-	941	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-075 0.0-0.5	01-09-15	S15-Se01641	470781	0-0.5	-	-	-	-	-	728	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-076 0.0-1.0	27-08-15	M15-Au24513	470301	0-1	-	-	-	-	-	749	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-076 1.0-1.2	27-08-15	M15-Au24514	470301	1-1.2	-	-	-	-	-	677	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-077 0.0-1.0	27-08-15	M15-Au24512	470301	0-1	-	-	-	-	-	912	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC56	27-08-15	M15-Au24521	470301	0-1	-	-	-	-	-	783	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC56A	27-08-15	133384-2	133384		-	-	-	-	-	860	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-078 0.0-1.0	27-08-15	M15-Au24511	470301	0-1	-	-	-	-	-	857	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-079 0.0-0.8	27-08-15	M15-Au24510	470301	0-0.8	-	-	-	-	-	854	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-080 0.0-0.8	27-08-15	M15-Au24509	470301	0-0.8	-	-	-	-	-	793	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-081 0.0-1.0	27-08-15	M15-Au24508	470301	0-1	-	-	-	-	-	756	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC68	27-08-15	M15-Au24533	470301	0-1	-	-	-	-	-	762	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC68A	27-08-15	133384-14	133384		-	-	-	-	-	812	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-082 0.0-0.2	02-09-15	S15-Se03302	470968	0-0.2	-	-	-	-	-	852	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-083 0.0-0.8	27-08-15	M15-Au24507	470301	0-0.8	-	-	-	-	-	860	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC61	27-08-15	M15-Au24526	470301	0-0.8	-	-	-	-	-	763	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC61A	27-08-15	133384-7	133384		-	-	-	-	-	749	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
X1-084 0.0-0.8	27-08-15	M15-Au24506	470301	0-0.8	-	-	-	-	-	847	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-085 0.0-0.9	27-08-15	M15-Au24505	470301	0-0.9	-	-	-	-	-	827	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC66	27-08-15	M15-Au24531	470301	0-0.9	-	-	-	-	-	984	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC66A	27-08-15	133384-12	133384		-	-	-	-	-	941	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-086 0.0-1.0	27-08-15	M15-Au24504	470301	0-1	-	-	-	-	-	791	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-087 0.0-0.9	27-08-15	M15-Au24503	470301	0-0.9	-	-	-	-	-	744	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-088 0-0.2	31-08-15	S15-Au26680	470534	0-0.2	-	-	-	-	-	954	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1_089 0.0-0.2	06-08-15	S15-Au05937	468034	0-0.2	-	-	-	-	-	670	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-090 0.0-0.2	01-09-15	S15-Se01642	470781	0-0.2	-	-	-	-	-	704	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-091 0.0-1.0	27-08-15	M15-Au24501	470301	0-1	-	-	-	-	-	902	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-091 1.0-1.1	27-08-15	M15-Au24502	470301	1-1.1	-	-	-	-	-	940	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-092 0.0-0.8	27-08-15	M15-Au24500	470301	0-0.8	-	-	-	-	-	586	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-093 0.0-1.0	27-08-15	M15-Au24499	470301	0-1	-	-	-	-	-	588	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-094 0.0-1.0	27-08-15	M15-Au24497	470301	0-1	-	-	-	-	-	728	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-094 1.0-1.5	27-08-15	M15-Au24498	470301	1-1.5	-	-	-	-	-	723	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-095 0.0-1.0	27-08-15	M15-Au24495	470301	0-1	-	-	-	-	-	820	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-095 1.0-1.1	27-08-15	M15-Au24496	470301	1-1.1	-	-	-	-	-	824	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-096 0.0-1.0	27-08-15	M15-Au24494	470301	0-1	-	-	-	-	-	820	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-097 0.0-1.0	27-08-15	M15-Au24493	470301	0-1	-	-	-	-	-	532	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-098 0.0-0.15	01-09-15	S15-Se01643	470781	0-0.15	-	-	-	-	-	780	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-099 0.0-0.2	02-09-15	S15-Se03303	470968	0-0.2	-	-	-	-	-	813	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-100 0.0-0.3	01-09-15	S15-Se01644	470781	0-0.3	-	-	-	-	-	859	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-101 0.0-1.0	27-08-15	M15-Au24492	470301	0-1	-	-	-	-	-	585	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-102 0.0-1.0	27-08-15	M15-Au24491	470301	0-1	-	-	-	-	-	611	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
X1-103 0.0-1.0	27-08-15	M15-Au24490	470301	0-1	-	-	-	-	-	802	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-104 0.0-1.0	27-08-15	M15-Au24489	470301	0-1	-	-	-	-	-	657	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-105 0.0-1.0	27-08-15	M15-Au24488	470301	0-1	-	-	-	-	-	536	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-106 0-0.2	31-08-15	S15-Au26676	470534	0-0.2	-	-	-	-	-	908	0	0	0	0	0	0.0016	0.0016	0.0016	-	-	0.0002	No asbestos detected at the reporting limit of 0.001% w/w.*	Chrysotile asbestos detected in the form of loose fibre bundles.	NIL	Organic fibre detected.	NIL
X1-107 0.0-0.2	01-09-15	S15-Se01645	470781	0-0.2	-	-	-	-	-	768	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-108 0.0-0.4	01-09-15	S15-Se01646	470781	0-0.4	-	-	-	-	-	653	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-109 0.0-1.0	27-08-15	M15-Au24486	470301	0-1	-	-	-	-	-	467	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.002% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-109 1.0-1.2	27-08-15	M15-Au24487	470301	1-1.2	-	-	-	-	-	450	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.002% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-110 0.0-1.0	27-08-15	M15-Au24484	470301	0-1	-	-	-	-	-	618	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-110 1.0-1.2	27-08-15	M15-Au24485	470301	1-1.2	-	-	-	-	-	703	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-111 0.0-1.0	27-08-15	M15-Au24482	470301	0-1	-	-	-	-	-	561	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-111 1.0-1.1	27-08-15	M15-Au24483	470301	1-1.1	-	-	-	-	-	614	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-112 0.0-1.0	27-08-15	M15-Au24480	470301	0-1	-	-	-	-	-	567	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-112 1.0-1.2	27-08-15	M15-Au24481	470301	1-1.2	-	-	-	-	-	561	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1_114 0.0-0.3	06-08-15	S15-Au05938	468034	0-0.3	-	-	-	-	-	838	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-115 0.0-0.15	01-09-15	S15-Se01647	470781	0-0.15	-	-	-	-	-	930	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-116 0.0-0.1	01-09-15	S15-Se01648	470781	0-0.1	-	-	-	-	-	931	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-117 0.0-1.0	27-08-15	M15-Au24478	470301	0-1	-	-	-	-	-	673	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-117 1.0-1.2	27-08-15	M15-Au24479	470301	1-1.2	-	-	-	-	-	677	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-118 0.0-1.0	27-08-15	M15-Au24477	470301	0-1	-	-	-	-	-	685	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-119 0-0.2	31-08-15	S15-Au26699	470534	0-0.2	-	-	-	-	-	899	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-120 0.0-0.15	01-09-15	S15-Se01649	470781	0-0.15	-	-	-	-	-	928	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC82	01-09-15	S15-Se01652	470781	0-0.15	-	-	-	-	-	996	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.

Table App C
Job Number 54782
Project Stage 2c X series samples - asbestos

					Asbestos - Field					Asbestos												Asbestos - Trace Analysis				
					Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
					L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																										
NEPM 2013 Soil HIL A									0.01												0.001					
NEPM 2013 Soil HSL A - Sensitive Setting																										
QC82A	01-09-15	133623-2	133623		-	-	-	-	-	1002	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-121 0.0-0.15	01-09-15	S15-Se01650	470781	0-0.15	-	-	-	-	-	793	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC81	01-09-15	S15-Se01651	470781	0-0.15	-	-	-	-	-	809	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
QC81A	01-09-15	133623-1	133623		-	-	-	-	-	878	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL
X1-122 0.0-0.3	02-09-15	S15-Se03304	470968	0-0.3	-	-	-	-	-	942	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.
X1-123 0.0-0.1	02-09-15	S15-Se03305	470968	0-0.1	-	-	-	-	-	851	0	0	0	0	0	0	0	0	-	-	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.



Source: Base Image - © Near Map 28-07-2015

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0 5 10 20 m

Scale:1:600

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
A	Original Issue - R01	SE	20-11-2015

Legend:

- CHK001/6 Buildings
- CHK001/6 Building Concrete Footprint
- Stockpile Sample Locations

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Figure 6A: X Series Compound Layout and Stockpile Sample Locations

Client: Maryland Development Company

Project: Central Precinct

Job No: 50374 File Name: 50374_06A

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Table App C
Project Number: 54782
Project Name: Stage 2c X series stockpile samples

					Metals & Metalloids								Polycyclic Aromatic Hydrocarbons																										TPHs (NEPC 1999)					TRHs (NEPC 2013)						
					Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (WHO)	Benzo(b,j)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Carcinogenic PAHs as B(a)P TPE	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	Total Positive PAHs	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	C6-C10 Fraction	C6 - C10 less BTEX (F1)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					2.00	0.40	1.00	1.00	1.00	0.10	1.00	1.00	0.10	0.10	0.10	0.10	0.05	0.50	0.50	0.50		0.50		0.10	0.50	0.10	0.10	0.10	0.10		0.10	0.10	0.10	0.10	0.50		20.00	20.00	50.00	50.00	50.00	50.00	100.00	100.00	50.00	20.00	20.00
NEPC 2013 EIL, EILs Aged Sediment (Ecological Significance)					40		140	85	470		50	230																			10																		
NEPC 2013 EIL, EILs Aged Sediment (Urban Residential)					100		410	230	1100		270	770																			170																		
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil																	0.7[#3]																										25[#1]			25[#1]	125[#2]	125[#1]
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																	0.7[#3]																										120[#1]	300[#3]	2800[#3]	120[#1]	180[#2]	180[#1]
NEPM 2013 Soil HIL A					100[#4]	20	100[#5]	6000	300[#6]	40[#7]	400	7400																	3[#9]		56			300[#10]										280			280	50	50
Site Specific Criteria									230			200							3																								4500	6300				
NEPM 2013 Soil HSL A - Sensitive Setting																															3[#8]													110[#12]		45[#13]
Field_ID	**Date**	**SampleCode**	**Lab Number**	**Depth**																																												
X01SP01_01_0-1	29-06-15	S15-Jn26183	463518	0-1	8.3	<0.4	19	22	15	<0.1	13	30	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP01_02_0-1	29-06-15	S15-Jn26184	463518	0-1	5.8	<0.4	20	35	16	<0.1	28	110	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
QC01	29-06-15	S15-Jn26273	463518	0-1	5.8	<0.4	16	19	10	<0.1	12	33	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
QC01A	29-06-15	130558-1	130558		<4	<0.4	27	38	16	<0.1	42	110	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	-	<0.5	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.172[#2]	<0.1	<0.1	<0.1	<0.1	-	0[#5]	<25	<50	<100	<100	-	<50	<100	120	<50	<25	<25
X01SP01_02_1-1.6	29-06-15	S15-Jn26185	463518	1-1.6	3	0.9	27	43	11	<0.1	43	130	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP01_03_0-1	29-06-15	S15-Jn26186	463518	0-1	5.2	<0.4	19	41	10	<0.1	34	61	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP01_03_1-1.7	29-06-15	S15-Jn26187	463518	1-1.7	7	<0.4	24	34	15	<0.1	28	60	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP01_04_0-1	29-06-15	S15-Jn26188	463518	0-1	4.5	<0.4	19	46	7.8	<0.1	41	63	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP01_04_1-1.7	29-06-15	S15-Jn26189	463518	1-1.7	5	<0.4	20	34	9.6	<0.1	27	48	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP01_05_0-1	29-06-15	S15-Jn26190	463518	0-1	2.9	<0.4	20	34	<5	<0.1	38	43	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP01_06_0-1	29-06-15	S15-Jn26191	463518	0-1	4.4	<0.4	20	34	11	<0.1	30	54	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_01_0-1	29-06-15	S15-Jn26192	463518	0-1	4.8	<0.4	24	24	12	<0.1	22	51	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	72	<50	72	<50	<100	<100	<50	<20	<20
QC02	29-06-15	S15-Jn26274	463518	0-1	6.7	<0.4	22	13	11	<0.1	10	35	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	250	<50	250	<50	270	<100	<50	<20	<20
QC02A	29-06-15	130558-2	130558		5	<0.4	33	16	18	<0.1	23	55	<0.1	<0.1	<0.1	<0.1	0.08	<0.5	<0.5	-	<0.5	<0.2	<0.1	-	<0.1	<0.1	0.1	<0.1	0.141[#1]	<0.1	<0.1	<0.1	0.1	-	0.28	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25
X01SP02_01_1-2	29-06-15	S15-Jn26193	463518	1-2	5.4	<0.4	21	18	14	<0.1	18	47	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_02_0-1	29-06-15	S15-Jn26195	463518	0-1	5.4	<0.4	23	12	14	<0.1	14	91	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	130	<50	130	<50	160	<100	<50	<20	<20
X01SP02_02_1-2	29-06-15	S15-Jn26196	463518	1-2	5.7	<0.4	31	15	14	<0.1	20	47	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	220	<50	220	<50	250	<100	<50	<20	<20
X01SP02_03_0-1	29-06-15	S15-Jn26197	463518	1-1	4.2	<0.4	28	15	9.2	<0.1	20	35	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_03_1-2	29-06-15	S15-Jn26198	463518	1-2	6.8	<0.4	36	18	12	<0.1	20	57	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_04_0-1	29-06-15	S15-Jn26199	463518	0-1	5.5	<0.4	27	17	11	<0.1	17	35	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_04_1-2	29-06-15	S15-Jn26200	463518	1-2	3.2	<0.4	29	34	12	<0.1	37	87	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	0.6	<0.5	0.6	-	<20	<20	<50	52	52	<50	<100	<100	<50	<20	<20
X01SP02_05_0-1	29-06-15	S15-Jn26201	463518	0-1	7.7	<0.4	28	19	14	<0.1	18	49	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_05_1-2	29-06-15	S15-Jn26202	463518	1-2	5.1	<0.4	26	20	8.1	<0.1	23	60	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_05_2-2.5	29-06-15	S15-Jn26203	463518	2-2.5	3.6	<0.4	23	30	15	<0.1	32	53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_06_0-1	29-06-15	S15-Jn26204	463518	0-1	5.4	<0.4	23	27	11	<0.1	25	55	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	64	<50	64	<50	<100	<100	<50	<20	<20
X01SP02_06_1-2	29-06-15	S15-Jn26205	463518	1-2	4.6	<0.4	19	28	10	<0.1	28	56	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	140	<50	140	<50	180	<100	<50	<20	<20
X01SP02_07_0-1	29-06-15	S15-Jn26207	463518	0-1	4.3	<0.4	18	30	11	<0.1	25	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	53	<50	53	<50	<100	<100	<50	<20	<20
X01SP02_07_1-2	29-06-15	S15-Jn26208	463518	1-2	6.1	<0.4	24	27	16	<0.1	25	71	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	57	120	180	<50	110	<100	<50	<20	<20
X01SP02_07_2-2.5	29-06-15	S15-Jn26209	463518	2-2.5	5.7	<0.4	23	28	8.3	<0.1	30	62	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	160	140	300	<50	220	<100	<50	<20	<20
X01SP02_08_0-1	29-06-15	S15-Jn26210	463518	0-1	4.4	<0.4	20	33	9.5	<0.1	33	59	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	55	190	250	<50	130	<100	<50	<20	<20
X01SP02_08_1-2	29-06-15	S15-Jn26211	463518	1-2	3.9	<0.4	19	24	11	<0.1	20	47	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_08_2-2.5	29-06-15	S15-Jn26212	463518	2-2.5	4.1	<0.4	38	26	7.7	<0.1	40	60	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	53	53	<50	<100	<100	<50	<20	<20
X01SP02_09_0-1	29-06-15	S15-Jn26213	463518	0-1	6.1	<0.4	48	23	9.7	<0.1	35	53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_09_1-2	29-06-15	S15-Jn26214	463518	1-2	7	<0.4	30	20	15	<0.1	23	69	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_09_2-2.5	29-06-15	S15-Jn26215	463518	2-2.5	3.7	<0.4	38	18	7.8	<0.1	30	36	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_10_0-1	29-06-15	S15-Jn26216	463518	0-1	4.9	<0.4	26	21	13	<0.1	22	52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_10_1-2	29-06-15	S15-Jn26217	463518	1-2	5.2	<0.4	34	20	13	<0.1	25	54	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_11_0-1	29-06-15	S15-Jn26219	463518	0-1	5.5	<0.4	48	19	9.6	<0.1	32	41	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	100	<50	100	<50	130	<100	<50	<20	<20
X01SP02_11_1-2	29-06-15	S15-Jn26220	463518	1-2	5	<0.4	22	17	12	<0.1	15	75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_11_2-2.5	29-06-15	S15-Jn26221	463518	2-2.5	5.1	<0.4	46	24	11	<0.1	37	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_12_0-1	29-06-15	S15-Jn26222	463518	0-1	6.3	<0.4	22	18	10	<0.1	12	36	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_12_1-2	29-06-15	S15-Jn26223	463518	1-2	4.6	<0.4	32	20	6.9	<0.1	27	47	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_12_2-2.5	29-06-15	S15-Jn26224	463518	2-2.5	8.5	<0.4	28	18	35	<0.1	17	72	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_13_0-1	29-06-15	S15-Jn26225	463518	0-1	5.9	<0.4	31	18	10	<0.1	22	49	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_13_1-2	29-06-15	S15-Jn26226	463518	1-2	5.9	<0.4	28	18	14	<0.1	17	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_13_2-2.5	29-06-15	S15-Jn26227	463518	2-2.5	5.2	<0.4	24	18	13	<0.1	19	66	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_14_0-1	29-06-15	S15-Jn26228	463518	0-1	4.9	<0.4	19	25	11	<0.1	13	65	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_14_1-2	29-06-15	S15-Jn26229	463518	1-2	6.1	<0.4	27	19	15	<0.1	16	88	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#4]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20

Table App C
Project Number: 54782
Project Name: Stage 2c X series stockpile samples

	Metals & Metalloids								Polycyclic Aromatic Hydrocarbons																						TPHs (NEPC 1999)					TRHs (NEPC 2013)					
	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (WHO)	Benzo(b,j)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Carcinogenic PAHs as B(a)P TPE	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	Total Positive PAHs	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	C6-C10 Fraction	C6 - C10 less BTEX (F1)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	2.00	0.40	1.00	1.00	1.00	0.10	1.00	1.00	0.10	0.10	0.10	0.10	0.05	0.50	0.50	0.50		0.50		0.10	0.50	0.10	0.10	0.10	0.10		0.10	0.10	0.10	0.10	0.50		20.00	20.00	50.00	50.00	50.00	50.00	100.00	100.00	50.00	20.00	20.00
NEPC 2013 EIL, EILs Aged Sediment (Ecological Significance)	40		140	85	470		50	230																				10														
NEPC 2013 EIL, EILs Aged Sediment (Urban Residential)	100		410	230	1100		270	770																				170														
NEPM 2013 ESL Areas of Ecological Significance, Coarse Soil													0.7[#3]																								25[#1]			25[#1]	125[#2]	125[#1]
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil													0.7[#3]																								120[#1]	300[#3]	2800[#3]	120[#1]	180[#2]	180[#1]
NEPM 2013 Soil HIL A	100[#4]	20	100[#5]	6000	300[#6]	40[#7]	400	7400							3											3[#9]		56			300[#10]									280			280	50	50
Site Specific Criteria					230			200							3																						4500	6300				
NEPM 2013 Soil HSL A - Sensitive Setting																												3[#8]											110[#12]		45[#13]

Field_ID	Date	SampleCode	Lab Number	Depth																																								
X01SP02_14_2-2.5	29-06-15	S15-Jn26230	463518	2-2.5	4.7	<0.4	24	17	11	<0.1	21	61	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_15_0-1	29-06-15	S15-Jn26231	463518	0-1	6.5	<0.4	27	19	13	<0.1	21	43	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_15_1-2	29-06-15	S15-Jn26232	463518	1-2	5.8	<0.4	27	18	12	<0.1	20	44	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_15_2-2.5	29-06-15	S15-Jn26233	463518	2-2.5	6.2	<0.4	33	18	13	<0.1	25	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_16_0-1	30-06-15	S15-Jn26234	463518	0-1	7.8	<0.4	32	17	14	<0.1	24	49	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
QC03	30-06-15	S15-Jn26275	463518	0-1	8.6	<0.4	30	15	19	<0.1	21	64	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
QC03A	30-06-15	130558-3	130558		6	<0.4	27	22	79	<0.1	18	130	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	-	<0.5	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.172[#2]	<0.1	<0.1	<0.1	<0.1	-	0[#5]	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25
X01SP02_16_1-2	30-06-15	S15-Jn26235	463518	1-2	6.3	<0.4	41	25	16	<0.1	30	60	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_16_2-2.5	30-06-15	S15-Jn26236	463518	2-2.5	5.9	<0.4	31	18	11	<0.1	24	40	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_17_0-1	30-06-15	S15-Jn26237	463518	0-1	7.4	<0.4	36	20	16	<0.1	23	64	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_17_1-2	30-06-15	S15-Jn26238	463518	1-2	5.3	<0.4	26	18	8.6	<0.1	18	33	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
QC04	30-06-15	S15-Jn26276	463518	1-2	6	<0.4	30	15	11	<0.1	24	55	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
QC04A	30-06-15	130558-4	130558		6	<0.4	30	15	17	<0.1	24	53	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	-	<0.5	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.172[#2]	<0.1	<0.1	<0.1	<0.1	-	0[#5]	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25
X01SP02_17_2-2.5	30-06-15	S15-Jn26239	463518	2.5-2.5	6.3	<0.4	22	15	11	<0.1	12	47	<0.5	<0.5	<0.5	<0.5	0.5	0.6	0.9	1.2	-	0.6	-	<0.5	<0.5	0.7	<0.5	0.6	<0.5	0.8945[#3]	<0.5	<0.5	<0.5	0.8	3.2	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_18_0-1	30-06-15	S15-Jn26240	463518	0-1	3.6	<0.4	37	18	6.1	<0.1	29	45	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_18_1-2	30-06-15	S15-Jn26241	463518	1-2	5.3	<0.4	25	16	9.6	<0.1	19	39	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_18_2-3	30-06-15	S15-Jn26242	463518	2-3	3.5	<0.4	32	14	6.7	<0.1	26	25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_19_0-1	30-06-15	S15-Jn26243	463518	0-1	5.4	<0.4	30	19	8.5	<0.1	22	54	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_19_1-2	30-06-15	S15-Jn26244	463518	1-2	3.5	<0.4	30	15	6.9	<0.1	25	35	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_19_2-3	30-06-15	S15-Jn26245	463518	2-3	3.7	<0.4	36	16	5.6	<0.1	29	42	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_20_0-1	30-06-15	S15-Jn26246	463518	0-1	5.8	<0.4	30	18	12	<0.1	22	46	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_20_1-2	30-06-15	S15-Jn26247	463518	1-2	7.3	<0.4	27	16	14	<0.1	15	79	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_20_2-3	30-06-15	S15-Jn26248	463518	2-3	3.1	<0.4	33	11	7.4	<0.1	18	48	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_21_0-1	30-06-15	S15-Jn26249	463518	0-1	5.6	<0.4	18	17	14	<0.1	11	49	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_21_1-2	30-06-15	S15-Jn26250	463518	1-2	6.7	<0.4	34	20	19	<0.1	21	39	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_21_2-3	30-06-15	S15-Jn26251	463518	2-3	7.4	<0.4	29	18	14	<0.1	18	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_22_0-1	30-06-15	S15-Jn26252	463518	0-1	5.4	<0.4	44	23	11	<0.1	37	69	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_22_1-2	30-06-15	S15-Jn26253	463518	1-2	4.3	<0.4	34	19	8.4	<0.1	27	40	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_22_2-3	30-06-15	S15-Jn26254	463518	2-3	6.8	<0.4	36	24	11	<0.1	23	42	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_23_0-1	30-06-15	S15-Jn26255	463518	0-1	4.5	<0.4	45	18	<5	<0.1	39	44	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_23_1-2	30-06-15	S15-Jn26256	463518	1-2	4.7	0.8	34	16	8.7	<0.1	27	190	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_23_2-3	30-06-15	S15-Jn26257	463518	2-3	4.5	<0.4	33	19	10	<0.1	29	41	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_24_0-1	30-06-15	S15-Jn26258	463518	0-1	5.4	<0.4	33	15	9.6	<0.1	23	44	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_24_1-2	30-06-15	S15-Jn26259	463518	1-2	4.6	<0.4	39	17	7.8	<0.1	30	44	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	120	110	230	<50	220	<100	<50	<20	<20
X01SP02_24_2-3	30-06-15	S15-Jn26260	463518	2-3	4.8	<0.4	32	17	9.4	<0.1	20	27	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_25_0-1	30-06-15	S15-Jn26261	463518	0-1	4.5	<0.4	26	14	17	<0.1	15	71	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
QC05	30-06-15	S15-Jn26277	463518	0-1	5.6	<0.4	18	11	12	<0.1	6.1	17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
QC05A	30-06-15	130558-5	130558		5	<0.4	27	16	17	<0.1	18	54	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	-	<0.5	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.172[#2]	<0.1	<0.1	<0.1	<0.1	-	0[#5]	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25
X01SP02_25_1-2	30-06-15	S15-Jn26262	463518	1-2	6.5	<0.4	36	18	13	<0.1	22	45	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_26_0-1	30-06-15	S15-Jn26264	463518	0-1	5.9	<0.4	29	16	9.6	<0.1	18	32	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_26_1-2	30-06-15	S15-Jn26265	463518	1-2	5.8	<0.4	31	17	11	<0.1	24	42	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_27_0-1	30-06-15	S15-Jn26267	463518	0-1	4.7	<0.4	37	17	6.9	<0.1	25	41	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_27_1-2	30-06-15	S15-Jn26268	463518	1-2	3.9	<0.4	21	17	10	<0.1	13	54	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_28_0-1	30-06-15	S15-Jn26270	463518	0-1	4.3	<0.4	33	20	8.3	<0.1	26	32	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_28_1-2	30-06-15	S15-Jn26271	463518	1-2	4.7	<0.4	31	17	8	<0.1	28	38	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
X01SP02_28_2-3	30-06-15	S15-Jn26272	463518	2-3	5.5	<0.4	30	17	9.8	<0.1	22	35	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21[#1]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20

Statistical Summary																																											
Number of Results	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	89	5	89	5	94	89	94	94	94	94	94	94	94	94	89	5	94	94	94	94	89	94	94	94	94	94	94	94
Number of Detects	93	2	94	94	92	0	94	94	0	0	0	0	2	1	89	89	0	1	0	0	0	1	0	2	0	2	0	0	1	2	2	5	0	0	12	6	14	0	9	1	0	0	0
Minimum Concentration	2.9	<0.4	16	11	<5	<0.1	6.1	17	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	1.2	<0.5	<0.5	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	0.141	<0.1	<0.1	<0.1	<0.1	<0.5	<0	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20
Minimum Detect	2.9	0.8	16	11	5.6	ND	6.1	17	ND	ND	ND	ND	0.08	0.6	0.6	1.2	ND	0.6	ND	ND	ND	0.7	ND	0.1	ND	0.141	ND	ND	0.6	0.1	0.6	0.28	ND	ND	53	52	52	ND	110	120	ND	ND	ND
Maximum Concentration	8.6	0.9	48	46	79	<0.1	43	190	<0.5	<0.5	<0.5	<0.5	0.5	0.6	0.9	1.2	<0.5	0.6	<0.2	<0.5	<0.5	0.7	<0.5	0.6	<0.5	<1.21	<0.5	<0.5	0.6	0.8	3.2	0.28	<25	<50	250	190	300	<50	270	120	<50	<25	<25
Maximum Detect	8.6	0.9	48	46	79	ND	43	190	ND	ND	ND	ND	0.5	0.6	0.9	1.2	ND	0.6	ND	ND	ND	0.7	ND	0.6	ND	0.8945	ND	ND	0.6	0.8	3.2	0.28	ND	ND	250	190	300	ND	270	120	ND	ND	ND
Average Concentration	5.3	0.21	29	21	12	0.05	24	56	0.24	0.24	0.24	0.24	0.24	0.25	0.58	1.2	0.25	0.25	0.1	0.24	0.25	0.24	0.24	0.24	0.24	0.58	0.24	0.24	0.24	0.25	0.29	0.056	10	11	38	32	45	25	63	51	25	10	10
Median Concentration	5.4	0.2	28	18	11	0.05	23	50	0.25	0.25	0.25	0.25	0.25	0.25	0.6	1.2	0.25	0.25	0.1	0.25	0.25	0.25	0.25	0.25	0.25	0.605	0.25	0.25	0.25	0.25	0.25	0	10	10	25	25	25	25	50	50	25	10	10
Standard Deviation	1.3	0.095	7.1	7.1	8.1	0	7.7	25	0.045	0.045	0.045	0.045	0.056	0.036	0.086	0

Table App C
Project Number: 54782
Project Name: Stage 2c X series stockpile samples

	Organochlorine Pesticides																										BTEX							Polychlorinated Biphenyls								Nitrobenzenes			Nitrotoluenes			Explosives in Soil									Organic		
	4,4-DDE	Aldrin	Aldrin + Dieldrin (Sum of Total)	Dieldrin	DDD	DDT	alpha-BHC	DDT+DDE+DDD (Sum of Total)	beta-BHC	delta-BHC	alpha-Chlordane	Chlordane	Endosulfan alpha	gamma-Chlordane	Endosulfan beta	Endosulfan (Total)	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Hexachlorobenzene	Methoxychlor	Toxaphene	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	1,3,5-trinitrobenzene	1,3-dinitrobenzene	Nitrobenzene	2,4,6-trinitrotoluene	2,4-dinitrotoluene	2-nitrotoluene	3-nitrotoluene	PETN	Nitroglycerine	4-&2-AM-DNT(Isomeric Mixture)	2,6-Dinitrotoluene	4-Amino-2,6-dinitrotoluene	Tetryl	2-Amino-4,6-dinitrotoluene	HMX	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-135-trinitro-135-triazine (RDX)
	mg/kg	mg/kg	mg/kg

Table App C
Project Number: 54782
Project Name: Stage 2c X series stockpile samples

| | Organochlorine Pesticides | | |

Table App C
Project Number: 54782
Project Name: Stage 2C X series SP asbestos

	Asbestos - Field					Asbestos										Asbestos - Trace Analysis					
	Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthet+AB4:AB103ic Fibres - Comment
	L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	%w/w	Comment	Comment	Comment	Comment	Comment	Comment
EQL																					
NEPM 2013 Soil HIL A					0.01										0.001						
NEPM 2013 Soil HSL A - Sensitive Setting																					
Field_ID	**Lab Number**	**Depth**																			
X01SP01_01_0-1	463518	0-1	-	-	-	-	-	604	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC01	463518		-	-	-	-	-	505	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC01A	130558		-	-	-	-	-	530	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL	NIL
X01SP01_02_0-1	463518	0-1	-	-	-	-	-	775	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP01_02_1-1.6	463518	1-1.6	-	-	-	-	-	623	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP01_03_0-1	463518	0-1	-	-	-	-	-	881	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP01_03_1-1.7	463518	1-1.7	-	-	-	-	-	935	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP01_04_0-1	463518	0-1	-	-	-	-	-	1064	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP01_04_1-1.7	463518	1.7	-	-	-	-	-	1066	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP01_05_0-1	463518	0-1	-	-	-	-	-	874	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP01_06_0-1	463518	0-1	-	-	-	-	-	954	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_01_0-1	463518	0-1	-	-	-	-	-	820	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_01_1-2	463518	1-2	-	-	-	-	-	606	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_02_0-1	463518	0-1	-	-	-	-	-	657	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC02	463518		-	-	-	-	-	755	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC02A	130558		-	-	-	-	-	658	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL	NIL
X01SP02_02_1-2	463518	1-2	-	-	-	-	-	917	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_03_0-1	463518	0-1	-	-	-	-	-	864	0	0	0	0	0	0.0008	0.0008	0.0008	0.0001	No asbestos detected at the reporting limit of 0.001% w/w.*	Chrysotile and amosite asbestos detected in the form of loose fibre bundles.	NIL	Organic fibre detected.	NIL	NIL
X01SP02_03_1-2	463518	1-2	-	-	-	-	-	807	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_04_0-1	463518	0-1	-	-	-	-	-	682	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_04_1-2	463518	1-2	-	-	-	-	-	865	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_05_0-1	463518	0-1	-	-	-	-	-	736	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_05_1-2	463518	1-2	-	-	-	-	-	773	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_05_2-2.5	463518	2-2.5	-	-	-	-	-	936	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_06_0-1	463518	0-1	-	-	-	-	-	790	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_06_1-2	463518	1-2	-	-	-	-	-	800	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL

Table App C
Project Number: 54782
Project Name: Stage 2C X series SP asbestos

	Asbestos - Field					Asbestos										Asbestos - Trace Analysis					
	Approximate Volume of Soil	Approx. Sample Mass #1	Mass ACM	Mass Asbestos in ACM #2	Asbestos from ACM in soil #3	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA #4	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos from FA & AF in soil #5	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthet+AB4:AB103ic Fibres - Comment
	L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	%w/w	Comment	Comment	Comment	Comment	Comment	Comment
EQL																					
NEPM 2013 Soil HIL A					0.01										0.001						
NEPM 2013 Soil HSL A - Sensitive Setting																					
Field_ID	**Lab Number**	**Depth**																			
X01SP02_07_0-1	463518	0-1	-	-	-	-	-	887	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_07_1-2	463518	1-2	-	-	-	-	-	709	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_07_2-2.5	463518	2-2.5	-	-	-	-	-	822	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_08_0-1	463518	0-1	-	-	-	-	-	1003	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	Synthetic mineral fibre detected
X01SP02_08_1-2	463518	1-2	-	-	-	-	-	892	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_08_2-2.5	463518	2-2.5	-	-	-	-	-	911	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_09_0-1	463518	0-1	-	-	-	-	-	850	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_09_1-2	463518	1-2	-	-	-	-	-	902	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_09_2-2.5	463518	2-2.5	-	-	-	-	-	845	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_10_0-1	463518	0-1	-	-	-	-	-	877	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_10_1-2	463518	1-2	-	-	-	-	-	849	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_11_0-1	463518	0-1	-	-	-	-	-	749	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_11_1-2	463518	1-2	-	-	-	-	-	861	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_11_2-2.5	463518	2-2.5	-	-	-	-	-	845	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_12_0-1	463518	0-1	-	-	-	-	-	785	0	0	0	0	0	0.0003	0.0003	0.0003	0.00004	No asbestos detected at the reporting limit of 0.001% w/w.*	Chrysotile asbestos detected in the form of loose fibre bundles.	NIL	Organic fibre detected.	NIL	NIL
X01SP02_12_1-2	463518	1-2	-	-	-	-	-	766	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_12_2-2.5	463518	2-2.5	-	-	-	-	-	684	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_13_0-1	463518	0-1	-	-	-	-	-	861	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	Synthetic mineral fibre detected
X01SP02_13_1-2	463518	1-2	-	-	-	-	-	795	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_13_2-2.5	463518	2-2.5	-	-	-	-	-	790	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_14_0-1	463518	0-1	10	16300	8	1.2	0.007	760	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_14_1-2	463518	1-2	-	-	-	-	-	903	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_14_2-2.5	463518	2-2.5	-	-	-	-	-	821	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_15_0-1	463518	0-1	-	-	-	-	-	789	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_15_1-2	463518	1-2	-	-	-	-	-	761	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_15_2-2.5	463518	2-2.5	-	-	-	-	-	861	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_16_0-1	463518	0-1	-	-	-	-	-	742	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL

Table App C
Project Number: 54782
Project Name: Stage 2C X series SP asbestos

	Asbestos - Field					Asbestos										Asbestos - Trace Analysis					
	Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthet+AB4:AB103ic Fibres - Comment
	L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	%w/w	Comment	Comment	Comment	Comment	Comment	Comment
EQL																					
NEPM 2013 Soil HIL A					0.01										0.001						
NEPM 2013 Soil HSL A - Sensitive Setting																					
Field_ID	**Lab Number**	**Depth**																			
QC03	463518		-	-	-	-	-	823	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC03A	130558		-	-	-	-	-	662	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL	NIL
~~X01SP02_16_1-2~~	~~463518~~	~~1-2~~	-	-	-	-	-	~~892~~	~~0~~	~~0~~	~~0~~	~~0.3234~~	~~0.0645~~	~~0~~	~~0~~	~~0.0645~~	~~0.0072~~	~~No asbestos detected at the reporting limit of 0.001% w/w.*~~	~~NIL~~	~~Chrysotile asbestos detected in weathered bituminous fragment.~~	~~Organic fibre detected.~~	~~NIL~~	~~NIL~~
V01	474920		-	-	-	-	-	527	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
V02	474920		-	-	-	-	-	581	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
V03	474920		-	-	-	-	-	607	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
V04	474920		-	-	-	-	-	594	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
V-SP01	474920		-	-	-	-	-	583	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_16_2-2.5	463518	2-2.5	-	-	-	-	-	854	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_17_0-1	463518	0-1	-	-	-	-	-	597	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_17_1-2	463518	1-2	-	-	-	-	-	872	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC04	463518		-	-	-	-	-	774	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC04A	130558		-	-	-	-	-	827	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL	NIL
X01SP02_17_2-2.5	463518	2-2.5	-	-	-	-	-	861	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_18_0-1	463518	0-1	-	-	-	-	-	940	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_18_1-2	463518	1-2	-	-	-	-	-	826	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_18_2-3	463518	2-3	-	-	-	-	-	772	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_19_0-1	463518	0-1	-	-	-	-	-	760	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_19_1-2	463518	1-2	-	-	-	-	-	756	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_19_2-3	463518	2-3	-	-	-	-	-	775	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_20_0-1	463518	0-1	-	-	-	-	-	982	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_20_1-2	463518	1-2	-	-	-	-	-	828	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_20_2-3	463518	2-3	-	-	-	-	-	60	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_21_0-1	463518	0-1	-	-	-	-	-	916	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_21_1-2	463518	1-2	-	-	-	-	-	795	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_21_2-3	463518	2-3	-	-	-	-	-	691	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL

Table App C
Project Number: 54782
Project Name: Stage 2C X series SP asbestos

			Asbestos - Field					Asbestos										Asbestos - Trace Analysis					
			Approximate Volume of Soil	Approx. Sample Mass #1	Mass ACM	Mass Asbestos in ACM #2	Asbestos from ACM in soil #3	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA #4	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos from FA & AF in soil #5	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthet+AB4:AB103ic Fibres - Comment
			L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	%w/w	Comment	Comment	Comment	Comment	Comment	Comment
EQL																							
NEPM 2013 Soil HIL A							0.01										0.001						
NEPM 2013 Soil HSL A - Sensitive Setting																							
Field_ID	**Lab Number**	**Depth**																					
X01SP02_22_0-1	463518	0-1	-	-	-	-	-	905	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_22_1-2	463518	1-2	-	-	-	-	-	815	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_22_2-3	463518	2-3	-	-	-	-	-	812	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_23_0-1	463518	0-1	-	-	-	-	-	788	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_23_1-2	463518	1-2	-	-	-	-	-	747	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_23_2-3	463518	2-3	-	-	-	-	-	747	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_24_0-1	463518	0-1	-	-	-	-	-	779	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_24_1-2	463518	1-2	-	-	-	-	-	882	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_24_2-3	463518	2-3	-	-	-	-	-	773	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_25_0-1	463518	0-1	-	-	-	-	-	707	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC05	463518		-	-	-	-	-	670	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC05A	130558		-	-	-	-	-	774	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL	NIL
X01SP02_25_1-2	463518	1-2	-	-	-	-	-	809	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_26_0-1	463518	0-1	-	-	-	-	-	751	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_26_1-2	463518	1-2	-	-	-	-	-	775	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_27_0-1	463518	0-1	-	-	-	-	-	808	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_27_1-2	463518	1-2	-	-	-	-	-	855	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_28_0-1	463518	0-1	-	-	-	-	-	827	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_28_1-2	463518	1-2	-	-	-	-	-	894	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
X01SP02_28_2-3	463518	2-3	-	-	-	-	-	723	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL

Data Comments
#1 Sample Mass - Based on soil density of 1.63 g/cm3 for fine grained soils
#2 Assumed volume of asbestos in ACM = 15%
#3 ACM Concentration (w/w%) = (Mass ACM (g) / Mass Soil (g)) x 100
#4 Assumed volume of asbestos in FA = 100%
#5 FA Concentration (w/w%) = (Mass FA (g) / Mass Soil (g)) x 100

Source: Base Image - © Near Map 28-07-2015

© 2015 JBS&G

0 15 30 60 m

Scale:1:1,480

Datum: GDA 1994 MGA Zone 56 - AHD

Legend:

- CHK001/6 Buildings
- CHK001/6 Building Concrete Footprint
- Delineation Extent
- Delineation Sample Locations
- Sample Locations Requiring Additional Characterisation and Delineation

All delineation sample IDs are proceeded with the original sample ID and depth (ie X2-002-0-0.2-V1)

Rev	Description	Drn.	Date
A3			
A	Original Issue - R01	SE	22-12-2015

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Figure 5C: X Series Compound and Delineation Sample Locations

Client: Maryland Development Company

Project: Central Precinct

Job No: 50374 File Name: 50374_05C

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

X02SP02-16	Depth	Concentration
Analyte	(m BGS)	(%w/w)
Chrysoltile Asbestos	10-2.0	0.0072

Source: Base Image - © Near Map 28-07-2015

© 2015 JBS&G

0 5 10 20 m

Scale:1:600

Datum: GDA 1994 MGA Zone 56 - AHD

Legend:

- CHK001/6 Buildings
- CHK001/6 Building Concrete Footprint
- Stockpile Sample Locations

Rev	Description	Drn.	Date
A3			
A	Original Issue - R01	SE	20-11-2015

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Figure 6B: Stockpile Sample Locations and Exceedances

Client: Maryland Development Company

Project: Central Precinct

Job No: 50374 File Name: 50374_06B

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Table App C
Job Number 54782
Delneation sample results

					Metals & Metalloids		Asbestos - Field					Asbestos												Asbestos - Trace Analysis					
					Lead	Zinc	Approximate Volume of Soil	Approx. Sample Mass [#1]	Mass ACM	Mass Asbestos in ACM [#2]	Asbestos from ACM in soil [#3]	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA [#4]	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos fibres	Asbestos Sample Dimensions	Asbestos from FA & AF in soil [#5]	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthet+AB4:AB103ic Fibres - Comment
					mg/kg	mg/kg	L	g	g	g	%w/w	g	g	g	%w/w	g	g	g	g	g	-	Comment	%w/w	Comment	Comment	Comment	Comment	Comment	Comment
EQL					1.00	1.00																							
NEPC 2013 EIL, EILs Aged Sediment (Ecological Significance)					470	230																							
NEPC 2013 EIL, EILs Aged Sediment (Urban Residential)					1100	770																							
NEPM 2013 Soil HIL A											0.01												0.001						
NEPM 2013 Soil HSL A - Sensitive Setting																													
NEPM 2013 Soil HIL A					300[#2]	7400																							
NEPM 2013 Soil HSL A - Sensitive Setting																													
Site Specific Criteria					300	200																							
Field_ID	**Sample_Depth_Rar**	**Sampled_Date-Tim**	**SampleCode**	**Lab_Report_Number**																									
X0-005 0.5-1.0 V-1	0.5-1	02-12-15	S15-De03526	482031	10	-																							
X0-005 0.5-1.0 V-2	0.5-1	02-12-15	S15-De03527	482031	9.1	-																							
X0-005 0.5-1.0 V-3	0.5-1	02-12-15	S15-De03528	482031	14	-																							
X0-005 0.5-1.0 V-4	0.5-1	02-12-15	S15-De03529	482031	18	-																							
X0-005 0.5-1.0 V-BASE	0.5-1	02-12-15	S15-De03530	482031	13	-																							
X0-020 0-0.2 V-1	0-0.2	02-12-15	S15-De03531	482031	-	15																							
X0-020 0-0.2 V-2	0-0.2	02-12-15	S15-De03532	482031	-	13																							
X0-020 0-0.2 V-3	0-0.2	02-12-15	S15-De03533	482031	-	40																							
X0-020 0-0.2 V-4	0-0.2	02-12-15	S15-De03534	482031	-	13																							
X0-020 0-0.2 V-BASE	0-0.2	02-12-15	S15-De03535	482031	-	48																							
X01SP02_16_0-1	463518	0-1					-	-	-	-	-	742	0	0	0	0	0	0	0	0			0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC03	463518						-	-	-	-	-	823	0	0	0	0	0	0	0	0			0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
QC03A	130558						-	-	-	-	-	662	0	0	0	0	0	0	0	0			0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	NIL	NIL
~~X01SP02_16_1-2~~	~~463518~~	~~1-2~~					~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~892~~	~~0~~	~~0~~	~~0~~	~~0.3224~~	~~0.0645~~	~~0~~	~~0~~	~~0.0645~~			0.0072	~~No asbestos detected at the reporting limit of~~	~~NIL~~	~~Chrysotile asbestos detected in weathered~~	~~Organic fibre detected.~~	~~NIL~~	~~NIL~~
V01	474920						-	-	-	-	-	527	0	0	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
V02	474920						-	-	-	-	-	581	0	0	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
V03	474920						-	-	-	-	-	607	0	0	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
V04	474920						-	-	-	-	-	594	0	0	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL
V-SP01	474920						-	-	-	-	-	583	0	0	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected.	No respirable fibres detected.	NIL



Legend:

- Central Precinct Boundary
- Test Pit Location
- Bund Location

JBS&G

Job No: 54158	
Client: Maryland Development Company	
Version: L006	Date 5/09/2018
Drawn By: FH	Checked By: JC
Scale 1:2,500	

0 40 80
metres

Coord. Sys. GDA 1994 MGA Zone 56

Central Precinct Remediation

MUNITION BUND TEST PIT LOCATIONS

FIGURE 2

Reference: Near Map www.nearmap.com, imagery date 08-04-2018.

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Table A: Munitions Bund Chemisty Analytical
Project Number: 54158
Project Name: Central Precinct Remediation

| | | | VIC IWRG621 (| | Metals & Metalloids | | | | | | | | TPHs (NEPC 1999) | | | | | TRHs (NEPC 2013) | | | | | | | BTEX | | | | | | Polycyclic Aromatic Hydrocarbons | | | | | | | |

Table A: Munitions Bund Chemisty Analytical
Project Number: 54158
Project Name: Central Precinct Remediation

			Chlorinated Benzenes	Polychlorinated Biphenyls								Organochlorine Pesticides																								Asbestos									Asbestos	Asbestos - Trace Analysis				
			Hexachlorobenzene	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	4,4-DDE	Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	alpha-Chlordane	beta-BHC	Chlordane	Dieldrin	DDD	DDT	DDT+DDE+DDD (Sum of Total)	delta-BHC	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	gamma-Chlordane	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene	Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos ID in Soil	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Synthetic Fibres - Comment
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	g	%w/w	%w/w	g	g	g	g	g	g	g	g	Comment	Comment	Comment	Comment	Comment	Comment
EQL			0.05	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.05	0.05	0.05		0.05	0.10	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	1.00																
NEPC 2013 EIL, EILs Aged Sediment																					3																												
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																																	
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																																					0.01														
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																						0.001													
NEPM 2013 Soil HIL A			10								1			6				50				240					10				6			300	20															
Sample ID	**Date**	**Laboratory Report Number**																																																
AM-01_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	664	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-01_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	526	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-02_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	581	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
QC20180808-01	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	509	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
QA20180808-01	08-Aug-18	198249	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	$<0.2^{\#3}$	<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	-	-	-	-	-
AM-02_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	504	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-03_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	590	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-03_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	467	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-04_0.2-0.3	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	472	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-04_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	630	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-05_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	594	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-05_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	545	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-06_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	484	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-06_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	528	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-07_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	570	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-07_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	608	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-08_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	594	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-08_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	445	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-09_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	540	0	0	0	0	0	0	0	0	0	-	1#4	1#4		1#2	1#4
AM-09_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	517	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-10_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	712	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-10_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	627	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-11_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	641	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-11_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	450	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
QA20180808-02	08-Aug-18	198249	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	$<0.2^{\#3}$	<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	-	-	-	-	-
QC20180808-02	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	475	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-12_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	640	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-12_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	705	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-13_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	649	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-13_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	604	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-14_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	641	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-14_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	596	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-15_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	579	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-15_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	494	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-16_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	567	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-16_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	537	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-17_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	594	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-17_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	643	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-18_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	572	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-18_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	679	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-19_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	519	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-19_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	553	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-20_0.2-0.3	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	530	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4
AM-20_0.6-0.7	08-Aug-18	611693	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	634	0	0	0	0	0	0	0	0	0	-	1#4	1#4	1#4	1#2	1#4

Data Comments
#1 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#3 Organic fibres detected.

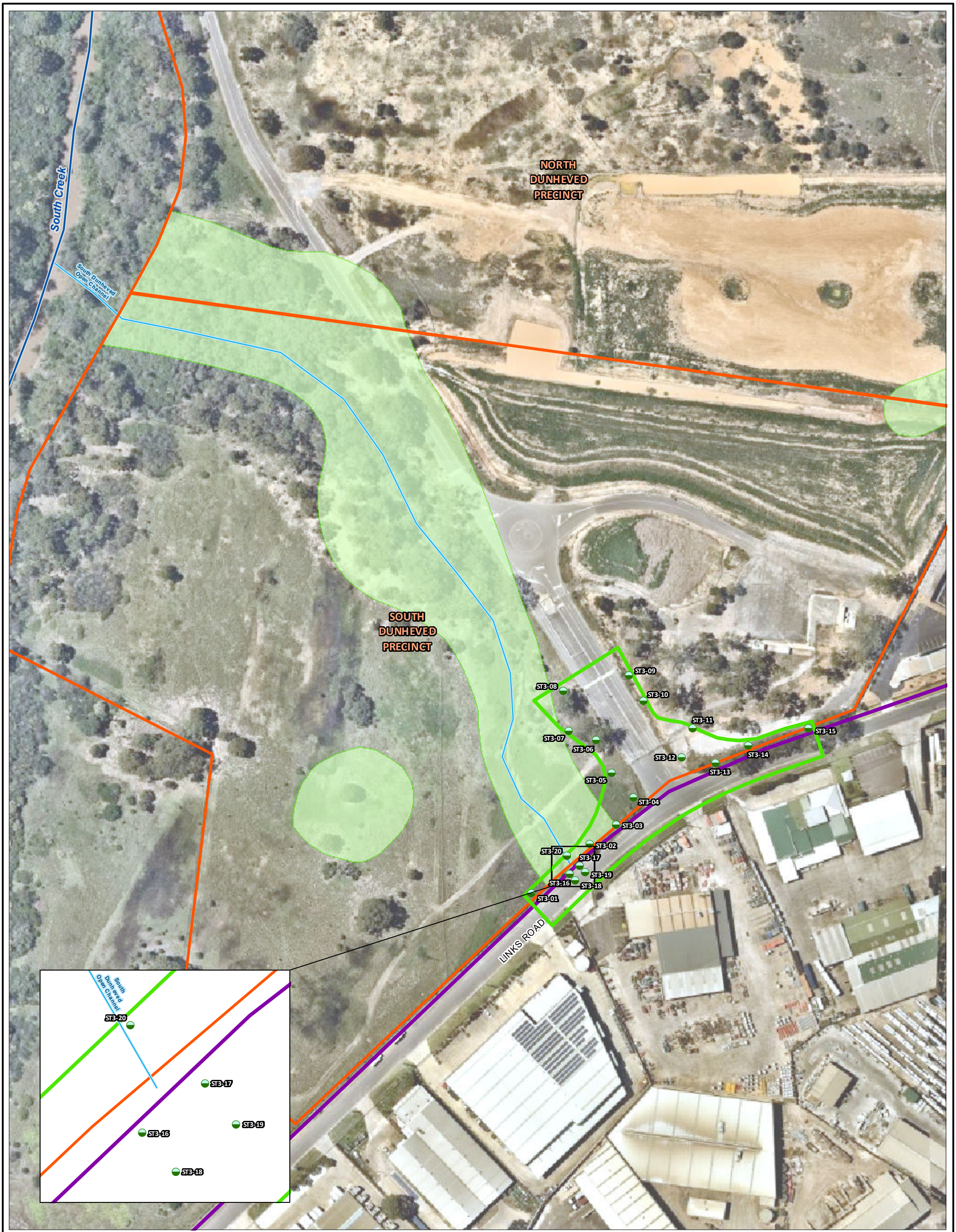
Table A: Munitions Bund Chemisty Analytical
Project Number: 54158
Project Name: Central Precinct Remediation

			PFAS																																	
			2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of PFASs (n=28)	Sum of WA DER PFAS (n=10)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01
NEPC 2013 EIL, EILs Aged Sediment																																				
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																				
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																																				
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																				
NEPM 2013 Soil HIL A																																				
Sample ID	**Date**	**Laboratory Report Number**																																		
AM-01_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-01_0.6-0.7	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-02_0.2-0.3	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
QC20180808-01	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
QA20180808-01	08-Aug-18	198249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-02_0.6-0.7	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-03_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-03_0.6-0.7	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-04_0.2-0.3	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-04_0.6-0.7	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-05_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-05_0.6-0.7	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-06_0.2-0.3	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-06_0.6-0.7	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-07_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-07_0.6-0.7	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-08_0.2-0.3	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-08_0.6-0.7	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-09_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-09_0.6-0.7	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-10_0.2-0.3	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-10_0.6-0.7	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-11_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-11_0.6-0.7	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
QA20180808-02	08-Aug-18	198249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
QC20180808-02	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-12_0.2-0.3	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-12_0.6-0.7	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-13_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-13_0.6-0.7	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-14_0.2-0.3	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-14_0.6-0.7	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-15_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-15_0.6-0.7	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-16_0.2-0.3	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-16_0.6-0.7	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-17_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-17_0.6-0.7	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-18_0.2-0.3	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
AM-18_0.6-0.7	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-19_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-19_0.6-0.7	08-Aug-18	611693																																		
AM-20_0.2-0.3	08-Aug-18	611693	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005		
AM-20_0.6-0.7	08-Aug-18	611693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Data Comments
#1 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#2 Organic fibres detected

Stage 3 Data

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Legend:

- Former ADI St Marys Property
- Dunheved Precinct
- Stage 3 Boundary
- Proposed PFAS Remediation Areas
- Creeks
- Channels
- Soil Sample Location - Stage 3

JBS&G

0 20 40 metres

Central Precinct

SOIL SAMPLING LOCATIONS

Job No: 54782		Scale: 1:1,750		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: R05 Rev A	Date: 15-Jul-2019	**FIGURE 3**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R05 Rev A\54782_03_Soil_Sampling_Locations.mxd
Time Saved: 28/08/2019 20191228

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Table A - Soil Analytical Results
Project Number: 54782
Project Name: Stage 3 East West Connecto Road ESA

			Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEXN							Polycyclic Aromatic Hydrocarbons																
			Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C10-C16 less Naphthalene (F2)	>C6-C10 Fraction	>C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2	0.4	5	5	5	0.1	5	5	20	20	50	50	50	50	100	100	100	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEMP 2019 PFAS Human Health Screening Values - Industrial/Commercial																																														
NEPM 2013 EIL - Commercial Industrial (generic)			160		310	85	1800		55	110																			370																		
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																	1700	3300		170		215	75	165	135			180					1.4													
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																																													
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																													
NEPM 2013 Soil HIL D			3000	900	3600	240000	1500	730	6000	400000																								40	40	40									
HEPA 2019 PFAS Ecological Indirect Exposure - All landuses																																													
Sample ID	**Sample Date**	**Laboratory Report Number**																																												
ST3-01 0-0.1	7/07/2019	664672	2.9	<0.4	29	48	18	<0.1	22	110	<20	<20	87	220	307	<50	250	250	500	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5
ST3-02 0-0.1	7/07/2019	664672	7.8	<0.4	41	59	62	0.2	27	280	<20	<20	<50	86	86	<50	100	<100	100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5
QA20190707_01	7/07/2019	664672	7.3	<0.4	46	50	55	0.2	27	240	<20	<20	<50	50	50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	0.6	0.6	0.7	1	1.3	<0.5	0.5	<0.5	<0.5	<0.5	1	<0.5	0.6
QC20190707-01	7/07/2019	221255	5	<0.4	29	43	38	0.1	23	170	<25	<50	<100	110	-	<50	120	100	220	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<3	<1	<0.1	<0.1	<0.1	0.2	0.3	<0.5	<0.5	<0.5	0.3	0.3	=	0.2	<0.1	0.6	<0.1	0.2
ST3-03 0-0.1	7/07/2019	664672	4.8	<0.4	29	41	32	0.1	20	130	<20	<20	62	96	158	<50	130	<100	130	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	0.7	1.2	0.6	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5
ST3-04 0.8-0.9	7/07/2019	664672	10	<0.4	35	9.5	31	<0.1	6.2	21	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-04 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-05 0-0.1	7/07/2019	664672	7.5	<0.4	30	20	23	<0.1	19	56	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5
ST3-06 0-0.1	7/07/2019	664672	6.6	<0.4	17	12	26	<0.1	11	32	<20	<20	<50	62	62	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-08 0-0.1	7/07/2019	664672	19	<0.4	14	18	14	<0.1	8	20	<20	<20	76	66	142	<50	110	<100	110	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-09 0.4-0.5	7/07/2019	664672	3.8	<0.4	11	9.2	6.8	<0.1	<5	14	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-09 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-10 0-0.1	7/07/2019	664672	4.1	<0.4	18	20	14	<0.1	14	57	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-11 0-0.1	7/07/2019	664672	8.9	<0.4	17	26	20	<0.1	9.9	68	<20	<20	<50	79	79	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-12 0-0.1	7/07/2019	664672	3.8	<0.4	15	96	14	<0.1	8.8	76	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-13 0-0.15	7/07/2019	664672	2.7	<0.4	42	23	22	<0.1	40	49	<20	<20	160	290	450	<50	370	260	630	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	0.6	0.7	0.8	1.1	1.4	<0.5	0.5	<0.5	0.5	<0.5	0.9	<0.5	0.5
ST3-14 0-0.1	7/07/2019	664672	7.1	<0.4	26	40	28	<0.1	13	130	<20	25	96	130	251	<50	180	<100	180	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	1.1	1.3	1.7	2	2.2	1	1.1	0.9	1	<0.5	3	<0.5	1
ST3-15 0-0.1	7/07/2019	664672	7.3	<0.4	33	25	29	<0.1	10	110	<20	<20	130	120	250	<50	220	<100	220	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	0.8	2.8	3.4	5.4	5.4	5.4	3	2.7	2	2.9	0.9	9.5	<0.5	2.2
ST3-16 0.3-0.5	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-16 0.8-1.0	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-17 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-17 1.0-1.2	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-18 0.3-0.4	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-18 1.0-1.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-19 0.5-0.7	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST319 1.0-1.2	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST320 0.2-0.3	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST320 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Data Comments
#1 No respirable fibres detected.
#2 Organic fibres detected.
#3 Nil

Table A - Soil Analytical Results
Project Number: 54782
Project Name: Stage 3 East West Connecto Road ESA

| | | | | | | Organochlorine Pesticides | | | | | | | | | | | | | | | | | | | | | | Chlorinated Alkanes | | | | | | | | | | | | | | | | | | |

Table A - Soil Analytical Results
Project Number: 54782
Project Name: Stage 3 East West Connecto Road ESA

			Chlorinated Alkenes								Solvents	Polychlorinated Biphenyls								PFAS																	
			4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	2-Propanone (Acetone)	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoropentanoic acid (PFPeA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorooctanoic acid (PFOA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorononanoic acid (PFNA)	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorodecanesulfonic acid (PFDS)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.01	0.005	0.005	0.005	0.005	0.005
NEMP 2019 PFAS Human Health Screening Values - Industrial/Commercial																																50							20	
NEPM 2013 EIL - Commercial Industrial (generic)																																							
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																																							
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																																							
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																							
NEPM 2013 Soil HIL D																			7																				
HEPA 2019 PFAS Ecological Indirect Exposure - All landuses																																							
Sample ID	**Sample Date**	**Laboratory Report Number**																																					
ST3-01 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	<5	<5	<5	<5	<5	<5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-02 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
QA20190707_01	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
QC20190707-01	7/07/2019	221255	<1	<1	<1	<1	<1	<1	<1	<1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001		<0.005	<0.0001	<0.0001	<0.001	0.0007	<0.001		<0.001	0.0004	<0.001		<0.001	<0.0001			0.0003	
ST3-03 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-04 0.8-0.9	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-04 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-05 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-06 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-08 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-09 0.4-0.5	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-09 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-10 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-11 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-12 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-13 0-0.15	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-14 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-15 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
ST3-16 0.3-0.5	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	0.013	<0.005	0.0094	<0.005
ST3-16 0.8-1.0	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-17 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-17 1.0-1.2	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	0.094	<0.005
ST3-18 0.3-0.4	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-18 1.0-1.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-19 0.5-0.7	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST319 1.0-1.2	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST320 0.2-0.3	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	0.089	<0.005
ST320 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	0.013	<0.005

Data Comments
#1 No respirable fibres detected.
#2 Organic fibres detected.
#3 Nil

Table A - Soil Analytical Results
Project Number: 54782
Project Name: Stage 3 East West Connecto Road ESA

												Monocyclic Aromatic Hydrocarbons					Miscellaneous Hydrocarbons						Chlorinated Benzenes					Trihalomethanes				: Sulfur Com	Other	EPA VIC - IWRG621			
			Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of WA DER PFAS (n=10)	Sum of PFASs (n=28)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	Bromobenzene	Isopropylbenzene	Styrene	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	Dibromomethane	Iodomethane	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Hexachlorobenzene	Bromodichloromethane	Chloroform	Dibromochloromethane	Tribromomethane	Carbon disulfide	% Moisture 103oC	Chlorinated Hydrocarbons EPAVic	Other Chlorinated Hydrocarbons EPAVic	Organochlorine Pesticides EPAVic	Other Organochlorine Pesticides EPAVic
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.05	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.1	0.1
NEMP 2019 PFAS Human Health Screening Values - Industrial/Commercial							20	20																													
NEPM 2013 EIL - Commercial Industrial (generic)																																					
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																																					
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																																					
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																					
NEPM 2013 Soil HIL D																											80										
HEPA 2019 PFAS Ecological Indirect Exposure - All landuses							0.01																														
Sample ID	**Sample Date**	**Laboratory Report Number**																																			
ST3-01 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	18	<0.5	<0.5	<2	<2
ST3-02 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.0081	0.0081	0.0081	0.0081	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	28	<0.5	<0.5	<0.2	<0.2
QA20190707_01	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.0074	0.0074	0.0074	0.0074	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	27	<0.5	<0.5	<0.2	<0.2
QC20190707-01	7/07/2019	221255					0.0068	-	-	-	-	-						<1			<1	<1		<1	<1	<1	<1	<0.1	<1	<1	<1							
ST3-03 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.0062	0.0062	0.0062	0.0062	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	16	<0.5	<0.5	<0.2	<0.2
ST3-04 0.8-0.9	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	19	<0.5	<0.5	<0.2	<0.2
ST3-04 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-05 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	18	<0.5	<0.5	<0.2	<0.2
ST3-06 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	6.7	<0.5	<0.5	<0.2	<0.2
ST3-08 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	11	<0.5	<0.5	<0.2	<0.2
ST3-09 0.4-0.5	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.2	<0.2
ST3-09 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-
ST3-10 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15	<0.5	<0.5	<2	<2
ST3-11 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	19	<0.5	<0.5	<0.2	<0.2
ST3-12 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	8.1	<0.5	<0.5	<0.2	<0.2
ST3-13 0-0.15	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	18	<0.5	<0.5	<0.2	<0.2
ST3-14 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	18	<0.5	<0.5	<0.2	<0.2
ST3-15 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	17	<0.5	<0.5	<0.2	<0.2
ST3-16 0.3-0.5	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.16	0.1694	0.16	0.1694	0.1694	0.1824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	-	-	-	-
ST3-16 0.8-1.0	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.03	0.03	0.03	0.03	0.03	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-
ST3-17 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.061	0.061	0.061	0.061	0.061	0.061	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-
ST3-17 1.0-1.2	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.05	0.0565	0.05	0.0565	0.0565	0.0565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	-	-	-
ST3-18 0.3-0.4	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.4	-	-	-	-
ST3-18 1.0-1.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.011	0.011	0.011	0.011	0.011	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-
ST3-19 0.5-0.7	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.1	-	-	-	-
ST319 1.0-1.2	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-
ST320 0.2-0.3	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.26	0.349	0.275	0.364	0.369	0.369	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-
ST320 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.13	0.143	0.13	0.143	0.143	0.143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	-	-	-	-

Data Comments
#1 No respirable fibres detected.
#2 Organic fibres detected.
#3 Nil

Table B - Asbestos in Soil Analytical Results
Project Number - 54782
Project Name - Stage 3 East West Connector Road ESA

			Asbestos Laboratory												Asbestos - Trace Analysis				
			Approx. Sample Mass	Asbestos from ACM in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Asbestos from FA & AF in Soil	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Total Asbestos#1	ACM>7 mm Estimation	FA and AF Estimation*#2	ACM - Comment	FA - Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
			g	%w/w	g	g	g	g	%w/w	g	g	g	g/kg	%w/w	%(w/w)	Comment	Comment	Comment	Comment	Comment
EQL																				
NEPM 2013 Soil HIL D				0.05					0.001					0.05	0.001					
NEPM 2013 Soil HSL D - Sensitive Setting																				
Field_ID	**Sampled_Date-Tim**	**Lab Report Number**																		
ST3-01 0-0.1	7/07/2019	664672	401	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-02 0-0.1	7/07/2019	664672	403	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
QA20190707_01	7/07/2019	664672	339	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
QC20190707-01	7/07/2019	09-Oct-2505	423	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-03 0-0.1	7/07/2019	664672	451	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-04 0-0.1	7/07/2019	664672	391	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-05 0-0.1	7/07/2019	664672	435	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-06 0-0.1	7/07/2019	664672	561	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-08 0-0.1	7/07/2019	664672	425	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-09 0-0.1	7/07/2019	664672	515	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-10 0-0.1	7/07/2019	664672	570	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-11 0-0.1	7/07/2019	664672	482	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-12 0-0.1	7/07/2019	664672	633	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-13 0-0.15	7/07/2019	664672	493	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-14 0-0.1	7/07/2019	664672	502	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-15 0-0.1	7/07/2019	664672	281	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected

Table App C
Project Number: 54782
Project Name: Dunheved Investigation

	Explosives in Soil										Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)						BTEXN											
	PETN	Nitroglycerine	4-&2-AM-DNT(Isomeric Mixture)	Tetryl	4-Amino-2,6-dinitrotoluene	2-Amino-4,6-dinitrotoluene	HMX	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	GS-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C16 less Naphthalene (F2)	GS-C10 Fraction	GS-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene	Acenaphthene	Acenaphthylene	Anthrazene	Benz(a)anthracene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL								0.1	0.1	0.1	2	0.4	1	1	1	0.1	1	1	20	20	50	50	50	50	100	100	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1
NEPM 2013 EIL - Commercial Industrial (Site Specific)											160		850	310	1800		350	770																	370				
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																									1700	3300	170		215	75	165	135			180					
NEPM 2013 Soil HIL D											3000	900	3600	240000	1500	730	6000	400000																						
NEPM 2013 Soil HSL D - Sensitive Setting																											-		250	3	-	-			230	-				
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																																								
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																								

Field ID	Date	Report Number																																							
Dunheved South																																									
DHS-28-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	8.5	<0.4	66	21	17	<0.1	6.8	15	<20	<20	<50	56	56	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5

Data Comments
#1 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#2 ESDAT Combined with Non-Detect Multiplier of 0.5.
#5 Chrysotile asbestos detected.
#6 Organic fibres detected.
#7 ESDAT Combined.
#8 50x35x3

Table App C
Project Number: 54782
Project Name: Dunheved Investigation

| | Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | | Organochlorine Pesticides | | | | | | | | | | | | | | | |

Table App C
Project Number: 54782
Project Name: Dunheved Investigation

	Polychlorinated Biphenyls						Chlorinated Benzenes	Nitrobenzenes			Nitrotoluenes				Ionic Balance		
	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	Hexachlorobenzene	1,3,5-trinitrobenzene	1,3-dinitrobenzene	Nitrobenzene	2,4,6-trinitrotoluene	2,4-dinitrotoluene	2-nitrotoluene	3-nitrotoluene	Cation Exchange Capacity	EC 1:5 soil:water	pH 1:5 soil:water
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	µS/cm	ph Units
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1		0.1	0.1	0.05	10	0.1
NEPM 2013 EIL - Commercial Industrial (Site Specific)																	
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																	
NEPM 2013 Soil HIL D						7	80										
NEPM 2013 Soil HSL D - Sensitive Setting																	
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																	
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																	
Field ID	**Date**	**Report Number**															
Dunheved South																	
DHS-28-0-0.1	12-Feb-18	584878	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-

Data Comments
#1 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#2 ESDAT Combined with Non-Detect Multiplier of 0.5.
#5 Chrysotile asbestos detected.
#6 Organic fibres detected.
#7 ESDAT Combined.
#8 50x35x3

Table App CResults
Job Number: 54782
Job Name: Dunheved Investigation

			Asbestos Field					Asbestos Laboratory													Asbestos - Trace Analysis				
			Approximate Volume of Soil	Approx. Sample Mass[1]	Mass ACM	Mass Asbestos in ACM[2]	Asbestos from ACM in soil[3]	Approx. Sample Mass	Asbestos from ACM in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Asbestos from FA & AF in Soil	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Total Asbestos#1	ACM>7 mm Estimation	FA and AF Estimation*#2	ACM - Comment	FA - Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
			l	g	g	g	%w/w	g	%w/w	g	g	g	g	%w/w	g	g	g	g/kg	%w/w	%(w/w)	Comment	Comment	Comment	Comment	Comment
EQL																									
NEPM 2013 Soil HIL D							0.05		0.05					0.001					0.01	0.001					
NEPM 2013 Soil HSL D - Sensitive Setting																									
South Dunheved																									
DHS-28-0-0.1	12-Feb-18	S84878	10	16300	0	0	0	735	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected

Table App C Analytical Results
Job number - 54782
Job Name - PFAS Assessment former St Mary's ADI Site

			PFAS																																						
			2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoropentanoic acid (PFPeA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorononanoic acid (PFNA)	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of PFASs (n=28)	Sum of WA DER PFAS (n=10)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Z-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	N-ethyl-perfluorooctanesulfonamidoacetic-acid	N-methyl-perfluorooctanesulfonamidoacetic_acid
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01			
HEPA (2018) Ecological Indirect exposure - Residential																															0.01	0.01								
HEPA (2018) Human Health Screening Levels - Residential with Garden accessible Soils																0.1														0.009	0.009								
HEPA (2018) Human Health Screening Levels - Public Open Space																10														1	1								
HEPA (2018) Human Health Screening Levels - Commercial/Industrial																100														20	20								
HEPA (2018) Soil Indirect - Commercial and Industrial																														0.14	0.14								
OEH/NSW Health (2017) Soil Direct Toxicity - Commercial and Industrial																48														60	60								
HEPA (2018) Soil Direct Toxicity - Public Open Space																10														1	1								
Field_ID		**Sampled_Date-Time**																																						
DHS-42 0-0.1	DHS-42 0-0.1	04-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-

Notes
* It is noted that the SP30 footprint samples included are of the current surface level and following additional scrape up

Surface samples beneath SP30 which were scraped up and relocated to Dunheved, ie not representative of the current SP30 footprint surface

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APPENDIX B

Phase 1 Preliminary Site Assessment East West Connector Road

JBS&G

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Minter Ellison

Phase 1 Preliminary Site Assessment
East West Connector Road

Jordan Springs East, NSW

17 April 2019

54782/121318 (Rev 2)

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Minter Ellison

Phase 1 Preliminary Site Assessment
East West Connector Road

Jordan Springs East, NSW

17 April 2019

54782/121318 (Rev 2)
JBS&G

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Abbreviations

Term	Definition
ACM	Asbestos Containing Material
AEC	Areas of Environmental Concern
BCC	Blacktown City Council
Bgs	Below Ground Surface
BTEX	Benzene, toluene, ethylbenzene and Xylenes
CMP	Contamination Management Plan
COPC	Contaminants of Potential Concern
DP	Deposited Plan
Dunheved Link Road	Connects the EWCR with Links Road located to the South of the property
Dunheved Industrial Precinct	Proposed Development area located south of the EWCR
EPA	NSW Environmental Protection Authority
EWCR	East West Connector Road
HHERA	Human Health and Ecological Risk Assessment
JSE	Jordan Springs East (formerly Central Precinct)
NEPC	National Environmental Pretention Measure
OCPs	Organochlorine pesticides
OPPs	Organophosphate pesticides
PAHs	Poly aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PCC	Penrith City Council
PFAS	Poly-fluoroalkyl substances
RAP	Remedial Action Plan
SAQP	Sampling Analysis and Quality Plan
SAS	Site Audit Statement
SEPP 55	State Environmental Planning Policy No. 55
TRH	Total Recoverable Hydrocarbons

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Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Minter Ellison on behalf of Maryland Development Company Pty Ltd and St Mary's Land Ltd (the client) to conduct a Phase 1 Preliminary Site Investigation (PSI) for the proposed East West Connector Road (EWCR) including the Regional Open Space (ROS) area and the Dunheved Link Road (the site) within the former ADI St Marys property ('the property'). The site is proposed to be developed into a multi lane roadway as necessary infrastructure to the Jordan Springs East Development Site (JSE) and sports fields and parkland within the ROS area.

The EWCR, is planned to comprise a roadway to connect the JSE Development site with the Suburb of Ropes Crossing. The EWCR currently exists as a paved Road from the sites former use as a munitions storage facility and/or as a haul road associated with the development works occurring within the overall development site. The (roadway) site is approximately 3 km in total length and is split into 3 Stages. The ROS area is included with Stage 2 of the EWCR and comprises approximately 25 ha of proposed park land and sports field adjacent area to the JSE development. The location of the site is provided in **Figure 1**, the layout of the site including surrounding areas and the division of stages is provided in **Figure 2**.

The property has undergone various previous environmental investigation works including extensive environmental assessment and remediation works in the mid 1990's which led to a number of site audit statements (SAS) being issued. The SAS's confirmed that the property was suitable for proposed uses with the exception of excluded areas including footprints of original buildings, car parks, roads and stockpiles that were inaccessible when previous works were conducted.

More recently, JBS&G have conducted a number of environmental investigations throughout the site and nearby areas including unexploded ordinance (UXO) clearance, management of pavement removal for historical road and/or building footprints and extensive environmental sampling with associated reporting. This has included a comprehensive PFAS (per and poly-fluoroalkyl substances) investigation (JBS&G 2018a[1]). Given that comprehensive investigation within the property including areas covered by the site has been conducted by JBS&G and appropriate methodologies and documentation have been issued to the satisfaction of an EPA accredited auditor, it is considered that conclusions can be drawn using historical information to determine the suitability of the site for its proposed use.

Based on the environmental assessment as completed previously and collated within this assessment, the following areas of environmental concern (AECs) and associated contaminants of potential concern (COPCs) were identified on the roadway as per **Table E1** following.

Table E1 – AECs and associated COPCs based on review of records and previous reports

Area of Environmental Concern (AEC)	Contaminants of Potential Concern (COPC)
EWCR	
Fill materials underlying the road	Heavy metals, Poly aromatic hydrocarbons (PAHs), Total Recoverable Hydrocarbons (TRH)/BTEX (Benzene, toluene, ethylbenzene and Xylenes), Organochlorine pesticides (OCPs), Organophosphate pesticides (OPPs), Polychlorinated Biphenyls (PCBs), asbestos and explosives Metallic Debris – may contain explosive ordnance waste
Paved Road asphalt	Heavy metals, PAHs, TRH/BTEX, asbestos and explosives, Coal Tar

[1] *PFAS Assessment at Former ADI St Marys Development Site - St Marys and Llandilo, NSW (Rev B*) JBS&G Australia Pty Ltd. 23 November 2018 (JBS&G 2018a)

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Area of Environmental Concern (AEC)	Contaminants of Potential Concern (COPC)
Flytipping	Heavy metals, PAHs, TRH/BTEX, OCPs, OPPs, PCBs and asbestos
Dunheved Link Road	
Historical use of the site for sewage sludge and effluent storage	Heavy metals, PAHs, TRH/BTEX, OCPs, OPPs, PCBs, asbestos and PFAS
Impact associated with the Dunheved Open Channel (surface water entering site)	PFAS
Potential impact from offsite sources south of Links Road	Heavy metals, PAHs, TRH/BTEX, OCPs, OPPs, PCBs, asbestos and PFAS
ROS	
Flytipping	Heavy metals*, PAHs, TPH/BTEX, OCPs, PCBs and asbestos
Building Footprints	Heavy metals*, PAHs, TPH/BTEX, OCPs, PCBs, asbestos and explosives**
Fill materials and impact from demolition works, use of the site as a compound	Heavy metals*, PAHs, TPH/BTEX, and asbestos

With the findings summarised in **Table E1** and subject to the limitations in **Section 7,** it is concluded that the site can be made suitable for the proposed use in accordance with clause 7 of SEPP 55 subject to the following actions:

- The EWCR requires further investigation including completion of an SAQP that includes details on required pavement removal, UXO clearance and detailed site assessment including soil sampling and analysis of soils present underlying roadways. The SAQP and subsequent investigations shall require review and endorsement by the Site Auditor[2]. The sampling works can only be undertaken subsequent to the removal of the existing roadway. This same process has been previously completed on a substantial extent of historical roadways / building footprints throughout the remainder of the overall development site. Assessments in lieu of the removal of the roadway have been completed to the extent achievable;
- Formerly inaccessible areas of the ROS including building footprints require UXO clearance and assessment in accordance with the existing JBS&G SAQP for JSE (JBS&G 2017c);
- In addition to findings of works undertaken specific to soils underlying the existing roadway footprint, the previously prepared Remedial Action Plan (JBS&G 2018c) to address PFAS impacts will be required to be implemented for PFAS impacted soils and groundwater identified within the Links road connection in the Dunheved portion of the site. The extent of the required remedial works has been determined by a substantial extent of sampling and analysis completed prior; and
- A Site Audit Statement will be required as specific to the roadway, subject to the completion of the anticipated additional environmental assessment and Validation Reports, to confirm the site as suitable for the proposed use.

[2] It is noted that works advanced from Phase 1 assessments as recommended have already been undertaken. Associated reports can be provided upon request.

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1. Introduction and Background

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Minter Ellison on behalf of Maryland Development Company Pty Ltd and St Mary's Land Ltd (the client) to conduct a Phase 1 Preliminary Site Investigation (PSI) for the proposed East West Connector Road (EWCR) including the Regional Open Space (ROS) area and the Dunheved Link Road (the site) within the former ADI St Marys property ('the property'). The site is proposed to be developed into a multi lane roadway as necessary infrastructure to the Jordan Springs East Development Site (JSE) and sports fields and parkland within the ROS area.

The EWCR, is planned to comprise a roadway to connect the JSE Development site with the Suburb of Ropes Crossing. The EWCR currently exists as a paved Road from the sites former use as a munitions storage facility, however significant upgrade to the road will be required. The ROS area formerly consisted of ADI buildings, a radar range and bush land. It currently comprises unsealed roads, storage areas for stockpiles, mulch and building materials. The Dunheved Link Road connects the EWCR with Links Road located to the South of the property. The Dunheved Link Road is currently a haul road built for access purposes during earthworks at JSE and will also require upgrades. The site is approximately 3 km in total length and is split into 3 Stages. The location of the site is provided in **Figure 1**, the layout of the site including surrounding areas and the division of stages is provided in **Figure 2**.

The site falls within two LGA zones, Penrith City Council (PCC) and Blacktown City Council (BCC). The council boundary crosses the site at two points, where the EWCR crosses South Creek and in the mid to southern portion of the Dunheved Link Road approximately 270 m north of Links Road.

The property has undergone various previous environmental investigation works including extensive environmental assessment and remediation works in the mid 1990's. Of the works conducted, the Southern Sector West and the Southern Sector East validation reports (ADI 1996) encompassed the areas in which the site falls within. Ultimately, these reports lead to a number of site audit statements (SAS) being prepared and more specifically the site is covered by three previously issued SAS prepared by HLA-Envirosciences (CHK001/1 Kidd 1999a), (CHK001/6 Kidd 1999b) and (CHK001/7 Kidd 1999c). The reports confirm that the property was suitable for proposed uses with the exception of excluded areas including footprints of original buildings, car parks, roads and stockpiles that were inaccessible when previous works were conducted.

Due to the time elapsed since the (historical) site audit statements were issued, noting the requirement for assessment of roads as being excluded from previous SAS (as is the case for the EWCR), assessment of the site for suitability is required. It is also noted that potential impacts regarding PFAS was not assessed for in the earlier works. As such, and prior to a development application being granted for the site, clause 7 of SEPP 55 states '*the consent authority must consider whether the site is suitable or can be made suitable for the proposed development*'.

More recently, JBS&G have conducted a number of environmental investigations throughout the site and nearby areas. These reports have included UXO clearance (where necessary), management of pavement removal for historical road and/or building footprints and environmental sampling with associated reporting. Previous works have occurred under the review of an independent EPA accredited auditor. In addition, a comprehensive PFAS investigation (JBS&G 2018) was also conducted throughout the property, including creeks and tributaries that run through the site and in an area identified as Dunheved which the Dunheved Link road runs through.

Given that comprehensive investigation within the property including areas covered by the site has been conducted by JBS&G and appropriate methodologies and documentation have been issued to the satisfaction of an EPA accredited auditor, it is considered that a sufficient extent of site

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characterisation has been completed to allow conclusions can be drawn using historical information to determine the suitability of the site for its proposed use.

This report has been prepared to address clause 7 of SEPP 55 requirements for contamination assessment to allow the suitability of the site for the proposed commercial/industrial land use to be assessed by the relevant consent authority. The report is further prepared to provide recommendations (if any) on how the site can be made suitable for the proposed use from a contamination investigation.

This report, and previous investigations as completed on the site and relied upon in the preparation of this report, have been developed in accordance with guidelines made or approved by the NSW Environment Protection Authority (EPA) and relevant Australian Standards.

1.2 Objective

The objective of the investigation is to characterise potential contamination at the site, to draw conclusions on whether the site can be made suitable from a contamination perspective and to identify any recommendations for remediation required to be implemented with the site development to cause the site to be suitable for the proposed development.

1.3 Scope of Works

To achieve the project objectives, the following scope of works was proposed:

- Desktop review of available local and regional background environmental information, and available historical background information including aerial photographs, state and national heritage information, search of EPA records and groundwater bore information;
- Review of the substantial extent of previous soil and groundwater sampling and analysis works completed with the extent of the proposed roadway, and in proximity of the proposed roadway, to characterise soil and groundwater conditions on the site;
- Development of a CSM to identify potential AECs and associated COPCs;
- A detailed site inspection / walkover; and
- Preparation of this Phase 1 PSI in general accordance with guidelines made or approved by the NSW Environment and Protection Authority (EPA).

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2. Site Condition and Surrounding Environment

2.1 Site Identification

The location of the site is shown in **Figure 1,** the site layout and surrounding areas are shown in **Figure 2**. Details of the site are summarised in **Table 2.1** below.

Table 2.1 Summary Site Details

Lot Numbers	Lot 2 DP 1203565, Lot 2, 5 and 6 DP1203565 and Lot 3 DP 1133301 (BCC). Lot 3000 DP1215087 and Lot 1 DP1132380 (PCC).
Street Address	Jordan Springs East Development Site, access off Links Road St Marys.
Site Area	Approximately 35.4 ha(Stage 1 4.58 ha, Stage 2 30.17 ha and Stage 3 0.67 ha)
Local Government Authority	Penrith City Council and Blacktown City Council
Geographic Coordinates (MGA 56)	33.7325 E 150.750 N
Current Land-use **Proposed Land-use**	Vacant, storage and Roadway Roadway

2.2 Site Description

EWCR

The EWCR comprised a bitumen paved road with no curbing that extended from west to east and from JSE to the current property boundary secured by an electric gate in Ropes Crossing. The road was generally level with some cut and fill undertaken to keep the road flat where natural low points in the landform occurred.

Two bridges were observed at the EWCR, a concrete bridge of approximately 85 m in length crossed South Creek in the eastern portion of Stage 2 and a bridge located in the approximate mid-section of Stage 1 which crossed Ropes Creek and was approximately 25 meters in length.

Verges adjacent to the road comprised mostly of grasses and trees, no fly-tipping was observed within the verges.

ROS

The ROS area comprised of vacant areas and bushland in its southern portion. The northern half of the ROS area comprised of a number of unsealed roads, storage areas for soil and mulch associated with the JSE development. The most northern part and near the EWCR comprised of a former carpark and footprints of former buildings recently demolished. Remaining shipping containers, soil stockpiles and surplus temporary fence panels could be observed within this area.

Dunheved Link Road

The Dunheved Link Road comprised a recently constructed bitumen road with curbing and associated infrastructure. The paved road was observed to be in good condition and is currently used for access purposes. Either side of the road comprised of grass verges. No significant fly-tipping, was observed within the road verges on the Dunheved Link Road.

It is noted that the proposed Dunheved Link Road also includes a temporary bund located in its southern end as shown on **Figure 2**. This portion comprised of vacant grass land of the former ADI site. The eastern portion of the bund is noted to cross the Dunheved Open channel which is characterised by thick shrub and an access path which crosses the channel.

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Links Road/Dunheved Link Road Intersection

The southern portion of the Dunheved Link Road and where Stage 3 is located comprised a paved road intersection with Links Road which extended beyond the property boundary. A steel electric gate was observed at the entry to the property and as the start of the Dunheved Link Road.

Drainage infrastructure underlying the southwestern portion of Stage 3 Links Road was observed and appeared to be flowing out to the north and into an open channel which runs adjacent to the Dunheved Link Road.

2.3 Surrounding Land use

The surrounding land use described below is summary from Kidd 1999 for the Central Precinct development site:

- North – densely vegetated Regional Parklands, south creek meanders through this area.
- East – The Ropes Crossing housing development is located to the east of the site. The proposed Dunheved Industrial precinct is located directly east of the Dunheved Link Road. The St Marys Sewage treatment Plant is located approximately 400 m east of the site.
- South – Regional Parklands including portions of South Creek, the proposed Dunheved Industrial Precinct, Links Road and Commercial/industrial zone associated with Dunheved along links road and Dunheved Circuit are located to the South. Franchises including Toxfree, Gulf oil western among other were located along the southern side of Links Road.
- West – The JSE residential development site is located directly west of the site. Dense vegetation, a small Creek identified as the Dunheved Open Channel and vacant areas formerly part of the ADI site were located to the west the Dunheved Link Road.

2.4 Topography and Hydrology

The EWCR was relatively flat (approximately 25 to 30 m AHD) as it comprises of a sealed roadway which has been developed as relatively level along its length, including areas over waterways and through low lying areas.

The roadway tapers away towards its edges and therefore any surface water that falls onto the road is anticipated to flow towards the nearest road edge.

The Dunheved Link Road was also identified as relatively flat, this area tends to fall towards nearby local channels such as the Dunheved Open Channel. Regional topography and surface water runoff is to the north, north-east.

South Creek and Ropes Creek are the two main waterways that flow in proximity and below small portion of the roadway site. South Creek drains a very large catchment in western Sydney, originating at Narellan, over 30 km to the south. The catchment is a long narrow strip up to 8 km wide with an approximate area of 18,000 ha. The catchment includes residential, agricultural and industrial areas. The creek flows northwards from the development site through mainly agricultural areas before meeting the Hawkesbury River at Windsor, 12 km to the north.

Ropes Creek drains a smaller catchment, originating at Cecil Park, 12 km to the south-west. This catchment is also a long narrow strip up to 4 km wide and with an approximate area of 2400 ha. The catchment also includes residential, agricultural and industrial areas. Part of the creek has been diverted along a concrete drainage channel for about 2 km through the former St Marys Property before flowing into South Creek at its new confluence just to the north of the former St Marys Property boundary and is present in proximity of the proposed roadway.

The St Marys Sewage Treatment Plant (STP) is located south east of the site. ADI (1996b) reported effluent from the STP receives tertiary treatment before being discharged into the old Ropes Creek

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flow channel. This then flows into South Creek at its old confluence in the middle of the former St Marys Property.

An Open Channel is present to the west of the Dunheved Link Road, referred to as the Dunheved Open Channel. The channel passes through the area of retained vegetation to the west of Dunheved and discharges into South Creek. The elevation of the channel within the site is generally 2 to 3 m above the observed depth to groundwater. Surface water flow into the channel is from a stormwater outlet at the southern boundary of the ADI property which is anticipated to discharge stormwater flows from the Links Road industrial estate to the south of the site.

2.5 Geology

Review of the regional geological map (DMR 1997) indicated the site lies within Tertiary Londonderry Clay. The Londonderry Clay is characterised by clay, patches of ferruginized, consolidated sand.

Review of the regional soil map (DLWC 1972) indicated that the site lies within the Berkshire Park soil landscape group.

The typical Berkshire landscape is characterised by weakly pedal orange heavy clays and clayey sands, often mottled with inclusions of ironstone nodules. Large silcrete boulders (up to 20cm) occur in sand/clay matrix. Yellow podzolic soils where drainage conditions are poor, red podzolic soils and chocolate soils on flats and in small drainage lines. Kransnozems are present in unstructured plastic clays and in drainage lines or a crest.

Limitations of the Berkshire landscape group are very high wind erosion hazard if cleared. Gully, sheet and rill erosion on dissected areas. Waterlogging, impermeable subsoils, low fertility hazard.

This area is largely Quaternary age alluvium beds that consist of gravelly sand, sand, clayey sand silty clay, from 1 to 8m in depth. In the northeast, the soil type is the Berkshire Park soil, while the eastern area is the Blacktown soil type – both of these overlie the Bringelly Shale Unit. Noted in the western region were a number of paleochannels of unknown origin.

As reported in ADI (1996a) the former ADI St Marys Property is underlain by shales of Bringelly Shale Unit part of the Liverpool Sub-group and Wianamatta Group of the Triassic epoch. These are overlain by alluvium of Quaternary age. The Bringelly Shale unit consisting mainly of grey hard shales within intervening siltstone forms the bedrock. The top of the shale, up to 5m thick, is highly weathered and very friable in nature. The Quaternary Alluvium comprises predominately buff coloured silt, silty/sandy clays which is often lateritic in nature and mottled with yellow/red ochres and iron nodules. Quaternary Alluvium was deposited mainly in the central lowlands along the flood plains of South Creek and Ropes Creek. Thickness of the alluvium within the development site is likely to range in thickness from approximately 6m to 10m as these are the central lowlands.

2.6 Hydrogeology

A review of information obtained from the NSW Office of Water database (NSW DPI 2018[3]) indicated there are three registered groundwater monitoring wells located to the south east of the site with no feature information available for any of the three wells. No registered groundwater wells fall within the site.

Based on information obtained during groundwater investigation works conducted by JBS&G including JBS&G (2018[4]) the depth to the water table in proximity to the site ranges from 2 to 7 m below ground surface depending upon the geology (quaternary alluvium and high weathered shale). The water table occurs in the sandy to silty clay above the weathered shale and/or shale bedrock.

[3]NSW Department of Primary Industries Website http://allwaterdata.water.nsw.gov.au/water.stm, accessed 23 January 2018 (NSW DPI 2018)

[4] *PFAS Assessment at Former ADI St Marys Development Site – St Marys and Llandilo, NSW (rev B*) JBS&G Australia Pty Ltd November 2018 (JBS&G 2018)

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The groundwater flow pattern of the site follows the general topography of the area (to the north east towards South Creek), however, variation in the flow direction can occur locally based on the ground slope and also by infiltration of seepage water from overlying Open Channels / open drains.

Groundwater in the shallow upper aquifer is fresh to brackish as well as saline (electrical conductivity (EC) 300 to 40 000 µS/cm). Groundwater is more typically present in the saline range in proximity of the proposed roadway. The groundwater pH ranges from 4.5 to 7 indicating slightly acidic conditions, with most locations generally slightly acidic to neutral. Slightly reducing conditions are present in the aquifer.

2.7 Acid Sulphate Soils

Review of the Department of Land and Water Conservation map of Springwood/Riverstone (DLWC 1997[5]) indicated that there no known occurrence of acid sulfate soils in the vicinity of the site.

[5] NSW Department of Land and Water Conservation Edition 2 (DLWC 1997)

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3. Site History

3.1 Aerial Photographs

Historical aerial photographs were obtained from the Department of Lands as shown in **Appendix A**. Summary of aerial photographs obtained of the site is included below:

- **1947** – the site comprised of mostly vacant grass land, no structures or development was apparent. The current Links Road alignment could be observed as a paved road South of the site. South Creek and Ropes Creek could be observed in the image. Surrounding areas to the site were also observed to be vacant, areas associated with former military operations were observed to the south and southeast.
- **1955** – the property appeared to be undergoing earthworks at the time of the image, including areas of the EWCR. Construction of roadways for the future ADI site appeared to be occurring. Additionally, Ropes Creek appeared to comprise of recently excavated soil suggesting construction of the current concrete lined channel. A small building was observed to the south of the site potentially identified as a sewage treatment plant albeit much smaller than the current St Mary's STP.
- **1965** – it is noted that this image does not show the entire length of the site, however it could be interpreted that the current paved road alignment appeared to exist in this image. Development of surrounding areas had occurred whereby an established munitions factory and associated infrastructure was observed.
- **1975** – the EWCR appeared similar to the previous image. The roadway was observed to extended through to the current day Ropes Crossing. Ropes Creek comprised of a concrete lined channel similar to how it appears at present. The admin section of the former ADI site including the Firestation could be observed to the east of the EWCR.

  The Dunheved Link Road appeared to be cleared of vegetation and was undergoing earthworks of some sort. Potential biosolids storage could be observed east of the Dunheved Link Road associated with the St Mary's STP. The St Mary's STP could be observed approximately 300 m east of the site and was observed to be a larger operation than observed in previous aerials, with multiple buildings, tanks and treatment facilities observed.
- **1982** – the EWCR appeared similar to preciously described. The Dunheved Link Road comprised of an unsealed road or access track in its mid section. Storage of biosolids was observed to occur in the mid to southern portion of the Dunheved Link Road. Surrounding areas appeared similar to the previous image, additional facilities of the ADI site including the W series radar range could be observed to the west of the site.
- **1991** – the EWCR appeared similar to that previously described. The Dunheved Links Road appeared to become overgrown with vegetation and use of the site for sewage storage appeared to cease or at least become over grown. Access tracks and other features appeared to be less distinct, assumed to be due to the site becoming less frequently used or occupied.
- Earthworks were observed south of the site and the Dunheved Industrial area, south of Links road appeared to have developed.
- **2002** – the EWCR appeared similar to preciously described. The Dunheved Link Road comprised of bare soil, assumed to be associated with remediation works associated with the excavation of historical biosolids known to occur in the mid 1990's based on historical ADI reports.

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- **2017** – the site appeared similar to the previous image. Surrounding areas to the site were noted to increase in vegetation. It could also be observed that development of a sealed road as the Dunheved Link Road had occurred. Areas to the west of the site (Ropes Crossing) and West (Jordan Springs East) were undergoing development works.
- **2019** – the site appeared similar to the previous description. It is noted that stockpiled soil was observed in the mid portion of Dunheved and east of the Dunheved Link Road comprising of approximately 90,000 m3 of relocated SP30 biosolid materials.

3.2 EPA Records

A search of the NSW EPA's public register under the Protection of the Environment Operations Act 1997 (POEO Act) was under taken (**Appendix B**). The search for the site identified there were:

- No prevention, clean-up or prohibition notices;
- No transfer, variation, suspension, surrender or revocation of an environmental protection licence.

A search was also conducted through the EPA's public contaminated land register and is provided in **Appendix B.** The search did not identify any current or previous records of notices by the EPA, or notification to the EPA under Section 60 of the Contaminated Land Management Act 1997 (CLM Act), in relation to the site or immediately surrounding land.

3.3 Australian and NSW Heritage Register

A search of the Australian Heritage database was undertaken and records are included in **Appendix C.** It is noted that the Western Sydney Shale Woodlands St Marys is located within the general search area, however given the site location is within the historical road, this feature is not considered to be within the site.

A search of the NSW Heritage database was undertaken and records are included in **Appendix C**. The search did not identify the presence of any items of state significance in the vicinity of the site.

It is noted that areas of aboriginal heritage exist within the North Dunheved Precinct. It is understood that this area has undergone recent aboriginal heritage salvage works.

3.4 Integrity Assessment

The information obtained from the historical sources reviewed has been found to be in general agreement. It is therefore considered that the information provided in this historical assessment has an acceptable level of accuracy.

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4. Previous Reports

4.1 Summary Site History

The site is located within the former St Mary's ADI Munitions facility and consists of a current and historical access road. The former St Mary's ADI munitions facility covered a much larger area (approximately 1535 ha) and was established in 1942 as part of a larger parcel of farmland resumed in 1941 by the Commonwealth for establishment of ammunitions factory to support the war effort (World War II). From 1955-57, a new munitions factory was constructed and a substantial part of the original factory was leased to private industry and became the present Dunheved Industrial Estate.

The St Marys Munitions factory was primarily a filling, or load and pack type, operation where explosives and propellant, manufactured elsewhere, were loaded into shells, bomb and rocket casings and stored in magazines awaiting deployment. Small amounts of some initiator explosives for detonators and fuses were manufactured on the property because they were too sensitive to travel. Some test firing of detonators, fuses and smaller occurred at designated areas as part of the manufacturing quality assurance program. All larger munitions were test fired at Army ranges elsewhere.

ADI conducted a comprehensive historical report on the St Mary's ADI site in the mid 1990's[6] which included a chronological history of site activities and development of buildings and structures. The report did not include detailed information of the site itself, apart from confirming its historical use as an internal paved road. It is noted that historical potential areas of environmental concern nearby or adjacent to the site, include the former administration section which included a fire station east of the site. This area was assessed in the Western Collector Road Detailed Site Investigation (DSI) and the Western Collector Road Extension DSI (JBS&G 2017a[7] and JBS&G 2017b[8]) reports which is discussed in more detail in **Section 4.7**.

In addition, Site 11, a remedial area associated with buried general waste located south of the mid portion of the site was remediated in the mid 1990s and is discussed further in the summary of the Southern Sector West Validation Report (ADI 1996) in **Section 4.2**.

Comprehensive PFAS assessment and subsequent remedial action plan has been conducted by JBS&G from 2017 to present. Associated reports for these works are summarised in **Sections 4.6, 4.8** and **4.9**.

Historical reports have been summarised in sections below to obtain information relating to the site.

[6] ADI Limited – ADI St Mary's Property Historical Report

[7] *Detailed Site Investigation – Western Collector Road, Ropes Crossing, NSW*. 21 September 2017 JBS&G Australia Pty Ltd (Rev 1) JBS&G 2017a

[8] *Detailed Site Investigation – Western Collector Road Extension, Ropes Crossing, NSW*. 13 December 2017 JBS&G Australia Pty Ltd (Rev C) JBS&G 2017b

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4.2 Southern Sector West (ADI 1996)

A portion of the former Southern Sector West falls within the western portion of the site.

Kidd (1999) reported historically, the sector had a variety of uses none of which occurred on the site. Remedial area Site 11 is noted to be located to the south of the site and formerly comprised a soil and gravel quarry area and a tip site for rubble and general factory waste. This underwent extensive investigation works, prior to being excavated and disposed of offsite to a suitably licensed facility. A total of approximately 75,000 m^3 of impacted soils and buried waste was disposed of offsite. Validation samples were collected following the excavation and offsite disposal and samples were found to be within the Environmental Acceptance criteria utilised.

4.3 Southern Sector East (ADI 1996)

The Northern Dunheved Precinct, proposed commercial/industrial site falls within the former Southern Sector East Sector. The portion covered by the Northern Dunheved Precinct includes previously investigated contaminated areas Site 24F and Site 12 (ADI 1996d).

ADI (2016d) reports that Site 12 covered an area of 4.1 ha and was used as a general tip for site materials including buildings rubble and general rubbish between 1955 and 1980. ADI (1996d) observed general solid waste including timber, bricks, concrete slabs, scrap metal, fibro sheeting, asphalt, concrete pipes, asbestos sheeting, galvanised roofing and glass. No evidence was uncovered that the site was used for the destruction or disposal of explosive wastes.

Following the remedial works soil validation samples were collected from the site and analytical concentrations were either within the Safe Environmental Acceptance criteria or within 95% UCLs. The land was then recontoured to the resemble the original topography.

ADI (1996d) reports that from the mid 1980's the St Marys Sewage Treatment Plant (STP) received approval from the St Marys Munitions Filling Factory (the site) to pump treated sludge from its plant onto ADI land. Site 24F was identified as a disused sewage effluent dumping area. The area was boarded by 0.5 to 1 m high earth mounds.

Following investigation works into Site 24F identified that the sewage sludge material was generally outside of the adopted Safe Environmental Acceptance Criteria for Chromium, Copper, zinc and OCPs, isolated occurrences of impacted PCBs and PAHs were also reported.

OCP, PCB and PAH impacted samples were delineated and then excavated and disposed offsite to landfill. The remaining dried sludge material was excavated and stockpiled elsewhere within the St Marys Property.

Following the remedial works soil validation samples were collected from the site and analytical concentrations were either within the Safe Environmental Acceptance criteria or within 95% UCLs.

It is noted that PFAS investigation was not conducted within 24F, given its proximity the St Mary's STP and given that this portion of the site was used to dump disused sewage effluent, it is considered a potential AEC.

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4.4 Groundwater Monitoring Event (JBS&G 2016[9])

JBS&G was engaged to complete a Groundwater Monitoring Event (GME) across Central Precinct Development and associated Regional Park, located at Llandilo, NSW. JBS&G conducted the well installation (12 groundwater monitoring wells) between 8 and 14 January 2016 comprising 12 monitoring wells, with groundwater sampling conducted between 21 and 27 January 2016.

During groundwater sampling, measured depth to water was between 2.7 and 6.8 m from the top of well casing. Corrected water elevation was between 12.04 m and 16.75 m Australian Height Datum (AHD). The inferred groundwater flow direction was to the east and southeast. Groundwater encountered was clear to brown, low to high turbidity, with no sheen or odour observed at all monitoring locations. No aesthetic issues are present within groundwater at the site.

Groundwater samples were analysed for heavy metals, TRHs, BTEX, PAHs (low levels), OCPs, PCBs, VOCs and explosives. All reported concentrations were found within the site adopted criteria with the exception of minor zinc concentrations marginally above the Fresh Water Ecosystems (ANZECC 2000) guidelines, and nickel at MW01 above the fresh water criterion and the Australian Drinking Water (Mar 2015) health criterion, however, groundwater within the vicinity of MW01 was not proposed to be used for potable purposes.

These minor exceedances were not considered to pose an unacceptable risk to the intended uses of the site for the following reasons:

- The zinc and nickel levels are considered typical of urban areas, based on the general consistency in the results across the site, including upgradient locations;
- The highest concentrations at MW01 and MW07 were over 750 m and 250 m respectively from the nearest watercourse (South Creek), with downgradient wells showing similar or lower concentrations than elsewhere; and
- Groundwater was unlikely to be used for potable purposes.

It is noted that concentrations of copper, lead and zinc exceeded ANZECC 2000 Fresh Water Ecosystems, however these concentrations were considered consistent with background levels and therefore were not considered to pose a risk at the site. It is also noted no concentrations were elevated above ANZECC 2000 guidelines for Water Quality and General Water Use (irrigation purposes). Furthermore, groundwater at the site is unlikely to be used as a resource given the proposed residential development.

Based on the findings of the assessment, it was considered that there were no unacceptable risks to likely onsite or offsite receptors from groundwater.

[9] *Groundwater Monitoring Event – Central Precinct, Llandilo, NSW (Rev 0*) JBS&G Australia Pty Ltd 29 June 2016 (JBS&G 2016)

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4.5 Sampling Analysis and Quality Plan (SAQP) (JBS&&G 2017c[10])

The SAQP was developed to document the methods which will be employed to complete the Environmental Site Assessments (ESAs) across the JSE and included the ROS area within Stage 2 of the site.

Based on the Conceptual Site Model (CSM), baseline COPC were identified as heavy metals, PAHs, TRH, OCPs, PCBs, explosives, UXOs and Asbestos.

The ESAs are required across previously inaccessible areas (paved roads, building and stockpile footprints) of the JSE and associated Regional Open Space. A number of buildings within the ROS area associated with the former radar range require ESA assessment

It is understood the inaccessible areas requiring ESA are to be developed together with the surrounding development site for standard residential land use, associated Regional Open Space and the roads for commercial industrial land uses. It was noted some of the auditable areas fall into the regional open space which surrounds the JSE.

4.6 PFAS Human Health and Ecological Risk Assessment (JBS&G 2018b[11])

JBS&G were requested to complete an investigation on PFAS across the adjacent development site and Stockpile 30 (located to the north of the roadway and consisting of biosolids derived material as historically stored in proximity of the Dunheved portion of the roadway).

The results of the investigation identified:

- An elevated level of PFAS in one groundwater monitoring well as located within the western portion of Dunheved in close proximity of the roadway referred to in this assessment;
- PFAS was identified within stockpile 30 and immediately hydrogeological downgradient of stockpile 30;
- The source of the PFAS was likely associated with the historical sewage treatment activities associated with the formation of the stockpiled materials; and
- Concentrations of PFAS reported in stockpile 30 have not been identified to pose a potential health or ecological risk where the materials are reused on site in a commercial/industrial setting.

4.7 Western Collector Road DSI (JBS&G 2017a, JBS&G 2017b)

JBS&G conducted UXO clearance works and environmental investigation works on the Western Collector Road and Western Collector Road extension site in 2017. The Western collector road is located east of the site and is understood to form part of the previously existing road.

The investigation included review of historical reports and information, UXO clearance works following the removal of the road pavement, test pitting and soil sampling of soils and comparison of soil analytical results against NEPC (2013) site suitability criteria to determine the suitability of the site for the proposed use as a road way.

Based on the findings of the investigation:

- No unexploded ordnance items were identified at the site and the site was cleared as free of UXO by the UXO clearance contractor;

[10] *Sampling Analysis and Quality Plan, Central Precinct Llandilo, Maryland Development Company*, November 2015 (Rev 5) JBS&G Australia Pty Ltd (JBS&G 2017a)

[11] *PFAS Human Health and Ecological Risk Assessment – Former S Marys ADI Property Central Precinct, Llandilo, NSW (Rev D*) JBS&G Australia Pty Ltd (JBS&G 2018b)

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- The soil samples collected reported concentrations of heavy metals, TRH, BTEX, OCPs, PCBs and PAHs below the adopted health based criteria (HIL-D);
- No ACM/asbestos was observed within the sample locations or within the samples analysed;
- Based on the groundwater results and targeted soil samples collected adjacent to the fire station, the upgradient Fire Station did not pose a risk to the site with concern to PFAS;
- It was considered that the site is suitable for the proposed roadway with no further assessment, remediation or management of contamination issues; and
- It was recommended that an unexpected find protocol be utilised for future works at the site.

4.8 PFAS Assessment at Former ADI St Marys Development Site (JBS&G 2018a)

JBS&G were engaged by the client to undertake environmental site assessment activities at the Lend Lease St Marys Development Site, as located at St Marys and Llandilo, NSW as restricted to the assessment of per and poly fluoroalkyl substances (PFAS). The site is within the former St Marys ADI site which was used for various munition filling and storage activities up until 1994.

Several stages of historical, assessment and remediation have occurred at the development site. PFAS have been recently identified as an emerging contaminant of concern on a range of historical commercial, industrial and Defence sites. Previous stages of assessment, remediation and validation at the site have not considered PFAS as a potential contaminant.

A desktop review of potential PFAS sources on and in proximity of the site identified potential PFAS contamination associated with: a historical Fire Station present at the east of Ropes Crossing; potential historical fires across the site; receipt, storage and handling / relocation of biosolids from the adjoining Sydney Water Sewage Treatment Plant (STP) in the 1980's and 1990's and potential historical PFAS uses / contamination in proximity of the site. Biosolids historically received at the Dunheved portion of the site were transferred to an area known as Stockpile SP30 as located to the north of Central Precinct in the mid 1990's.

The assessment of PFAS on the site has been undertaken by sampling and analysis of soil, surface water, sediment, groundwater and biota samples undertaken through the latter part of 2017 and 2018. An assessment of quality assurance / quality control has found that the generated data is reliable to characterise levels of PFAS in each of the media assessed.

On the basis of the data set generated, it was found:

- PFAS was identified in historical biosolids as associated with Stockpile SP30, within soils in proximity of the South Dunheved Open Channel passing though the south-western portion of the Dunheved portion of the site and at the south-east of the former extent of biosolids storage within Stockpile SP30. The levels of PFAS measured in soils were not considered to pose a significant health or ecological risk by potential direct exposure pathways as per the current or proposed site use. Though slight exceedances of potentially applicable ecological protection criteria were identified;
- PFAS impact was identified in surface water across the site. Increases in levels of PFOS in surface water were observed in South Creek moving upstream to downstream of the site. Elevated levels of principally sulfonic forms of PFAS (PFOS and PFHxS) were reported throughout the South Dunheved Open Channel in the south-western portion of the Dunheved portion of the site. PFAS was being discharged into the South Dunheved Open Channel from a stormwater pipe discharging from Links Rd adjoining the south of Dunheved. The South Dunheved Open Channel discharges into South Creek;

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- A range of PFAS constituents, generally at levels slightly exceeding detection limits, were present throughout South Creek tributaries on the development site and an Open Channel from the STP. PFOS was identified and found to have bioaccumulated (by comparison to levels measured in surface water), within biota sampled from South Creek and the Open Channel from the STP. Sediment analysis was consistent with surface water findings;
- PFAS was identified in groundwater adjoining and hydrogeologically downgradient of Stockpile SP30, in proximity of the South Dunheved Open Channel passing though the south-western portion of the Dunheved portion of the site, underlying an area of North Dunheved and adjoining the northern portion of the western boundary to the Sydney Water STP; and
- The highest levels of PFAS impact in groundwater were reported in proximity of the South Dunheved Open Channel passing though the south-western portion of the Dunheved portion of the site and were considered to be consequent of historical migration of PFAS impacted surface water through the South Dunheved Open Channel. It was considered likely that historically substantially higher levels of PFAS had been present in the South Dunheved Open Channel.

It was recommended that site management and/or remediation works are undertaken:

- To prevent the inflow of PFAS impacted stormwater to the site;
- To remove potential direct exposures to biosolids prior to / with development of the site for the proposed site uses and preclude surface water contact to prevent future leaching / migration of PFAS impact within biosolids; and
- Control potential future leaching of PFAS impacted soils / sediments present at near surface depths in proximity of the South Dunheved Open Channel.

A remedial action plan (RAP) was prepared by JBS&G to manage and remediate the PFAS impacted areas identified in the report and as discussed above. The RAP is summarised in **Section 4.9** below, of particular relevance and with respect to the site area being assessed is impacted soils associated with the Dunheved open channel which are located within the vicinity of the Dunheved Links Road as shown on **Figure 3**.

4.9 Remedial Action Plan – Former ADI St Marys Development Site (JBS&G 2018c[12])

JBS&G was engaged by the client to prepare a RAP at the Lend Lease St Marys Dunheved Development Site, as located at St Marys and Llandilo, NSW. The RAP was based on the findings of the site wide PFAS Assessment summarised in **Section 4.8** where it was established that remediation/management of impacted soil would be required within the Dunheved Industrial precinct so that it can be considered suitable for its proposed commercial / industrial land uses. The RAP was prepared in accordance and with reference to relevant guidelines made or endorsed by the NSW Environment Protection Agency (EPA) inclusive of NEPC (2013), EPA (2017) and SEPP 55 and was specific to the remediation of PFAS impacts only.

The RAP identified the most feasible remedial strategy as containment of impacted soils given the significant filling requirements for the land to meet flood mitigation measures. This strategy would isolate the impacted materials and contain them within a confined area where potential for migration is mitigated. The proposed containment strategy is as follows:

- The materials to be contained shall be maintained to the commercial / industrial land-use area within the Dunheved precinct, as consistent with that area as nominated in the development approval;

[12] *Remedial Action Plan – Former ADI St Marys Development Site St Marys and Llandilo, NSW (Rev C*) JBS&G Australia Pty Ltd 27 November 2018 (JBS&G 2018c)

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- Excavation of impacted soils at the Dunheved Open Channel and relocation of those soils to the containment cell;
- Relocation of SP30 soils, currently temporarily stockpiled in Dunheved, into the containment cell;
- A minimum soil cover thickness of 2 m will be placed over the impacted soils; and
- Impacted soils will be placed a minimum of 2 m above the depth of groundwater.

Following relocation, validation sampling will be conducted within associated excavations and stockpile footprints.

The inflow of contaminated stormwater into the Dunheved Open Channel will be redirected as part of proposed infrastructure works in the area.

In relation to the site area, impacted soils at or adjacent to the Dunheved Open Channel as shown on **Figure 3** will require excavation, containment and validation as per the above listed procedures.

It was considered that subject to the successful implementation of the measures of the RAP the site can be made suitable for the intended land uses and that the risks posed by contamination can be managed in such a way as to be adequately protective of human health and the environment.

4.10 Additional Analytes Summary Letter for the Dunheved Industrial Precinct, St Mary's, NSW (JBS&G 2018d[13])

JBS&G conducted environmental assessment works across the Dunheved Industrial Precinct comprising of consideration of other potential contaminants other than asbestos throughout 2018. Consideration of PFAS was covered in the PFAS Assessment at the Former ADI St Marys Development site (JBS&G 2018), however consideration of other contaminants was required to satisfy council conditions.

The objective of the investigation is to characterise potential contamination at the site using all non-PFAS data collected over the past 18 months and to use this information to draw conclusions regarding the suitability of the site for the proposed use or make recommendations to enable such conclusions (in lieu of PFAS assessment which has been undertaken separately).

All soil concentrations were identified at concentrations below the adopted health and ecological criteria adopted for the site. Further to this, no significant impact as far as staining, odours or ACM was identified across the site during the various investigations.

It was noted that a single fragment of ACM was identified on the surface at location DHN-50. The fragment was collected and sent to the testing laboratory for confirmatory testing. No additional fragments were identified within the vicinity to DHN-50. As such it is considered that the fragment was isolated and not part of a significant issue which would warrant further investigation or remediation.

Groundwater analytical results were reported at concentrations below the laboratory limit of reporting for the majority of analytes tested. Reported concentrations of heavy metals including arsenic, cadmium, chromium copper, lead, mercury, nickel and zinc are generally considered representative of background concentrations in the area. Given that groundwater is not used as a resource at the site given its brackish to saline properties the identified concentrations are not considered to pose a potential risk.

There is no potential for migration of contamination from the site for the following reasons:

[13] *Additional Analytes Summary Letter for the Dunheved Industrial Precinct, St Marys, NSW (Rev A*) JBS&G Australia Pty Ltd 31 December 2018 (JBS&G 2018d)

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- No concentrations of soil or groundwater were identified at concentrations that represent a health or ecological risk; and
- Soil is generally secured with overlying vegetation cover preventing potential wind or surface water migration. Groundwater at the site is slow moving as demonstrated through hydraulic conductivity testing conducted in JBS&G (2018a).

Based on the findings of the investigation the following conclusions were made:

- Soils at the site were not identified to pose an aesthetic risk noting the proposed commercial/industrial use of the site;
- Soil analytical results were reported at concentrations below the adopted criteria; and
- Groundwater analytical results were generally reported at concentrations below the adopted criteria. Elevated concentrations of heavy metals identified were not considered to pose a risk given groundwater is not used as a resource and has limited migration potential;

It was recommended that the CMP (JBS&G 2018e) is implemented throughout future works.

Sample locations in proximity to the site are provided on **Figure 3**, given this report overlaps with the Dunheved Link Road, data is considered to be a good indicator for potential contamination.

4.11 Contamination Management Plan (CMP) – Central Precinct and Dunheved Precinct (JBS&G 2018e[14])

This Contamination Management Plan (CMP) is a revision and update of a previous CMP by URS (2008). This CMP has been updated throughout the time the project has been running and includes the Central precinct (JSE) area as well as the Dunheved Precinct.

The CMP is a condition of all site audit statements (SASs) requiring an appropriate management plan including procedures for the safe handling and disposal of any items of explosive ordnance, shall be in place before development earthworks commences and shall remain in place to cover any excavation on within Central Precinct during its ongoing use.

The objectives of this CMP is to provide an Unexpected Finds Protocol (UFP) with an appropriate framework for identifying and addressing any discovery of chemical contamination, potentially explosive ordnance or any other form of hazard during development prior to subdivision so as to ensure a safe working environment for workers and to avoid unacceptable impact on the natural environment.

Unexpected finds may occur in areas which, although searched extensively, contain remnant materials which were obscured by the local topography, the type of surface cover (e.g. building) or at a depth preventing detection. The Site Auditor considered that, while explosive ordnance may be uncovered during earthworks, it is unlikely that these will present an unacceptable risk provided appropriate procedures for the safe handling and disposal of such material are adopted.

Furthermore, the CMP provides an appropriate framework for an Asbestos Management Plan (AMP) including procedures required for handling and disposing of any identified asbestos containing materials and asbestos impacted soils during the development of the Central Precinct.

The successful implementation of the CMP requires the appropriate briefing and Specific OHS Induction of site workers who may uncover potential chemical contamination (including potential asbestos containing materials) and/or explosive ordnance. It is proposed this briefing will include the review of the CMP and the associated flow chart.

[14] *Contamination Management Plan – Central Precinct and Dunheved Precinct, Llandilo, NSW (Rev 3*) JBS&G Australia Pty Ltd 23 January 2018 (JBS&G 2018e)

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This CMP describes reporting procedures and lines of responsibility, including the contact numbers for relevant experts at the commencement of the development works.

The Property has been remediated, audited and declared suitable for its intended land uses, and remnant contamination, if present, is most likely to be discovered during the development earthworks which occur prior to subdivision. The approaches included in the CMP are intended for use only during the Central Precinct preparation phase of development, during which structures are demolished and disposed of, land levels are altered and redundant infrastructure is removed and new infrastructure is installed. Post-subdivision management plans, if required, would be administered through the relevant local government authority.

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5. Conceptual Site Model

5.1 Potential Areas and Substances of Environmental Concern

Based on the history of the site and based on previous investigations conducted, general areas of environmental concern have been categorised and are present in **Table 5.1**. Within the EWCR, potential areas of impact at the site are associated with fill materials of unknown origin during construction of the road, areas of fly tipped waste on or adjacent to the paved road and potential residual impact from the pavement portion of the road to underlying soils.

Within the Dunheved Link Road, potential areas of impact are associated with historical use of the area for sewage sludge and effluent storage by the nearby St Mary's sewage treatment plant, and potential offsite impact from the nearby commercial/industrial uses in Dunheved, south of Links Road. It is additionally noted that the Dunheved Open channel, identified to be impacted with PFAS runs adjacent to the Dunheved Link Road.

The ROS area was predominantly remediated and signed off in previous site audit statements. Former buildings in the northern portion of the ROS area were excluded in previous SAS and require assessment in accordance with the JBS&G SAQP (2017c). As such, this area is considered of low risk of significant contamination. However, asbestos and or building rubble impact associated with former and recent demolition works and former uses of the ROS as a compound are considered.

Table 5.1. Areas if Environmental Concern and Associated Contaminants of Potential Concern

Area of Environmental Concern (AEC)	Contaminants of Potential Concern (COPC)
EWCR	
Fill materials underlying the road	Heavy metals*, PAHs, TPH/BTEX, OCPs, PCBs, asbestos and explosives** Metallic Debris – may contain explosive ordnance waste
Paved Road asphalt	Heavy metals*, PAHs, TPH/BTEX, asbestos and explosives** Coal Tar
Flytipping	Heavy metals*, PAHs, TPH/BTEX, OCPs, PCBs and asbestos
Dunheved Link Road	
Historical use of the site for sewage sludge and effluent storage	Heavy metals*, PAHs, TPH/BTEX, OCPs, PCBs, asbestos and PFAS
Impact associated with the Dunheved Open Channel	PFAS
Potential impact from offsite sources south of Links Road	Heavy metals*, PAHs, TPH/BTEX, OCPs,, PCBs, asbestos and PFAS
ROS	
Flytipping	Heavy metals*, PAHs, TPH/BTEX, OCPs, PCBs and asbestos
Building Footprints	Heavy metals*, PAHs, TPH/BTEX, OCPs, PCBs, asbestos and explosives**
Fill materials and impact from demolition works, use of the site as a compound	Heavy metals*, PAHs, TPH/BTEX, and asbestos

* Heavy metals include As (Arsenic), Cu (Copper), Cr (Chromium), Cd (Cadmium), Ni (Nickel), Pb (Lead), Zn (Zinc) and Hg (Mercury).

** Explosives will include, but not limited to, RDX (research department explosive), TNT (trinitrotoluene), 2,4-DNT (2,4-Dinitrotoluene) and 2,6-DNT (2,6-dinitrotoluene).

5.2 Potentially Contaminated Media

Potentially contaminated media present at the site include:

- Fill material; and
- Natural soils underlying impacted fill materials; and
- Groundwater.

The source of the fill material across road footprints is unknown. Fill material across the site must therefore be considered a potentially contaminated medium. Fill material is anticipated to be limited

to directly beneath roads where road base and other materials are anticipated to be used during road construction. Deeper fill is anticipated in areas where roads cross over creeks and gullies.

Further, fill associated with left behind biosolids from previous use of the Dunheved Portion of the site for biosolids storage, is considered a potential area of concern.

Based on the known former site use for munitions testing and the unknown source of fill materials, vertical migration of contamination from the fill and surface soils into the underlying natural soils may have occurred. Consequently, natural soils underlying impacted fill materials have a moderate potential to be a contaminated media.

Groundwater has been previously investigated and signed off as part of the historical remediation and validation works conducted across the former ADI St Marys Property therefore significant groundwater impacts are not anticipated. In addition, JBS&G conducted a groundwater monitoring assessment (JBS&G 2016 and JBS&G 2018a) in JSE, Dunheved and surrounding areas, no impact was identified.

Impact to groundwater from PFAS has been identified in the comprehensive PFAS investigations conducted. However, noting the proposed use for the site as a road way with no anticipated exposure pathway, the proposed development is not considered to be directly impacted by this issue.

Reference to PFAS impacted soils within and surrounding the Dunheved Open Channel is provided JBS&G (2018a) discussed in **Section 4.7** and are confirmed to extend onto the Dunheved Links Road portion of the site. As such PFAS impacted soils are considered to be present in portions of the site and will require remediation in accordance with the RAP (JBS&G 2018c).

Given the site was not historically located in munitions manufacturing or filling areas and the historical validation data for the development site surrounding the auditable areas does not indicate exceedances of volatile components it is considered unlikely that soil vapour is a contaminated media. However, should any volatile contaminants be detected in soil or groundwater this will be reassessed.

5.3 Potential Exposure Pathways

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

The potential contaminants identified as part of the site history review and review of previous investigations are generally in a solid form (e.g. heavy metals, asbestos, explosives, ordnance etc). As the site is currently paved there is a low potential for contaminates to have migrated via either windblown dust or surface water.

The potential for contaminants to migrate via groundwater is moderate to low, given the low hydraulic conductivity of groundwater in the region.

Based on the contaminants of concern identified in various media as discussed above and based on the proposed site development activities, potential exposure pathways at the site during and following development works include:

- Potential dermal and oral contact to impacted soils as present at shallow depths and/or accessible by earthworks contractors, however given the concentrations identified in PFAS generally industry standard PPE requirements including gloves, long sleeved clothing and pants, and steel capped boots will mitigate this risk;

Contamination associated with PFAS is considered to be from an offsite source(s). In its present state migration of impacted surface water, which in turn impacts soils and groundwater below, is occurring. In order to mitigate or eliminate the potential for migration, the RAP (JBS&G 2018c) should be implemented within identified impacted areas as shown on **Figure 3**.

5.4 Potential Receptors

Potential receptors of may include:

- Excavation / construction / maintenance workers conducting activities at or in the vicinity of the site, who may potentially be exposed to COPCs through direct contact with impacted soils present within excavations and/or inhalation of dusts / fibres associated with impacted soils;
- Nearby surface water bodies including South Creek and Ropes Creek;
- Ecological receptors located adjacent to the road in NPWS areas; and
- Residential areas following completion of planned development works in Jordan Springs East and Ropes Crossing.

5.5 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPCs as either liquids or gasses.

Man-made preferential pathways may be present at the site, generally associated with fill materials at near surface depths. Fill materials are anticipated to have a higher permeability than the underlying natural soil and/or bedrock.

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6. Conclusions

Based on the environmental assessment as completed previously and collated within this assessment, the following areas of environmental concern (AECs) and associated contaminants of potential concern (COPCs) were identified on the roadway as per **Table 6.1** following.

Table 6.1 – AECs and associated COPCs based on review of records and previous reports

Area of Environmental Concern (AEC)	Contaminants of Potential Concern (COPC)
EWCR	
Fill materials underlying the road	Heavy metals*, Poly aromatic hydrocarbons (PAHs), Total Recoverable Hydrocarbons (TRH)/BTEX (Benzene, toluene, ethylbenzene and Xylenes), Organochlorine pesticides (OCPs), Organophosphate pesticides (OPPs), Polychlorinated Biphenyls (PCBs), asbestos and explosives** Metallic Debris – may contain explosive ordnance waste
Paved Road asphalt	Heavy metals*, PAHs, TRH/BTEX, asbestos and explosives** Coal Tar
Flytipping	Heavy metals*, PAHs, TRH/BTEX, OCPs, OPPs, PCBs and asbestos
Dunheved Link Road	
Historical use of the site for sewage sludge and effluent storage	Heavy metals*, PAHs, TRH/BTEX, OCPs, OPPs, PCBs, asbestos and PFAS
Impact associated with the Dunheved Open Channel (surface water entering site)	PFAS
Potential impact from offsite sources south of Links Road	Heavy metals*, PAHs, TRH/BTEX, OCPs, OPPs, PCBs, asbestos and PFAS
ROS	
Flytipping	Heavy metals*, PAHs, TPH/BTEX, OCPs, PCBs and asbestos
Building Footprints	Heavy metals*, PAHs, TPH/BTEX, OCPs, PCBs, asbestos and explosives**
Fill materials and impact from demolition works, use of the site as a compound	Heavy metals*, PAHs, TPH/BTEX, and asbestos

With the findings summarised in **Table 6.1** and subject to the limitations in **Section 7,** it is concluded that the site can be made suitable for the proposed use in accordance with clause 7 of SEPP 55 subject to the following actions:

- The EWCR requires further investigation including completion of an SAQP that includes details on required pavement removal, UXO clearance and detailed site assessment including soil sampling and analysis of soils present underlying roadways. The SAQP and subsequent investigations shall require review and endorsement by the Site Auditor[15]. The sampling works can only be undertaken subsequent to the removal of the existing roadway. This same process has been previously completed on a substantial extent of historical roadways / building footprints throughout the remainder of the overall development site. Assessments in lieu of the removal of the roadway have been completed to the extent achievable;
- Formerly inaccessible areas of the ROS including building footprints require UXO clearance and assessment in accordance with the existing JBS&G SAQP for JSE (JBS&G 2017c);
- In addition to findings of works undertaken specific to soils underlying the existing roadway footprint, the previously prepared Remedial Action Plan (JBS&G 2018c) to address PFAS impacts will be required to be implemented for PFAS impacted soils and groundwater identified within the Links road connection in the Dunheved portion of the site. The extent

[15] It is noted that works advanced from Phase 1 assessments as recommended have already been undertaken. Associated reports can be provided upon request.

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of the required remedial works has been determined by a substantial extent of sampling and analysis completed prior; and

- A Site Audit Statement will be required as specific to the roadway, subject to the completion of the anticipated additional environmental assessment and Validation Reports, to confirm the site as suitable for the proposed use.

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7. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

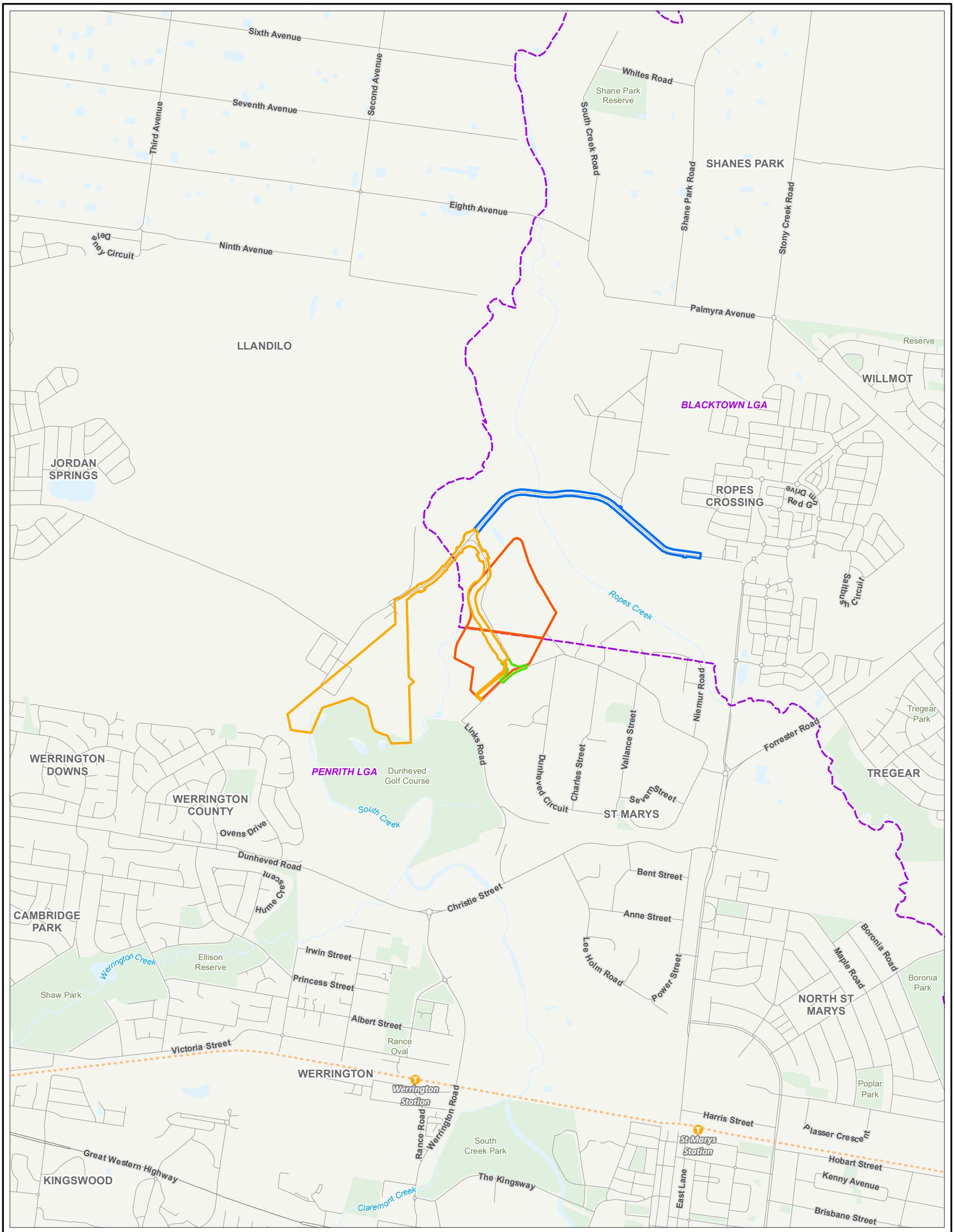
Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

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Figures

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Legend:

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct
- LGA boundary
- Parks and reserves
- Waterbody area
- Waterway
- Primary Road
- Local Road
- Train Line
- Train Station

JBS&G

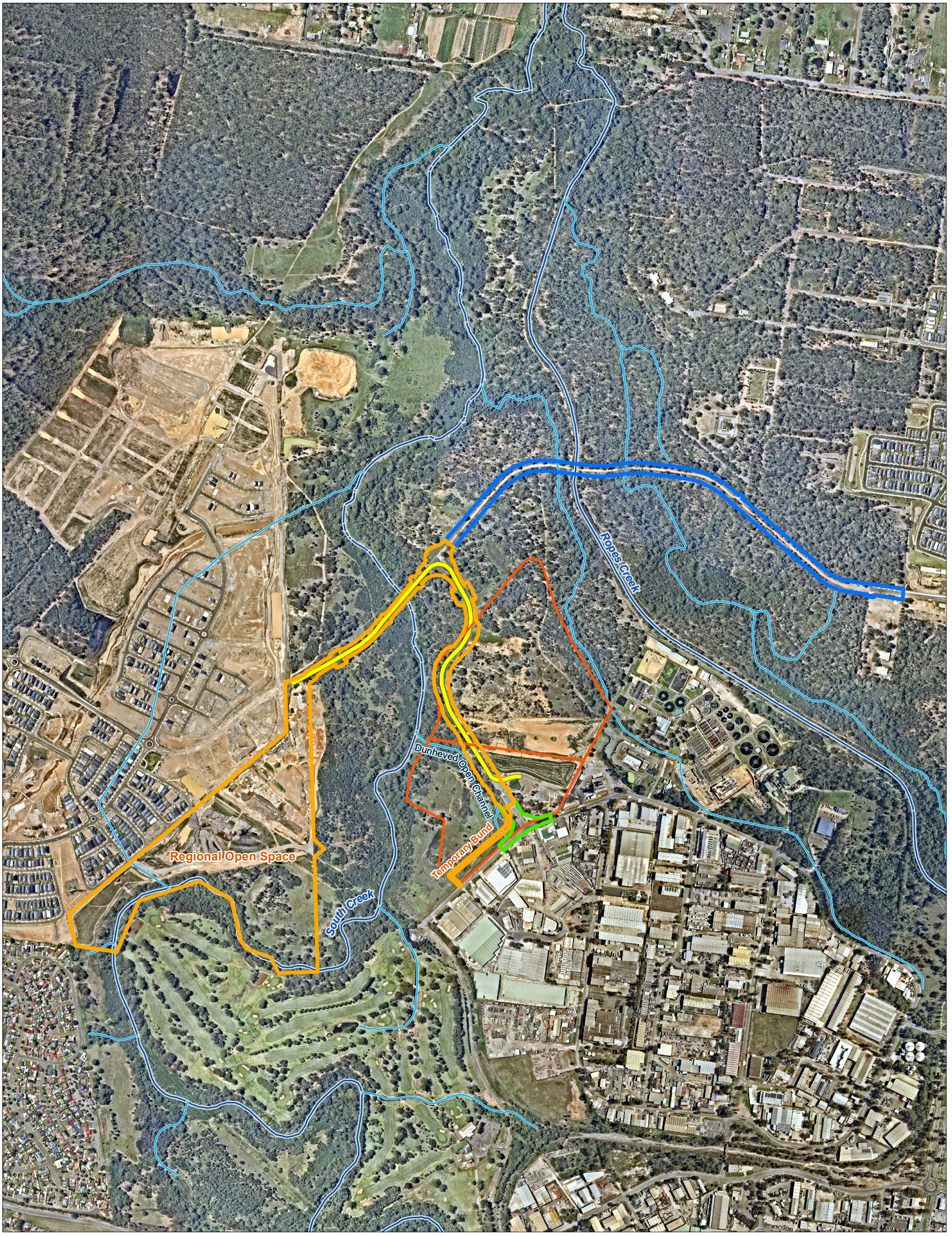
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Central Precinct

EAST WEST CONNECTOR ROAD (EWCR) SITE LOCATION

Job No: 54782		Scale: 1:20,000		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: FH	Checked By: GB	Version: R03 Rev B	Date: 12-Apr-2019	**FIGURE 2**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R04 Rev A\54782_01_Site_Location.mxd
Template Version: 20180730



Legend:

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct
- Haulage Road
- Creeks
- Channels

JBS&G

0 130 260
metres

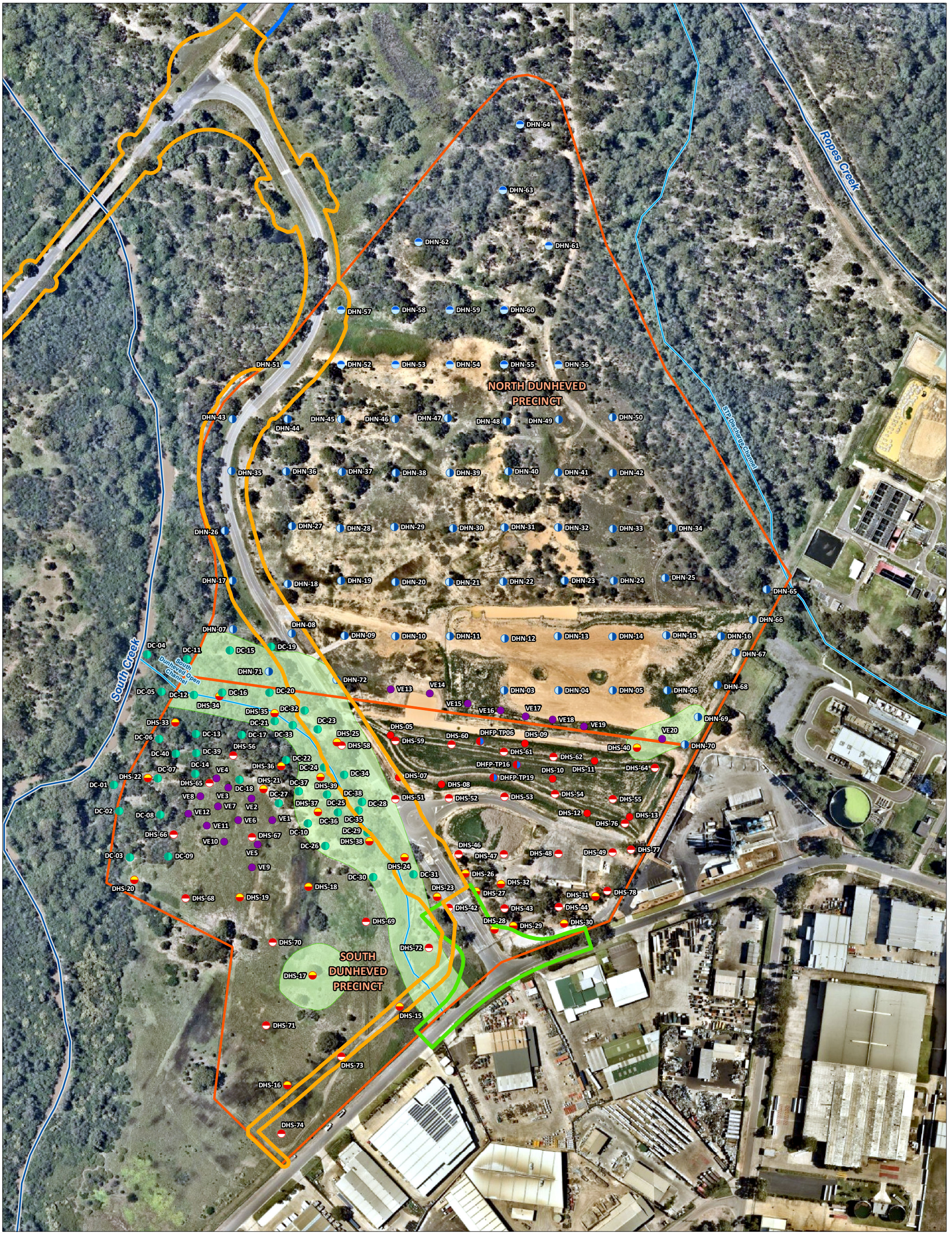
Central Precinct

EAST WEST CONNECTOR ROAD (EWCR) SITE LAYOUT

Job No: 54782		Scale: 1:10,000		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: FH	Checked By: GB	Version: R03 Rev B	Date: 12-Apr-2019	**FIGURE 2**

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Time Saved: 29/12/2018 1:20:30 PM

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Legend:

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct
- Creeks
- Channels
- Proposed PFAS Remediation Areas

Soil Sample Location

- Dunheved South - Dec 2017
- Dunheved South - Sep 2017
- Dunheved South - Feb 2018
- Dunheved South - May 2018
- Dunheved North - May 2018
- Material Characterisation Dunheved May 2018
- Adjoining Dunheved South - July 2018
- Dunheved North - Nov 2018

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0 40 80
metres

Central Precinct

SOIL SAMPLE LOCATIONS DUNHEVED

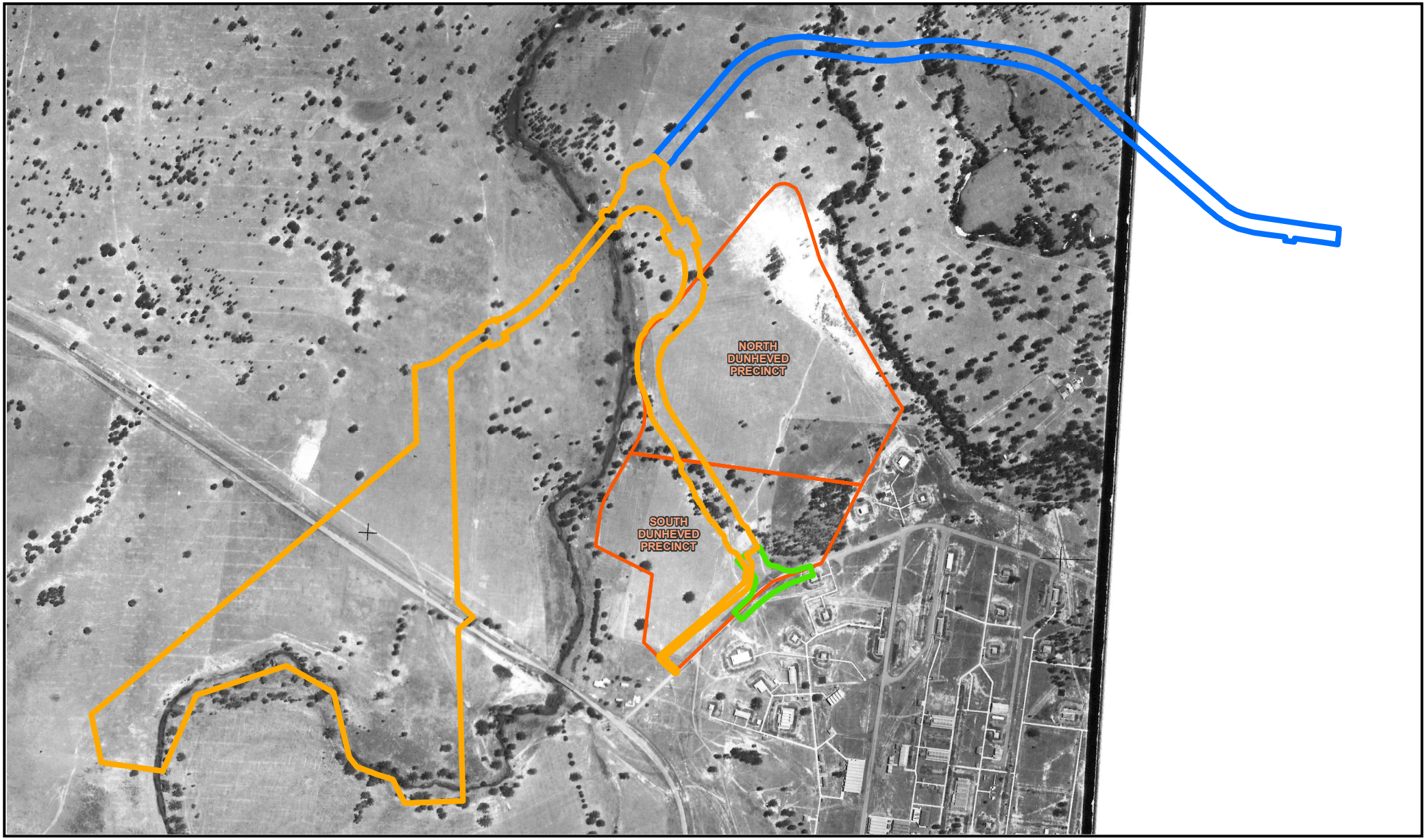
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Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: FH	Checked By: GB	Version: R03 Rev B	Date: 12-Apr-2019	**FIGURE 3**

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Last Saved on: 12 April 2019 by: Fiona Hamilton

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Appendix A Aerial Photographs

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Reference: DFSI Imagery

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Scale:1:10,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
	Original Issue - R01	BC	12-04-2019

Legend:

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct

JBS&G **Figure: Aerial 1947**

Client: Maryland Development Company

Project: Central Precinct

Job No: 54782 File Name: 1947_Aerials

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Reference: DFSI Imagery

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Scale:1:10,000

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
	Original Issue - R01	BC	12-04-2019
Rev	Description	Drn.	Date:

Legend:

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- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct

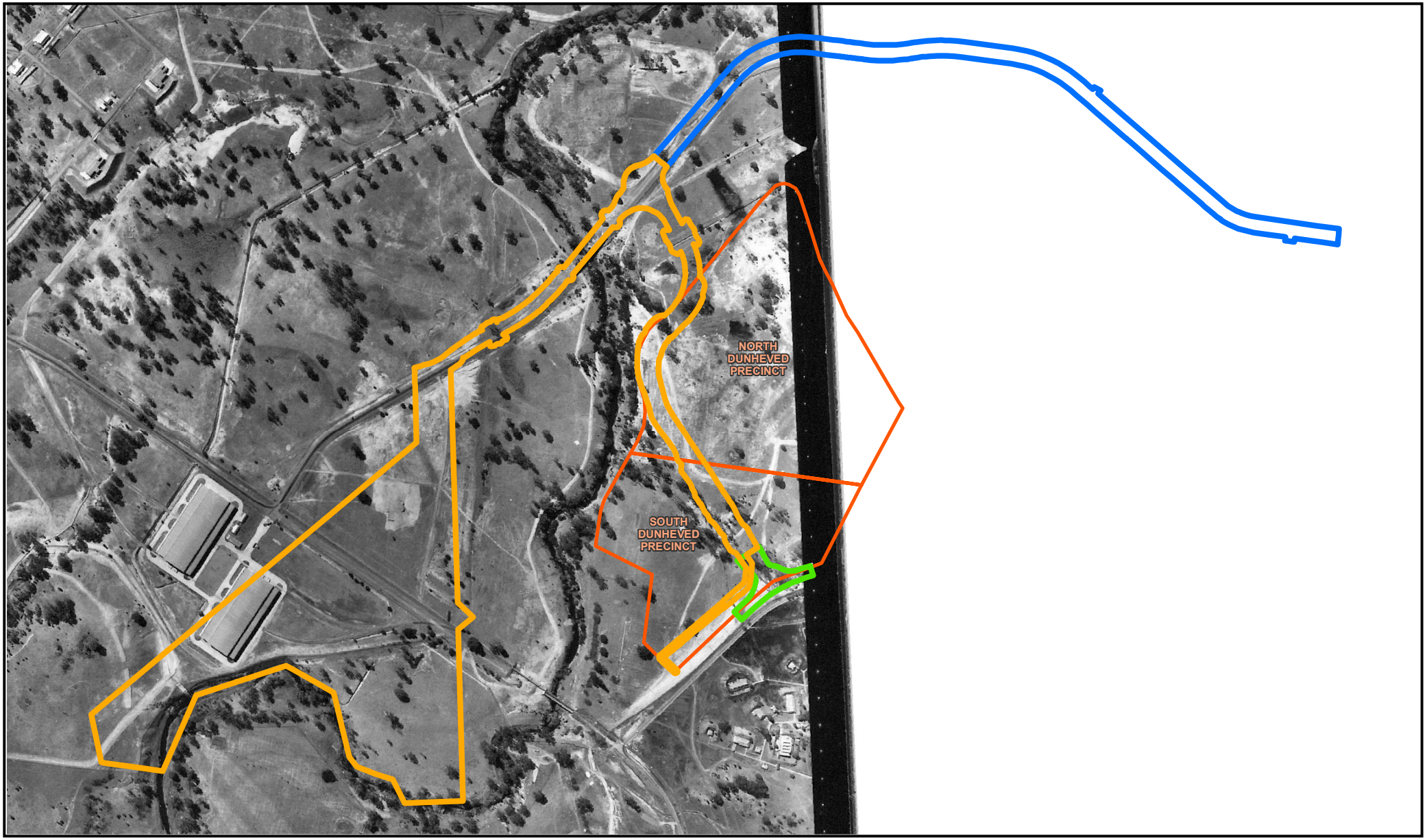
JBS&G **Figure: Aerial 1955**

Client: Maryland Development Company

Project: Central Precinct

Job No: 54782 File Name: 1955_Aerials

Document Set ID: 6830565
Version: 1, Version Date: 28/08/2019



Reference: DFSI Imagery

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Scale:1:10,000

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
	Original Issue - R01	BC	12-04-2019
Rev	Description	Drn.	Date:

Legend:
- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct

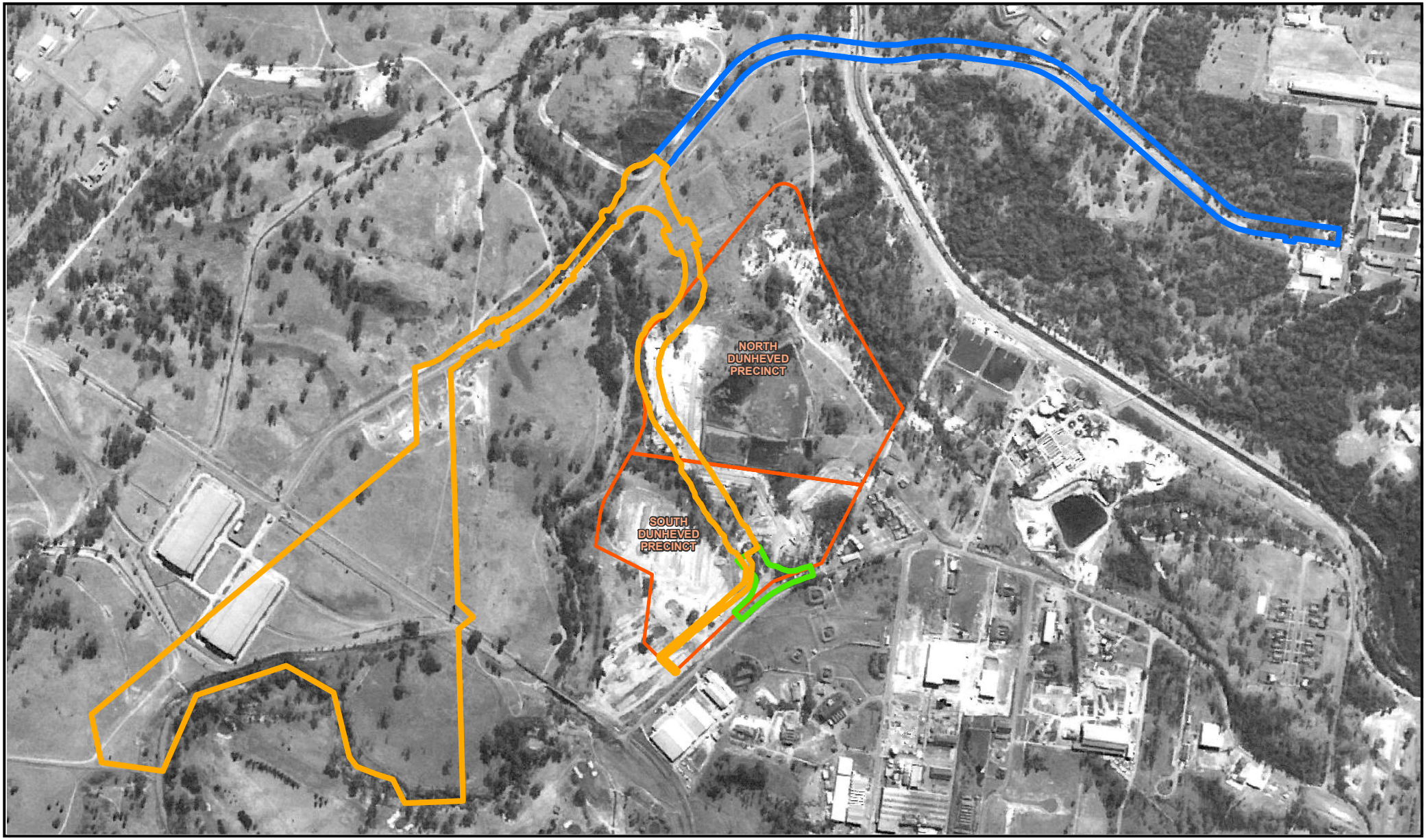
JBS&G **Figure: Aerial 1965**

Client: Maryland Development Company

Project: Central Precinct

Job No: 54782 File Name: 1965_Aerials

Document Set ID: 6830565
Version: 1, Version Date: 28/08/2019



Reference: DFSI Imagery

© 2019 JBS&G

0 100 200 400 m

Scale:1:10,000

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
	Original Issue - R04	FH	12-04-2019
Rev	Description	Drn.	Date:

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Legend:

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct

JBS&G **Figure: Aerial 1975**

Client: Maryland Development Company

Project: Central Precinct

Job No: 54782 File Name: 1975_Aerials

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Reference: DFSI Imagery

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0 100 200 400 m

Scale:1:10,000

Datum: GDA 1994 MGA Zone 56 - AHD

Legend:
- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct

Rev	Description	Drn.	Date:
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	Original Issue - R04	FH	12-04-2019

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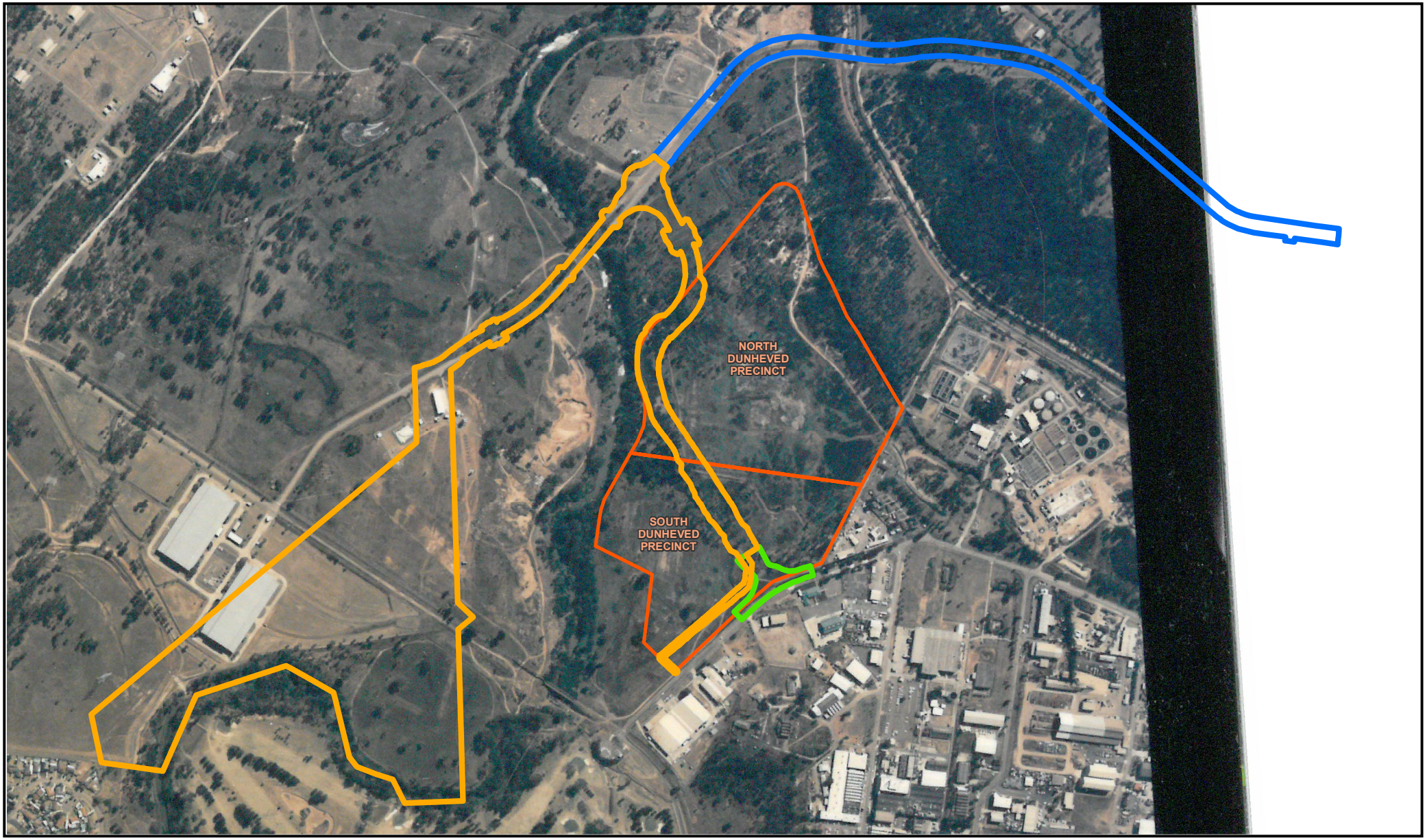
JBS&G **Figure: Aerial 1982**

Client: Maryland Development Company

Project: Central Precinct

Job No: 54782 File Name: 1982_Aerials

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Reference: DFSI Imagery

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0 100 200 400 m

Scale:1:10,000

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
	Original Issue - R04	FH	12-04-2019
Rev	Description	Drn.	Date:

Legend:

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct

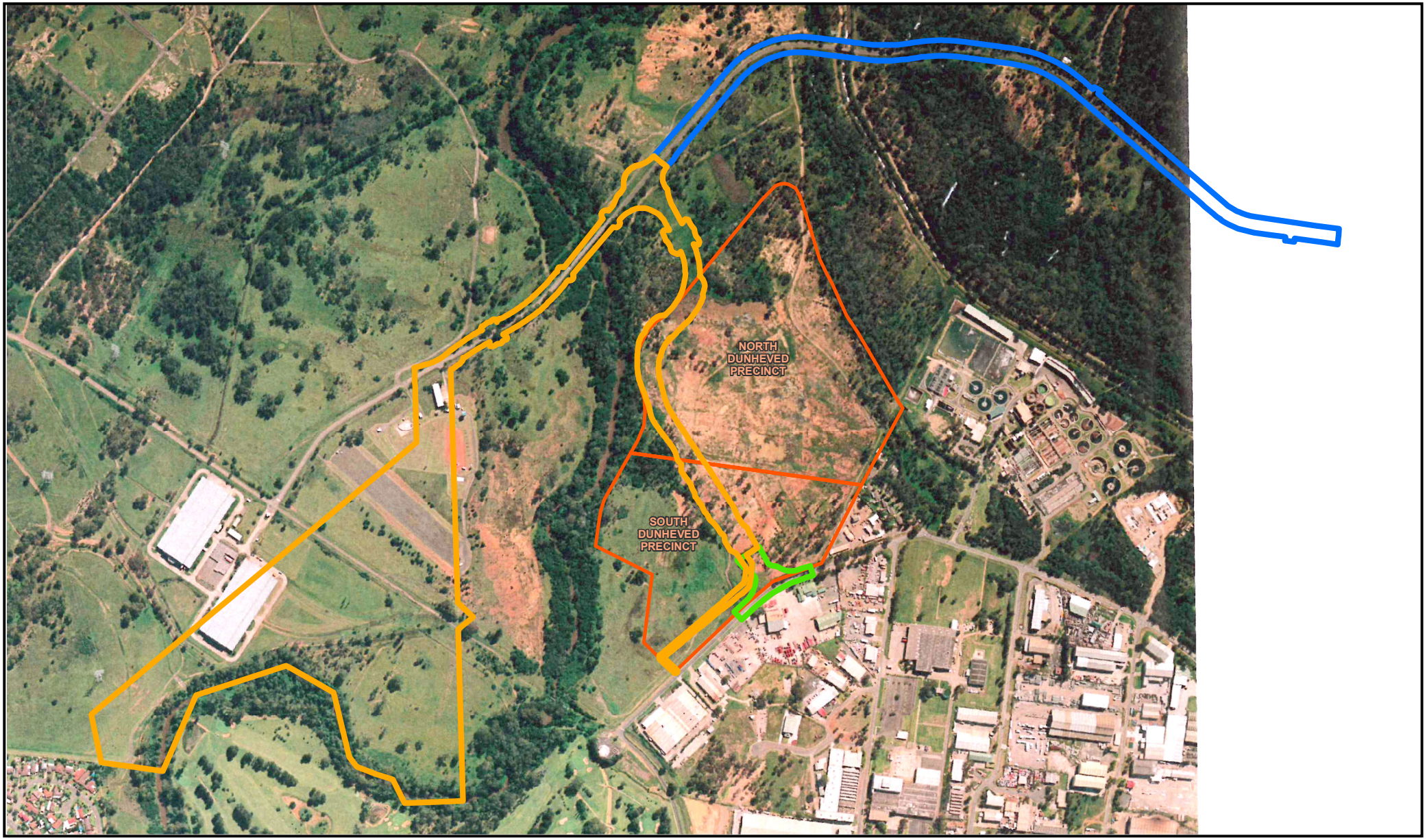
JBS&G **Figure: Aerial 1991**

Client: Maryland Development Company

Project: Central Precinct

Job No: 54782 File Name: 1991_Aerials

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Reference: DFSI Imagery

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0 100 200 400 m

Scale:1:10,000

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
	Original Issue - R04	FH	12-04-2019
Rev	Description	Drn.	Date:

Legend:

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct

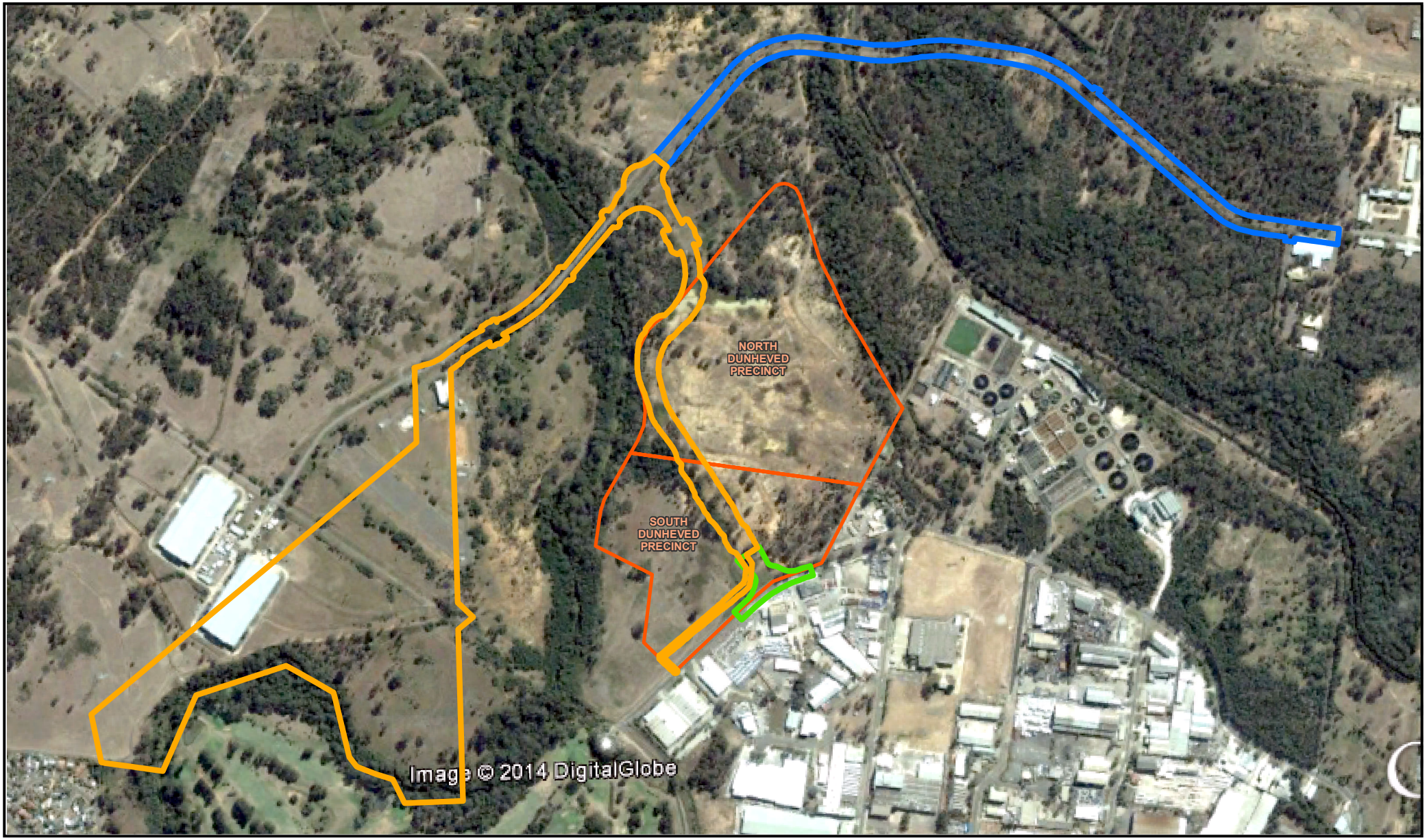
JBS&G **Figure: Aerial 2002**

Client: Maryland Development Company

Project: Central Precinct

Job No: 54782 File Name: 2002_Aerials

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Reference: Digital Globe

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0 100 200 400 m

Scale:1:10,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
	Original Issue - R04	FH	12-04-2019

Legend:

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct

JBS&G **Figure: Aerial 2006**

Client: Maryland Development Company

Project: Central Precinct

Job No: 54782 File Name: 2006_Aerials

Appendix B EPA Records

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Search results

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

Name - ADI St Marys

returned 0 result

Search Again

For business and industry

For local government

Contact us

131 555 (tel:131555)

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)

Accessibility (https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/help-index)
Disclaimer (https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/disclaimer)
Privacy (https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/privacy)
Copyright (https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/copyright)

Find us on (https://au.linkedin.com/company/nsw-environment-protection-authority-epa) (https://twitter.com/NSW_EPA) (https://www.youtube.com/channel/UCS5jrgAEsHicG

Document: Sept5 - 8336565
Version: 1, Version Date: 28/08/2019

List of NSW Contaminated Sites Notified to EPA as of 20 March 2019

Background

A strategy to systematically assess, prioritise and respond to notifications under Section 60 of the *Contaminated Land Management Act 1997* (CLM Act) has been developed by the EPA. This strategy acknowledges the EPA's obligations to make information available to the public under *Government Information (Public Access) Act 2009*.

When a site is notified to the EPA, it may be accompanied by detailed site reports where the owner has been proactive in addressing the contamination and its source. However, often there is minimal information on the nature or extent of the contamination.

For some notifications, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any offsite consequences to the community or environment. Such sites would still need to be cleaned up, but this could be done in conjunction with any subsequent building or redevelopment of the land. These sites may not require intervention under the CLM Act, but could be dealt with through the planning and development consent process.

Where indications are that contamination is significant enough to warrant regulation having regard to the matters in section 12 of the CLM Act, the EPA may apply the regulatory provisions of the CLM Act to have the appropriate person (for example, the responsible polluter and/or landowner) investigate and remediate the site.

Where the EPA reasonably suspects that a pollution incident is occurring (or has occurred) at a premise, the EPA, as the appropriate regulatory authority, may choose to regulate the incident and any resulting contamination under the POEO Act by ordering the occupier or the owner to carry out certain actions.

As such, the sites notified to the EPA and presented in the following table are at various stages of the assessment and/or remediation process. Understanding the nature of the underlying contamination, its implications and implementing a remediation program where required, can take a considerable period of time. The tables provide an indication, in relation to each nominated site, as to the management status of that particular site. Further detailed information may be available from the EPA or the responsible landowner.

The following questions and answers may assist those interested in this issue:

Frequently asked questions

What is the difference between the "List of NSW Contaminated Sites Notified to the EPA" and the "Contaminated Land: Record of Notices"?

A site will be on the Contaminated Land: Record of Notices only if the EPA has issued a regulatory notice in relation to the site under the *Contaminated Land Management Act 1997*.

The sites appearing on this "List of NSW contaminated sites notified to the EPA" indicate that the notifiers consider that the sites are contaminated and warrant reporting to the EPA. However, the contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review and, if necessary, obtain more information before it can make a determination as to whether the site warrants regulation.

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Why my site appears on the list?

Your site appears on the list because of one or more of the following reasons:

- The site owner and/or the person partly or fully responsible for causing the contamination notified to the EPA about the contamination under Section 60 of the *Contaminated Land Management Act 1997*. In other words, the site owner or the "polluter" believes the site is contaminated.
- The EPA has been notified via other means and is satisfied that the site is or was contaminated.

Does the list contain all contaminated sites in NSW?

No. The list only contains contaminated sites that the EPA is aware of, with regard to its regulatory role under the CLM Act. An absence of a site from the list does not necessarily imply the site is not contaminated.

The EPA relies upon responsible parties to notify contaminated sites.

How are these notified contaminated sites managed by the EPA?

There are different ways that the EPA manages these notified contaminated sites. First, an initial assessment is carried out by the EPA. At the completion of the initial assessment, the EPA may take one or more than one of the following management approaches:

- The contamination warrants the EPA's direct regulatory intervention either under the *Contaminated Land Management Act 1997* or the *Protection of the Environment Operations Act 1997* (POEO Act), or both. Information about current or past regulatory action on this site can be found on EPA website.
- The contamination with respect to the current use or approved use of the site, as defined under the *Contaminated Land Management Act 1997,* is not significant enough that it warrants EPA regulation.
- The contamination does not require EPA regulation and can be managed by a planning approval process.
- The contamination is related to an operational Underground Petroleum Storage System, such as a service station or fuel depot. The contamination may be managed under the POEO Act and the Protection of the Environment Operation (Underground Petroleum Storage Systems) Regulation 2014.
- The contamination is being managed under a specifically tailored program operated by another agency (for example t
- he Department of Industry and Investment's *Derelict Mines Program*).

I am the owner of a site that appears on the list. What should I do?

First of all, you should ensure the current use of the site is compatible with the site contamination. Secondly, if the site is the subject of EPA regulation, make sure you comply with the regulatory requirements, and you have considered your obligations to notify other parties who may be affected.

If you have any concerns, contact us and we may be able to offer you general advice, or direct you to accredited professionals who can assist with specific issues.

I am a prospective buyer of a site that appears on the list. What should I do?

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You should seek advice from the vendor to put the contamination issue into perspective. You may need to seek independent expert advice.

The information provided in the list is meant to be indicative only, and a starting point for your own assessment. Site contamination as a legacy of past site uses is not uncommon, particularly in an urbanised environment. If the contamination on a site is properly remediated or managed, it may not materially impact upon the intended future use of the site. However, each site needs to be considered in context.

List of NSW Contaminated Sites Notified to the EPA

Disclaimer

The EPA has taken all reasonable care to ensure that the information in the list of contaminated sites notified to the EPA (the list) is complete and correct. The EPA does not, however, warrant or represent that the list is free from errors or omissions or that it is exhaustive.

The EPA may, without notice, change any or all of the information in the list at any time.

You should obtain independent advice before you make any decision based on the information in the list.

The list is made available on the understanding that the EPA, its servants and agents, to the extent permitted by law, accept no responsibility for any damage, cost, loss or expense incurred by you as a result of:

1. any information in the list; or
2. any error, omission or misrepresentation in the list; or
3. any malfunction or failure to function of the list;
4. without limiting (2) or (3) above, any delay, failure or error in recording, displaying or updating information.

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

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finalised	that the contamination is significant enough to warrant regulation under the *Contaminated Land Management Act 1997*. A regulatory approach is being finalised.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record.
Contamination currently regulated under POEO Act	Contamination is currently regulated under the *Protection of the Environment Operations Act 1997* (POEO Act). The EPA as *the appropriate regulatory authority* reasonably suspects that a pollution incident is occurring/ has occurred and that it requires regulation under the POEO Act. The EPA may use environment protection notices, such as clean up notices, to require clean up action to be taken. Such regulatory notices are available on the POEO public register.
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the *Environmental Planning and Assessment Act 1979* (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the *Protection of the Environment Operations Act 1997* (POEO Act).
Contamination was addressed via the planning process	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the

(EP&A Act)	*Environmental Planning and Assessment Act 1979* (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the *Contaminated Land Management Act 1997* (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record.

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Suburb	SiteName	Address	ContaminationActivityType	ManagementClass	Latitude	Longitude
BERESFIELD	Former Koppers Timber Treatment Site	53 Weakleys DRIVE	Other Industry	Regulation under CLM Act not required	-32.79902937	151.6358846
BERKELEY VALE	Former Berkeley Vale Service Station	121-123 Lakedge AVENUE	Service Station	Regulation under CLM Act not required	-33.34899186	151.4423109
BERKSHIRE PARK	Shell Coles Express Berkshire Park	746 - 752 Richmond ROAD	Service Station	Regulation under CLM Act not required	-33.66508654	150.7990243
BEROWRA	Caltex Berowra Service Station	12-14 Berowra Waters ROAD	Service Station	Regulation under CLM Act not required	-33.6233827	151.1505554
BEROWRA	7-Eleven Berowra Service Station	965-969 Pacific (Cnr Waratah Rd) HIGHWAY	Service Station	Regulation under CLM Act not required	-33.62673163	151.1479171
BEROWRA	Shell Coles Express Berowra	955 Pacific (Cnr Yallambee Rd) HIGHWAY	Service Station	Regulation under CLM Act not required	-33.62818015	151.1475736
BEROWRA	42 Berowra Waters Road	42 Berowra Waters ROAD	Unclassified	Regulation under CLM Act not required	-33.6203211	151.1482454
BERRIGAN	Caltex Service Station Berrigan	155-165 Chanter STREET	Service Station	Regulation under CLM Act not required	-35.6557616	145.8015557
BERRY	Berry Service Centre - Shell Branded	88 Queen STREET	Service Station	Regulation under CLM Act not required	-34.77571634	150.6961713
BERRY	Shell Berry - Now Oleum branded	75 Queen STREET	Service Station	Regulation being finalised	-34.77500516	150.695167
BEXLEY	7-Eleven Bexley	474 Forest ROAD	Service Station	Regulation under CLM Act not required	-33.95160096	151.1252355
BEXLEY	7-Eleven (former Mobil) Service Station Bexley	613 Forest ROAD	Service Station	Regulation under CLM Act not required	-33.95539246	151.118447
BILLINUDGEL	CSR Readymix	Mogo PLACE	Other Industry	Regulation under CLM Act not required	-28.50210255	153.5278161
BILLINUDGEL	Billinudgel General Store	2A Wilfred STREET	Service Station	Under assessment	-28.50435	153.52701
BLACKMANS FLAT	Mount Piper Extension Development Site	2847 Boulder ROAD	Other Industry	Regulation under CLM Act not required	-33.35619968	150.0279881
BLACKMANS FLAT	Lamberts Gully Mine	Castlereagh HIGHWAY	Other Industry	Regulation under CLM Act not required	-33.36713827	150.0483236
BLACKTOWN	Former Caltex Service Station	131 Richmond ROAD	Service Station	Regulation under CLM Act not required	-33.75866104	150.8962614
BLACKTOWN	Valspar Blacktown	4 Steel STREET	Chemical Industry	Regulation under CLM Act not required	-33.75425018	150.9127714
BLACKTOWN	Land at Reservoir Road	Reservoir ROAD	Unclassified	Regulation under CLM Act not required	-33.79119448	150.8967838
BLACKTOWN	7-Eleven Service Station	60 Walters ROAD	Service Station	Regulation under CLM Act not required	-33.77599783	150.8948926
BLAKEHURST	Woolworths Service Station Blakehurst	390 Princes HIGHWAY	Service Station	Contamination currently regulated under CLM Act	-33.990197	151.11361
BLAKEHURST	The Bay Nursing Home	392-394 Princes HIGHWAY	Service Station	Under assessment	-33.99030465	151.1140293
BLAXLAND	7-Eleven (former Mobil) Service Station	137 Great Western HIGHWAY	Service Station	Regulation under CLM Act not required	-33.74627	150.6137669

Suburb	SiteName	Address	ContaminationActivityType	ManagementClass	Latitude	Longitude
SPRINGVALE	Springvale Colliery	Castlereagh HIGHWAY	Other Industry	Regulation under CLM Act not required	-33.40334736	150.1070462
ST CLAIR	7-Eleven (former Mobil) Service Station	4 Endeavour AVENUE	Service Station	Regulation under CLM Act not required	-33.79430926	150.7885793
ST IVES	7-Eleven (former Mobil) St Ives Service Station	157-159 Mona Vale Road, corner Putarri AVENUE	Service Station	Regulation under CLM Act not required	-33.73265301	151.1563899
ST IVES	Caltex Service Station	452 Mona Vale ROAD	Service Station	Regulation under CLM Act not required	-33.70752272	151.187545
ST IVES	Caltex Service Station	164 Mona Vale ROAD	Service Station	Regulation under CLM Act not required	-33.7307595	151.1570462
ST IVES	Caltex Service Station St Ives	363 Mona Vale ROAD	Service Station	Regulation under CLM Act not required	-33.7168971	151.1735263
ST IVES	Shell Service Station	179-181 Mona Vale ROAD	Service Station	Contamination currently regulated under CLM Act	-33.73124859	151.1575827
ST LEONARDS	Telstra Data Centre	4A Herbert STREET	Other Petroleum	Under assessment	-33.81873741	151.1914222
ST MARYS	Former Woolworths Service Station	120-128 Forrester ROAD	Service Station	Regulation under CLM Act not required	-33.75525115	150.7752897
ST MARYS	7-Eleven (former Mobil) Service Station	2 Christie STREET	Service Station	Regulation under CLM Act not required	-33.74790843	150.7767667
ST MARYS	7-Eleven (former Mobil) Service Station	2 Wilson STREET	Service Station	Regulation under CLM Act not required	-33.77790415	150.771689
ST MARYS	Solveco	38 LINKS ROAD	Other Industry	Contamination currently regulated under CLM Act	-33.738673	150.771554
ST MARYS	Integral Energy Mt Druitt Transmission Substation	69 Kurrajong North ROAD	Other Industry	Regulation under CLM Act not required	-33.76376093	150.7921691
ST MARYS	Caltex St Marys Service Station	Wordoo St Cnr Forrester ROAD	Service Station	Regulation under CLM Act not required	-33.75334263	150.7755489
ST MARYS	Chemcolour Industries Ltd	19-25 Anne STREET	Chemical Industry	Under assessment	-33.75027071	150.7725397
ST MARYS	Old Drycleaning location	1-7 Queen STREET	Other Industry	Under assessment	-33.73873	150.771747
ST PETERS	Cooks River Rail Terminal	20 Canal ROAD	Unclassified	Regulation under CLM Act not required	-33.91943986	151.1726689
ST PETERS	Camdenville Park	May STREET	Other Industry	Regulation under CLM Act not required	-33.90911815	151.176951
ST PETERS	Former Tidyburn Facility	53 Barwon Park ROAD	Chemical Industry	Contamination formerly regulated under the CLM Act	-33.9130091	151.1809912
ST PETERS	BP Express Service Station	2 Princes HIGHWAY	Service Station	Regulation under CLM Act not required	-33.90982281	151.1809936
ST PETERS	Former Industrial Manufacturing Facility (Taubman's Paints)	75 Mary STREET	Other Industry	Regulation under CLM Act not required	-33.91307297	151.1731383
STANMORE	125 Corunna Road	125 Corunna ROAD	Unclassified	Regulation under CLM Act not required	-33.88937382	151.1644589
STRATHFIELD	7-Eleven (former Mobil) Service Station	577 Liverpool ROAD	Service Station	Regulation under CLM Act not required	-33.88736091	151.0743474

Appendix C Heritage Records

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Office of Environment & Heritage

Home > Topics > Heritage places and items > Search for heritage

Search for NSW heritage

Return to search page where you can refine/broaden your search.

Statutory listed items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into three sections.

- **Section 1** - contains Aboriginal Places declared by the **Minister for the Environment** under the National Parks and Wildlife Act. This information is provided by the Heritage Division.
- **Section 2** - contains heritage items listed by the **Heritage Council of NSW** under the NSW Heritage Act. This includes listing on the State Heritage Register, an Interim Heritage Order or protected under section 136 of the NSW Heritage Act. This information is provided by the Heritage Division.
- **Section 3** - contains items listed by **local councils** on Local Environmental Plans under the Environmental Planning and Assessment Act, 1979 and **State government agencies** under s.170 of the Heritage Act. This information is provided by local councils and State government agencies.

Section 1. Aboriginal Places listed under the National Parks and Wildlife Act.

Your search did not return any matching results.

Section 2. Items listed under the NSW Heritage Act.

Your search returned 23 records.

Item name	Address	Suburb	LGA	SHR
Blacktown Native Institution	Richmond Road	Oakhurst	Blacktown	01866
Bungarribee Homestead Complex - Archaeological Site	Doonside Road	Doonside	Blacktown	01428
Clydesdale - House, Barn, Cottage and Farm Landscape	1270 Richmond Road	Marsden Park	Blacktown	00674
Colebee and Nurragingy Land Grant	Richmond Road	Colebee	Blacktown	01877
Dayton House	37-39 Roger Place	Seven Hills	Blacktown	00325
Exeter Farm	2 Knightsbridge Avenue	Glenwood	Blacktown	00205
Former Great Western Road, Prospect	Reservoir Road	Prospect	Blacktown	01911
Government Depot Site (former)	Dunsmore Street	Rooty Hill	Blacktown	00345
Grantham Poultry Research Station (former)	71 Seven Hills Road	Seven Hills	Blacktown	01382
Imperial Hotel	1 Rooty Hill Road North	Rooty Hill	Blacktown	00114
Merriville House & Gardens	Vinegar Hill Road	Kellyville Ridge	Blacktown	00091
Neoblie	Great Western Highway	Mount Druitt	Blacktown	00245
Prospect Post Office (former)	23 Tarlington Place	Prospect	Blacktown	01385

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Prospect Reservoir and surrounding area	Reservoir Road	Prospect	Blacktown	01370
Riverstone Railway Station Group and Residence	Riverstone Parade	Riverstone	Blacktown	01237
Rooty Hill, The	Eastern Road	Rooty Hill	Blacktown	01756
Rouse Hill House and Farm	Windsor Road	Rouse Hill	Blacktown	00002
Royal Cricketers Arms Inn	385 Reservoir Road	Prospect	Blacktown	00660
St. Andrew's Anglican Church, Hall & Rectory	313 Seven Hills Road North	Seven Hills	Blacktown	00057
St. Bartholomew's Anglican Church (former) & Cemetery	Ponds Road	Prospect	Blacktown	00037
The Manse	23 The Avenue	Mount Druitt	Blacktown	00206
Upper Canal System (Pheasants Nest Weir to Prospect Reservoir)		Prospect	Blacktown	01373
Veteran Hall - House Remains	Great Western Highway	Prospect	Blacktown	01351

Section 3. Items listed by Local Government and State Agencies.

Your search returned 190 records.

Item name	Address	Suburb	LGA	Information source
Administration Building	71 Seven Hills Road South	Seven Hills	Blacktown	LGOV
Alroy	371 Rooty Hill Road North	Plumpton	Blacktown	LGOV
Battle of Vinegar Hill	712-746 Windsor Road	Kellyville	Blacktown	LGOV
Belvedere	116 Rooty Hill Road South	Rooty Hill	Blacktown	LGOV
Bicentennial Museum	81 Garfield Road East	Riverstone	Blacktown	LGOV
Blacktown (Sunnyholt Road No.2) Overbridge	Sunnyholt Road	Blacktown	Blacktown	SGOV
Blacktown Primary School (former)	Flushcombe Road	Blacktown	Blacktown	LGOV
Blacktown Railway Signal Box	George Street	Blacktown	Blacktown	SGOV
Blacktown Railway Station Signals Building	George Street	Blacktown	Blacktown	LGOV

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Brick Cistern	26 Market Street	Riverstone	Blacktown	LGOV
Bridestowe	568 Reservoir Road	Prospect	Blacktown	LGOV
Bungarribee Homestead Complex	Steeltrap Drive	Doonside	Blacktown	LGOV
Bungarribee View Corridor	Steel Trap Drive	Doonside	Blacktown	LGOV
Burns House	74 Mount Druitt Road	Mount Druitt	Blacktown	LGOV
Cassola	20 Riverstone Road	Riverstone	Blacktown	LGOV
Church	115 Mount Druitt Road	Mount Druitt	Blacktown	LGOV
Clydesdale, Farmers Cottages & Barn	Richmond Road	Marsden Park	Blacktown	LGOV
Colebee and Nurragingy Land Grant	Richmond Road	Blacktown	Blacktown	SGOV
Colebee and Nurrangingy Land Grants	Richmond Road	Marsden Park	Blacktown	LGOV
Colyton Public School	Great Western Highway	Mount Druitt	Blacktown	LGOV
Community Geriatric Cottage	63-7 Railway Street	Mount DRUITT	Blacktown	SGOV
Convent	166 Garfield Road East	Riverstone	Blacktown	LGOV
Crossroads Christian Fellowship Church	104 Mount Druitt Road	Mount Druitt	Blacktown	LGOV
Dayton House	37 - 39 Roger Place	Blacktown	Blacktown	LGOV
Doonside Railway Station - Platforms and Station Building	Doonside Crescent	Doonside	Blacktown	LGOV
Doonside Railway Station Group	Doonside Crescent	Doonside	Blacktown	SGOV
Drumtochty	71 Seven Hills Road South	Seven Hills	Blacktown	LGOV
Eastern Creek Bridge	Garfield Road	Riverstone	Blacktown	SGOV
Electricity Substation	426 - 428 Blacktown Road	Prospect	Blacktow	LGOV

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			n	
Electricity Substation	432 Blacktown Road	Prospect	Blacktown	LGOV
Ellalong	6 Lindsay Place	Doonside	Blacktown	LGOV
Exeter Farm Cottage	2 Knightsbridge Avenue	Glenwood	Blacktown	LGOV
Fairholme	18 First Avenue	Seven Hills	Blacktown	LGOV
Fairholme / St Agnes School	24 Evans Road	Rooty Hill	Blacktown	LGOV
Farmhouse	Riverstone Road	Riverstone	Blacktown	GAZ
Feeder Shed and archaeological remnant	71 Seven Hills Road South	Seven Hills	Blacktown	LGOV
Flushcombe Turrets Gates	Lancelot Street	Blacktown	Blacktown	LGOV
Former Great Western Highway Alignment	Tarlington Place to Boiler Close	Prospect / Blacktown	Blacktown	LGOV
Former Minchinbury Winery	Minchin Drive	Minchinbury	Blacktown	LGOV
Former Prospect Post Office	23 Tarlington Place	Prospect	Blacktown	LGOV
Four Oaks	50 - 54 Solander Road	Seven Hills	Blacktown	LGOV
Glenwood	174 Glenwood Park Drive	Glenwood	Blacktown	LGOV
Glenwood Park Dairy	Sunnyholt Road	Parklea	Blacktown	GAZ
Government Depot (Ruins)	Dunsmore Street	Rooty Hill	Blacktown	SGOV
Grantham Poultry Research Station former	71 Seven Hills Road South	Seven Hills	Blacktown	LGOV
Group of Workers' Cottages	23,25,27,29,31,33,37,39,43, 45,47&49 Richards Avenues	Riverstone	Blacktown	LGOV
Hall	Grange Avenue	Marsden Park	Blacktown	LGOV
Headingly	7 Redwood Street	Blacktown	Blacktown	LGOV

Hebe Farm	Bridge Street	Schofields	Blacktown	GAZ
Hebe Farm	14 Bridge Street	Riverstone	Blacktown	LGOV
Hill End	Hill End Road	Doonside	Blacktown	LGOV
House	142 Clifton Street	Marsden Park	Blacktown	LGOV
House	237 Hill End Road	Doonside	Blacktown	LGOV
House	11 Harold Street	Blacktown	Blacktown	LGOV
House	47 Clifton Street	Blacktown	Blacktown	LGOV
House	49 Clifton Street	Blacktown	Blacktown	LGOV
House	2 Erith Street	Blacktown	Blacktown	LGOV
House	5 Sarsfield Street	Blacktown	Blacktown	LGOV
House	4 Wallace Street	Blacktown	Blacktown	LGOV
House	55 Hill End Road	Doonside	Blacktown	LGOV
House	3 Maley Grove	Glenwood	Blacktown	LGOV
House	3 Cavalry Grove	Glenwood	Blacktown	LGOV
House	357 Rooty Hill Road North	Plumpton	Blacktown	LGOV
House	95 Fermoy	Marsden Park	Blacktown	LGOV
House	369 Seven Hills Road	Seven Hills	Blacktown	LGOV
House	193 Rooty Hill Road North	Rooty Hill	Blacktown	LGOV
House	45 Rooty Hill Road South	Rooty Hill	Blacktown	LGOV
House	17 George Street	Riverstone	Blacktown	LGOV

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			n	
House	27 King Street	Riverstone	Blacktown	LGOV
House	25 King Street	Riverstone	Blacktown	LGOV
House	38 Park Street	Riverstone	Blacktown	LGOV
House	122 Regent Street	Riverstone	Blacktown	LGOV
House	7 Richards Avenue	Riverstone	Blacktown	LGOV
House	17 Richards Avenue	Riverstone	Blacktown	LGOV
House	24 Mary Street	Rooty Hill	Blacktown	LGOV
House	20 Perkins Street	Rooty Hill	Blacktown	LGOV
House	169 Garfield Road East	Riverstone	Blacktown	LGOV
House	41 Riverstone Road	Riverstone	Blacktown	LGOV
House	22 West Parade	Riverstone	Blacktown	LGOV
House	21 Church Street	Riverstone	Blacktown	LGOV
House	66 Crown Street	Riverstone	Blacktown	LGOV
House	64 Elizabeth Street	Riverstone	Blacktown	LGOV
House	52 Elizabeth Street	Riverstone	Blacktown	LGOV
House	42 Bourke	Riverstone	Blacktown	LGOV
House	45 Bourke Street	Riverstone	Blacktown	LGOV
House	41 Clifton Street	Blacktown	Blacktown	LGOV
house	45 Devitt Street	Blacktown	Blacktown	LGOV

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House	70 Richmond Road	Blacktown	Blacktown	LGOV
House	29 Old Church Lane	Propspect	Blacktown	LGOV
House	38 Railway Terrace	Riverstone	Blacktown	LGOV
House - "Homeleigh"	2 Sarsfield Street	Blacktown	Blacktown	LGOV
House & Shop	76 -78 Garfield Road East	Riverstone	Blacktown	LGOV
House & Slab Cottage	180 Garfield Road West	Riverstone	Blacktown	LGOV
House and Original School Building	441 Blacktown Road	Prospect	Blacktown	LGOV
Howard Villa	15 Ropes Creek Road	Mount Druitt	Blacktown	LGOV
Imperial Hotel	1 Rooty Hill Road North	Rooty Hill	Blacktown	LGOV
Inter-War House	193-195 Flushcombe Road	Blacktown	Blacktown	LGOV
Leslie View	393 Seven Hills Road South	Seven Hills	Blacktown	LGOV
Liquor Store	331 Rooty Hill Road Nth	Plumpton	Blacktown	LGOV
Lozells	39 Cannery Road	Plumpton	Blacktown	LGOV
Lytton Cottage	29 Lyton Street	Blacktown	Blacktown	LGOV
Malmo	1-3 Luxford Road	Mount Druitt	Blacktown	LGOV
Manse, The	23 The Avenue	Mount Druitt	Blacktown	LGOV
Marayong Reservoir (WS 0066)	Wilson Road	Acacia Gardens	Blacktown	SGOV
Meadows Public School	Fuller Street	Seven Hills	Blacktown	LGOV
Melrose	71 Seven Hills Road South	Seven Hills	Blacktown	LGOV
Merriville	1 Eire Way	Kellyville	Blacktow	LGOV

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			n	
Merriville Rise Park	cnr Glenheath Ave / Cavanagh Way	Kellyville	Blacktown	LGOV
Milestone - Ponds Road and Bartholomews Place	Great Western Highway	Prospect	Blacktown	SGOV
Milestones	Great Western Highway	Prospect, Huntingwood, Minchinbury, Mount Druitt	Blacktown	LGOV
Mount Druitt Hall	85 - 87 Mount Druitt Road	Mount Druitt	Blacktown	LGOV
Mount Druitt Waterholes	Great Western Highway	Mount Druitt	Blacktown	LGOV
Native Institution Centre (site)	Rooty Hill Road North	Oakhurst	Blacktown	LGOV
Neoblie	Great Western Highway	Mount Druitt	Blacktown	LGOV
Northern Suburbs Ocean Outfall Sewer (NSOOS)	Flushcome Road, Blacktown to Ocean Outfall at North Head	Northern Suburbs Of Sydney	Manly	SGOV
Northern Suburbs Ocean Outfall Sewer (NSOOS)	Flushcome Road, Blacktown to Ocean Outfall at North Head	Northern Suburbs Of Sydney	Hunters Hill	SGOV
Northern Suburbs Ocean Outfall Sewer (NSOOS)	Flushcome Road, Blacktown to Ocean Outfall at North Head	Northern Suburbs Of Sydney	Ku-Ring-Gai	SGOV
Northern Suburbs Ocean Outfall Sewer (NSOOS)	Flushcome Road, Blacktown to Ocean Outfall at North Head	Northern Suburbs Of Sydney	Blacktown	SGOV
Northern Suburbs Ocean Outfall Sewer (NSOOS)	Flushcome Road, Blacktown to Ocean Outfall at North Head	Northern Suburbs Of Sydney	Mosman	SGOV
Northern Suburbs Ocean Outfall Sewer (NSOOS)	Flushcome Road, Blacktown to Ocean Outfall at North Head	Northern Suburbs Of Sydney	Ryde	SGOV
Northern Suburbs Ocean Outfall Sewer (NSOOS)	Flushcome Road, Blacktown to Ocean Outfall at North Head	Northern Suburbs Of Sydney	The Hills	SGOV
Northern Suburbs Ocean Outfall Sewer (NSOOS)	Flushcome Road, Blacktown to Ocean Outfall at North Head	Northern Suburbs Of Sydney	Warringah	SGOV
Northern Suburbs Ocean Outfall Sewer (NSOOS)	Flushcome Road, Blacktown to Ocean Outfall at North Head	Northern Suburbs Of Sydney	Parramatta	SGOV
Northern Suburbs Ocean Outfall Sewer (NSOOS)	Flushcome Road, Blacktown to Ocean Outfall at North Head	Northern Suburbs Of Sydney	Lane Cove	SGOV
Norwest Community Church	37 Douglas Road	Quakers Hill	Blacktown	LGOV
Nu Welwyn	4 Clarke Street	Riverstone	Blacktown	LGOV

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Oaks, The	12 Hanna Place	Oakhurst	Blacktown	LGOV
Old School Building	Garfield Road West	Marsden Park	Blacktown	LGOV
Old Windsor Road and Windsor Road Heritage Precincts	Old Windsor Road & Windsor Road	Multiple	Multiple LGAs	SGOV
Parklea Correctional Centre	66 Sentry Drive	Parklea	Blacktown	SGOV
Parrington Terrace	39 - 41A Garfield Road East	Riverstone	Blacktown	LGOV
Pioneer Memorial Church	Rooty Hill Road South	Rooty Hill	Blacktown	LGOV
Plumpton House School	327 Rooty Hill Road North	Plumpton	Blacktown	LGOV
Police Station	Elizabeth Street	Riverstone	Blacktown	LGOV
Polish Memorial Roman Catholic Church	116 Quakers Road	Marayong	Blacktown	LGOV
Prospect Hill Reservoir (Elevated) (WS 0095)	Prospect Reservoir, off Reservoir Road	Prospect	Blacktown	SGOV
Prospect Post Office (Former)	23 Tarlington Place	Prospect	Blacktown	SGOV
Prospect Reservoir (operational land)	Reservoir Road	Prospect	Fairfield	SGOV
Prospect Reservoir (operational land)	Reservoir Road	Prospect	Blacktown	SGOV
Prospect Reservoir Group	Reservoir Road	Prospect	Blacktown	LGOV
Prospect-Thornleigh Pumping Station (WPS 138)	Reservoir Road	Prospect	Blacktown	SGOV
Railway Station Group	Riverstone Parade	Riverstone	Blacktown	LGOV
Redgate - house and garden	20 Farm Road	Riverstone	Blacktown	LGOV
Riverstone General Cemetery	Garfield Road West	Riverstone	Blacktown	LGOV
Riverstone Police Station	Railway Terrace, Corner Elizabeth Street	Riverstone	Blacktown	SGOV
Riverstone Public School (former)	Garfield Road East	Riverstone	Blacktown	LGOV

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Riverstone Railway Station Group and Residence	Riverstone Parade	Riverstone	Blacktown	SGOV
Rooty Hill Railway Station	Railway Land	Rooty Hill	Blacktown	LGOV
Rooty Hill Railway Station Group	North Parade	Rooty Hill	Blacktown	SGOV
Rosebank	213 Garfield Road East	Riverstone	Blacktown	LGOV
Rosebank	Garfield Road East	Riverstone	Blacktown	GAZ
Rouse Hill House Estate	980 Windsor Road	Rouse Hill	Blacktown	LGOV
Row of Olives	Minchin Drive	Minchinbury	Blacktown	LGOV
Royal Cricketers Arms Inn	385 Reservoir Road	Prospect	Blacktown	LGOV
Royal Cricketers Arms Inn	385 Reservoir Road	Prospect	Blacktown	SGOV
Ruins of the Government Depot	Dunsmore Street	Rooty Hill	Blacktown	LGOV
Russian Orthodox Church	9a Kempsey Street	Blacktown	Blacktown	LGOV
Rutherglen	50 Sorenson Crescent	Blackett	Blacktown	LGOV
Sandstone Culvert	Livorno Grove Refalo Reserve	Glenwood	Blacktown	LGOV
Sandstone Culvert, approx 200m south of Meurants Lane	Old Windsor Road	Glenwood	Blacktown	SGOV
Schofeilds Public School	Junction Road	Schofeilds	Blacktown	LGOV
School Master's Residence (former)	Great Western Highway	Mount Druitt	Blacktown	LGOV
School of Arts	32 Rooty Hill Road South	Rooty Hill	Blacktown	LGOV
Seven Hills - Grantham Poultry Research Station	71 Seven Hills Road	Seven Hills	Blacktown	SGOV
Seven Hills Flyover	Main West corridor Between Seven Hills and Blacktown Stations	Seven Hills	Blacktown	SGOV
Seven Hills North Public School	301 Seven Hills Road	Seven Hills	Blacktown	LGOV

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Seven Hills Rail Station and Under bridge	Railway Land	Seven Hills	Blacktown	LGOV
Seven Hills Railway Station Group	The Hills Crescent	Seven Hills	Blacktown	SGOV
Shop	4 Garfield Road West	Riverstone	Blacktown	LGOV
Siglingen	112 Mount Druitt Road	Mount Druitt	Blacktown	LGOV
Site of Veteran Hall	Reservoir Road	Prospect	Blacktown	LGOV
Slab cottage in grounds of Riverstone High School	Regent Street	Riverstone	Blacktown	LGOV
Southridge	1 Southridge Street	Eastern Creek	Blacktown	LGOV
St Andrews Church, Hall and Rectory (former)	313 Seven Hills Road	Seven Hills	Blacktown	LGOV
St Andrews Uniting Church	62 Garfield Road East	Riverstone	Blacktown	LGOV
St Anthonys Church	14 Bowmans Road	Kings Park	Blacktown	LGOV
St Bartholomews Church & Cemetery	Ponds Road	Prospect	Blacktown	LGOV
St Johns Catholic Church	164 Garfield Road East	Riverstone	Blacktown	LGOV
St Pauls Anglican Church	19 Elizabeth Street	Riverstone	Blacktown	LGOV
St Phillips Church Cemetery	Richmond Road	Marsden Park	Blacktown	LGOV
Station Masters Residence (former)	Riverstone Parade	Riverstone	Blacktown	LGOV
Station Master's Residence (former)	2 Mount Druitt Road	Mount Druitt	Blacktown	LGOV
Terraces	4 West Parade	Riverstone	Blacktown	LGOV
Veteran Hall Archaeological Site	Reservoir Road	Prospect	Blacktown	SGOV
Veteran Hall remains & site	Reservoir Road (1km south of)	Prospect	Blacktown	GAZ

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War Memorial	Riverstone Parade	Riverstone	Blacktown	LGOV
Warrawong	158 Riverstone Road	Riverstone	Blacktown	LGOV
Watts Cottage	2 Watt Street	Rooty Hill	Blacktown	LGOV
Windsor and Old Windsor Roads		Parklea	Blacktown	LGOV
Woodstock	6 Hobson Place	Plumpton	Blacktown	LGOV

There was a total of 213 records matching your search criteria.

Key:
LGA = Local Government Area
GAZ= NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.
Note: While the Heritage Division seeks to keep the Inventory up to date, it is reliant on State agencies and local councils to provide their data. Always check with the relevant State agency or local council for the most up-to-date information.

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Office of Environment & Heritage

Search for NSW heritage

Return to search page where you can refine/broaden your search.

Statutory listed items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into three sections.

- **Section 1** - contains Aboriginal Places declared by the **Minister for the Environment** under the National Parks and Wildlife Act. This information is provided by the Heritage Division.
- **Section 2** - contains heritage items listed by the **Heritage Council of NSW** under the NSW Heritage Act. This includes listing on the State Heritage Register, an Interim Heritage Order or protected under section 136 of the NSW Heritage Act. This information is provided by the Heritage Division.
- **Section 3** - contains items listed by **local councils** on Local Environmental Plans under the Environmental Planning and Assessment Act, 1979 and **State government agencies** under s.170 of the Heritage Act. This information is provided by local councils and State government agencies.

Section 1. Aboriginal Places listed under the National Parks and Wildlife Act.

Your search did not return any matching results.

Section 2. Items listed under the NSW Heritage Act.

Your search did not return any matching results.

Section 3. Items listed by Local Government and State Agencies.

Your search returned 36 records.

Item name	Address	Suburb	LGA	Information source
Bennett Wagon	Pioneer Park Great Western Highway	St Marys	Penrith	LGOV
Brick Cottage	31-33 Pages Road	St Marys	Penrith	LGOV
Brick Cottage	18 Princess Mary Street	St Marys	Penrith	LGOV
Brick Cottage	40 Gidley Street	St Marys	Penrith	LGOV
Brick Cottage	100-104 Saddington Street	St Marys	Penrith	LGOV
Brick Cottage	38 Gidley Street	St Marys	Penrith	LGOV
Bronte - Villa	50 Gidley Street	St Marys	Penrith	LGOV
Dunheved Fire Station	50 Christie Street	St Marys	Penrith	LGOV
Explosives Storehouse	146 Dunheved Circuit	St Marys	Penrith	LGOV
Gothic Revival Cottage	24 Princess Mary Street	St Marys	Penrith	LGOV
Margaret Farm- House, Barn &	Pages,Barber,Wilson & Schleicher Sts	St	Penr	LGOV

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Tannery Site		St Marys	Penrith	
Milestone	Fronting 410-422 Great Western Highway(between Marsden Rd & Day St)	St Marys	Penrith	LGOV
Mimosa - Dwelling, Fence & Garden	13 Pages Road	St Marys	Penrith	LGOV
Mimosa Stables (Former)	11 Pages Road	St Marys	Penrith	LGOV
Moore Cottage	8 Sainsbury Street	St Marys	Penrith	LGOV
Mourilyan - (original section) of House	329-333 Great Western Highway	St Marys	Penrith	LGOV
Sawmill Precinct		St Marys	Penrith	LGOV
Shop	373 Great Western Highway	St Marys	Penrith	LGOV
South Creek Bridge (Eastbound)	Great Western Highway	St Marys	Penrith	SGOV
St Mary Magdalene Church, Hall, Cemetery, & Grounds	299-311 Great Western Highway	St Marys	Penrith	LGOV
St Marys Council Chambers (Former)	2-6 Mamre Road	St Marys	Penrith	LGOV
St Marys General Cemetery	175-191 Great Western Highway	St Marys	Penrith	LGOV
St Marys Railway Station	Station Street	St Marys	Penrith	LGOV
St Marys Railway Station Group	Queen Street	St Marys	Penrith	SGOV
St. Mary Magdalene Cemetery				LGOV
St. Marys Public School	2 - 6 Princess Mary Street	St Marys	Penrith	LGOV
St. Marys Railway Station Parcels Office				LGOV
Thompsons Tannery (Former)		St Marys	Penrith	LGOV
Thompsons Tannery Site - Tannery Pits (Former) & Well	94 Saddington Street	St Marys	Penrith	LGOV
Thompsons Tannery Site(former)	Saddington Street	St Marys	Penrith	LGOV
Victoria Park and Memorial	Great Western Highway	St Marys	Penrith	LGOV
Victoria Park War Memorial		St Marys	Penrith	LGOV
Wagon Wheel Hotel	449 Great Western Highway	St Marys	Penrith	LGOV
Weatherboard Cottage	20 Princess Mary Street	St Marys	Penrith	LGOV
Weatherboard Cottage	22 Princess Mary Street	St Marys	Penrith	LGOV
Woolpack Inn (Ruin)	556 Great Western Highway	St Marys	Penrith	LGOV

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There was a total of 36 records matching your search criteria.

Key:
LGA = Local Government Area
GAZ= NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.
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Heritage
Heritage places
- World Heritage List
- National Heritage List
- Commonwealth Heritage List
- List of Overseas Places of Historic Significance to Australia
- Register of the National Estate
- Nominating a heritage place
- Finalised Priority Assessment Lists

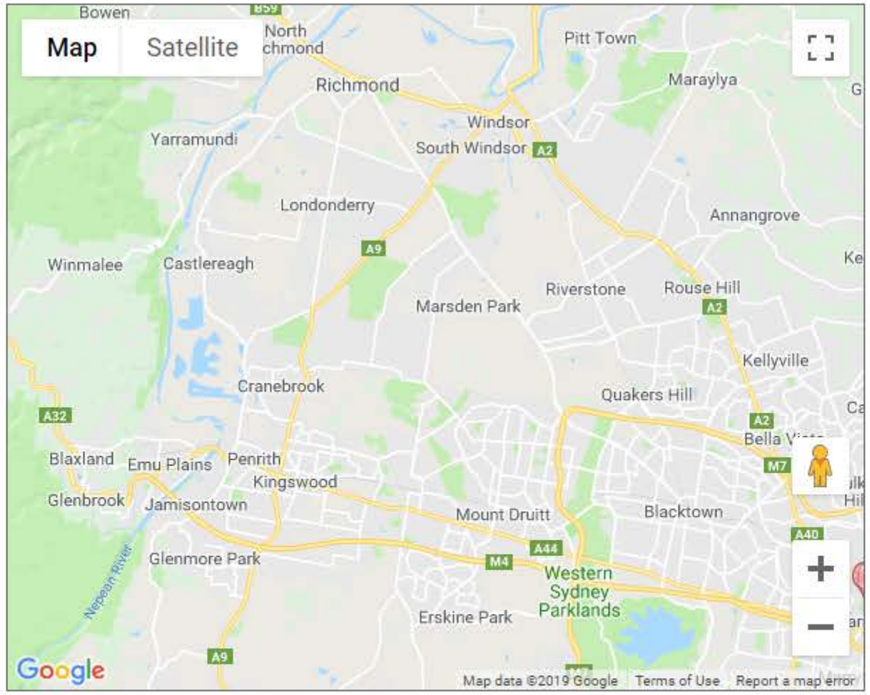
Australia's National Heritage List

The National Heritage List is Australia's list of natural, historic and Indigenous places of outstanding significance to the nation.

Use our interactive map or select from the list below to find out more about a listed place.

Australia's Heritage: National Treasures is a journey around Australia exploring the stories of some of these National Heritage places.

-- Zoom to a National Heritage place on the map --



Customise map view

- Show all places
- NSW
- Vic
- Qld
- SA
- WA
- Tas
- NT
- ACT
- Antarctica
- External Territories

Note: for some places, the names given here may vary from the officially listed place names. For the official National Heritage place names (and numbers of listed places), see the Australian Heritage Database.

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1	George Black	Matthew Parkinson	DRAFT – For Client review		17/04/2019
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APPENDIX C

Additional Targeted Assessment of Dunheved Portion (Stage 2b) of Stage 2 East West Connector Road

JBS&G

14 August 2019

ATT: Tara Kahrovic
Associate
Minter Ellison
Governor Macquarie Tower 1
Farrar Place
SYDNEY NSW 2000
Via email: tara.kahrovic@minterellison.com

Additional Targeted Assessment of Dunheved Portion (Stage 2b) of Stage 2 East West Connector Road
Dunheved Precinct, St Marys NSW

Dear Ms Kahrovic,

1. Introduction

JBS&G Australia Pty Ltd (JBS&G) has been previously engaged by Maryland Development Corporation Pty Ltd (MDC) to undertake an environmental site assessment of the proposed extent of the east-west connector road as proposed to be constructed from Ropes Crossing to Central Precinct within the extent of the former ADI St Marys site. A previous environmental site assessment has been issued as *Maryland Development Company Environmental Site Assessment and Unexploded Ordnance Clearance for Stage 2 of the East-West Connector Road, Ropes Crossing to Jordan Springs East, NSW rev 0*, 6 February 2019, JBS&G Australia Pty Ltd (JBS&G 2019a).

JBS&G has been further previously engaged by Minter Ellison (the client) to undertake specific assessments within the Dunheved portion of the overall St Marys site, and including a portion of the south-eastern extent of the Stage 2 East West Connector Road, as targeted to the assessment of per- and poly-fluoroalkyl substances (PFAS). This has been previously issued as *Minter Ellison PFAS Assessment at Former ADI St Marys Development Site St Marys and Llandilo, NSW rev 0*, 14 August 2018, JBS&G Australia Pty Ltd (JBS&G 2018).

JBS&G (2018) identified low levels of PFAS constituents at one sample location within the extent of the proposed Stage 2 corridor (sample location DHN-72), and further sample locations generally to the west of the south-eastern portion of the proposed Stage 2 corridor. By comparison to published assessment criteria as based on a commercial / industrial health exposure setting and an ecological criteria as further specific to a commercial and industrial setting, the levels of impact on and/or in proximity of the proposed east-west connector road did not record any criteria exceedances. On the basis of this comparison JBS&G (2018) reported that PFAS constituents were not at levels within the extent of the Stage 2 connector road that posed a potential health or ecological risk.

More recent guidance has been issued for the assessment of PFAS constituents in soils as subsequent to JBS&G (2018 and 2019a) as *PFAS National Environment Management Plan Version 2.0 Consultation Draft*, March 2019, National Chemicals Working Group of the Heads of EPA Australia and New Zealand (HEPA 2019). HEPA (2019) has proposed more conservative ecological criteria for the assessment of soils than those adopted in JBS&G (2018). This has been most recently advised to

Minter Ellison Remedial Action Plan Former ADI St Marys Development Site St Marys and Llandilo, NSW rev D, 21 June 2019, JBS&G Australia Pty Ltd (JBS&G 2019b).

JBS&G and Lend Lease are currently engaged in a process with the NSW EPA to consider JBS&G (2018 and 2019b). Though the duration of the process, PFAS affected soils and materials are being managed in a controlled stockpiled location within the Dunheved precinct on an interim basis. The interim management of PFAS impacted soils is anticipated to continue until such time as a requirement, approach and method of remediation can be agreed with the NSW EPA.

Two sources of PFAS impact were identified in JBS&G (2018) in proximity of the Stage 2 roadway. This included historical storage and handling of biosolids material as historically received from the adjoining St Marys Sewage Treatment Plant to the east of the south-eastern portion of the Stage 2 corridor and an historical and ongoing inflow of PFAS contaminated surface water into the Dunheved site at the west of the south-eastern portion of the Stage 2 roadway.

On the basis of an estimation of the extent of soil impact from the inflow of PFAS impacted surface water into the Dunheved site, an estimated extent of PFAS impacted soils was presented in JBS&G (2019b). This estimated extent of impact is shown on **Figure 1** provided to **Attachment 2**. Notwithstanding the extent of impact shown within the extent of the Stage 2 roadway, by review of soil sample location locations undertaken in JBS&G (2018), only sample location DHN-72 reported PFAS levels above detection limits. This sample location was located on the eastern side of the roadway, and it was inferred in JBS&G (2019b) that PFAS impact was present from the source to the west to the extent of sample location DHN-72.

Additional sampling and analysis have been undertaken along the western boundary of the south-eastern portion of the Stage 2 portion of the east-west connector road for the purposes of further advising the potential extent of PFAS impacted soils within the Stage 2 portion of the EWCR.

On the basis of this assessment, the likely extent of PFAS impacted soils within the Stage 2 road corridor can be more appropriately estimated. Requirements for interim management of this material are outlined in a Remedial Action Plan (RAP) prepared specifically for PFAS impact within the proposed East West Connector Road, *Remedial Action Plan – East West Connector Road St Marys, NSW Rev A*, JBS&G Australia Pty Ltd (JBS&G 2019c).

The sampling and analysis works have been undertaken in accordance with guidelines made or approved by the NSW EPA, and further consistent with the assessment methodology as adopted in JBS&G (2018).

2. Scope of Works

The scope of works comprised:

- Review of JBS&G (2018, 2019a and 2019b);
- Soil sampling from sample intervals of surface to 0.1 m and 0.8-1.0 m at sample locations ST201 to ST204 and ST206 to ST208 adjoining the western boundary of the south-eastern portion of the Stage 2 east west connector road. The sample locations were in close proximity to the western boundary of the roadway as confirmed by physical markings of the site to show where the boundary was prior to the fieldworks;
- Analysis of soil samples for PFAS;
- Assessment of data reliability by a program of quality assurance / quality control (QA/QC); and
- Assessment of the levels of PFAS and development of advice as to the likely extent of PFAS impact within the road corridor.

3. Objective

The objective of this additional targeted assessment was to determine the extent and source of PFAS impacted soils as present at sample location DHN-72 within the road corridor as previously assessed in JBS&G (2018) and to advise the extent of PFAS impact which will require remediation.

4. Methodology

4.1 Soil Sampling

Soil sample locations were undertaken by placement of push-tube sample locations to a depth of 1.0 m at sample locations ST201 to ST204 and ST206 to ST208 as shown on **Figure 1** provided to **Attachment 2**. Sample location ST205 was required to be abandoned due to the potential presence of underground services in this area.

Samples were removed directly from the push-tube and placed into laboratory supplied sample jars. Sample jars were transferred directly to a chilled esky prior to transport to the analysing laboratory under chain of custody protocols.

Surface samples were selected as the most appropriate for the scope of the assessment as the source to both the east and the west of the Stage corridor are associated with a historical surface process, namely:

- Historical storage and handling of biosolids at the site surface to the east of the roadway; and
- Overland / surface flows of PFAS impacted surface water at the west of the roadway.

On this basis, where impacted soils were present as consequent of either historical process, the impact is more than likely present at a surface soil depth.

4.2 Laboratory Analysis

JBS&G contracted Eurofins | mgt Australia (Eurofins), NATA accredited for the analysis undertaken, at Lane Cove NSW as the primary laboratory for the required analysis. In addition, the laboratory was required to meet JBS&G's internal quality assurance/quality control (QA/QC) requirements. Envirolab was used as the secondary / quality check laboratory.

A total of 14 primary samples were analysed for PFAS.

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5. Assessment Criteria

Consideration to regulatory technical guidelines and adoption of NEPC 2013 and HEPA (2019) assessment criteria was used to assess soil sample analysis results as consistent with the guidance's listed below:

- *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1),* 2013, National Environment Protection Council (NEPC 2013); and
- HEPA (2019).

Assessment criteria values utilised are provided on **Tables A** in **Attachment 3**. Notwithstanding the published criteria the interim management of soils impacted by PFAS on other areas of the St Marys site has considered levels of PFAS exceeding laboratory reporting limits. Actions in the RAP for interim management are based on detectable levels of PFAS using the primary laboratories (Eurofins MGT) limit of reporting for PFAS constituents with current guideline values within HEPA (2019), which is 0.005 mg/kg for PFOS, PFOA and PFHxS in soil. PFAS acceptability criteria in soils will be considered at the stage that a remedial approach can be agreed with the NSW EPA and remediation works implemented.

6. Quality Assurance / Quality Control

Data reliability was assessed by a program, of quality assurance / quality control (QA/QC) which consistent of the following elements:

- Preparation of blind duplicate samples at a frequency of one sample per 14 primary samples. All relative percentile differences (RPD's) were calculated below a level of zero consequent of non-detects in the primary sample as summarised in **Table A** to **Attachment 3**;
- Preparation of split duplicate samples at a frequency of one sample per 14 primary samples. All RPD's were calculated below a level of zero consequent of non-detects in the primary sample as summarised in **Table A** to **Attachment 3**;
- No formal trip blank or rinsate blank sample was included in the sample batch in a soil media. However multiple samples are available with levels of all PFAS constituents below detection limits which confirms that sample contamination form external sources, or otherwise cross-contamination during the sampling works has not occurred;
- A trip blank sample was prepared in a water media which similarly had levels of all PFAS constituents below detection limits;
- Retention and handling of samples in accordance with chain of custody protocols, with relevant documentation provided as **Attachment 4**;
- A range of laboratory QA/QC assessments were undertaken and had results in accordance with the laboratories NATA accredited method requirements (as summarised in laboratory report sheets provided as **Attachment 4**) including:
    - Addition of surrogate spikes to all samples and measurement of surrogate recovery;
    - Completion of laboratory blank samples and confirmation of all PFAS constituents below detection limits;
    - Completion of laboratory control samples and recovery of all PFAS constituents in accordance with NATA accredited recovery limits;

  - Completion of matrix spike samples and recovery of all PFAS constituents in accordance with NATA accredited recovery limits;
  - Preparation and analysis of laboratory duplicate samples and confirmation of RPD's levels below NATA accredited limits; and
- Analysis of all samples within laboratory holding times.

On the basis of the assessment of QA/QC, it has been found that the PFAS analytical data as generated by the sampling and analysis works is appropriately reliable to characterize PFAS levels within the targeted area of the roadway corridor.

7. Results

7.1 Observations

Soils were generally found to be consistent with conditions as reported in JBS&G (2018). This included grass/topsoil (slight shallow fill with gravel/asphalt adjacent the road) underlain by orange to brown clay. Clays were typically found to be stiff. Importantly, no apparent evidence of biosolids or biosolids like materials were observed at any of the sample locations. Soils were further free of any other potential indicators of site contamination.

7.2 PFAS Soil Analytical Results

Summary soil analytical results are provided in **Table A** of **Attachment 3**. Laboratory reports and chain of custody documentation is provided in **Attachment 4**. Sample locations are shown on **Figure 1** to **Attachment 2**.

Levels of PFAS constituents were below detection limits in each of the primary samples apart from a detection of PFHxS at sample location ST204 at a depth of 0.8-1.0 m. The detection very slightly exceeded the laboratory detection limit, however was well below any potentially applicable criteria.

Importantly, the level of PFOS in all primary samples was below laboratory detection limits.

8. Conclusions

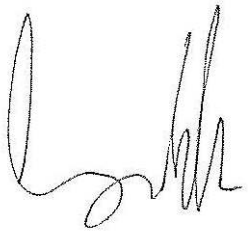
8.1 Conclusions

Based on the results of this investigation and subject to the limitations in **Attachment 1**, the following conclusions have been made:

- A significant source of PFAS impact was previously identified to the west of the south-eastern portion of the Stage 2 corridor associated with an off-site inflow of PFAS impacted surface water. This impact has been identified to extend into the EWCR boundary and will require remediation as per the RAP (JBS&G 2019c);
- Gross levels or widespread indicators of PFAS impact were not identified during the additional targeted investigation as undertaken to determine if the source to the west had substantially affected the corridor; and
- Localised PFAS impact has been previously identified at sample location DHN-72 (JBS&G 2018) as more than likely consequent of the historical storage and handling of PFAS affected biosolids to the east of the Stage 2 corridor. This is the highest level of PFAS impact within the Stage 2 corridor and should be considered as an appropriate starting point for interim management works that are otherwise being documented in the RAP developed for the roadworks (JBS&G 2019c);

Should you require any further information, please contact the undersigned on 02 8245 0300 or by email gblack@jbsg.com.au.

Yours sincerely:



George Black
Environmental Consultant
JBS&G Australia Pty Ltd

Reviewed/Approved by:



Matt Parkinson
Principal Contaminated Land
JBS&G Australia Pty Ltd

Attachments

1) Limitations
2) Figures
3) Tables
4) Laboratory Reports and Chain of Custody

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Attachment 1 – Limitations

This report has been prepared for use by the client who commissioned the works in accordance with the project brief only and has been based in part on information obtained from other parties. The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements and site history, not on sampling and analysis of all media at all locations for all potential contaminants.

Limited sampling and laboratory analyses were undertaken as part of the investigations, as described herein. Ground conditions between sampling locations may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the sites, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

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Attachment 2 – Figures

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Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Legend:

- Former ADI St Marys Property
- Dunheved Precinct
- Stage 2 Boundary
- Proposed PFAS Remediation Areas
- Creeks
- Channels
- Soil Sample Location - Stage 2

JBS&G

0 20 40
metres

Central Precinct

SOIL SAMPLING LOCATIONS

Job No: 54782		Scale: 1:1,750		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: L20 Rev 0	Date: 15-Jul-2019	**FIGURE 1**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\L20 Rev 0\54782_01_Soil_Sampling_Locations.mxd
Data Source: LPI 20191228 © Department of Finance, Services & Innovation 2017

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Attachment 3 – Tables

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Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Table A - Stage 2 Assessment
Project Number: 54782
Project Name: Stage 2 - Jordan Springs PFAS Assessment

	PFAS																																		Other
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorodecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoropentanoic acid (PFPeA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorooctanoic acid (PFOA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorononanoic acid (PFNA)	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of WA DER PFAS (n=10)	Sum of PFASs (n=28)	% Moisture 103oC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
EQL	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.05	1
NEMP 2018 PFAS Human Health Screening Values - Industrial/Commercial																50							20							20	20				
NEPM 2018 PFAS Ecological Indirect Exposure - Industrial/Commercial																														0.01					
Sample ID	**Sample Date**	**Laboratory Report Number**																																		
ST201 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	19
ST201 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	11
QA20190707-02	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	15
QC20190707-02	7/07/2019	221253	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.0001	<0.001	<0.0001	<0.001	<0.0001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	0.0006	-	-	-	-
ST202 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	13
ST202 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	15
ST203 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	9.5
ST203 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	18
ST204 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	0.0088 #1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0088	<0.005	0.0088	<0.01	<0.05	15
ST204 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	14
ST206 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	9.9
ST206 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	19
ST207 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	13
ST207 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	11
ST208 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	15
ST208 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	17

Data Comments
#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.

Attachment 4 – Laboratory Reports and Chain of Custody

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

019739

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54782	LABORATORY BATCH NO.:
PROJECT NAME: ST MARY'S	SAMPLERS: G.B
DATE NEEDED BY: 72 hr TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ....gblack.....@jbsg.com.au; (3) .....mperkinson.....@jbsg.com.au luke.walker@minterellison.com

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

PFAS 28 compounds

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	PFAS	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
ST201 0-0.1	SOIL	7/07/19	—	PFAS + ICE	—	X			
ST201 0.8-1.0						X			
ST202 0-0.1						X			
ST202 0.8-1.0						X			
ST203 0-0.1						X			
ST203 0.8-1.0						X			
ST204 0-0.1						X			
ST204 0.8-1.0						X			
ST206 0-0.1						X			
ST206 0.8-1.0						X			
ST207 0-0.1						X			
ST207 0.8-1.0						X			
ST208 0-0.1						X			
ST208 0.8-1.0						X			
QA20190707-02						X			
TB01	WATER					X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: G-BLACK DATE: 7/07/19	CONSIGNMENT NOTE NO. —	NAME: Lina D DATE: 08/07/19	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: Eurofins mgt 6:00 pm	COOLER TEMP ..... deg C 12.2°C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

664671

019740

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54782	LABORATORY BATCH NO.:
PROJECT NAME: St MARY'S	SAMPLERS: GB.
DATE NEEDED BY: 72 hr TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) gblack@jbsg.com.au; (3) mparkinson@jbsg.com.au luke.walker@minterellison.com

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	PFAS	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
QC20190707-02	SOIL	7/07/19	—	PFAS + ICE	—	X			

PLEASE SEND TO ENVIROLAB!

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: G. BLACK DATE:	CONSIGNMENT NOTE NO. —	NAME: Lina D. 08/07	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: OF: Envirolab NATA 6:00 PM	COOLER TEMP ..... deg C 12.2°C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

eurofins | mgt

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

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

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: George Black
Project name: ST MARY"S
Project ID: 54782
COC number: Not provided
Turn around time: 3 Day
Date/Time received: Jul 8, 2019 6:00 PM
Eurofins | mgt reference: **664671**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 12.2 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☑ Sample containers for volatile analysis received with zero headspace.

☑ Split sample sent to requested external lab.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Sample QC20190707-02 forwarded to Envirolab for analysis

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to George Black - gblack@jbsg.com.au.

Note: A copy of these results will also be delivered to the general JBS & G Australia (NSW) P/L email address.

eurofins | mgt

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

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

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: ST MARY'S
Project ID: 54782

Order No.:
Report #: 664671
Phone: 02 8245 0300
Fax:

Received: Jul 8, 2019 6:00 PM
Due: Jul 12, 2019
Priority: 3 Day
Contact Name: George Black

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794						X	X
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	ST201 0-0.1	Jul 07, 2019		Soil	S19-Jl10854	X	X
2	ST201 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10855	X	X
3	ST202 0-0.1	Jul 07, 2019		Soil	S19-Jl10856	X	X
4	ST202 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10857	X	X
5	ST203 0-0.1	Jul 07, 2019		Soil	S19-Jl10858	X	X
6	ST203 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10859	X	X
7	ST204 0-0.1	Jul 07, 2019		Soil	S19-Jl10860	X	X
8	ST204 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10861	X	X
9	ST206 0-0.1	Jul 07, 2019		Soil	S19-Jl10862	X	X

eurofins | mgt

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

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6 Monterey Road
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: ST MARY'S
Project ID: 54782

Order No.:
Report #: 664671
Phone: 02 8245 0300
Fax:

Received: Jul 8, 2019 6:00 PM
Due: Jul 12, 2019
Priority: 3 Day
Contact Name: George Black

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794						X	X
Perth Laboratory - NATA Site # 23736							
10	ST206 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10863	X	X
11	ST207 0-0.1	Jul 07, 2019		Soil	S19-Jl10864	X	X
12	ST207 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10865	X	X
13	ST208 0-0.1	Jul 07, 2019		Soil	S19-Jl10866	X	X
14	ST208 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10867	X	X
15	QA20190707-02	Jul 07, 2019		Soil	S19-Jl10868	X	X
16	TB01	Jul 07, 2019		Water	S19-Jl10869		X
Test Counts						15	16

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

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: **George Black**

Report **664671-S**
Project name ST MARY'S
Project ID 54782
Received Date Jul 08, 2019

Client Sample ID			**ST201 0-0.1**	**ST201 0.8-1.0**	**ST202 0-0.1**	**ST202 0.8-1.0**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Jl10854**	**S19-Jl10855**	**S19-Jl10856**	**S19-Jl10857**
Date Sampled			**Jul 07, 2019**	**Jul 07, 2019**	**Jul 07, 2019**	**Jul 07, 2019**
Test/Reference	LOR	Unit				
% Moisture	1	%	11	19	15	13
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	104	112	119	107
13C5-PFPeA (surr.)	1	%	81	110	95	109
13C5-PFHxA (surr.)	1	%	93	102	107	115
13C4-PFHpA (surr.)	1	%	88	97	104	106
13C8-PFOA (surr.)	1	%	97	111	111	123
13C5-PFNA (surr.)	1	%	92	106	93	101
13C6-PFDA (surr.)	1	%	91	122	111	111
13C2-PFUnDA (surr.)	1	%	123	154	135	170
13C2-PFDoDA (surr.)	1	%	110	111	118	137
13C2-PFTeDA (surr.)	1	%	127	136	120	155
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	116	120	106	141

Client Sample ID			ST201 0-0.1	ST201 0.8-1.0	ST202 0-0.1	ST202 0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl10854	S19-Jl10855	S19-Jl10856	S19-Jl10857
Date Sampled			Jul 07, 2019	Jul 07, 2019	Jul 07, 2019	Jul 07, 2019
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D3-N-MeFOSA (surr.)	1	%	100	115	99	125
D5-N-EtFOSA (surr.)	1	%	75	86	75	109
D7-N-MeFOSE (surr.)	1	%	68	85	79	104
D9-N-EtFOSE (surr.)	1	%	85	111	77	116
D5-N-EtFOSAA (surr.)	1	%	76	69	58	86
D3-N-MeFOSAA (surr.)	1	%	76	82	77	76
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	78	107	113	90
18O2-PFHxS (surr.)	1	%	95	131	118	115
13C8-PFOS (surr.)	1	%	84	103	97	106
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	103	117	95	72
13C2-6:2 FTSA (surr.)	1	%	131	132	156	74
13C2-8:2 FTSA (surr.)	1	%	105	142	147	125
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			ST203 0-0.1	ST203 0.8-1.0	ST204 0-0.1	ST204 0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl10858	S19-Jl10859	S19-Jl10860	S19-Jl10861
Date Sampled			Jul 07, 2019	Jul 07, 2019	Jul 07, 2019	Jul 07, 2019
Test/Reference	LOR	Unit				
% Moisture	1	%	18	9.5	14	15
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5

Client Sample ID			ST203 0-0.1	ST203 0.8-1.0	ST204 0-0.1	ST204 0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl10858	S19-Jl10859	S19-Jl10860	S19-Jl10861
Date Sampled			Jul 07, 2019	Jul 07, 2019	Jul 07, 2019	Jul 07, 2019
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	114	101	140	145
13C5-PFPeA (surr.)	1	%	95	77	108	126
13C5-PFHxA (surr.)	1	%	106	99	109	123
13C4-PFHpA (surr.)	1	%	85	87	104	115
13C8-PFOA (surr.)	1	%	95	98	114	131
13C5-PFNA (surr.)	1	%	81	86	101	113
13C6-PFDA (surr.)	1	%	98	105	120	134
13C2-PFUnDA (surr.)	1	%	121	143	125	162
13C2-PFDoDA (surr.)	1	%	89	106	115	141
13C2-PFTeDA (surr.)	1	%	107	122	132	167
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	98	114	113	157
D3-N-MeFOSA (surr.)	1	%	86	104	106	153
D5-N-EtFOSA (surr.)	1	%	64	83	79	110
D7-N-MeFOSE (surr.)	1	%	80	99	92	125
D9-N-EtFOSE (surr.)	1	%	66	92	95	114
D5-N-EtFOSAA (surr.)	1	%	64	54	75	99
D3-N-MeFOSAA (surr.)	1	%	65	50	84	101
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	[N09]8.8
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	84	99	106	134
18O2-PFHxS (surr.)	1	%	99	98	132	129
13C8-PFOS (surr.)	1	%	81	93	103	113

Client Sample ID			ST203 0-0.1	ST203 0.8-1.0	ST204 0-0.1	ST204 0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl10858	S19-Jl10859	S19-Jl10860	S19-Jl10861
Date Sampled			Jul 07, 2019	Jul 07, 2019	Jul 07, 2019	Jul 07, 2019
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	104	77	120	INT
13C2-6:2 FTSA (surr.)	1	%	96	53	86	147
13C2-8:2 FTSA (surr.)	1	%	116	108	159	153
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	8.8
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	8.8
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			ST206 0-0.1	ST206 0.8-1.0	ST207 0-0.1	ST207 0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl10862	S19-Jl10863	S19-Jl10864	S19-Jl10865
Date Sampled			Jul 07, 2019	Jul 07, 2019	Jul 07, 2019	Jul 07, 2019
Test/Reference	LOR	Unit				
% Moisture	1	%	19	9.9	11	13
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	120	124	128	117
13C5-PFPeA (surr.)	1	%	83	103	95	105
13C5-PFHxA (surr.)	1	%	98	104	108	112
13C4-PFHpA (surr.)	1	%	90	121	91	94
13C8-PFOA (surr.)	1	%	107	125	102	116
13C5-PFNA (surr.)	1	%	65	102	87	84
13C6-PFDA (surr.)	1	%	68	148	115	123
13C2-PFUnDA (surr.)	1	%	99	160	128	154
13C2-PFDoDA (surr.)	1	%	53	128	100	140
13C2-PFTeDA (surr.)	1	%	26	112	84	163

Client Sample ID			ST206 0-0.1	ST206 0.8-1.0	ST207 0-0.1	ST207 0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl10862	S19-Jl10863	S19-Jl10864	S19-Jl10865
Date Sampled			Jul 07, 2019	Jul 07, 2019	Jul 07, 2019	Jul 07, 2019
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	57	118	87	146
D3-N-MeFOSA (surr.)	1	%	53	123	101	128
D5-N-EtFOSA (surr.)	1	%	52	100	79	104
D7-N-MeFOSE (surr.)	1	%	48	92	88	135
D9-N-EtFOSE (surr.)	1	%	42	100	84	127
D5-N-EtFOSAA (surr.)	1	%	15	69	49	66
D3-N-MeFOSAA (surr.)	1	%	37	84	70	64
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	114	112	112	97
18O2-PFHxS (surr.)	1	%	123	144	109	131
13C8-PFOS (surr.)	1	%	70	117	90	115
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	100	102	104	56
13C2-6:2 FTSA (surr.)	1	%	89	INT	110	112
13C2-8:2 FTSA (surr.)	1	%	55	126	112	116
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			ST208 0-0.1	ST208 0.8-1.0	QA20190707-02
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl10866	S19-Jl10867	S19-Jl10868
Date Sampled			Jul 07, 2019	Jul 07, 2019	Jul 07, 2019
Test/Reference	LOR	Unit			
% Moisture	1	%	17	15	15
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	138	127	138
13C5-PFPeA (surr.)	1	%	119	101	133
13C5-PFHxA (surr.)	1	%	108	102	108
13C4-PFHpA (surr.)	1	%	107	112	112
13C8-PFOA (surr.)	1	%	127	109	129
13C5-PFNA (surr.)	1	%	95	94	102
13C6-PFDA (surr.)	1	%	132	119	133
13C2-PFUnDA (surr.)	1	%	151	146	132
13C2-PFDoDA (surr.)	1	%	127	127	109
13C2-PFTeDA (surr.)	1	%	144	148	100
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	132	141	103
D3-N-MeFOSA (surr.)	1	%	122	106	97
D5-N-EtFOSA (surr.)	1	%	85	83	71
D7-N-MeFOSE (surr.)	1	%	75	90	111
D9-N-EtFOSE (surr.)	1	%	94	102	85
D5-N-EtFOSAA (surr.)	1	%	79	81	49
D3-N-MeFOSAA (surr.)	1	%	89	74	72
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5

Client Sample ID			ST208 0-0.1	ST208 0.8-1.0	QA20190707-02
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl10866	S19-Jl10867	S19-Jl10868
Date Sampled			Jul 07, 2019	Jul 07, 2019	Jul 07, 2019
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	107	120	107
18O2-PFHxS (surr.)	1	%	129	133	128
13C8-PFOS (surr.)	1	%	108	102	98
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N15]	5	ug/kg	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	77	113	113
13C2-6:2 FTSA (surr.)	1	%	122	61	122
13C2-8:2 FTSA (surr.)	1	%	158	104	136
PFASs Summations					
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50

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 (regarding both quality and NATA accreditation).

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
% Moisture	Brisbane	Jul 08, 2019	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Jul 09, 2019	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Jul 09, 2019	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Jul 09, 2019	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Jul 09, 2019	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA # 1261 Site # 18217

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: ST MARY'S
Project ID: 54782

Order No.:
Report #: 664671
Phone: 02 8245 0300
Fax:

Received: Jul 8, 2019 6:00 PM
Due: Jul 11, 2019
Priority: 3 Day
Contact Name: George Black

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794						X	X
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	ST201 0-0.1	Jul 07, 2019		Soil	S19-Jl10854	X	X
2	ST201 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10855	X	X
3	ST202 0-0.1	Jul 07, 2019		Soil	S19-Jl10856	X	X
4	ST202 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10857	X	X
5	ST203 0-0.1	Jul 07, 2019		Soil	S19-Jl10858	X	X
6	ST203 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10859	X	X
7	ST204 0-0.1	Jul 07, 2019		Soil	S19-Jl10860	X	X
8	ST204 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10861	X	X
9	ST206 0-0.1	Jul 07, 2019		Soil	S19-Jl10862	X	X

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Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794						X	X
Perth Laboratory - NATA Site # 23736							
10	ST206 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10863	X	X
11	ST207 0-0.1	Jul 07, 2019		Soil	S19-Jl10864	X	X
12	ST207 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10865	X	X
13	ST208 0-0.1	Jul 07, 2019		Soil	S19-Jl10866	X	X
14	ST208 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10867	X	X
15	QA20190707-02	Jul 07, 2019		Soil	S19-Jl10868	X	X
16	TB01	Jul 07, 2019		Water	S19-Jl10869		X
Test Counts						15	16

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

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							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	119			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	97			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	99			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	93			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	105			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	95			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	102			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	122			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	111			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	111			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	117			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	97			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	102			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	132			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	67			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	94			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	99			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	99			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	134			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	131			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	112			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	80			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	107			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	90			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	128			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	81			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	80			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	112			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B19-JI08884	NCP	%	99			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B19-JI08884	NCP	%	111			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B19-JI08884	NCP	%	109			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B19-JI08884	NCP	%	92			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B19-JI08884	NCP	%	99			50-150	Pass	
Perfluorononanoic acid (PFNA)	B19-JI08884	NCP	%	108			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B19-JI08884	NCP	%	109			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B19-JI08884	NCP	%	99			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B19-JI08884	NCP	%	110			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B19-JI08884	NCP	%	95			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B19-JI08884	NCP	%	116			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B19-JI08884	NCP	%	105			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B19-JI08884	NCP	%	96			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B19-JI08884	NCP	%	106			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B19-JI08884	NCP	%	99			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B19-JI08884	NCP	%	88			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B19-JI08884	NCP	%	80			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B19-JI08884	NCP	%	102			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B19-JI08884	NCP	%	96			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B19-JI08884	NCP	%	96			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B19-JI08884	NCP	%	107			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B19-JI08884	NCP	%	101			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B19-JI08884	NCP	%	84			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B19-JI08884	NCP	%	95			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B19-JI08884	NCP	%	82			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B19-JI08884	NCP	%	114			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B19-JI08884	NCP	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B19-JI08884	NCP	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B19-JI08884	NCP	%	93			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B19-JI08884	NCP	%	109			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-JI10857	CP	%	13	13	2.0	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S19-JI10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S19-Jl10860	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S19-Jl10860	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S19-Jl10860	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S19-Jl10860	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Jl10867	CP	%	15	16	9.0	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
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised By

Nibha Vaidya	Analytical Services Manager
Bryan Wilson	Senior Analyst-PFAS (QLD)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

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JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

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: **George Black**

Report **664671-W**
Project name ST MARY'S
Project ID 54782
Received Date Jul 08, 2019

Client Sample ID			**TB01**
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S19-Jl10869**
Date Sampled			**Jul 07, 2019**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	132
13C5-PFPeA (surr.)	1	%	113
13C5-PFHxA (surr.)	1	%	121
13C4-PFHpA (surr.)	1	%	128
13C8-PFOA (surr.)	1	%	99
13C5-PFNA (surr.)	1	%	139
13C6-PFDA (surr.)	1	%	85
13C2-PFUnDA (surr.)	1	%	94
13C2-PFDoDA (surr.)	1	%	71
13C2-PFTeDA (surr.)	1	%	45
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	55
D3-N-MeFOSA (surr.)	1	%	47
D5-N-EtFOSA (surr.)	1	%	34

Client Sample ID			TB01
Sample Matrix			Water
Eurofins | mgt Sample No.			S19-Jl10869
Date Sampled			Jul 07, 2019
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D7-N-MeFOSE (surr.)	1	%	73
D9-N-EtFOSE (surr.)	1	%	61
D5-N-EtFOSAA (surr.)	1	%	43
D3-N-MeFOSAA (surr.)	1	%	46
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	126
18O2-PFHxS (surr.)	1	%	115
13C8-PFOS (surr.)	1	%	135
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N15]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	165
13C2-6:2 FTSA (surr.)	1	%	65
13C2-8:2 FTSA (surr.)	1	%	39
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

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 (regarding both quality and NATA accreditation).

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
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Jul 09, 2019	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Jul 09, 2019	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Jul 09, 2019	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Jul 09, 2019	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA # 1261 Site # 20794

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Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: ST MARY'S
Project ID: 54782

Order No.:
Report #: 664671
Phone: 02 8245 0300
Fax:

Received: Jul 8, 2019 6:00 PM
Due: Jul 11, 2019
Priority: 3 Day
Contact Name: George Black

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794						X	X
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	ST201 0-0.1	Jul 07, 2019		Soil	S19-Jl10854	X	X
2	ST201 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10855	X	X
3	ST202 0-0.1	Jul 07, 2019		Soil	S19-Jl10856	X	X
4	ST202 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10857	X	X
5	ST203 0-0.1	Jul 07, 2019		Soil	S19-Jl10858	X	X
6	ST203 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10859	X	X
7	ST204 0-0.1	Jul 07, 2019		Soil	S19-Jl10860	X	X
8	ST204 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10861	X	X
9	ST206 0-0.1	Jul 07, 2019		Soil	S19-Jl10862	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794						X	X
Perth Laboratory - NATA Site # 23736							
10	ST206 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10863	X	X
11	ST207 0-0.1	Jul 07, 2019		Soil	S19-Jl10864	X	X
12	ST207 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10865	X	X
13	ST208 0-0.1	Jul 07, 2019		Soil	S19-Jl10866	X	X
14	ST208 0.8-1.0	Jul 07, 2019		Soil	S19-Jl10867	X	X
15	QA20190707-02	Jul 07, 2019		Soil	S19-Jl10868	X	X
16	TB01	Jul 07, 2019		Water	S19-Jl10869		X
Test Counts						15	16

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

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							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	143			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	119			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	117			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	137			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	141			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	138			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	135			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	137			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	136			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	132			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	137			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	136			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	134			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	124			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	130			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	109			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	134			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	117			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	105			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	75			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	130			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	122			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	117			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	96			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	128			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	83			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	106			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	140			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	139			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	137			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M19-Jl07650	NCP	%	137			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M19-Jl07650	NCP	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M19-Jl07650	NCP	%	102			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M19-Jl07650	NCP	%	130			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M19-Jl07650	NCP	%	140			50-150	Pass	
Perfluorononanoic acid (PFNA)	M19-Jl07650	NCP	%	124			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M19-Jl07650	NCP	%	138			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M19-Jl07650	NCP	%	124			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M19-Jl07650	NCP	%	139			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M19-Jl07650	NCP	%	137			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M19-Jl07650	NCP	%	137			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M19-Jl07650	NCP	%	137			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M19-Jl07650	NCP	%	128			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M19-Jl07650	NCP	%	124			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M19-Jl07650	NCP	%	122			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M19-Jl07650	NCP	%	109			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M19-Jl07650	NCP	%	118			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M19-Jl07650	NCP	%	133			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M19-Jl07650	NCP	%	121			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M19-Jl07650	NCP	%	85			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M19-Jl07650	NCP	%	133			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M19-Jl07650	NCP	%	131			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M19-Jl07650	NCP	%	119			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M19-Jl07650	NCP	%	104			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M19-Jl07650	NCP	%	139			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M19-Jl07650	NCP	%	84			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M19-Jl07650	NCP	%	134			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M19-Jl07650	NCP	%	117			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M19-Jl07650	NCP	%	132			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M19-Jl07650	NCP	%	143			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M19-Jl07651	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M19-Jl07651	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M19-Jl07651	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M19-Jl07651	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M19-Jl07651	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M19-Jl07651	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M19-Jl07651	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M19-Jl07651	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M19-Jl07651	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M19-Jl07651	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised By

Nibha Vaidya	Analytical Services Manager
Bryan Wilson	Senior Analyst-PFAS (QLD)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

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CERTIFICATE OF ANALYSIS 221253

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	George Black
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**54782, St Mary's**
Number of Samples	1 soil
Date samples received	09/07/2019
Date completed instructions received	09/07/2019

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	12/07/2019
Date of Issue	12/07/2019

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Results Approved By
Alexander Mitchell Maclean, Senior Chemist
Phalak Inthakesone, Organics Development Manager, Sydney

Authorised By

Nancy Zhang, Laboratory Manager

PFAS in Soils Extended		
Our Reference		221253-1
Your Reference	UNITS	QC20190707-02
Date Sampled		07/07/2019
Type of sample		soil
Date prepared	-	11/07/2019
Date analysed	-	11/07/2019
Perfluorobutanesulfonic acid	µg/kg	<0.1
Perfluoropentanesulfonic acid	µg/kg	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1
Perfluoroheptanesulfonic acid	µg/kg	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	0.5
Perfluorodecanesulfonic acid	µg/kg	<0.2
Perfluorobutanoic acid	µg/kg	<0.2
Perfluoropentanoic acid	µg/kg	<0.2
Perfluorohexanoic acid	µg/kg	<0.1
Perfluoroheptanoic acid	µg/kg	<0.1
Perfluorooctanoic acid PFOA	µg/kg	<0.1
Perfluorononanoic acid	µg/kg	<0.1
Perfluorodecanoic acid	µg/kg	<0.5
Perfluoroundecanoic acid	µg/kg	<0.5
Perfluorododecanoic acid	µg/kg	<0.5
Perfluorotridecanoic acid	µg/kg	<0.5
Perfluorotetradecanoic acid	µg/kg	<5
4:2 FTS	µg/kg	<0.1
6:2 FTS	µg/kg	<0.1
8:2 FTS	µg/kg	<0.1
10:2 FTS	µg/kg	<0.1
Perfluorooctane sulfonamide	µg/kg	<1
N-Methyl perfluorooctane sulfonamide	µg/kg	<1
N-Ethyl perfluorooctanesulfon amide	µg/kg	<1
N-Me perfluorooctanesulfonamid oethanol	µg/kg	<1
N-Et perfluorooctanesulfonamid oethanol	µg/kg	<5
MePerfluorooctanesulf- amid oacetic acid	µg/kg	<0.2
EtPerfluorooctanesulf amid oacetic acid	µg/kg	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	105
Surrogate $^{13}C_2$ *PFOA*	%	101
Extracted ISTD $^{13}C_3$ *PFBS*	%	90
Extracted ISTD $^{18}O_2$ *PFHxS*	%	94
Extracted ISTD $^{13}C_4$ *PFOS*	%	94
Extracted ISTD $^{13}C_4$ *PFBA*	%	92

PFAS in Soils Extended		
Our Reference		221253-1
Your Reference	UNITS	QC20190707-02
Date Sampled		07/07/2019
Type of sample		soil
Extracted ISTD $^{13}C_3$ *PFPeA*	%	72
Extracted ISTD $^{13}C_2$ *PFHxA*	%	78
Extracted ISTD $^{13}C_4$ *PFHpA*	%	83
Extracted ISTD $^{13}C_4$ *PFOA*	%	87
Extracted ISTD $^{13}C_5$ *PFNA*	%	95
Extracted ISTD $^{13}C_2$ *PFDA*	%	93
Extracted ISTD $^{13}C_2$ *PFUnDA*	%	68
Extracted ISTD $^{13}C_2$ *PFDoDA*	%	101
Extracted ISTD $^{13}C_2$ *PFTeDA*	%	102
Extracted ISTD $^{13}C_2$ *4:2FTS*	%	83
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	93
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	120
Extracted ISTD $^{13}C_8$ *FOSA*	%	83
Extracted ISTD d_3 *N MeFOSA*	%	90
Extracted ISTD d_5 *N EtFOSA*	%	97
Extracted ISTD d_7 *N MeFOSE*	%	92
Extracted ISTD d_9 *N EtFOSE*	%	97
Extracted ISTD d_3 *N MeFOSAA*	%	78
Extracted ISTD d_5 *N EtFOSAA*	%	48
Total Positive PFHxS & PFOS	µg/kg	0.7
Total Positive PFOS & PFOA	µg/kg	0.5
Total Positive PFAS	µg/kg	0.7

Moisture		
Our Reference		221253-1
Your Reference	UNITS	QC20190707-02
Date Sampled		07/07/2019
Type of sample		soil
Date prepared	-	10/07/2019
Date analysed	-	11/07/2019
Moisture	%	17

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Org-035	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.3 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: PFAS in Soils Extended					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	221253-1
Date prepared	-			11/07/2019	[NT]	[NT]	[NT]	[NT]	11/07/2019	11/07/2019
Date analysed	-			11/07/2019	[NT]	[NT]	[NT]	[NT]	11/07/2019	11/07/2019
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	103	102
Perfluoropentanesulfonic acid	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	111	110
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	113	116
Perfluoroheptanesulfonic acid	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	103	100
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	118	101
Perfluorodecanesulfonic acid	µg/kg	0.2	Org-035	<0.2	[NT]	[NT]	[NT]	[NT]	119	105
Perfluorobutanoic acid	µg/kg	0.2	Org-035	<0.2	[NT]	[NT]	[NT]	[NT]	114	117
Perfluoropentanoic acid	µg/kg	0.2	Org-035	<0.2	[NT]	[NT]	[NT]	[NT]	109	108
Perfluorohexanoic acid	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	111	107
Perfluoroheptanoic acid	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	102	105
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	106	101
Perfluorononanoic acid	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	103	94
Perfluorodecanoic acid	µg/kg	0.5	Org-035	<0.5	[NT]	[NT]	[NT]	[NT]	110	109
Perfluoroundecanoic acid	µg/kg	0.5	Org-035	<0.5	[NT]	[NT]	[NT]	[NT]	108	98
Perfluorododecanoic acid	µg/kg	0.5	Org-035	<0.5	[NT]	[NT]	[NT]	[NT]	111	103
Perfluorotridecanoic acid	µg/kg	0.5	Org-035	<0.5	[NT]	[NT]	[NT]	[NT]	92	87
Perfluorotetradecanoic acid	µg/kg	5	Org-035	<5	[NT]	[NT]	[NT]	[NT]	107	110
4:2 FTS	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	105	105
6:2 FTS	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	106	107
8:2 FTS	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	110	114
10:2 FTS	µg/kg	0.1	Org-035	<0.1	[NT]	[NT]	[NT]	[NT]	118	113
Perfluorooctane sulfonamide	µg/kg	1	Org-035	<1	[NT]	[NT]	[NT]	[NT]	122	120
N-Methyl perfluorooctane sulfonamide	µg/kg	1	Org-035	<1	[NT]	[NT]	[NT]	[NT]	112	112
N-Ethyl perfluorooctanesulfon amide	µg/kg	1	Org-035	<1	[NT]	[NT]	[NT]	[NT]	103	104
N-Me perfluorooctanesulfonamid oethanol	µg/kg	1	Org-035	<1	[NT]	[NT]	[NT]	[NT]	115	122
N-Et perfluorooctanesulfonamid oethanol	µg/kg	5	Org-035	<5	[NT]	[NT]	[NT]	[NT]	111	92
MePerfluorooctanesulf- amid oacetic acid	µg/kg	0.2	Org-035	<0.2	[NT]	[NT]	[NT]	[NT]	104	103
EtPerfluorooctanesulf amid oacetic acid	µg/kg	0.2	Org-035	<0.2	[NT]	[NT]	[NT]	[NT]	109	97
Surrogate $^{13}C_8$ *PFOS*	%		Org-035	104	[NT]	[NT]	[NT]	[NT]	107	101
Surrogate $^{13}C_2$ *PFOA*	%		Org-035	98	[NT]	[NT]	[NT]	[NT]	99	92

QUALITY CONTROL: PFAS in Soils Extended					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	221253-1
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-035	105	[NT]	[NT]	[NT]	[NT]	98	84
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-035	101	[NT]	[NT]	[NT]	[NT]	96	84
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-035	110	[NT]	[NT]	[NT]	[NT]	95	91
Extracted ISTD $^{13}C_4$ *PFBA*	%		Org-035	94	[NT]	[NT]	[NT]	[NT]	93	90
Extracted ISTD $^{13}C_3$ *PFPeA*	%		Org-035	85	[NT]	[NT]	[NT]	[NT]	84	66
Extracted ISTD $^{13}C_2$ *PFHxA*	%		Org-035	90	[NT]	[NT]	[NT]	[NT]	89	72
Extracted ISTD $^{13}C_4$ *PFHpA*	%		Org-035	99	[NT]	[NT]	[NT]	[NT]	95	75
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-035	101	[NT]	[NT]	[NT]	[NT]	99	82
Extracted ISTD $^{13}C_5$ *PFNA*	%		Org-035	107	[NT]	[NT]	[NT]	[NT]	102	90
Extracted ISTD $^{13}C_2$ *PFDA*	%		Org-035	102	[NT]	[NT]	[NT]	[NT]	103	85
Extracted ISTD $^{13}C_2$ *PFUnDA*	%		Org-035	90	[NT]	[NT]	[NT]	[NT]	91	82
Extracted ISTD $^{13}C_2$ *PFDoDA*	%		Org-035	118	[NT]	[NT]	[NT]	[NT]	115	94
Extracted ISTD $^{13}C_2$ *PFTeDA*	%		Org-035	114	[NT]	[NT]	[NT]	[NT]	125	97
Extracted ISTD $^{13}C_2$ *4:2FTS*	%		Org-035	85	[NT]	[NT]	[NT]	[NT]	84	73
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-035	97	[NT]	[NT]	[NT]	[NT]	94	77
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-035	136	[NT]	[NT]	[NT]	[NT]	123	114
Extracted ISTD $^{13}C_8$ *FOSA*	%		Org-035	106	[NT]	[NT]	[NT]	[NT]	105	86
Extracted ISTD d_3 *N MeFOSA*	%		Org-035	109	[NT]	[NT]	[NT]	[NT]	106	86
Extracted ISTD d_5 *N EtFOSA*	%		Org-035	107	[NT]	[NT]	[NT]	[NT]	112	89
Extracted ISTD d_7 *N MeFOSE*	%		Org-035	119	[NT]	[NT]	[NT]	[NT]	111	87

QUALITY CONTROL: PFAS in Soils Extended					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	221253-1
Extracted ISTD d_9 *N EtFOSE*	%		Org-035	112	[NT]	[NT]	[NT]	[NT]	112	99
Extracted ISTD d_3 *N MeFOSAA*	%		Org-035	84	[NT]	[NT]	[NT]	[NT]	82	62
Extracted ISTD d_5 *N EtFOSAA*	%		Org-035	93	[NT]	[NT]	[NT]	[NT]	82	55

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Report Comments

For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

019740

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54782	LABORATORY BATCH NO.:
PROJECT NAME: St MARY'S	SAMPLERS: AB.
DATE NEEDED BY: 72 hr TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) sblack@jbsg.com.au; (3) mparkinson@jbsg.com.au luke.walker@minterellison.com

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	PFAS	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
QC20190707-02	Soil	7/07/19	—	PFAS + ICE	—	X			

ENVIROLAB Envirolab Services 12 Ashley St Chatswood NSW 2067 Ph: (02) 9910.6200

Job No: 220215

Date Received: 9/7.

Time Received: 11:56

Received by: AZ

Temp: Cool/Ambient

Cooling: Ice/Icepack

Security: Intact/Broken/None

RELEASE SEND TO ENVIROLAB

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: G. Beach DATE:	CONSIGNMENT NOTE NO. —	NAME: Lina D. 08/07 DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: Envirolab NSW 6:00 PM	COOLER TEMP ..... deg C 12.2°C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: AZ DATE: 9/7.	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF: 11:56	COOLER TEMP ..... deg C 11.8.

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	George Black

Sample Login Details

Your reference	54782, St Mary's
Envirolab Reference	221253
Date Sample Received	09/07/2019
Date Instructions Received	09/07/2019
Date Results Expected to be Reported	12/07/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 soil
Turnaround Time Requested	3 days
Temperature on Receipt (°C)	11.8
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	PFAS in Soils Extended
QC20190707-02	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

13070

APPENDIX D

Remedial Action Plan Stage 2b and Stage 3: East West Connector Road

JBS&G

Minter Ellison

Remedial Action Plan

Stage 2b and Stage 3 - East West Connector Road
St Marys, NSW

14 August 2019

54782/123642 Rev 0

JBS&G Australia Pty Ltd

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Minter Ellison

Remedial Action Plan

Stage 2b and Stage 3 - East West Connector Road
St Marys, NSW

14 August 2019

54782/123642 Rev 0

JBS&G Australia Pty Ltd

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Appendices

Appendix A Summary of PFAS data held within the EWCR

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Abbreviations

Term	Definition
ACM	Asbestos Containing Material
AHD	Australian Height Datum
AMP	Asbestos Management Plan
ASS	Acid Sulfate Soils
bgs	Below Ground Surface
COC	Contaminants of Concern
Council	Penrith City Council
CSM	Conceptual Site Model
DA	Development application
DP	Deposited Plan
DPI	Department of Primary Industry
DQI	Data Quality Indicator
DQO	Data Quality Objective
EIL	Ecological Investigation Levels
EPA	NSW Environmental Protection Authority
ESA	Environmental Site Assessment
GME	Groundwater Monitoring Event
GPS	Global Positioning Unit
Ha	Hectare
HIL	Health Investigation Levels
HSL	Health Screening Levels
JBS&G	JBS&G Australia Pty Ltd
LEP	Local Environmental Plan
LOR	Limit of Reporting
NATA	National Association of Testing Authorities
OEH	Office of Environment and Heritage
PAH	Polycyclic Aromatic Hydrocarbons
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness and Sensitivity
PFAS	Per- and Poly-fluoroalkyl substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
pH	Potential of Hydrogen
QA/QC	Quality Assurance / Quality Control
RAP	Remedial Action Plan
RCP	Remedial Concept Plan
RPD	Relative Percent Difference
RWPs	Remedial Works Plan
SAS	Site Audit Statement
SAQP	Sampling, Analysis and Quality Plan
SAR	Site Audit Report
SP	Strata Plan
STP	Sewage Treatment Plant
UCL	Upper Confidence Limit

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1. Introduction

1.1 Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Minter Ellison on behalf of Maryland Development Company Pty Ltd and St Mary's Land Ltd (the client) to prepare a Remedial Action Plan (RAP) for the proposed East West Connector Road (EWCR), including the Regional Open Space (ROS) area and the Dunheved Link Road within the former ADI St Marys property ('the property'). The EWCR is proposed to be developed into a multi lane roadway as necessary infrastructure to the Jordan Springs East Development Site (JSE) and sports fields and parkland within the ROS area.

The EWCR is approximately 3 km in total length, is split into 3 Stages and falls within two LGA zones, Penrith City Council (PCC) and Blacktown City Council (BCC). The council boundary crosses the site at two points, where the EWCR crosses South Creek and in the mid to southern portion of the Dunheved Link Road approximately 270 m north of Links Road. The location of the EWCR is provided in **Figure 1**, the layout of the EWCR including surrounding areas and the division of stages is provided in **Figure 2**.

JBS&G has conducted a number of environmental investigations throughout the former ADI St Marys property and nearby areas to supplement the previous historical assessments. These reports have included UXO clearance (where necessary), management of pavement removal for historical road and/or building footprints and environmental sampling with associated reporting. Investigations and associated reports which fall within the EWCR area included:

- Environmental Site Assessment Stage 1 of the EWCR (JBS&G 2018a[1]);
- Additional Analytes Summary Letter for the Dunheved Industrial Precinct (JBS&G 2018b[2])
- Environmental Site Assessment Stage 2 of the EWCR (JBS&G 2019a[3]);
- Phase 1 Preliminary Site Assessment East West Connector Road – East West Connector Road Jordan Springs East, NSW (Rev 2) 17 April 2019 (JBS&G 2019b[4])
- Environmental Site Assessment Stage 3 of the EWCR (JBS&G 2019c[5]);
- Environmental Site Assessment W Series buildings within Regional Open Space Area (JBS&G 2019d[6]); and

In addition, a comprehensive PFAS investigation (JBS&G 2018c[7]) was also conducted throughout the property, including creeks and tributaries.

The investigations identified areas of PFAS impacted soil located within the proposed EWCR southern portion of Stage 2 (Stage 2b) and within the western portion of Stage 3 (the site). Both

[1] *Environmental Site Assessment and unexploded Ordnance Clearance for Stage 1 of the East West Connector Road – Ropes Crossing to Jordan Springs East, NSW (Rev A*) JBS&G Australia Pty Ltd 10 October 2018 (JBS&G 2018a)

[2] *Additional analytes Summary Letter for the Dunheved Industrial Precinct, St Mary's, NSW (Rev A*) JBS&G Australia Pty Ltd 31 December 2018 (JBS&G 2018a)

[3] *Environmental Site Assessment and unexploded Ordnance Clearance for Stage 2 of the East West Connector Road – Ropes Crossing to Jordan Springs East, NSW (Rev 0*) JBS&G Australia Pty Ltd 6 February 2019 (JBS&G 2019a)

[4] *Phase 1 Preliminary Site Assessment East West Connector Road – East West Connector Road Jordan Springs East, NSW (Rev 2*) JBS&G Australia Pty Ltd 17 April 2019 (JBS&G 2019b)

[5] *Phase 2 Environmental Site Assessment – Stage 3 East West Connector Road, Links Road St Mary's, NSW (Rev 0)* JBS&G Australia Pty Ltd 14 August 2019 (JBS&G 2019c)

[6] *Environmental Site Assessment – W Series Building Footprints within Regional Open Space Area – Central Precinct, NSW (Rev B*) JBS&G Australia Pty Ltd 19 July 2019 (JBS&G 2019d)

[7] *PFAS Assessment at Former ADI St Mary's Development Site – St Mary's and Llandilo, NSW (Rev B*). JBS&G Australia Pty Ltd November 2018 (JBS&G 2018c)

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locations are within the Dunheved industrial precinct and adjacent to the Dunheved Open Channel. Impacted areas within the EWCR are shown on **Figure 3**.

Based on these findings remediation is required to remove PFAS impact and make the site suitable for the proposed landuse.

It is noted that an existing RAP for PFAS impact within the St Mary's ADI property (JBS&G 2019e[8]) is currently undergoing review with the NSW Environmental Protection Authority (EPA). As such, and in order to allow development to proceed within the EWCR, a conservative approach to remove all potential PFAS impacted soils within the EWCR is proposed. This RAP details the requirements to remove all PFAS impact that falls within the EWCR, and includes relocation of the impacted soils to the temporary PFAS impacted soil stockpile area in Dunheved.

This RAP has been prepared in accordance and with reference to relevant guidelines made or endorsed by the NSW Environment Protection Agency (EPA) inclusive of NEPC (2013[9]), EPA (2017[10]) and SEPP 55[11] and is specific to the remediation of PFAS impacts only. Further to this, all remediation, validation and sampling activities documented in this RAP shall meet the requirements of the PFAS National Environmental Management Plan (January 2018).

1.2 Objective

The objectives of this RAP are to:

- Characterise and document the known extent of PFAS impact via presentation of a conceptual site model (CSM);
- Develop a remedial strategy to remove all PFAS impacted soil within the EWCR;
- Identify the requirements for validation requirements following site remediation; and
- To confirm that the site is suitable for the proposed land use.

[8] *Remedial Action Plan – Former ADI St Marys Development Site St Marys and Llandilo, NSW (Rev D*) JBS&G Australia Pty Ltd 21 June 2019 (JBS&G 2019e)

[9] *National Environment Protection (Assessment of Site Contamination) Measure, Amendment No 1* (2013). National Environment Protection Council (NEPC 2013)

[10] *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd Edition).* NSW EPA 2017 (EPA 2017)

[11] *Managing Land Contamination – Planning Guidelines SEPP 55 Remediation of Land*. Department of Urban Affairs and Planning. Environment Protection Authority 1998 (SEPP 55)

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2. Site Condition & Surrounding Environment

2.1 Site Identification

The location of the site is shown in **Figure 1,** the site layout and surrounding areas are shown in **Figure 2**. Details of the site are summarised in **Table 2.1** below.

Table 2.1 Summary Site Details

Lot Numbers relating to DAs	Lot 3 DP 1133301 (BCC). Lot 1 DP1132380 (PCC).
Lot Numbers, most recent	Part Lot 3 DP 1133301 (BCC) and Part Lot 1 DP1132380 (PCC).
Street Address	Jordan Springs East Development Site, access off Links Road St Marys.
Site Area	Approximately 4.17 ha (Stage 2b 3.5 ha and Stage 3 0.67 ha)
Local Government Authority	Penrith City Council and Blacktown City Council
Geographic Coordinates (MGA 56)	33.7325 E 150.750 N
Current Land-use **Proposed Land-use**	Vacant, storage and roadway Roadway

2.2 Site Description

Description of the relevant portions of the EWCR (Stage 2b and Stage 3) which form the site area is discussed below.

Dunheved Link Road (Stage 2b)

The Dunheved Link Road comprises a recently constructed bitumen road with curbing and associated infrastructure. The Dunheved Link road or Stage 2b comprises of an approximate 800 m roadway which extends from Links Road to a former paved road to the north and within the ST Mary's ADI property. The paved road was observed to be in good condition and is currently used for access purposes. Either side of the road comprises of grass verges. No significant fly-tipping was observed within the road verges on the Dunheved Link Road.

It is noted that the proposed Dunheved Link Road also includes a temporary bund located in its southern end as shown on **Figure 2**. This portion comprises of vacant grass land of the former ADI property. The eastern portion of the bund is noted to cross the Dunheved Open channel which is characterised by thick shrub and an access path which crosses the channel.

Links Road/Dunheved Link Road Intersection (Stage 3)

The southern portion of the Dunheved Link Road and where Stage 3 is located comprised a paved road intersection with Links Road which extends beyond the property boundary. A steel electric gate was observed at the entry to the property and of the start of the Dunheved Link Road.

Drainage infrastructure underlying the southwestern portion of Stage 3 Links Road was observed and appeared to be flowing to the north and into an open channel which runs adjacent to the Dunheved Link Road.

2.3 Surrounding Land use

The surrounding land use described below based on recent observations during works conducted at the site:

North – Stages 1 and 2a of the EWCR are located north of the site. Densely vegetated Regional Parklands and South Creek are located further to the north.

East – The Ropes Crossing housing development is located to the east of the site. The proposed Dunheved Industrial precinct is located directly east of the Dunheved Link Road. The St Marys Sewage treatment Plant is located approximately 400 m east of the site.

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South –Links Road and Commercial/industrial zone associated with Dunheved along links road and Dunheved Circuit are located to the South. Franchises including Toxfree, Gulf Oil Western among other are located along the southern side of Links Road.

West – The JSE residential development is located directly west of the site. Dense vegetation, a small creek identified as the Dunheved Open Channel and vacant areas formerly part of the ADI site were located to the west the Dunheved Link Road.

2.4 Topography and Hydrology

The EWCR is relatively flat (approximately 25 to 30 m AHD) as it comprises of a sealed roadway which has been developed as relatively level along its length, including areas over waterways and through low lying areas.

The roadway tapers away towards its edges and therefore any surface water that falls onto the road is anticipated to flow towards the nearest road edge.

The Dunheved Link Road is also relatively flat and this area tends to fall towards nearby local channels such as the Dunheved Open Channel. Regional topography and surface water runoff is to the north, north-east.

South Creek and Ropes Creek are the two main waterways that flow in proximity and below small portion of the EWCR. South Creek drains a very large catchment in western Sydney, originating at Narellan, over 30 km to the south. The catchment is a long narrow strip up to 8 km wide with an approximate area of 18,000 ha. The catchment includes residential, agricultural and industrial areas. The creek flows northwards from the property through mainly agricultural areas before meeting the Hawkesbury River at Windsor, 12 km to the north.

Ropes Creek drains a smaller catchment, originating at Cecil Park, 12 km to the south-west. This catchment is also a long narrow strip up to 4 km wide and with an approximate area of 2400 ha. The catchment also includes residential, agricultural and industrial areas. Part of the creek has been diverted along a concrete drainage channel for about 2 km through the former St Marys Property before flowing into South Creek at its new confluence just to the north of the former St Marys Property boundary and is present in proximity of the proposed roadway.

The St Marys Sewage Treatment Plant (STP) is located south east of the site. ADI (1996b) reported effluent from the STP receives tertiary treatment before being discharged into the old Ropes Creek flow channel. This then flows into South Creek at its old confluence in the middle of the former St Marys Property.

An open channel is present to the west of the Dunheved Link Road, referred to as the Dunheved Open Channel. The channel passes through the area of retained vegetation to the west of Dunheved and discharges into South Creek. The elevation of the channel within the site is generally 2 to 3 m above the observed depth to groundwater. Surface water flow into the channel is from a stormwater outlet at the southern boundary of the site which is anticipated to discharge stormwater flows from the Links Road industrial estate to the south of the site.

2.5 Geology

A review of the regional geological map (DMR 1997) indicated the site lies within Tertiary Londonderry Clay. The Londonderry Clay is characterised by clay, patches of ferruginized, consolidated sand.

A review of the regional soil map (DLWC 1972) indicated that the site lies within the Berkshire Park soil landscape group.

The typical Berkshire landscape is characterised by weakly pedal orange heavy clays and clayey sands, often mottled with inclusions of ironstone nodules. Large silcrete boulders (up to 20cm) occur in sand/clay matrix. Yellow podzolic soils where drainage conditions are poor, red podzolic soils and

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chocolate soils on flats and in small drainage lines. Kransnozems are present in unstructured plastic clays and in drainage lines or a crest.

Limitations of the Berkshire landscape group are very high wind erosion hazard if cleared. Gully, sheet and rill erosion on dissected areas. Waterlogging, impermeable subsoils, low fertility hazard.

This area is largely Quaternary age alluvium beds that consist of gravelly sand, sand, clayey sand silty clay, from 1 to 8m in depth. In the northeast, the soil type is the Berkshire Park soil, while the eastern area is the Blacktown soil type – both of these overlie the Bringelly Shale Unit. Noted in the western region were a number of paleochannels of unknown origin.

As reported in ADI (1996a) the former ADI St Marys Property is underlain by shales of Bringelly Shale Unit part of the Liverpool Sub-group and Wianamatta Group of the Triassic epoch. These are overlain by alluvium of Quaternary age. The Bringelly Shale unit consisting mainly of grey hard shales within intervening siltstone forms the bedrock. The top of the shale, up to 5m thick, is highly weathered and very friable in nature. The Quaternary Alluvium comprises predominately buff coloured silt, silty/sandy clays which is often lateritic in nature and mottled with yellow/red ochres and iron nodules. Quaternary Alluvium was deposited mainly in the central lowlands along the flood plains of South Creek and Ropes Creek. Thickness of the alluvium within the development site is likely to range in thickness from approximately 6m to 10m as these are the central lowlands.

2.6 Hydrogeology

A review of information obtained from the NSW Office of Water database (NSW DPI 2018[12]) indicated there are three registered groundwater monitoring wells located to the south east of the EWCR with no feature information available for any of the three wells. No registered groundwater wells fall within the site.

Based on information obtained during groundwater investigation works conducted by JBS&G including JBS&G (2018[13]) the depth to the water table in proximity to the site ranges from 2 to 7 m below ground surface depending upon the geology (quaternary alluvium and high weathered shale). The water table occurs in the sandy to silty clay above the weathered shale and/or shale bedrock. The groundwater flow pattern of the site follows the general topography of the area (to the north east towards South Creek), however, variation in the flow direction can occur locally based on the ground slope and also by infiltration of seepage water from overlying Open Channels / open drains.

Groundwater in the shallow upper aquifer is fresh to brackish / saline (electrical conductivity (EC) 300 to 40 000 µS/cm). Groundwater is more typically present in the saline range in proximity of the proposed roadway. The groundwater pH ranges from 4.5 to 7 indicating slightly acidic conditions, with most locations generally slightly acidic to neutral. Slightly reducing conditions are present in the aquifer.

2.7 Acid Sulphate Soils

Review of the Department of Land and Water Conservation map of Springwood/Riverstone (DLWC 1997[14]) indicated that there no known occurrence of acid sulfate soils in the vicinity of the site.

[12]NSW Department of Primary Industries Website http://allwaterdata.water.nsw.gov.au/water.stm, accessed 23 January 2018 (NSW DPI 2018)

[13] *PFAS Assessment at Former ADI St Marys Development Site – St Marys and Llandilo, NSW (rev B*) JBS&G Australia Pty Ltd November 2018 (JBS&G 2018)

[14] NSW Department of Land and Water Conservation Edition 2 (DLWC 1997)

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3. Historical Summary and Previous Investigations

3.1 Summary Site History

The site is located within the former St Mary's ADI Munitions facility and consists of a current and historical access road. The former St Mary's ADI munitions facility covered a much larger area (approximately 1535 ha) and was established in 1942 as part of a larger parcel of farmland resumed in 1941 by the Commonwealth for establishment of ammunitions factory to support the war effort (World War II). From 1955-57, a new munitions factory was constructed and a substantial part of the original factory was leased to private industry and became the present Dunheved Industrial Estate.

The St Marys Munitions factory was primarily a filling, or load and pack type, operation where explosives and propellant, manufactured elsewhere, were loaded into shells, bomb and rocket casings and stored in magazines awaiting deployment. Small amounts of some initiator explosives for detonators and fuses were manufactured on the property because they were too sensitive to travel. Some test firing of detonators, fuses and smaller occurred at designated areas as part of the manufacturing quality assurance program. All larger munitions were test fired at Army ranges elsewhere.

ADI conducted a comprehensive historical report on the St Mary's ADI property in the mid 1990's[15] which included a chronological history of the property activities and development of buildings and structures. It is noted that historical potential areas of environmental concern nearby or adjacent to the site, include the former administration section which included a fire station east of the site. This area was assessed in the Western Collector Road Detailed Site Investigation (DSI) and the Western Collector Road Extension DSI (JBS&G 2017a[16] and JBS&G 2017b[17]) reports which are discussed in more detail in **Section 3.4**.

Comprehensive PFAS assessment and subsequent remedial action plan has been conducted by JBS&G from 2017 to present. Associated reports for these works are summarised in **Sections 3.5, 3.6** and **3.8**.

Historical reports have been summarised in sections below to obtain information relating to the site.

In addition, a summary of data associated with PFAS impact within the EWCR is provided in **Appendix A**.

3.2 Southern Sector East (ADI 1996)

The Northern Dunheved Precinct, proposed commercial/industrial area falls within the former Southern Sector East area. The portion covered by the Northern Dunheved Precinct includes previously investigated contaminated areas Site 24F and Site 12 (ADI 1996d).

ADI (2016d) reports that Site 12 covered an area of 4.1 ha and was used as a general tip for site materials including buildings rubble and general rubbish between 1955 and 1980. ADI (1996d) observed general solid waste including timber, bricks, concrete slabs, scrap metal, fibro sheeting, asphalt, concrete pipes, asbestos sheeting, galvanised roofing and glass. No evidence was uncovered that the site was used for the destruction or disposal of explosive wastes.

Following the remedial works soil validation samples were collected from the site and analytical concentrations were either within the Safe Environmental Acceptance criteria, the relevant

[15] ADI Limited – ADI St Mary's Property Historical Report

[16] *Detailed Site Investigation – Western Collector Road, Ropes Crossing, NSW*. 21 September 2017 JBS&G Australia Pty Ltd (Rev 1) JBS&G 2017a

[17] *Detailed Site Investigation – Western Collector Road Extension, Ropes Crossing, NSW*. 13 December 2017 JBS&G Australia Pty Ltd (Rev C) JBS&G 2017b

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contamination risk criteria widely used at the time, or within 95% UCLs. The land was then recontoured to the resemble the original topography.

ADI (1996d) reports that from the mid 1980's the St Marys Sewage Treatment Plant (STP) received approval from the St Marys Munitions Filling Factory (the property) to pump treated sludge from its plant onto ADI land. Site 24F was identified as a disused sewage effluent dumping area. The area was boarded by 0.5 to 1 m high earth mounds.

Following investigation works into Site 24F, it was identified that the sewage sludge material was generally outside of the adopted Safe Environmental Acceptance Criteria for chromium, copper, zinc and OCPs, isolated occurrences of impacted PCBs and PAHs were also reported.

OCP, PCB and PAH impacted samples were delineated and then excavated and disposed offsite to landfill. The remaining dried sludge material was excavated and stockpiled elsewhere within the St Marys Property.

Following the remedial works soil validation samples were collected and analytical concentrations were either within the Safe Environmental Acceptance criteria or within 95% UCLs.

It is noted that PFAS investigation was not conducted within 24F, and were assessed subsequently as summarised in **Sections 3.5**, **3.6** and **3.8**.

3.3 Groundwater Monitoring Event (JBS&G 2016[18])

JBS&G was engaged to complete a Groundwater Monitoring Event (GME) across Central Precinct Development and associated Regional Park, located at Llandilo, NSW. JBS&G conducted the well installation (12 groundwater monitoring wells) between 8 and 14 January 2016 comprising 12 monitoring wells, with groundwater sampling conducted between 21 and 27 January 2016.

During groundwater sampling, measured depth to water was between 2.7 and 6.8 m from the top of well casing. Corrected water elevation was between 12.04 m and 16.75 m Australian Height Datum (AHD). The inferred groundwater flow direction was to the east and southeast. Groundwater encountered was clear to brown, low to high turbidity, with no sheen or odour observed at all monitoring locations. No aesthetic issues are present within groundwater at the site.

Groundwater samples were analysed for heavy metals, TRHs, BTEX, PAHs (low levels), OCPs, PCBs, VOCs and explosives. All reported concentrations were found within the site adopted Fresh Water Ecosystems (ANZECC 2000) 95% protection levels criteria with the exception of minor zinc concentrations marginally above the Fresh Water Ecosystems (ANZECC 2000) guidelines, and nickel at MW01 above the fresh water criterion and the Australian Drinking Water (Mar 2015) health criterion, however, groundwater within the vicinity of MW01 was not proposed to be used for potable purposes.

These minor exceedances were not considered to pose an unacceptable risk to the intended uses of the site for the following reasons:

- The zinc and nickel levels are considered typical of urban areas, based on the general consistency in the results across the site, including upgradient locations;
- The highest concentrations at MW01 and MW07 were over 750 m and 250 m respectively from the nearest watercourse (South Creek), with downgradient wells showing similar or lower concentrations than elsewhere; and
- Groundwater was unlikely to be used for potable purposes.

It is noted that concentrations of copper, lead and zinc exceeded ANZECC 2000 Fresh Water Ecosystems, however these concentrations were considered consistent with background levels and

[18] *Groundwater Monitoring Event – Central Precinct, Llandilo, NSW (Rev 0*) JBS&G Australia Pty Ltd 29 June 2016 (JBS&G 2016)

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therefore were not considered to pose a risk at the site. It is also noted no concentrations were elevated above ANZECC 2000 guidelines for Water Quality and General Water Use (irrigation purposes). Furthermore, groundwater at the site is unlikely to be used as a resource given the proposed residential development.

Based on the findings of the assessment, it was considered that there were no unacceptable risks to likely onsite or offsite receptors from groundwater.

3.4 Western Collector Road DSI (JBS&G 2017a, JBS&G 2017b)

JBS&G conducted UXO clearance works and environmental investigation works on the Western Collector Road and Western Collector Road extension site in 2017. The Western Collector Road is located east of the site and is understood to form part of the previously existing road.

The investigation included review of historical reports and information, UXO clearance works following the removal of the road pavement, test pitting and soil sampling of soils and comparison of soil analytical results against NEPC (2013) site suitability criteria to determine the suitability of the site for the proposed use as a road way.

Based on the findings of the investigation:

- No unexploded ordnance items were identified at the site and the site was cleared as free of UXO by the UXO clearance contractor;
- The soil samples collected reported concentrations of heavy metals, TRH, BTEX, OCPs, PCBs and PAHs below the adopted health based criteria (HIL-D);
- No ACM/asbestos was observed within the sample locations or within the samples analysed;
- Based on the groundwater results and targeted soil samples collected adjacent to the fire station, the upgradient Fire Station did not pose a risk to the site in relation to PFAS;
- It was considered that the site is suitable for the proposed roadway with no further assessment, remediation or management of contamination issues; and
- It was recommended that an unexpected find protocol be utilised for future works at the site.

3.5 PFAS Human Health and Ecological Risk Assessment (JBS&G 2018b[19])

JBS&G were initially requested to complete an investigation on PFAS across the adjacent development site and Stockpile 30 (located to the north of the roadway and consisting of biosolids derived material as historically stored in proximity of the Dunheved portion of the roadway).

The results of the investigation identified:

- An elevated level of PFAS in one groundwater monitoring well as located within the western portion of Dunheved in close proximity of the roadway referred to in this assessment;
- PFAS was identified within Stockpile SP30 and immediately hydrogeological downgradient of Stockpile SP30;
- The source of the PFAS was likely associated with the historical sewage treatment activities associated with the formation of the stockpiled materials; and

[19] *PFAS Human Health and Ecological Risk Assessment – Former S Marys ADI Property Central Precinct, Llandilo, NSW (Rev D*) JBS&G Australia Pty Ltd (JBS&G 2018b)

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- Concentrations of PFAS reported in Stockpile SP30 have not been identified to pose a potential health or ecological risk where the materials are reused on site in a commercial/industrial setting.

3.6 PFAS Assessment at Former ADI St Marys Development Site (JBS&G 2018a)

JBS&G were engaged by the client to undertake environmental site assessment activities at the Lend Lease St Marys Development Site, as located at St Marys and Llandilo, NSW as restricted to the assessment of per and poly fluoroalkyl substances (PFAS). The site is within the former St Marys ADI site which was used for various munition filling and storage activities up until 1994.

Several stages of historical, assessment and remediation have occurred at the development site. PFAS have been recently identified as an emerging contaminant of concern on a range of historical commercial, industrial and Defence sites. Previous stages of assessment, remediation and validation at the site had not considered PFAS as a potential contaminant.

A desktop review of potential PFAS sources on and in proximity of the site identified potential PFAS contamination associated with: a historical Fire Station present at the east of Ropes Crossing; potential historical fires across the site; receipt, storage and handling / relocation of biosolids from the adjoining Sydney Water Sewage Treatment Plant (STP) in the 1980's and 1990's and potential historical PFAS uses / contamination in proximity of the site. Biosolids historically received at the Dunheved portion of the site were transferred to an area known as Stockpile SP30 as located to the north of Central Precinct in the mid 1990's.

The assessment of PFAS on the site was undertaken by sampling and analysis of soil, surface water, sediment, groundwater and biota samples undertaken through the latter part of 2017 and 2018.

On the basis of the data set generated, it was found:

- PFAS was identified in historical biosolids as associated with Stockpile SP30, within soils in proximity of the South Dunheved Open Channel passing though the south-western portion of the Dunheved portion of the site and at the south-east of the former extent of biosolids storage within Stockpile SP30. The levels of PFAS measured in soils were not considered to pose a significant health or ecological risk by potential direct exposure pathways as per the current or proposed site use. Though slight exceedances of potentially applicable ecological protection criteria were identified;
- PFAS impact was identified in surface water across the site. Increases in levels of PFOS in surface water were observed in South Creek moving upstream to downstream of the site. Elevated levels of principally sulfonic forms of PFAS (PFOS and PFHxS) were reported throughout the South Dunheved Open Channel in the south-western portion of the Dunheved portion of the site. PFAS was being discharged into the South Dunheved Open Channel from a stormwater pipe discharging from Links Rd adjoining the south of Dunheved. The South Dunheved Open Channel discharges into South Creek;
- A range of PFAS constituents, generally at levels slightly exceeding detection limits, were present throughout South Creek tributaries on the development site and an Open Channel from the STP. PFOS was identified and found to have bioaccumulated (by comparison to levels measured in surface water), within biota sampled from South Creek and the Open Channel from the STP. Sediment analysis was consistent with surface water findings;
- PFAS was identified in groundwater adjoining and hydrogeologically downgradient of Stockpile SP30, in proximity of the South Dunheved Open Channel passing though the south-western portion of the Dunheved portion of the site, underlying an area of North Dunheved and adjoining the northern portion of the western boundary to the Sydney Water STP; and

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- The highest levels of PFAS impact in groundwater were reported in proximity of the South Dunheved Open Channel passing though the south-western portion of the Dunheved portion of the site and were considered to be consequent of historical migration of PFAS impacted surface water through the South Dunheved Open Channel. It was considered likely that historically substantially higher levels of PFAS had been present in the South Dunheved Open Channel.

It was recommended that site management and/or remediation works are undertaken:

- To prevent the inflow of PFAS impacted stormwater to the site, via diversion or management of the source;
- To remove potential direct exposures to biosolids prior to / with development of the site for the proposed site uses and preclude surface water contact to prevent future leaching / migration of PFAS impact within biosolids; and
- Control potential future leaching of PFAS impacted soils / sediments present at near surface depths in proximity of the South Dunheved Open Channel.

A remedial action plan (RAP) was prepared by JBS&G to manage and remediate the PFAS impacted areas identified in the report and as discussed above. The RAP is summarised in **Section 3.8** below, of particular relevance and with respect to the site area being assessed is impacted soils associated with the Dunheved open channel which are located within the vicinity of the Dunheved Links Road as shown on **Figure 3**.

3.7 Additional Analytes Summary Letter for the Dunheved Industrial Precinct, St Mary's, NSW (JBS&G 2018d[20])

JBS&G conducted environmental assessment works across the Dunheved Industrial Precinct comprising of consideration of other potential contaminants other than asbestos throughout 2018. Consideration of PFAS was addressed in the PFAS Assessment at the Former ADI St Marys Development site (JBS&G 2018), however consideration of other contaminants was required to satisfy council conditions.

The objective of the investigation was to characterise potential contamination at the site using all non-PFAS data collected over the preceding 18 months and to use this information to draw conclusions regarding the suitability of the site for the proposed use or make recommendations to enable such conclusions (in lieu of PFAS assessment which had been undertaken separately).

All soil concentrations were identified at concentrations below the adopted health and ecological criteria adopted for the site. Further to this, no significant impact as far as staining, odours or ACM was identified across the site during the various investigations.

It was noted that a single fragment of ACM was identified on the surface at location DHN-50. The fragment was collected and sent to the testing laboratory for confirmatory testing. No additional fragments were identified within the vicinity to DHN-50. As such it is considered that the fragment was isolated and not part of a significant issue which would warrant further investigation or remediation.

Groundwater analytical results were reported at concentrations below the laboratory limit of reporting for the majority of analytes tested. Reported concentrations of heavy metals including arsenic, cadmium, chromium copper, lead, mercury, nickel and zinc are generally considered representative of background concentrations in the area. Given that groundwater is not used as a

[20] *Additional Analytes Summary Letter for the Dunheved Industrial Precinct, St Marys, NSW (Rev A*) JBS&G Australia Pty Ltd 31 December 2018 (JBS&G 2018d)

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resource at the site (brackish to saline), the identified concentrations were not considered to pose a potential risk.

There was considered no potential for migration of contamination from the site for the following reasons:

- No concentrations of soil or groundwater were identified at concentrations that represent a health or ecological risk; and
- Soil is generally secured with overlying vegetation cover preventing potential wind or surface water migration. Groundwater at the site is slow moving as demonstrated through hydraulic conductivity testing conducted in JBS&G (2018a).

Based on the findings of the investigation the following conclusions were made:

- Soils at the site were not identified to pose an aesthetic risk noting the proposed commercial/industrial use of the site;
- Soil analytical results were reported at concentrations below the adopted criteria; and
- Groundwater analytical results were generally reported at concentrations below the adopted criteria. Elevated concentrations of heavy metals identified were not considered to pose a risk given groundwater is not used as a resource and has limited migration potential.

It was recommended that the CMP (JBS&G 2019f) is implemented throughout future works.

3.8 Remedial Action Plan – Former ADI St Marys Development Site (JBS&G 2019e)

JBS&G was engaged by the client to prepare a RAP at the Lend Lease St Marys Dunheved Development Site, as located at St Marys and Llandilo, NSW. The RAP was based on the findings of the site wide PFAS Assessment summarised in **Section 3.6** where it was established that remediation/management of impacted soil would be required within the Dunheved Industrial precinct so that it can be considered suitable for its proposed commercial / industrial land uses. The RAP was prepared in accordance and with reference to relevant guidelines made or endorsed by the NSW Environment Protection Agency (EPA) inclusive of NEPC (2013), EPA (2017) and SEPP 55 and was specific to the remediation of PFAS impacts only.

The RAP identified the most feasible remedial strategy as relocation of impacted soils above the groundwater table and below imported material. Note, significant filling is required to meet flood mitigation measures. This strategy would isolate the impacted materials and contain them within a confined area where potential for migration is mitigated. The proposed strategy is as follows:

- The impacted materials shall be maintained in the commercial / industrial land-use area within the Dunheved precinct, as consistent with that area as nominated in the development approval;
- Excavation of impacted soils at the Dunheved Open Channel and relocation of those soils to the designated area;
- Relocation of SP30 soils, currently temporarily stockpiled in Dunheved, into the designated area;
- A minimum soil cover thickness of 2 m to be placed over the impacted soils; and
- Impacted soils to be placed a minimum of 2 m above the depth of groundwater.

Following relocation, validation sampling is to be conducted within associated excavations and stockpile footprints.

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The inflow of contaminated stormwater into the Dunheved Open Channel is to be redirected as part of proposed infrastructure works in the area.

In relation to the site area, impacted soils at or adjacent to the Dunheved Open Channel as shown on **Figure 3** will require excavation, containment and validation as per the above listed procedures.

It was considered that subject to the successful implementation of the measures of the RAP the site can be made suitable for the intended land uses and that the risks posed by contamination can be managed in such a way as to be adequately protective of human health and the environment.

The remedial strategy proposed here is currently under review by the EPA and has not yet been endorsed. It is anticipated that the impacted soils proposed to be relocated to the PFAS impacted soils stockpile area during implementation of this RAP will be subject to the remedial strategy summarised above.

3.9 Phase 2 Environmental Site Assessment – Stage 3 of the East West Connector Road, St Marys, NSW (JBS&G 2019g[21])

JBS&G was engaged by Minter Ellison on behalf of Maryland Development Company Pty Ltd and St Mary's Land Ltd (the client) to conduct a Phase 2 Environmental Site Assessment (ESA) for the proposed Stage 3 East West Connector Road (EWCR) (the site) within the former ADI St Marys property ('the property') and Links Road St Mary's, NSW.

Works included a detailed site inspection and comprehensive intrusive soil sampling throughout the site conducted on 7th July 2019. The surface of the site was observed to comprise sealed asphalt paved road with road base igneous gravel with grass road verges either side of the road. The site was generally flat with a slight embankment noted on the northern road verge of the eastern portion of Links Road. Stormwater infrastructure was observed underlying the western part of the site. The infrastructure comprised an approximate 2 m wide rectangular culvert with an outlet to the Dunheved Open Channel.

No staining, odours or asbestos containing materials were observed during the site inspection. Minor rubbish such as plastic wrappers were observed adjacent to Links Road but no significant fly tipping was observed.

All concentrations of heavy metals, TRH, BTEX, PAHs, VOCs, OCPs/PCBs, and asbestos were reported at below the site adopted health based criteria. No ACM was observed in the sample locations or within samples submitted for laboratory analysis either.

Based on the soil PFAS analytical results, it was identified that PFAS impact was present within locations ST3-01, ST3-02, ST3-03, ST3-16, ST3-17, ST3-18 and ST3-20. The locations of identified impact were within close proximity to the Dunheved Open Channel and as such the source of impact is considered to be directly associated with it.

Based on the findings of this investigation, the following conclusions were made:

- No potential risk to human health or ecological health are present associated with potential contaminants of concern, heavy metals, TRH/BTEX, PAHs, OCPs/PCBs, VOCs or asbestos;
- PFAS impact to soils adjacent to the Dunheved Open Channel were identified;
- No aesthetic risks were identified at the site;
- Preparation of a Remedial Action Plan (RAP) for the Stage 3 portion of the site to address PFAS impacted soils. The RAP can simply require the excavation and relocation of the

[21] *Phase 2 Environmental Site Assessment – Stage 3 of the East West Connector Road, St Marys, NSW (Rev 0*) JBS&G Australia Pty Ltd 14 August 2019 (JBS&G 2019g)

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PFAS affected soils to the existing stockpile of PFAS affected soils currently held within the Dunheved portion of the St Marys development site; and

- Surplus soils and/or demolition materials as generated by future road construction works should be managed consistent with a Contamination Management Plan (CMP as specific to the roadworks project.

It is recommended that the following actions are undertaken:

- Preparation of an RAP specific to the PFAS impacted areas identified within Stage 3 of the EWCR; and
- Preparation of a CMP to address all stages of the EWCR and include management requirements associated with material tracking, pavement removal, unexpected finds and imported fill.

3.10 Additional Targeted Assessment of Dunheved Portion (Stage 2b) of Stage 2 East West Connector Road (JBS&G 2019h[22])

JBS&G was engaged by the client to conduct and additional targeted PFAS assessment along the Stage 2b EWCR portion and adjacent to the Dunheved Open Channel. The investigation was conducted to obtain characterisation regarding the extent of PFAS impacted soils within the Stage 2b corridor.

Works included additional sampling at seven locations and analysis of 14 soils samples for PFAS along the western boundary of the south-eastern portion of the Stage 2b portion of the east-west connector road for the purposes of further advising the potential extent of PFAS impacted soils within Stage 2 of the EWCR.

Based on the results of the investigation, the following conclusions were made:

- A significant source of PFAS impact was previously identified to the west of the south-eastern portion of the Stage 2 corridor associated with an off-site inflow of PFAS impacted surface water. This impact has been identified to extend into the EWCR boundary and requires remediation as per this RAP;
- Gross levels or widespread indicators of PFAS impact were not identified during the additional targeted investigation as undertaken to determine if the source to the west had substantially affected the corridor; and
- Localised PFAS impact has been previously identified at sample location DHN-72 (JBS&G 2018a) as more than likely consequent of the historical storage and handling of PFAS affected biosolids to the east of the Stage 2b corridor. This is the highest level of PFAS impact within the Stage 2b corridor and should be considered as an appropriate starting point for interim management works that are otherwise being documented in this RAP developed for the roadworks.

It is noted that since this letter was prepared an approach to excavating all detectable levels of PFAS has been agreed upon. The approach varies slightly from commencing with DHN-72 as a starting point and excavating outwards as proposed in the Targeted Stage 2b letter.

[22] *Additional Targeted Assessment of Dunheved Portion (Stage 2b) of Stage 2 East West Connector Road (Rev 0*) JBS&G Australia Pty Ltd 14 August 2019 (JBS&G 2019h)

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3.11 Contamination Management Plan (CMP) – Stages 1 to 3 of the EWCR (JBS&G 2019f[23])

A CMP was developed for the EWCR to provide a framework for the implementation management requirements prior to and during development works including, unexpected finds protocol, characterisation of stockpiles, management of pavement materials, procedures for asbestos containing materials (ACM) and unexploded ordnance (UXO) if encountered, materials tracking procedures and requirements for imported fill if brought onto the site.

The CMP should be implemented for all works within the proposed EWCR including during remedial works conducted in accordance with this RAP for Stages 2b and 3.

[23] *Contamination Management Plan – Stages 1 to 3 of the EWCR, St Marys, NSW (Rev 0*) JBS&G Australia Pty Ltd 14 August (JBS&G 2019f)

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4. Conceptual Site Model

National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (NEPC 2013) identifies a conceptual site model (CSM) as a representation of site related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The development of a CSM is an essential part of all site assessments.

NEPC (2013) identified the essential elements of a CSM as including:

- Known and potential sources of contamination and contaminants of concern including the mechanism(s) of contamination;
- Potentially affected media (soil, sediment, groundwater, surface water, indoor and ambient air);
- Human and ecological receptors;
- Potential and complete exposure pathways; and
- Any potential preferential pathways for vapour migrations (if potential for vapours identified)

Each of these elements is discussed in the following sections

4.1 Contaminants of Potential Concern

The Stage 2b portion of the site is noted to have been assessed, validated and confirmed suitable in an existing SAS issued in 1999, noting that the current road within Stage 2b was built after the SAS was issued. Further works to identify potential data gaps associated within Stage 2b and Stage 3 beneath the paved road is included in **Section 5.4**.

PFAS are present in soils and groundwater, however given the depth of groundwater and noting the proposed development of PFAS impacted areas of the site as a roadway, groundwater proposed to be addressed under this RAP. It is noted that groundwater impacts will be addressed on a broader site scale (JBS&G 2019e).

4.2 Source of Contamination

Sources of significant PFAS contamination have been identified as:

- PFAS impacted surface water flowing into the South Dunheved Open Channel present in the south-western portion of South Dunheved through a stormwater pipe entering the southern boundary of the Dunheved from Links Rd. Inferring the location of the stormwater pipe, it would be assumed that there is an off-site source of PFAS in the St Marys / Links Rd industrial estate. PFAS impact here is substantially present as sulfonic forms of PFAS, with PFOS the predominant component. It was considered likely that historical levels of PFAS discharging into the site here were higher than those which have been recently measured; and
- To a lesser extent PFAS impacted biosolids as historically spread across Dunheved, transferred to the Stockpile SP30, and now relocated back to Dunheved. PFAS impact related within the biosolids occurs as a mixture of sulfonic and carboxylic forms of PFAS and is restricted to the biosolids material and an area at the south-eastern extent of the former storage of the biosolids at Stockpile SP30;

4.3 Potential Exposure Pathways

The exposure pathways considered to be potentially complete for the site include:

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- Potential dermal and oral contact to impacted soils as present at shallow depths and/or accessible by future service excavations; and/or
- Potential inhalation of impacted dust generated from site soil by future site occupants and visitors; and/or
- Potential contaminant uptake by vegetation at the site; and/or
- Potential dermal and oral contact of impacted surface waters at South Creek and the South Dunheved Open Channel (and Detention Basin while present); and/or
- Potential contaminant uptake by biota within South Creek.

As the PFAS compounds are non-volatile, inhalation of vapours is not considered a potential pathway.

4.4 Receptors

The site is currently under developed with human receptors currently restricted to Construction Workers and trespassers. A range of ecological receptors are potentially exposed to PFAS including terrestrial flora and fauna. Flora and fauna within or near South Creek are potentially exposed to PFAS from surface water and groundwater at the site.

Following the redevelopment of the site, site workers have the potential to be exposed to soil, however this is likely to be limited. In addition, the potential exposure of flora and fauna would also decrease following site development.

4.5 Exposure Pathways

PFAS constituents are non-volatile and potential human exposure pathways are inhalation of dusts / particulates, oral and dermal exposure. If PFAS soils are accessible at the site surface, then site users will potentially be exposed to PFAS.

No beneficial use of the groundwater occurs at the site, nor is it considered to be realised in the future due to the salinity of the groundwater and the general low yield. On this basis, there is no potential direct exposure pathways to PFAS impacted groundwater.

It is noted that impacted groundwater has potential to discharge into South Creek where potential direct human exposure pathways could occur. The removal of impacted soils from Stages 2b and 3 of the EWCR, in addition to groundwater management requirements as per the broader scale RAP (JBS&G 2019e), will address this potential issue.

There are no surface water bodies at the site, the Dunheved Open Chanel is noted to be located adjacent to Stage 2b and Stage 3, and shall be addressed in the broader scale RAP (JBS&G 2019e).

Potential direct exposure of flora and fauna will occur where impacted materials are retained at the site surface, or otherwise within the root growing zone (generally considered to be up to 2 m as per NEPC 2013).

Direct exposure of water flora and fauna will occur to PFAS impacted surface water. The concentration of PFOS in South Creek exceeds the 99% ecological protection level, and bioaccumulation within biota has been confirmed consistent with ranges reported in ITRC (2018). The 99% ecological protection level is instructed to be used where bioaccumulation processes occur.

Similarly discharge of impacted groundwater to surface water bodies will complete ecological exposure pathways. Concentrations of PFAS constituents in groundwater exceed 95% and 99% ecological protection levels. However, likely fluxes of groundwater based PFAS constituents to South Creek were considered to be insignificant in comparison to the flux of PFAS constituents from the discharge of impacted surface water to South Creek from the South Dunheved Open Channel.

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5. Remedial Action Plan

5.1 Remedial Goal

PFAS impacted soils are present within the proposed Stage 2b and Stage 3 portions of the EWCR development. In order to enable development within those area the impacted areas require remediation to an acceptable level whereby PFAS impact at the site and/or potential migration of PFAS impact to surrounding areas is prevented.

The goal for the remediation and/or ongoing management of PFAS impacted materials within the Dunheved Site is to:

- Prevent potential direct contact of human and ecological populations within the site to impacted soils retained / present at the site;
- Prevent potential phyto-toxicity effects of flora contact to impacted soils (where applicable);
- Remove potential ongoing sources of environmental contamination (i.e. unexpected finds, if encountered); and
- Mitigate direct contact to underlying groundwater affected by PFAS.

Currently the site is under interim management as per the procedures of the PFAS Management Plan for Central Precinct and Dunheved Developments as prepared by JBS&G (2018e[24]). It is further suggested that this management plan is implemented during remediation works along with the CMP (JBS&G 2019f).

5.2 Preferred Remediation/Management Method

The preferred hierarchy of options for remediation (clean up) and/or management adopted by NSW EPA has been established within the NEPC (2013) Assessment of Site Contamination Policy Framework as follows:

- On-site treatment of the soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level; and
- Off-site treatment of excavated soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to the site; or

If the above options are not practicable:

- Consolidation and isolation of the soil on site with a properly designed barrier; and
- Removal of contaminated soil to an approved site or facility, followed where necessary by replacement with clean fill; or
- Where the assessment indicates remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy.

With EPA currently reviewing assessment results and proposed remedial strategies, it is proposed that impacted soils are removed from the Stage 2b and Stage 3 EWCR site and placed within the designated PFAS impacted soils stockpiling area to undergo remediation at a later stage and following EPA endorsement of remedial strategies.

[24] *PFAS Management Plan, Central Precinct and Dunheved Developments, St Marys NSW (Rev A*) JBS&G Australia Pty Ltd 14 March 2018 (JBS&G 2018e)

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A conservative approach any detectable levels of PFOS, PFOA and PFHxS which are currently accounted for in criteria provided by National PFAS Environmental Management Plan (HEPA 2019) above the laboratory limits of reporting (0.005 mg/kg) will be identified as impacted for the purpose of this remedial activity.

It is noted that the proposed primary laboratory (Eurofins MGT) limit of reporting for PFOS, PFOA and PFHxS is 0.005 mg/kg.

5.3 Extent of Remediation/Management

PFAS impacted soils have been identified within the proposed Stage 2b and Stage 3 portions of the EWCR development. Approximate areas of PFAS impacted soils is shown on **Figure 3**.

The depth of PFAS extent varies throughout the area of impact, however, an average depth of 1.0 m below surface level is anticipated to be impacted. Where impact is identified to extend further, the impact will be chased out.

For the purpose of the proposed roadway development, groundwater is not considered to pose a potential risk as no direct exposure pathways are anticipated.

No surface water bodies exist within the impacted areas of the site.

5.4 Data Gap Assessment

Prior to commencement of remedial works, additional PFAS and asbestos assessment targeting directly beneath the current pavement within Stage 2b and Stage 3 is required. In addition to PFAS and asbestos assessment, sampling and analysis for other potential contaminants of concern including heavy metals, TRH/BTEX, PAHs and OCPs/PCBs will also be conducted for additional characterisation and to support the existing data set. The data gap assessment will incorporate characterisation requirements included in the CMP (JBS&G 2019f) such as fill and asbestos quantification assessment and reuse of bituminous pavements.

The assessment will comprise an additional 52 locations placed on an approximately 20 m grid within Stage 2b and Stage 3, with particular focus beneath current paved roads. The approximate proposed sampling grid is provided in **Figure 4**. Fifty-two sampling locations is considered to be appropriate for characterising an area of this size, noting the EPA sampling design guidelines recommends a minimum of 52 samples for a site of 4.5 hectares. The combined area of Stage 2b and 3 is approximately 4.17 ha.

Works are recommended to take place following pavement removal so that an excavator can be used to conduct testpits and obtain appropriate volume for asbestos quantification to occur. Soil sampling locations will be extended to at least 0.5 m into natural underlying soils or prior refusal.

Samples will be collected directly from the excavator bucket and placed into laboratory supplied sample jars. Sample jars will be transferred directly to a chilled esky prior to transport to the analysing laboratory under chain of custody protocols. Selected samples consisting of at least 1 sample per location will be analysed for a range of analytes including Heavy Metals, TRH/BTEX, PAHs, OCPs/PCBs, PFAS and asbestos for comparison to relevant NEPC (2013) landuse criteria and the adopted PFAS criteria as per **Section 7.5**. Soil sampling procedures as per **Section 7.3** shall also be adopted to ensure appropriate handling when sampling for PFAS.

Asbestos assessment requirements including inspection of 10L soil for asbestos quantification will be conducted at each sampling location. The 10L bulk sample shall be collected from each location and sieved through a 7 mm sieve or raked through if sieving is not possible due to clayey soils. The oversize through the sieve shall be inspected for the presence of asbestos containing materials (ACM). A volume of 500 ml of the undersize materials shall be sub-sampled for asbestos analysis asbestos.

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Based on history of the site noting validation of historical area 24f (storage of sewage sludge) including a site audit statement (SAS) covering the Stage 2b area (noting the current road was constructed recently and after issue of the 1999 SAS) and based on more recent works including PFAS Assessment at Former ADI St Marys Development Site (JBS&G 2018a) and Additional Analytes Summary Letter for the Dunheved Industrial Precinct, St Mary's, NSW (JBS&G 2018d) assessment for nutrients and bacteria are not considered necessary within the Dunheved portion of Stage 2b.

Prior to proceeding with remedial works, a data gap assessment report will be prepared by JBS&G and provided to the auditor for endorsement.

It is noted that assessment of groundwater will not be provided with the Data Gap Assessment, a summary of groundwater conditions and groundwater management requirements is included in the RAP for the broader St Marys ADI site (JBS&G 2019e).

5.5 PFAS Impacted Soils

The requirements for the management of the PFAS impacted soils within Stage 2b and Stage 3 corridor are summarised following:

- Implementation of environmental controls to manage the direct inflow of surface water from the stormwater culvert located in the western portion of Stage 3;
- Excavation of identified PFAS impact to the extents identified on **Figure 3**. Where PFAS impacted areas extent to the Stage 2b and Stage 3 boundaries, soils are to be excavated up to 1 m beyond the boundary with the wall battered as a 45 degree slope. Excavation at the Stage 3 southern boundary shall not extend beyond the boundary as the property to the south is understood not to be part of the broader development site;
- Excavation of PFAS impacted soils shall occur to a typical depth of 1.0 m below ground level, or below the level of the culvert, over the inferred extent of PFAS impact as shown on **Figure 3**;
- Sampling of the extent of the excavation shall be undertaken on the walls and base on a 5 m grid in the Stage 3 area, and a 10 m grid in the Stage 2b area following the initial stages of excavation works to determine if any PFAS impacted soils remain. Soil samples will be collected at site boundaries to identify whether PFAS impact within excavation walls or batters will require management;
- Additional stages of soils excavation works shall occur until PFAS impacted soils are removed to levels below laboratory reporting limits. Smaller excavations to chase deeper extents of PFAS affected soils shall be sampled on a 5 m grid, with at least one sample per each wall and a sample at the base of the excavation. Additional excavation will not extend further than 1 m beyond the Stage 2b and Stage 3 boundaries or beyond the southern Stage 3 boundary as shown on **Figure 3**; and
- Excavated soils shall be transferred directly to the controlled temporary stockpile locations within Dunheved identified as the PFAS impacted soils stockpile area and shown on **Figure 3**. PFAS impacted soils will require to be retained at this location consistent with the interim management approach currently being undertaken in consultation with the NSW EPA.

5.6 Material Tracking

Material tracking of the relocation of PFAS impacted soils will need to be recorded in accordance with **Section 6**.

5.7 Validation

Validation of the remedial works will be conducted to demonstrate the remediation criteria have been achieved. Details of the validation program are provided in **Section 7**.

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6. Material Tracking Plan

As discussed in the Remedial Plan in **Section 5**, impacted materials will require relocation from the EWCR to the PFAS impacted soils stockpile within the Dunheved Industrial Precinct. A Materials Compliance Management System (MCM) shall be developed for the reuse of materials on the site. It shall include two primary elements:

- Materials Management Guideline (material qualities); and
- Materials Tracking Plan (quantity/movement/location).

The MCMs also includes the following specific details:

- Definition of responsibilities, including the early works Principal Contractor(s), other contractor(s) e.g. Remediation Consultant (JBS&G) and the Site Auditor;
- Procedures for confirming material quality, summarising existing analytical (in-situ) data, additional analytical (ex-situ) data, additional observations to satisfy other acceptance criteria and alignment of any environmental data to enable beneficial re-use of the material at the point of placement;
- Procedures for recording where the materials have been placed (lateral & vertical limits) and inspections during placement;
- Identification of hold points where materials are proposed to be temporarily stockpiled;
- Procedures for recording the quantity of placed materials;
- Material Tracking Records;
- Standard forms/documentation;
- Non-conformances/Unexpected Finds; and
- QA/QC.

The MCMs may also need to include or make reference to additional material placement requirements to meet design elements such as those relating to subsurface drainage or compatibility with service corridors, and engineering properties of materials to be placed, which are outside the scope of this RAP.

Any material tracking provisions require to further be consistent with the CMP (JBS&G 2019f).

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7. Validation Plan

7.1 Overview

Validation data is required to be collected to verify the effectiveness of the remedial works and document the final site conditions as being suitable for the proposed future use(s).

The following sections establish the data quality objectives (DQOs) to be adopted during validation of the site remediation works.

7.2 State the Problem

The site, which has historically used by the Department of Defence for various uses, is proposed to be redeveloped for a roadway consistent with commercial / industrial land use exposure pathways. PFAS contaminated soils have been identified in in-situ soils which require removal/management to allow for the proposed development to proceed.

The level of impact is generally associated with a broader scale issue, however in order to proceed with the EWCR development removal of PFAS impacted soils that are located within the proposed Stage 2b and Stage 3 EWCR is required.

7.2.1 Identify the Decision

The following decisions are required to be addressed during validation:

- Have all PFAS impacted soils been excavated and relocated to the PFAS impacted soils stockpile area?
- Does soil analytical sampling confirm soils within the EWCR are free of detectable levels of PFAS following excavation and relocation?
- Does material tracking documentation confirm relocation of PFAS impacted soils as per the material tracking procedures in this RAP?

7.2.2 Identify Inputs to the Decision?

Inputs to the decisions are:

- Development plans;
- Field observations in relation to inspection of all excavation bases, walls and stockpiles for odours, sheen, discolouration, and other indicators of potential contamination;
- Soil validation analysis data collected from stockpiles and the base and walls of remedial excavations;
- Materials tracking records as per Section 6 and the CMP (JBS&G 2019f);
- Survey data as to the extent and thickness of physical separation arrangements and extent of environmentally impacted materials; and
- Data quality indicators as assessed by quality assurance/quality control (QA/QC).

7.2.3 Define the Study Boundaries

The study boundaries of the site are as follows:

- The lateral extent of the works relevant to this RAP as presented in **Figure 3**; and
- The vertical extent of the works is initially anticipated to be approximately 1 m below surface level and to a depth below the culvert in Stage 3 which is approximately 1.5 m below the surface. Where impact is identified below 1.0 m, the vertical extent will be extended.

7.2.4 Develop a Decision Rule

Decision rules are provided following for each of the environmental issues anticipated on the Site.

1. Have all PFAS impacted soils been excavated and relocated to the PFAS impacted soils stockpile area?
    - Impacted area as shown on **Figure 3** need to be excavated and relocated to the PFAS impacted stockpile area. Further to this, the process needs to be confirmed by the supervision of an environmental consultant as well as material tracking documentation. Additionally, confirmation that the extent of impacted soils has been reached following excavation is required as per point 2 below.
2. Does soil analytical sampling confirm soils within Stage 2b and Stage 3 of the EWCR are free of detectable levels of PFAS following excavation?
    - Soil validation samples are required to be collected from the walls and base of the excavation as per the designated frequency provided in **Section 5.5**.
    - All remaining in situ soils need to be supported by validation samples, with PFAS concentrations reported as below the primary laboratory limit of reporting (0.005 mg/kg) for PFOS, PFOA and PFHxS.
3. Does material tracking documentation confirm relocation of PFAS impacted soils as per the material tracking procedures in this RAP?
    - Material tracking records are required to be kept in accordance with the procedure provided in **Section 6** and the CMP (JB&G 2019f) to confirm the relocation of all PFAS impacted soils.

7.2.5 Specify Limits of Decision Error

This step is to define, in statistical terms, the decision-makers acceptable error rates based on the consequences of making an incorrect decision. Two types of decision error are defined in AS4482.1-2005 'Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds':

(a) Deciding that the site is acceptable when it actually is not; and

(b) Deciding that the site is unacceptable when it is.

AS4482.1-2005 nominates setting limits of 5% probability of (a) type errors and 20% probability of (b) type errors. These limits are in general accordance with suggested limits as outlined in US EPA (July 1994) 'Using the Data Quality Objectives Process in Risk Assessment'.

Data sets as formed by the application of the decision rules require assessment using the following relationship as provided in AS4482.1-1995 as based on the adopted limits of decision error to assess the number of sample locations required to make a decision:

$n = 6.2\ \sigma^2 / (Cs - \mu)^2$

where: n – number of samples needed

6.2 – factor derived from probability errors (a) and (b)

σ – estimated standard deviation of contaminants concentration in sampling area

Cs – acceptable limit (mg/kg)

μ – estimated average concentration in sample area (mg/kg)

This relationship will be required to be applied for each constituent in each data set to assess that a sufficient number of samples are available to meet the limits on decision error. Separate data sets

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shall be required to be prepared based on the data sets generated for the assessment of the soils data to the adopted assessment criteria.

Data sets prepared for surface water are unlikely to be suitable to assess to the nominated limits on decision error, and instead a qualitative assessment shall be undertaken with the preparation of these data sets.

7.2.6 Optimising the Design for Obtaining Data

A validation sampling design has been prepared on the basis of the media assessed and the validation criteria established. The following sampling is proposed as specific to each media and as per **Section 5.5**:

- Collection of soil samples from the walls and bases of excavations at a spacing of;
    - 1 per 5 m for walls and 1 per 25 m^2 for bases for excavations within Stage 3; and
    - 1 per 10 m for walls and 1 per 100 m^2 for bases for excavations within Stage 2b;

The difference in validation sampling ratios between Stage 2b and Stage 3 is because the impact in Stage 3 involves a smaller area and as such a greater sampling density is considered appropriate to adequately characterise the area.

Observations only as taken by a competent person will be required to inform other aspects of the site validation (i.e. prevention of inflow of contaminated stormwater from off-site, appropriate placement of contained materials).

7.3 Sampling Methodology

Validation samples require to be collected of soils to assess that sufficient impacted materials have been excavated and contained within the site.

7.3.1 Soil Sampling

The soil sampling method shall be determined by the Field Scientist as consistent with the observations of the site sub-surface and appropriate to generate representative samples.

Where sample locations are placed by boreholes, undisturbed samples, as collected by push tube is preferred where able to be effectively implemented. Otherwise samples may be recovered from solid flight augers, hand tools or via test pitting. Re-usable equipment shall require to be decontaminated between sampling locations.

7.3.2 Soil Sample Containers

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indications of contamination shall be noted on field reporting sheets/field logs.

Soil samples collected for validation purposes will require PFAS appropriate 250mL HDPE jars supplied by the laboratory. Sample labelling shall use of a ball-point pen.

The sample labels shall record sample identification number and date and time of sampling. Sample containers shall be transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form shall be completed and forwarded with the samples to the testing laboratory, containing the following information:

- Sample identification;
- Signature of sampler;
- Date of collection;
- Type of sample;

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- Number and type of container;
- Inclusive dates of possession; and
- Signature of receiver.

7.4 Quality Assurance/Quality Control

The pre-determined Data Quality Indicators (DQIs) established for the project are discussed below in relation to precision, accuracy, representativeness, comparability and completeness (PARCCS parameters), and are shown in **Table 7.1**.

- Precision - measures the reproducibility of measurements under a given set of conditions. The precision of the data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD)[25] of duplicate samples.
- Accuracy - measures the bias in a measurement system. The accuracy of the laboratory data that is generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- Representativeness –expresses the degree which sample data accurately and precisely represents a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- Comparability - expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- Completeness – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- Sensitivity – is the ability for laboratory methods to reliably measure and detect concentrations is the analytical process.

[25] $RPD(\%) = \frac{|C_o - C_d|}{C_o + C_d} \times 200$

Where C0 is the analyte concentration of the original sample. Cd is the analyte concentration of the duplicate sample

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Table 7.1: Summary of Quality Assurance / Quality Control Program

Data Quality Objective	Frequency	Data Quality Indicator
Precision		
Blind duplicates	>1 / 20 samples	<50% RPD[1]
Split duplicates	>1 / 20 samples	<50% RPD[1]
Trip blank	1 / media / day	<LOR
Rinsate blank	1 / media / day	<LOR
Accuracy		
Surrogate spikes	All organic samples	70-130%[2]
Matrix spikes	1 per lab batch or >1 per 20 samples	70-130%[2]
Laboratory control samples	1 per lab batch or >1 per 20 samples	70-130%[2]
Representativeness		
Sampling appropriate for media and analytes		-
Laboratory blanks	1 per lab batch	<LOR
Samples extracted and analysed within holding times.	-	Soils: 7 days for VOCs/pH, 14 days for all other analytes.
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All samples
Standard analytical methods used for all analyses	All Samples	All samples
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples
Limits of reporting appropriate and consistent	All Samples	All samples
Completeness		
Soil description and COCs completed and appropriate	All Samples	- All samples
Appropriate documentation	All Samples	- All samples
Satisfactory frequency and result for QC samples	All QA/QC samples	-
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Satisfactory laboratory detection limits to identify PFAS impact	All samples	All samples

[1] If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgment will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.

7.5 Validation Criteria

Validation sampling is required to demonstrate that the remedial works have been effective in removing PFAS impact from the site, including the potential for migration. Demonstration that sufficient soils have been excavated and consolidated to not pose a potential future health or ecological risk to site users or potentially sensitive receptors in proximity.

Noting the current requirement for EPA endorsement regarding remediation of PFAS, a conservative approach has been adopted to allow development within the EWCR prior to endorsement. A validation criteria of below the primary laboratory limit of reporting (Eurofins MGT Pty Ltd) of 0.005 mg/kg for PFOS, PFOA and PFHxS shall be adopted.

The soil criteria is below the current national human health based and ecological guidance values (NEMP 2018) and the proposed draft values, and the criteria is considered sufficiently conservative for the proposed land use (roadway) prior to site specific criteria being agreed with the NSW EPA. Noting, as a roadway and footpath, potential habitat to support sensitive ecology and terrestrial biota will be limited.

Should soil impact be identified to be close to groundwater depth, potential leaching of PFAS from soil (albeit validation soil concentration is <LOR) will be assessed.

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7.6 Reporting

7.6.1 Data Gap Assessment Reporting

Prior to remediation and validation works, a data gap assessment report is required to be prepared and endorsed by the site auditor, detailing assessment of data gaps as per the procedure identified in **Section 5.4**.

7.6.2 Validation Reporting

A validation report shall be prepared at the completion of the remediation works. It is anticipated that the validation report will include:

- Details of the remediation works conducted;
- Information demonstrating that the objectives of the RAP have been achieved;
- Demonstration of compliance with appropriate regulations and guidelines;
- Details on the source and classification of any imported materials;
- Any variations to the strategy undertaken during the implementation of the remedial works;
- Details of any environmental incidents that may have occurred during the remediation works and the actions undertaken in response to the incidents;
- A summary of any waste disposal activities and volumes of waste removed from the site including volumes for excavation and offsite disposal; and
- Provide a comment on the suitability of the site for the proposed use and requirements for any ongoing monitoring / management.

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8. Contingency Plan

Given the remedial approach consists of removing all PFAS impacted soils the risk for contingencies associated with PFAS is considered low.

Potential for non PFAS contamination to be encountered during works is acknowledged and the unexpected finds protocol as presented in **Section 8.1** below is to be adopted during the works. In addition, the requirements of the CMP (JBSG 2019f) shall be implemented to support the works.

The Contingency Plan is required to be part of the Principal Contractors Remediation Environmental Management Plan (REMP), as described in **Section 9**, and part of the Work Health and Safety Plan (WHSP), as also described in **Section 9**.

8.1 Unexpected Finds

While considered unlikely, the possibility exists for hazards that have not been identified to date to be present at the site and discovered during redevelopment works. Examples of hazards which may be present and which may be discovered are generally detectable through visual or olfactory means, for example:

- The presence of significant aggregates of friable asbestos materials (visible);
- Excessive quantities of Construction/Demolition Waste (visible);
- Hydrocarbon impacted materials (visible/odorous);
- Drums or USTs (visible); and
- Oily Ash and/or oily slag contaminated soils/fill materials (visible/odorous).

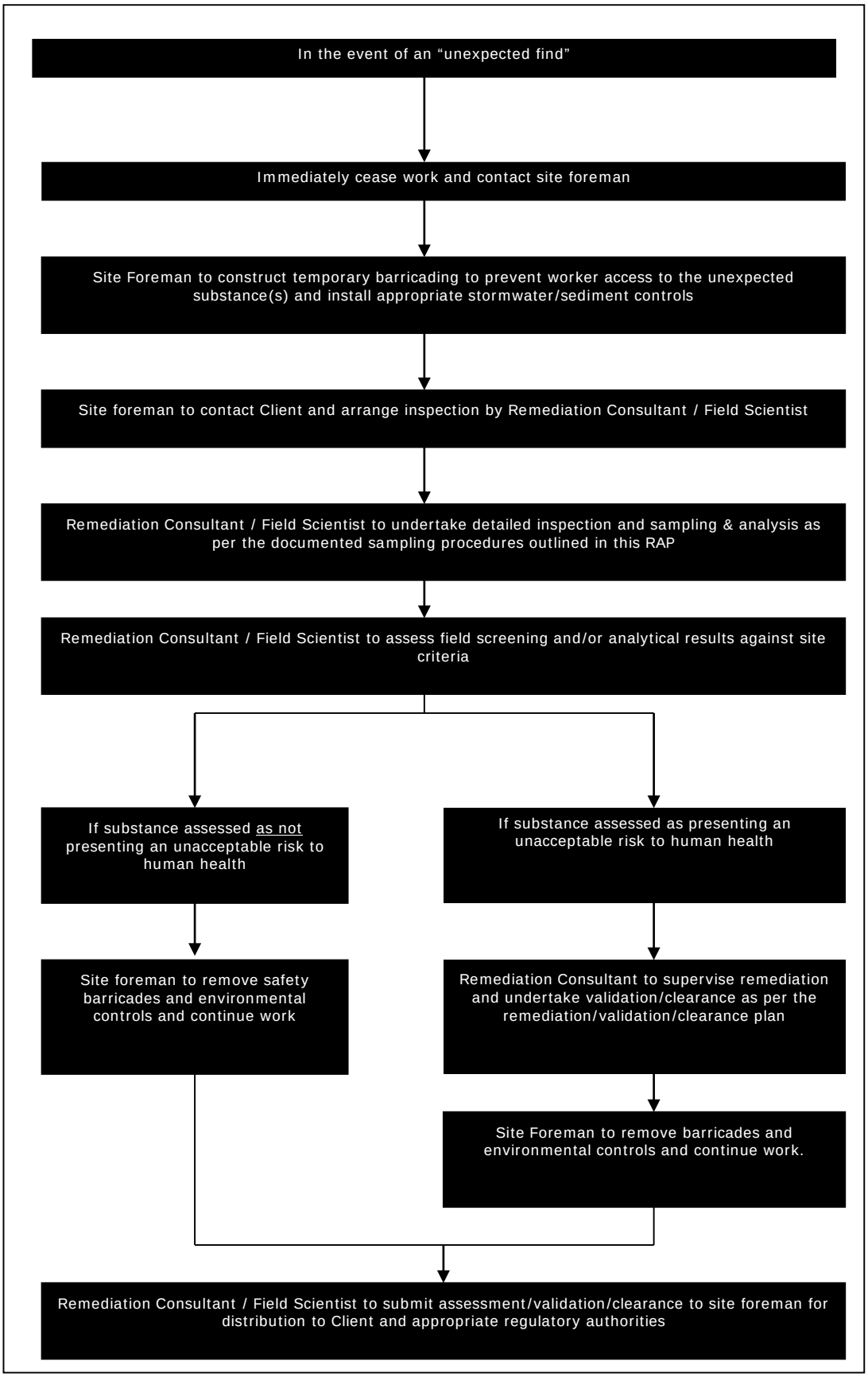
As a precautionary measure to ensure the protection of the workforce and surrounding community, should any of the abovementioned substances (or any other unexpected potentially hazardous substance) be identified, the procedure summarised in **Table 8.1** is to be followed.

In addition, each unexpected find will be notified to the appointed site auditor in a timely manner.

An enlarged version of the unexpected finds protocol, suitable for use on site, should be posted in the Site Office and referred to during the Site Specific Induction by the Remediation Contractor.

The sampling strategy for each “unexpected find” shall be designed by a suitably qualified environmental consultant. The strategy will, however, be aimed at determining the nature of the substance – that is, is it hazardous and, if so, is it at concentrations which pose an unacceptable risk to human health or the environment.

Table 8.1 Unexpected Finds Protocol



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8.2 Contingency Scenarios

8.2.1 Remedial Strategy Failure

In the event the proposed remediation works do not meet the validation criteria, or if the selected remedial strategy is not able to proceed, the following actions will be considered to ensure firstly the safety and health of people and the environment and secondly that the overall project objectives are achieved.

1. Continued controlled excavation until validation is achieved.
2. Reassessment of remedial and validation options.

Auditor to be notified and provided with details of any proposed contingency actions prior to implementation.

8.2.2 Complaints

Due to the nature of the activities and type of contaminants potentially at the site there is a potential for complaints to be received from members of the public relating to environmental emissions including:

1. Noise and vibration arising from excavation; and
2. Dust emissions arising from excavation, material handling and placement.

Monitoring of all environmental emissions shall be undertaken during the works and appropriate actions taken to further control emissions following receipt of a complaint. Such additional controls may include the following actions:

1. Disturbance of soils during meteorologically favourable periods only; and/or
2. Covering or wetting down soils which are generating dust.

8.2.3 Severe Weather

Weather will be monitored on a daily basis via checking an internet based weather service provider. Should severe weather be forecast works will stop until safe to re-commence. All site management controls will be implemented to the extent practicable prior to any severe weather events.

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9. Regulatory and Planning Requirements

9.1 Environmental Planning and Assessment Act 1997 (EP&A Act 1997)

The potential extent of remediation works has been assessed under the provisions of *Statement Environmental Planning Policy 55 – Remediation of Land* (SEPP 55) for 'Category 1' remediation works, for which development consent is required under the *Environmental Planning and Assessment Act 1997.*

- The remediation works are considered not to be identified as designated development within the provisions of EP&A Regulation (2000), Schedule 3, Section 15, relating to contaminated soil treatment works due to the following:
  - The remediation works will not treat or store contaminated soil not originating from the site on which development is proposed to be carried out and are located within areas identified in Section 15(a) of the Schedule; or
  - The remediation works will not treat more than 1,000 m^3 per year of contaminated soil not originating from the site on which the development is located; or
  - The remediation works will not treat contaminated soil originating exclusively from the site on which the development is located and:
    - incinerate more than 1,000 m^3 per year of contaminated soil; or
    - treat otherwise than by incineration and store more than 30,000 m^3 of contaminated soil; or
    - disturb more than an aggregate area of 3 hectares of contaminated soil.
- The site is considered not to be located on land declared to be a critical habitat.
- The remediation works are considered unlikely to have a significant effect on a critical habitat or a threatened species, population or ecological community.
- The remediation works are considered not to be development for which another state environmental planning policy or a regional environmental plan requires development consent. As discussed below in **Section 9.6**, the site is covered by the Sydney Regional Environmental Plan (SREP) No 30 – St Marys. However, in relation to contaminated land and remediation the SREP 30 simply states in Section 29 the development is to have regard to soil constraints to ensure that the risk of adverse environmental and economic impacts is minimised.
- The remediation works will not be carried out in an area or zone for which any classifications outlined in SEPP 55 – Reg 9(e) apply under an environmental planning instrument.
- The remediation works is not anticipated to be carried out on any land in a manner that does not comply with a policy made under the contaminated land planning guidelines by the council for any local government area in which the land is situated (or if the land is within the unincorporated area, the Western Lands Commissioner). Notwithstanding, Penrith Council development control plan (2014)-contaminated land notes that Council consent is required for all remediation of all contaminated land within the Penrith Local Government Area. This requirement is prescribed by Sydney Regional Environmental Plan No 20 Hawkesbury-Nepean River (No 2 – 1997) Part 3 Clause 11, subclause (4).

9.2 Protection of the Environment Operations Act 1997 (POEO Act)

The potential extent of remediation works has been assessed against provisions of Protection of the Environment Operation Act 1997, Section 5, Clause 15, relating to contaminated soil treatment.

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The remediation works is considered not to be identified as a 'scheduled activity' due to the following:

- The remediation works will not treat more than 1,000 m^3 per year of contaminated soil received from off site.
- The remediation is anticipated to treat contaminated soil originating exclusively on site, however:
  - will not include incineration more than 1,000 m^3 per year of contaminated soil; or
  - will not treat (otherwise than by incineration) and store more than 30,000 m^3 of contaminated soil; or
  - will not disturb more than an aggregate area of 3 hectares of contaminated soil.

As such, the proposed soil remediation works are not required to be licensed under POEO Act (1997).

9.3 Water Management Act 2000

Dewatering is not expected to be required as part of remediation works. As such, a dewatering and re-injection approval will not to be required from the NSW Office of Water (NOW) for any proposed site remediation works.

Controlled activities under the definition of the Water Management Act 2000 is not anticipated. If a controlled activity is required, the relevant Water Management Act 2000 approvals will be required.

9.4 Protection of the Environment Operations (Waste) Regulation 2014

The regulations make requirements relating to non-licensed waste activities and waste transporting. The proposed works on the site will not require to be licensed. Section 48 of the Reg. requires that wastes be stored in an environmentally safe manner. It is also stipulated that vehicles used to transport waste must be covered when loaded.

Provision is provided in the Regulation and EPA (2014a) guidelines for the NSW EPA to approve the immobilisation of contaminants in waste (if required).

9.5 Waste Classification Guidelines (EPA 2014)

All wastes generated and proposed to be disposed off-site shall be assessed, classified and managed in accordance with this guideline. Where wastes require immobilisation prior to off-site disposal (to reduce waste classifications) an immobilisation approval shall be sought in accordance with Part 2 of this guideline.

9.6 Sydney Regional Environmental Plan (SREP) No 30-St Marys

The EWCR is covered by this planning instrument which aims to

- Support the St Marys Environmental Planning Strategy, 2000 of the Department of Urban Affairs and Planning by providing a framework for the sustainable development and management of the land to which this plan applies, and
- Rezone certain land for urban and employment-generating development, and
- Rezone land for conservation purposes and conserve the significant heritage values of the land to which this plan applies, and
- Ensure that urban development on the land achieves desirable environmental, social and economic outcomes, and
- Provide opportunities for recreation facilities that meet the needs of the regional and local community, and

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- Ensure that development of the land to which this plan applies is integrated with established surrounding areas.

In relation to contaminated land and remediation the SREP 30 simply states in Section 29 the development is to have regard to soil constraints to ensure that the risk of adverse environmental and economic impacts is minimised.

9.7 St Marys Environmental Planning Strategy (EPS) 2000

This document describes the approach to be taken in managing development and conservation on the former ADI St Marys property. The EPS identifies the following:

- The aims for the future use and management of the property;
- Specific performance objectives;
- Actions to be undertaken by local and state governments;
- Development controls; and
- The obligations of developers.

The EPS stipulates a development application must be lodged with the relevant council (Penrith City Council) for all development which requires consent except when exempt and complying provisions apply.

Section 12 details the requirements in managing any remaining contamination on the site as follows:

- The existence of a Site Audit Statement must be noted on any planning certificates issued by a council under section 149(2) of the Environmental Planning and Assessment Act 1979. The vendor of a property must give a planning certificate to any potential purchaser.
- The SREP requires that precinct plans include proposals for, and information on, management of remnant contamination risk.
- The plan of management will include a contamination management plan to identify procedures for the safe handling and disposal of any items of ordnance that may be found during earthworks.
- Each precinct plan will include a contamination management plan to identify procedures for the safe handling and disposal of any items of ordnance that may be found during earthworks.
- Soils under existing buildings, car parks, and roads shall be tested for ordnance or chemical contamination when these facilities are removed; site audits for these areas will also be required.
- On removal of all or part of the existing stockpiles, soils under existing stockpiles will be tested for ordnance and chemical contamination. The testing should follow similar methods and levels of quality assurance as other parts of the site. Appropriate remediation and validation should be performed and the work reviewed by an independent auditor.
- In granting approval for any development involving excavation, the council will advise the applicant of the appropriate contact within the Commonwealth Government for identification and disposal of any ordnance-related items which are uncovered during the development.

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9.8 Penrith City Council Consent Conditions

It is noted that PCC consent conditions are currently being finalised for the site. Aspects of the draft DA conditions for Stage 2 (DA18_221) and Stage 3 (DA18_381) relating to contamination assessment and remediation works is provided below.

- Prior to commencement an SAQP, CMP, site assessment reports and RAPs are to be provided to PCC along with interim advice by the site auditor;
- Implementation of the RAP followed by a validation report and site audit report is required to confirm the land is suitable for the proposed used;
- An appropriately qualified person shall supervise all filling and material placement works and carryout an independent review of all documentation relation to placement of fill at the site for submission to Council. All documentation is to;
    - be prepared by an appropriately qualified person with consideration of all relevant guidelines, standards, planning instruments and legislation (e.g. EPA, NEPM, ANZECC, NH&MRC),
    - clearly state the legal property description of the fill material source site and the total amount of fill tested,
    - provide details of the volume of fill material to be used in the filling operations,
    - provide a classification of the material in accordance with the EPA's "Waste Classification Guidelines" 2014,
    - determine whether the fill material is suitable for its intended purpose and land use and whether the fill material will or will not pose.
- A Site Audit Statement and associated Site Audit Report must be submitted to Council on completion of the filling works that are the subject of this Development Application. The site must be suitable for its intended land use and shall not pose any unacceptable risk to human health or the environment.
- The development shall be carried out in accordance with the procedures set out in the CMP referred to in Schedule 1 of this Consent and the conditions and procedures set out in the Site Audit Statements relating to the site.
- Only clean and unpolluted water is to be discharged into Council's stormwater drainage system. Liquid wastes suitable for discharge to the sewer mains are to be discharged in accordance with Sydney Water requirements.

  If sewer mains are not available, or if Sydney Water will not allow disposal to the sewer then a licensed waste contractor is to remove the liquid waste from the premises to an appropriate waste facility.

  The waste contractor and waste facility are to hold the relevant licenses issued by the EPA.
- The stormwater drainage system shall not be altered or new lines directed into the system without the prior approval of Council.
- Prior to the issue of the Construction Certificate, a Construction Environmental Management Plan (CEMP) is to be prepared by a suitably experienced / qualified person and submitted to and approved by Council. If Council is not the certifying authority, a copy of Council's approval is to be provided to the Principal Certifying Authority.

9.9 Blacktown City Council Consent Conditions

It is noted that the northern portion of Stage 2b falls within the Blacktown city Council LGA, draft BCC consent conditions for Stage 2 relevant to contamination works are included below.

- The recommendations provided in the Contamination Management Plan (prepared by JBS&G, ref. 43352/61064 rev. 3 dated 24 January 2018) shall be implemented during construction. JBS&G note that a more recent and site Specific CMP (JBS&G 2019f) has since been prepared.
- The recommendations provided in Phase 2 Environmental Site Assessment – Stage 3 East West Connector Road, prepared by JBS&G Australia Pty Ltd, report no. 54782/123128 (Rev A), dated 15 July 2019, must be carried out, including specific advice for the management of existing and proposed stockpiled PFAS impacted soils.
- An appropriately qualified environmental consultant must be engaged to supervise all aspects of site remediation and validation.
- The applicant is to ensure that validation for the entire subject site can be prepared by a suitably qualified environmental consultant in accordance with Council's Contamination Land Policy.
- The applicant is to ensure that the site has been satisfactorily secured so as to prevent any unauthorised dumping of illegal fill/waste building materials (i.e. non-V.E.N.M soils) from entering onto the development site.
- Appropriate dust suppression measures are to be incorporated into the site works process, so as to ensure that adjoining properties in the local vicinity are not negatively impacted upon by dust generated from the development site.
- Any fill material imported to the site shall be certified at the source by a suitably qualified consultant as VENM fill material, non-slightly saline and non-aggressive to concrete or steel. If the importation of fill is undertaken under a specific EPA exemption, relevant details of the EPA exemption shall be forwarded to Council prior to the importation of fill to the site.
- Should Council receive any complaints regarding non-compliance with any of the above matters or other such operational type matters, then Council will have no alternative but to fully investigate the complaint and pursue an appropriate course of action.
- Only clean fill shall be deposited/imported on site in accordance with Council's Works Specification - Civil (Current Version). Note: dry builder's waste i.e. bricks plaster and timber industrial waste or putrescible materials are not to be deposited on site. Validation of the imported fill material will be required by a suitably qualified registered engineer. Imported fill shall be verified as Virgin Excavated Natural Material (VENM).
- A final site contamination Validation Report confirming the suitability of the site for the proposed road is to be endorsed by Council. The Validation Report shall be prepared by a consultant engaged under the terms of Council's Contaminated Lands Policy.
- A Site Audit Statement is to be obtained from a NSW Environment Protection Authority accredited Site Auditor. The Site Audit Statement must confirm that the site has been remediated in accordance with the approved Remediation Action Plan and that the site is suitable for the proposed use.
- Conditions on the Site Audit Statement shall form part of the consent. Where the Site Audit Statement is subject to conditions that require ongoing review by the Site Auditor or Blacktown City Council, these must be delivered in an ongoing Environmental Management Plan reviewed and approved by Blacktown City Council prior to the issue of a Site Audit Statement.

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9.10 SafeWork NSW and NSW WHS Regulations

During remedial works compliance with relevant SafeWork NSW Codes of practice and the NSW Work Health and Safety Regulation (WHS 2017) will be required. Reference to these documents relevant to the works required should be included in the Remediation Environmental Development Plan to be developed as per **Section 10.1**.

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10. Other Remediation Documents

10.1 Environmental Management

10.1.1 Preparation of a Remediation Environmental Management Plan

Prior to commencement of remediation works on the Site, a REMP shall be prepared by the Principal Contractor, which documents the environmental monitoring and management measures required to be implemented during the remediation and construction related activities associated with the development of the Site. The Remediation Contractor is required to have the REMP reviewed and endorsed as acceptable by the Environmental Consultant and/or the Site Auditor prior to the commencement of remediation works.

The REMP shall address each of the nominated items in **Section 10.1.2** and shall include the Contingency Plan, referred to in **Section 8**, earlier.

10.1.2 Required Elements/Procedures

An assessment of the proposed activities and the associated elements required to be incorporated into the REMP is provided in **Table 10.1**. The REMP is required to address each of the required elements and procedures in full detail and to include detailed monitoring processes and procedures, corrective actions and reporting requirements.

Table 10.1 Required Elements of the REMP

Element	Specific Minimum Requirements to be included in REMP
1. Dust and Airborne Hazard Control	Provisions for dust control based on monitoring results In accordance with DA conditions
2. Flora and Fauna	As appropriate
3. Heritage/Archaeological	In accordance with relevant heritage/archaeological studies
4. Visual Impacts	Visual monitoring at site boundary Specific colour requirements for various controls/measures, including PPE
5. Emergency Response	As appropriate Procedures required for spill incident response including material storage breach
6. Noise Control	Hours of operation, in accordance with the consent conditions Monday 7am to 6pm Saturday 7am (8am if noisy works) to 1pm No works Sunday or Public Holidays Boundary monitoring at commencement of work site activities with potential for environmental noise emissions Procedures for control and management of noise emissions, as appropriate (e.g., restricted hours) All works must be carried out in accordance with the approved Demolition, Excavation and Construction Management Plan.
7. Traffic	Controls on vehicle movements on public roads Controls on transport of tar impacted materials Compliance with DA requirements including loads covering and vehicle cleaning requirements
8. Protection of Adjoining Structures	As appropriate (where relevant)
9. Odour Control	If identified, procedures for addressing elevated odour monitoring results, including, but not limited to: reduction in earthworks activities within odorous material areas during adverse meteorological conditions or application of odour masking solutions at the odour source or between identified source(s) and receptor(s).
10. Handling of Contaminated Soil and Groundwater	Soil and water management (stockpiling, site access, excavation pump out, reinstatement). No wastewaters, chemicals or other substances harmful to the environment shall be permitted to discharge to Council's stormwater system. Only clean unpolluted water is permitted to discharge into the stormwater system
11. Soil Storage/Placement Areas	Soil and water management (stockpiling, site access, excavation pump out, reinstatement) Bunding Heavy vehicle/personnel decontamination Interim storage requirements for materials requiring later treatment

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Element	Specific Minimum Requirements to be included in REMP
	Site drainage requirements, incorporating clean/dirty areas and modifications to existing surface water and drainage controls beneath retained pavements Monitoring as required
12. Sediment Control	Bunding Collection/treatment/handling impacted sediments Compliance with the DA conditions
13. Operation of Site Office	As appropriate
14. Decontamination of Heavy Equipment	As appropriate
15. Environmental Monitoring	As appropriate
16. Environmental Criteria	Soil criteria as sourced from RAP
17. Material Classification	As detailed in this RAP Materials tracking, including QA/QC inspection and sampling
18. Community Relations Plan	Prepare project specific communication protocols, incorporating nomination of specific contact persons & details and requirements for communications/response register
19. Incident Reporting	As appropriate, including standard form/checklist
20. Security and Signage	Secure site perimeter Site boundary signage
21. EMP Review	As appropriate
22. Training	As appropriate
23. Contact Details	Company/personnel details, including names/phone numbers for: - Principal Contractor - Site Auditor - Remediation Consultant - Remediation Contractor - OH&S Compliance - Environmental Compliance

10.1.3 Certification

Prior to commencement of remediation works on the site, the Principal Contractor is required to have the REMP endorsed as acceptable by the Environmental Consultant and site auditor appointed to validate the works.

A copy of the REMP and the endorsement to the satisfaction of Environmental Consultant are required prior to commencement of remediation works on the site.

10.1.4 Hours of Site Operation/Duration of Works

Remediation works shall be completed in accordance with the permissible hours of work and noise as nominated:

- Construction works, or subdivision works that are carried out in accordance with an approved consent that involve the use of heavy vehicles, heavy machinery and other equipment likely to cause offence to adjoining properties, shall be restricted to the following hours in accordance with the NSW Environmental Protection Authority Noise Control Guidelines:
    - Mondays to Fridays, 7am to 6pm
    - Saturdays, 7 am to 1pm (if inaudible on neighbouring residential premises), otherwise 8am to 1pm
    - No works permitted on Sundays and Public Holidays

The appointed Remediation Contractor will be required to include a proposed schedule of remediation works within the REMP submitted for endorsement as discussed above.

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10.2 Health and Safety

10.2.1 Work Health and Safety Management Plan

A WHSP shall be prepared by the Principal Contractor prior to commencement of remediation works on the site. The Plan shall contain procedures and requirements that are to be implemented as a minimum during the works, in addition to the Contingency Plan, referred to in **Section 8**.

The objectives of the WHSP are:

- To apply standard procedures that minimises risks resulting from the works;
- To ensure all employees are provided with appropriate training, equipment and support to consistently perform their duties in a safe manner; and
- To have procedures to protect other site workers and the general public.

These objectives will be achieved by:

- Assignment of responsibilities;
- An evaluation of hazards;
- Establishment of personal protection standards, mandatory safety practices and procedures;
- Monitoring of potential hazards and implementation of corrective measures; and
- Provision for contingencies that may arise while operations are being conducted at the site.

10.2.2 Additional Site-Specific Elements/Procedures

In addition to the normal construction-related matters, the WHSP shall address the following site-specific specific hazards associated with the works relating to the management of contaminated soil and groundwater:

- Accidental release of PFAS contaminated soils and/or water
- Contact with contaminated soil (incl. dust), groundwater and vapours, including requirements for specific Personal Protective Equipment (PPE); and
- Heat/cold stress.

10.2.3 Additional Consideration of Chemical Contaminants

As a precautionary measure, the WHSP should include the requirement for the plan to be revised in the event of an unexpected find of contaminated material during remediation and/or construction.

When working with contaminated materials in general, care needs to be taken to ensure that the contamination is not introduced to the worker via ingestion, inhalation or absorption. The WHSP must detail the PPE and decontamination requirements to be followed to control the risks posed by potential exposure to chemical contaminants at the site.

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11. Conclusions and Recommendations

11.1 Conclusions

Overall, it is considered that the proposed actions outlined in this RAP conform to the requirements of the NSW Site Auditor Guidelines (EPA 2017) because they are: technically feasible; environmentally justifiable; and consistent with relevant laws policies and guidelines endorsed by NSW EPA.

Subject to the successful implementation of the measures described in this RAP and the recommendations below, it is concluded that the site can be made suitable for the intended land use.

11.2 Recommendations

It is recommended that the processes outlined in this RAP be implemented, and that the following documentation be developed and implemented to ensure the risks and impacts during remediation works are controlled in an appropriate manner:

- The appropriate regulatory and licence information as discussed in **Section 9** are obtained prior to commencement of remedial works.
- A Remediation Environmental Management Plan (REMP), to document the monitoring and management measures required to control the environmental impacts of the works and ensure the validation protocols are being addressed; and
- A Work Health and Safety Management Plan (WHSP) to document the procedures to be followed to manage the risks posed to the health of the remediation workforce.

The REMP and WHSP will require to be cognisant of the potential occurrence and storage/handling of PFAS contaminated soils on the site.

Upon completion of the works on the site, a Validation Report shall be prepared.

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12. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

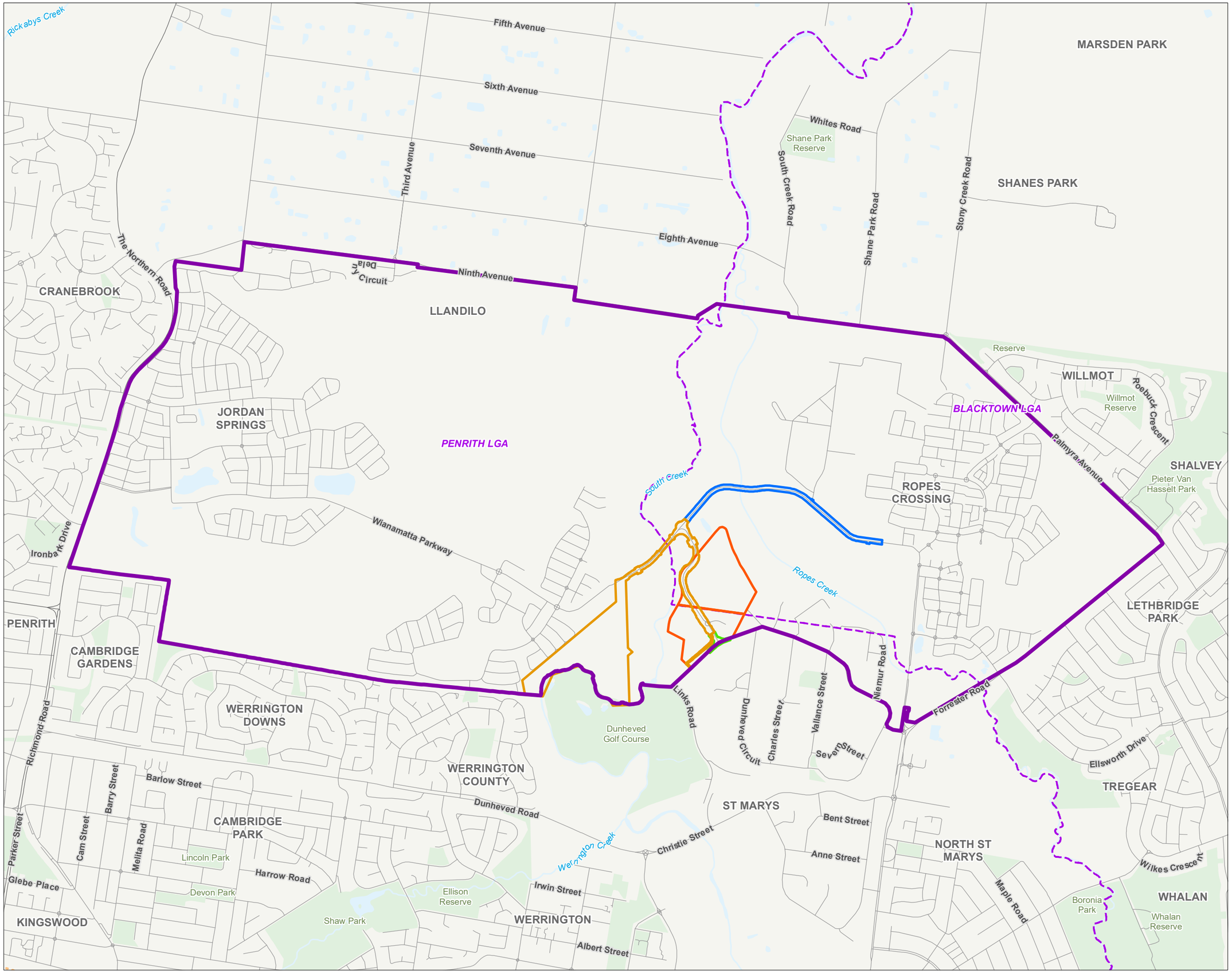
Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

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Figures

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Legend:

- Former ADI St Marys Property
- Dunheved Precinct

Development Stages

- Stage 1 Boundary
- Stage 2A Boundary
- Stage 2B Boundary
- Stage 2C Boundary
- Stage 3 Boundary
- LGA boundary
- Waterbody area
- Waterway
- Parks and reserves

JBS&G

Job No: 54782	
Client: Minter Ellison	
Version: R08 Rev0	Date: 14-Aug-2019
Drawn By: AS	Checked By: GB

Scale 1:23,500

0 250 500
metres

Coord. Sys. GDA 1994 MGA Zone 56

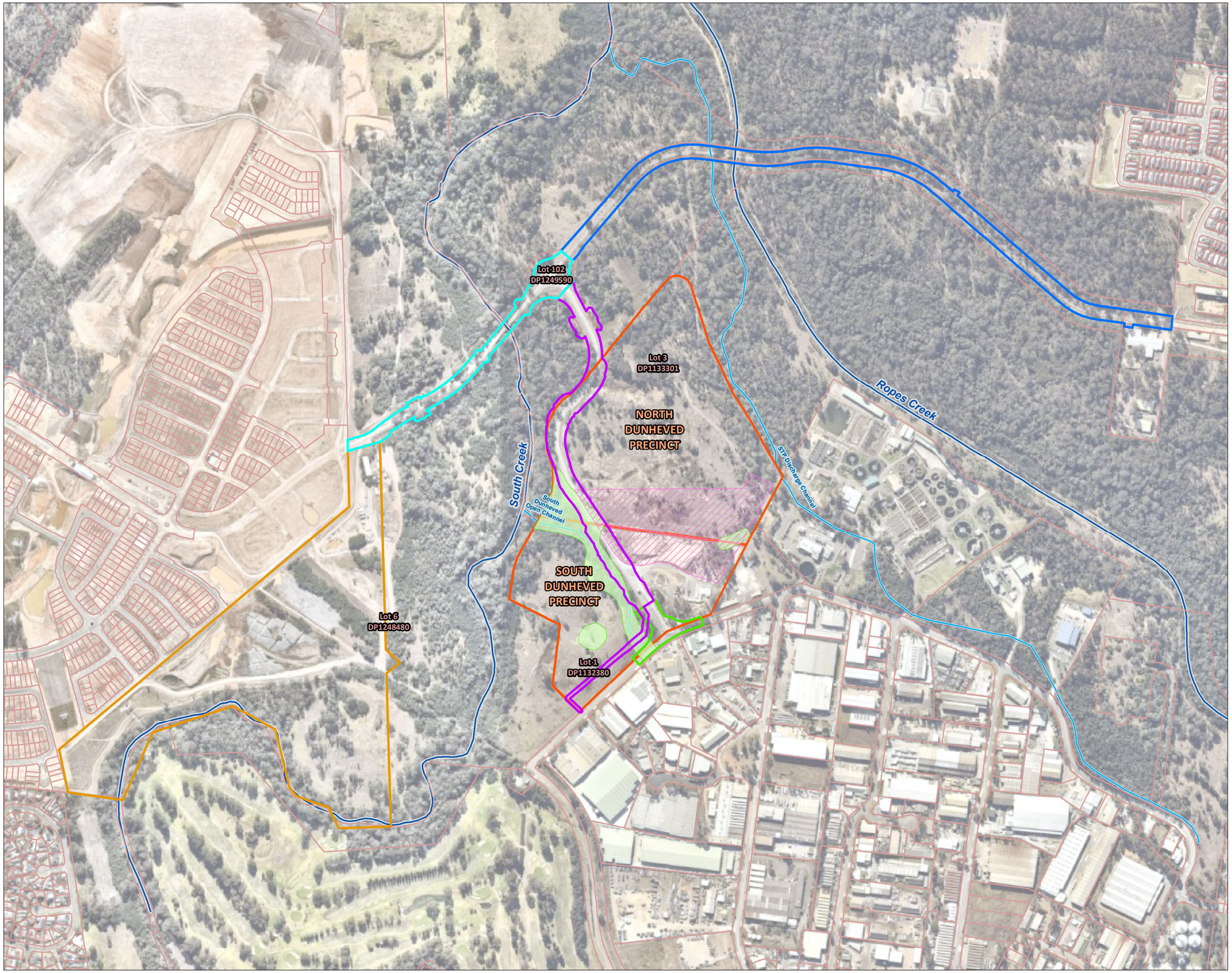
Central Precinct

SITE LOCATION

FIGURE 1

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R08 Rev A\54782_01_SiteLocation.mxd

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Legend:

- Current PFAS Impacted Temporary Soil Stockpile
- Proposed PFAS Remediation Areas

Development Stages

- Stage 1 Boundary
- Stage 2A Boundary
- Stage 2B Boundary
- Stage 2C Boundary
- Stage 3 Boundary
- Dunheved Precinct
- Cadastral Boundary
- Creeks
- Channels

JBS&G

Job No: 54782	
Client: Minter Ellison	
Version: R08 RevA	Date: 07-Aug-2019
Drawn By: AS	Checked By: GB

Scale 1:7,600

0 75 150
metres

Coord. Sys. GDA 1994 MGA Zone 56

East West Connector Road

DEVELOPMENT STAGES AND REMEDIATION AREAS

FIGURE 2

File Name: J:\Company Data\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R08 Rev A\54782_02_DevelopmentStagesAndRemediationAreas.mxd
Aerial Photo: NSW Imagery 2017

Document Set ID: 8830565
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NORTH DUNHEVED PRECINCT

SOUTH DUNHEVED PRECINCT

Lot 102 DP1249590

Lot 3 DP1133301

Lot 6 DP1248480

Lot 1 DP1132380

South Dunheved Open Channel

South Creek

STP Discharge Channel

Legend:

- Area of PFAS impacted soils Proposed for excavationand relocation to stockpile area
- Current PFAS Impacted Temporary Soil Stockpile

Development Stages

- Stage 1 Boundary
- Stage 2A Boundary
- Stage 2B Boundary
- Stage 2C Boundary
- Stage 3 Boundary
- Dunheved Precinct
- Cadastral Boundary
- Creeks
- Channels

JBS&G

Job No: 54782	
Client: Minter Ellison	
Version: R08 RevA	Date: 07-Aug-2019
Drawn By: AS	Checked By: GB

Scale 1:2,500

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 56

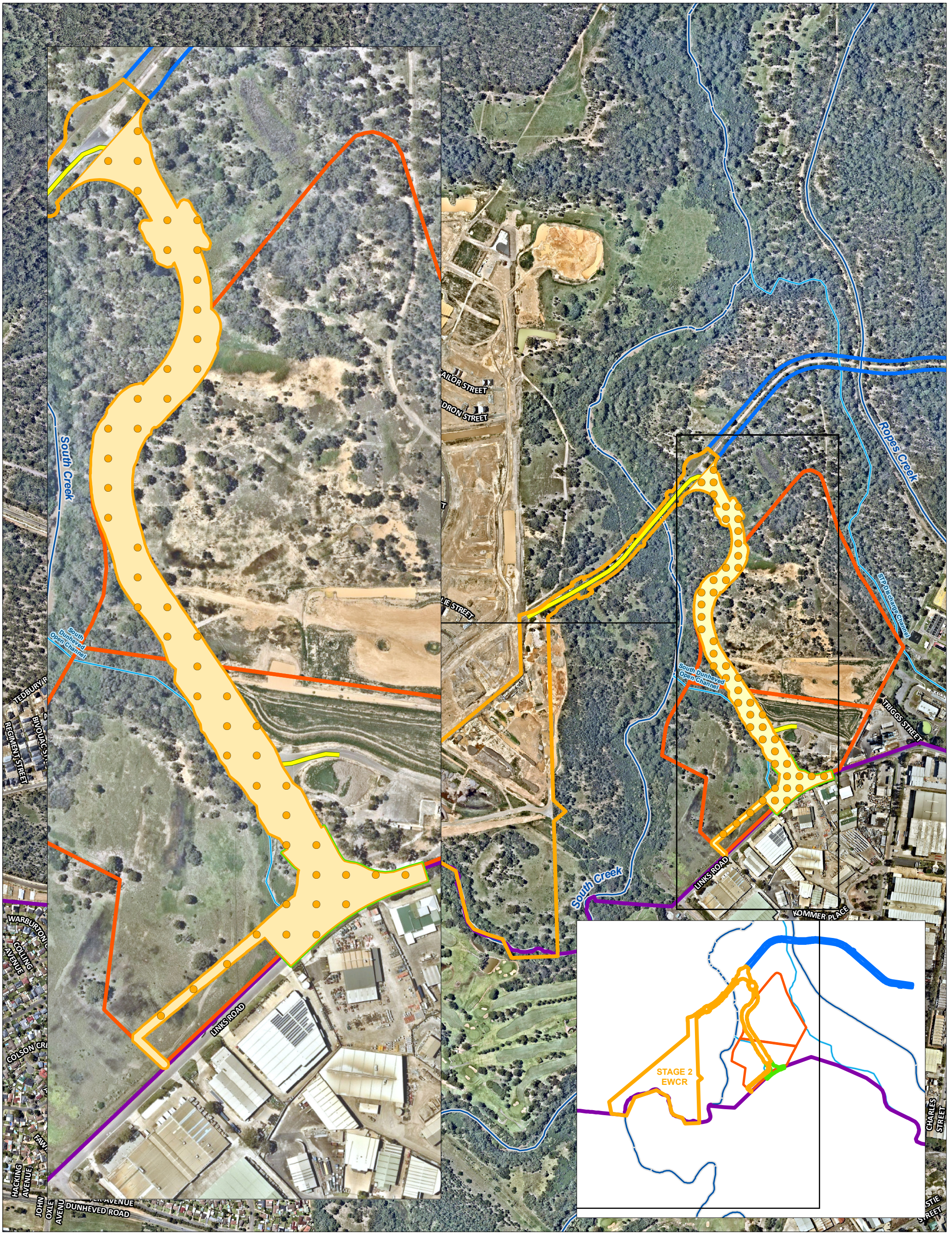
East West Connector Road

REMEDIATION AREAS AND PFAS IMPACTED STOCKPILE AREA

FIGURE 3

File Name: N:\Projects\54782 Jordan Springs PFAS Assessment\GIS\Maps\R08 Rev A\54782_03_RemediationAreasandPFASImpactedStockpileArea.mxd
Aerial Photo: Nearmap - 2017 Imagery 2017

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Legend:

- Former ADI St Marys Property
- Dunheved Precinct
- Stage 2b and 3 Area of Fill and Asbestos Quantifiaction

East West Connector Road Site

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Haulage Road
- Channels
- Creeks

JBS&G

0 120 240 metres

Central Precinct

STAGE 2B AND STAGE 3 DATA GAP ASSESSMENT LOCATIONS

Job No: 54782		Scale: 1:8,500		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: R08 Rev 0	Date: 14-Aug-2019	**FIGURE 4**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R08 Rev 0\54782_08_Stage2b_3_Fill_AsbestosQuantificationSamples.mxd
Created on: 14/08/2019 by: 20181229

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Appendix A Summary of Data

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Version: 1, Version Date: 28/08/2019

Stage 2b Data

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Legend:

- Former ADI St Marys Property
- Dunheved Precinct
- Stage 2 Boundary
- Proposed PFAS Remediation Areas
- Creeks
- Channels
- Soil Sample Location - Stage 2

JBS&G

0 20 40
metres

Central Precinct

SOIL SAMPLING LOCATIONS

Job No: 54782		Scale: 1:1,750		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: L20 Rev 0	Date: 15-Jul-2019	**FIGURE 1**

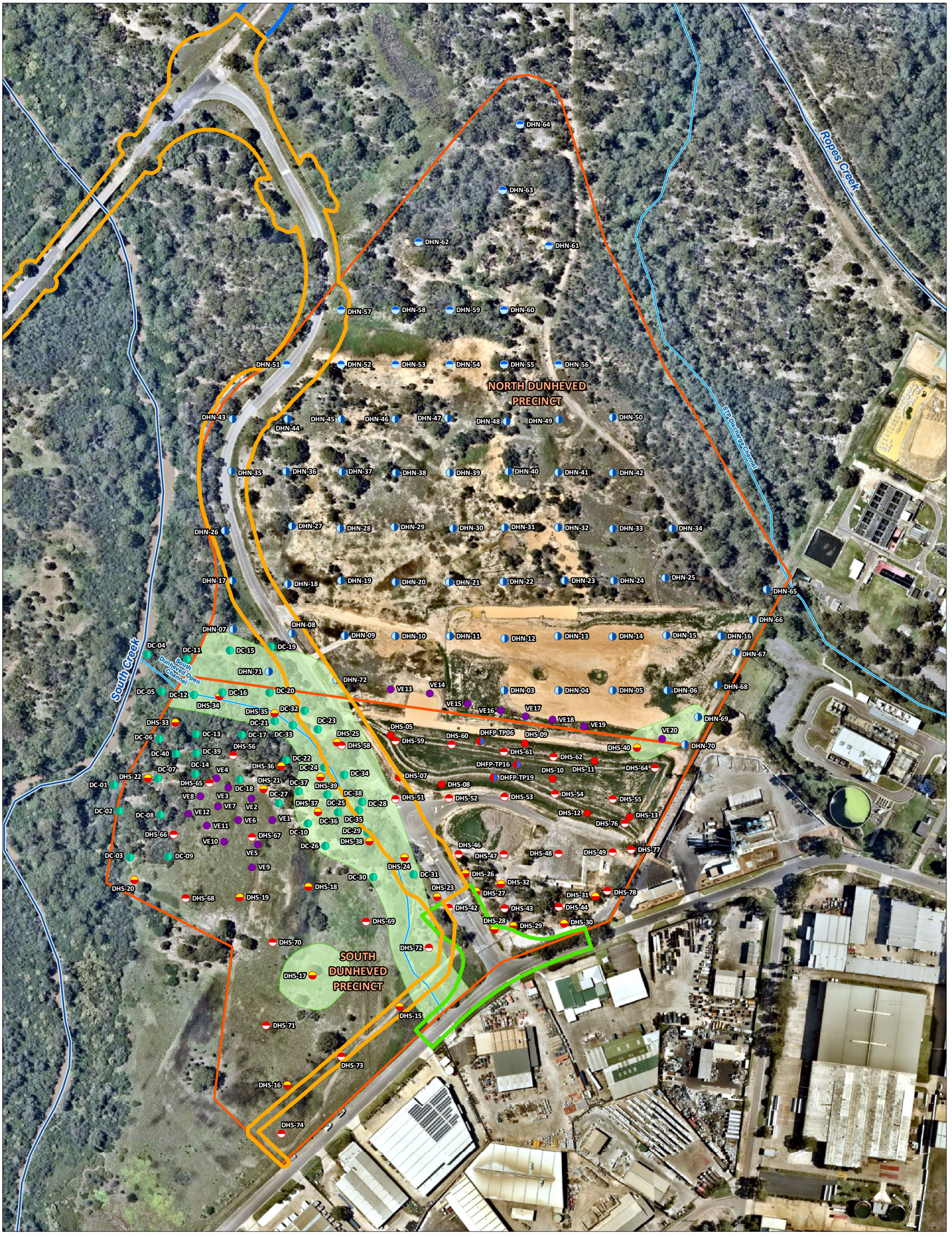
File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\L20 Rev 0\54782_01_Soil_Sampling_Locations.mxd
Data Source: LPI Web Services 20191228 © Department of Finance, Services & Innovation 2017

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Table A - Stage 2 Assessment
Project Number: 54782
Project Name: Stage 2 - Jordan Springs PFAS Assessment

			PFAS																																			Other
			2-(N-methylperfluoro-1-octane sulfonamido)-ethanol	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoroundecanoic acid (PFUnA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorododecanoic acid (PFDoA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	N-methyl-perfluorooctanesulfonamidoacetic acid	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorobutanesulfonic acid (PFBS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroundecanoic acid (PFUnS)	Perfluorododecanesulfonic acid (PFDoS)	Perfluorotridecanesulfonic acid (PFTrS)	Perfluorotetradecanesulfonic acid (PFTeS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of WA DER PFAS (n=10)	Sum of PFASs (n=28)	% Moisture 103oC
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
EQL			0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.05	1
NEMP 2018 PFAS Human Health Screening Values - Industrial/Commercial																				50											20					20	20				
NEPM 2018 PFAS Ecological Indirect Exposure - Industrial/Commercial																																0.01							
Sample ID	**Sample Date**	**Laboratory Report Number**																																					
ST201 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	19
ST201 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	11
QA20190707-02	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	15
QC20190707-02	7/07/2019	221253	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.0001	<0.001	<0.0001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	0.0006	-	-	-	-
ST202 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	13
ST202 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	15
ST203 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	9.5
ST203 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	18
ST204 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0088[#1]	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0088	<0.005	0.0088	<0.01	<0.05	15
ST204 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	14
ST206 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	9.9
ST206 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	19
ST207 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	13
ST207 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	11
ST208 0.8-1.0	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	15
ST208 0-0.1	7/07/2019	664671	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	17

Data Comments
#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.



Legend:

- Stage 1 Boundary
- Stage 2 Boundary
- Stage 3 Boundary
- Dunheved Precinct
- Creeks
- Channels
- Proposed PFAS Remediation Areas

Soil Sample Location

- Dunheved South - Dec 2017
- Dunheved South - Sep 2017
- Dunheved South - Feb 2018
- Dunheved South - May 2018
- Dunheved North - May 2018
- Material Characterisation Dunheved May 2018
- Adjoining Dunheved South - July 2018
- Dunheved North - Nov 2018

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0 40 80
metres

Central Precinct

SOIL SAMPLE LOCATIONS DUNHEVED

Job No: 54782		Scale: 1:3,000		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: FH	Checked By: GB	Version: R03 Rev B	Date: 12-Apr-2019	**FIGURE 3**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R04 Rev A\54782_03_Sample_locations.mxd
Time Saved: 19/12/2019 10:01:20 AM

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Table App C PFAS Analytical Results for Stage 2b EWCR
Job number - 54782
Job Name - PFAS Assessment former St Mary's ADI Site

			PFAS																																						
			2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoropentanoic acid (PFPeA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorononanoic acid (PFNA)	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of PFASs (n=28)	Sum of WA DER PFAS (n=10)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Z-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	N-ethyl-perfluorooctanesulfonamidoacetic-acid	N-methyl-perfluorooctanesulfonamidoacetic_acid
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
HEPA (2018) Ecological Indirect exposure - Residential																															0.01	0.01									
HEPA (2018) Human Health Screening Levels - Residential with Garden accessible Soils																0.1															0.009	0.009									
HEPA (2018) Human Health Screening Levels - Public Open Space																10															1	1									
HEPA (2018) Human Health Screening Levels - Commercial/Industrial																100															20	20									
HEPA (2018) Soil Indirect - Commercial and Industrial																															0.14	0.14									
OEH/NSW Health (2017) Soil Direct Toxicity - Commercial and Industrial																48															60	60									
HEPA (2018) Soil Direct Toxicity - Public Open Space																10															1	1									
Field_ID		**Sampled_Date-Time**																																							
Dunheved North																																									
DHN-17 0-0.1	DHN-17 0-0.1	08-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0097	0.0097	<0.05	<0.01	0.0097	0.0097	-	-	-
DHN-26_0-0.1	DHN-26_0-0.1	07-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHN-35 0-0.1	DHN-35 0-0.1	08-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHN-43 0-0.1	DHN-43 0-0.1	08-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHN-51 0-0.1	DHN-51 0-0.1	10-09-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHN-57 0-0.1	DHN-57 0-0.1	10-09-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.013	0.013	0.013	0.013	0.013	0.013	-	-	-
DHN-72 0.3-0.5	DHN-72 0.3-0.5	08-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0077	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.017	0.017	<0.05	0.0247	0.0247	0.0247	-	-	-
DHN-72 0-0.1	DHN-72 0-0.1	08-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.011	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0087	<0.005	0.28	0.2887	0.2997	0.2997	0.291	0.2997	-	-	-
DHN-72_0-0.1	DHN-72_0-0.1	07-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHN-8 0-0.1	DHN-8 0-0.1	04-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
Dunheved South																																									
DHS-07		13-12-17	-	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-	-
DHS-15-0-0.1		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0052	<0.005	<0.005	0.0052	<0.05	<0.01	-	-	-	-	-	-
DHS-23-0-0.1		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	-	-	-	-	-	-
DHS-24-0-0.1		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	-	-	-	-	-	-
QA2010212-02		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	-	-	-	-	-	-
QC20180212-02		12-02-18	-	-	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	0.0002	-	-	-	-	-	-	-	-	-	-	-	0.0006	-	0.0005	0.0011	-	-	-	-	-	-	-	-
DHS-25-0-0.1		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	-	-	-	-	-	-
DHS-26-0-0.1		12-02-18	-	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	-	-	-	-	-	-
DHS-51-5.2-5.3	DHS-51-5.2-5.3	01-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHS-58 0-0.1	DHS-58 0-0.1	04-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DHS-73 0-0.1	DHS-73 0-0.1	04-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
Adjoining Dunheved South																																									
DC-19 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.015	0.015	<0.05	0.015	0.015	0.015	-	-	-
QA20180703-02	DC-19 0.0-0.1	03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.018	0.018	<0.05	0.018	0.018	0.018	-	-	-
QC20180703-02	QC20180703-02	03-07-18	-	-	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	0.0011	-	-	-	-	-	-	-	-	-	-	-	0.0023	-	0.015	0.0173	0.018	-	-	-	-	-	-
DC-19 0.3-0.4		02-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0052	<0.005	<0.005	0.0052	<0.05	<0.01	<0.005	0.0052	-	-	-
DC-23 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0057	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0099	<0.005	0.13	0.1399	0.1456	0.1456	0.1357	0.1456	-	-	-
DC-23 0.3-0.4		02-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.029	0.029	<0.05	0.029	0.029	0.029	-	-	-
DC-23 0.6-0.8	DC-23 0.6-0.8	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-23 1.4-1.6	DC-23 1.4-1.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-23 2.4-2.6	DC-23 2.4-2.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-23 3.4-3.6	DC-23 3.4-3.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0093	0.0093	<0.05	<0.01	0.0093	0.0093			
DC-23 4.6-4.8	DC-23 4.6-4.8	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0069	0.0069	<0.05	<0.01	0.0069	0.0069			
DC-23 5.6-5.8	DC-23 5.6-5.8	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-23 6.3-6.5	DC-23 6.3-6.5	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-28 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.11	0.11	0.11	0.11	0.11	0.11	-	-	-
DC-29 0.0-0.1		02-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0073	0.0073	<0.05	<0.01	0.0073	0.0073	-	-	-
DC-31 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-
DC-32 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0057	0.0057	<0.05	<0.01	0.0057	0.0057	-	-	-
DC-34 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.027	0.027	<0.05	0.027	0.027	0.027	-	-	-
DC-34 0.3-0.4		02-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.025	<0.005	0.28	0.305	0.305	0.305	0.28	0.305	-	-	-
DC-34 0.6-0.8	DC-34 0.6-0.8	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.13	0.13	0.13	0.13	0.13	0.13			
DC-34 1.4-1.6	DC-34 1.4-1.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.051	0.051	0.051	0.051	0.051	0.051			
DC-34 2.4-2.6	DC-34 2.4-2.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.035	0.035	<0.05	0.035	0.035	0.035			
DC-34 3.4-3.6	DC-34 3.4-3.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
QA20180802-02	DC-34 3.4-3.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.015	0.015	<0.05	0.015	0.015	0.015			
QC20180802-02		02-08-18	-	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	0.0002	0.0006	-	-	-	-	-	-	-	-	-	-	0.0018	-	0.0057	0.0075	-	-	-	-	-	-	-	-
DC-34 4.4-4.6	DC-34 4.4-4.6	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-34 5.0-5.2	DC-34 5.0-5.2	02-08-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005			
DC-35 0.0-0.1		03-07-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.034	0.034	<0.05	0.034	0.034	0.034	-	-	-
QA/QC																																									

Table App C PFAS Analytical Results for Stage 2b EWCR
Job number - 54782
Job Name - PFAS Assessment former St Mary's ADI Site

	PFAS																																		
	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoropentanoic acid (PFPeA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorononanoic acid (PFNA)	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of PFASs (n=28)	Sum of WA DER PFAS (n=10)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	N-ethyl-perfluorooctanesulfonamidoacetic-acid	N-methyl-perfluorooctanesulfonamidoacetic_acid
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01			
HEPA (2018) Ecological Indirect exposure - Residential																													0.01	0.01							
HEPA (2018) Human Health Screening Levels - Residential with Garden accessible Soils														0.1															0.009	0.009							
HEPA (2018) Human Health Screening Levels - Public Open Space														10															1	1							
HEPA (2018) Human Health Screening Levels - Commercial/Industrial														100															20	20							
HEPA (2018) Soil Indirect - Commercial and Industrial																													0.14	0.14							
OEH/NSW Health (2017) Soil Direct Toxicity - Commercial and Industrial														48															60	60							
HEPA (2018) Soil Direct Toxicity - Public Open Space														10															1	1							
Field_ID		**Sampled_Date-Time**																																			
TRIP BLANK	596738	02-05-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	597159	04-05-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	597366	07-05-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	597594	08-05-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	597692	09-05-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	605971	03-07-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TRIP BLANK	610490	02-08-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01	-	-	-
TB	621017	03-10-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01			
TB	624659	25-10-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01			
TB	624659	25-10-18	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01			

Notes
* It is noted that the SP30 footprint samples included are of the current surface level and following additional scrape up

Surface samples beneath SP30 which were scraped up and relocated to Dunheved, ie not representative of the current SP30 footprint surface

Table A - Soil Analytical Results
Project Number: 54020
Project Name: Dunheved Investigation

			Explosives in Soil										Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)						BTEXN											
			PETN	Nitroglycerine	4-&2-AM-DNT(Isomeric Mixture)	Tetryl	4-Amino-2,6-dinitrotoluene	2-Amino-4,6-dinitrotoluene	HMX	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene	Acenaphthene	Acenaphthylene	Anthrazene	Benz(a)anthracene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL										0.1	0.1	0.1	2	0.4	1	1	1	0.1	1	1	20	20	50	50	50	50	100	100	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1
NEPM 2013 EIL - Commercial Industrial (Site Specific)													160		850	310	1800		350	770																370				
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																											1700	3300	170		215	75	165	135			180					
NEPM 2013 Soil HIL D													3000	900	3600	240000	1500	730	6000	400000																						
NEPM 2013 Soil HSL D - Sensitive Setting																													-		250	3	-	-			230	-				
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																																										
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																										
Field ID	**Date**	**Report Number**																																									
Dunheved South																																										
DHS-07	13-Dec-17	577258	-	-	-	-	-	-	-	<1	<0.5	<0.5	7.3	<0.4	23	19	17	<0.1	13	29	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
QA20171212-01	13-Dec-17	577258	-	-	-	-	-	-	-	<1	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20171212-01	13-Dec-17	182018	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	<0.4	17	15	13	<0.1	8	21	<25	<50	<100	<100	-	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DHS-15-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	2.9	<0.4	130	44	11	<0.1	120	67	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
DHS-23-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	5.7	<0.4	20	8.5	14	<0.1	5.4	10	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
DHS-24-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	8.5	<0.4	28	13	17	<0.1	6.2	18	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
DHS-25-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHS-26-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	7.9	<0.4	32	9.8	21	<0.1	8.6	21	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
Dunheved North																																										
DHN-8 0-0.1	04-May-18	597159	-	-	-	-	-	-	-	-	-	-	5.1	<0.4	19	15	19	0.1	6.7	22	<20	<20	<50	59	59	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
DHN-26_0.4-0.5	07-May-18	597366	-	-	-	-	-	-	-	-	-	-	9.5	<0.4	26	17	24	<0.1	18	39	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
DHN-35 0-0.1	08-May-18	597594	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHN-71 0.4-0.5	08-May-18	597594	-	-	-	-	-	-	-	-	-	-	4.3	<0.4	20	13	14	<0.1	9.3	26	<20	<20	<50	<50	<50	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5

Data Comments

#1 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#2 ESDAT Combined with Non-Detect Multiplier of 0.5.
#5 Chrysotile asbestos detected.
#6 Organic fibres detected.
#7 ESDAT Combined.
#8 50x35x3

Table A - Soil Analytical Results
Project Number: 54020
Project Name: Dunheved Investigation

| | | | Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | Organochlorine Pesticides | | | | | | | | | | | | | | |

Table A - Soil Analytical Results
Project Number: 54020
Project Name: Dunheved Investigation

			Polychlorinated Biphenyls						Chlorinated Benzenes	Nitrobenzenes			Nitrotoluenes				Ionic Balance		
			Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	Hexachlorobenzene	1,3,5-trinitrobenzene	1,3-dinitrobenzene	Nitrobenzene	2,4,6-trinitrotoluene	2,4-dinitrotoluene	2-nitrotoluene	3-nitrotoluene	Cation Exchange Capacity	EC 1:5 soil:water	pH 1:5 soil:water
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	µS/cm	ph Units
EQL			0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1		0.1	0.1	0.05	10	0.1
NEPM 2013 EIL - Commercial Industrial (Site Specific)																			
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																			
NEPM 2013 Soil HIL D								7	80										
NEPM 2013 Soil HSL D - Sensitive Setting																			
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																			
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																			
Field ID	**Date**	**Report Number**																	
Dunheved South																			
DHS-07	13-Dec-17	577258	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<1	<0.5	<0.5	<1	-	<0.5	<0.5	17	64	5.2
QA20171212-01	13-Dec-17	577258	-	-	-	-	-	-	-	<1	<0.5	<0.5	<1	-	<0.5	<0.5	-	-	-
QC20171212-01	13-Dec-17	182018	<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	-	-	-
DHS-15-0-0.1	12-Feb-18	584878	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-
DHS-23-0-0.1	12-Feb-18	584878	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-
DHS-24-0-0.1	12-Feb-18	584878	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-
DHS-25-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHS-26-0-0.1	12-Feb-18	584878	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	9.4	64	8.1
Dunheved North																			
DHN-8 0-0.1	04-May-18	597159	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	-	-	-	-	-	-	-	-	-
DHN-26_0.4-0.5	07-May-18	597366	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-
DHN-35 0-0.1	08-May-18	597594	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHN-71 0.4-0.5	08-May-18	597594	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-

Data Comments

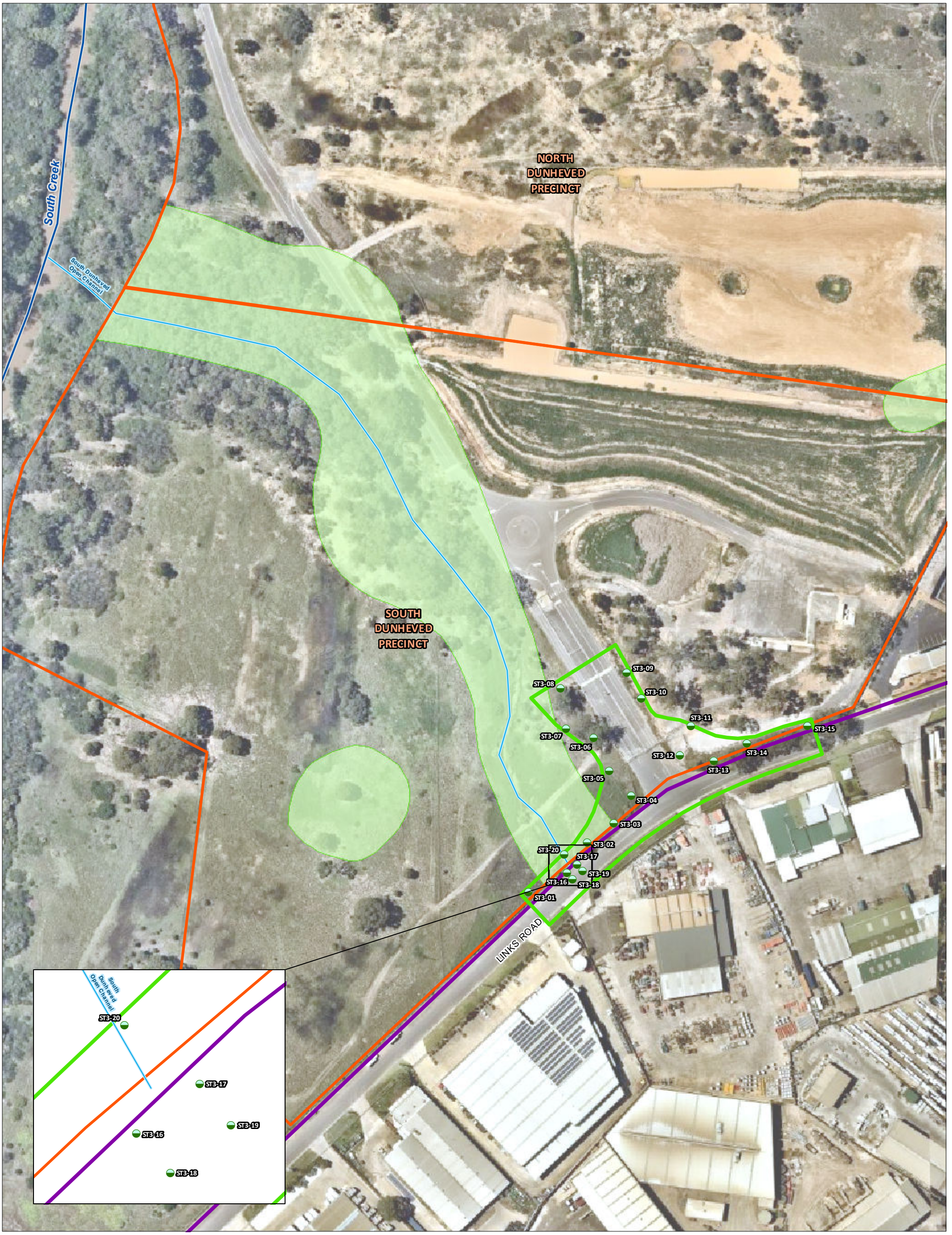
#1 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#2 ESDAT Combined with Non-Detect Multiplier of 0.5.
#5 Chrysotile asbestos detected.
#6 Organic fibres detected.
#7 ESDAT Combined.
#8 50x35x3

Table B: Asbestos in Soil Results
Job Number: 54020
Job Name: Dunheved Investigation

			Asbestos Field					Asbestos Laboratory													Asbestos - Trace Analysis				
			Approximate Volume of Soil	Approx. Sample Mass#1	Mass ACM	Mass Asbestos in ACM#2	Asbestos from ACM in soil#3	Approx. Sample Mass	Asbestos from ACM in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Asbestos from FA & AF in Soil	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Total Asbestos#1	ACM>7 mm Estimation	FA and AF Estimation*#2	ACM - Comment	FA - Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
			L	g	g	g	%w/w	g	%w/w	g	g	g	g	%w/w	g	g	g	g/kg	%w/w	%(w/w)	Comment	Comment	Comment	Comment	Comment
EQL																									
NEPM 2013 Soil HIL D							0.05		0.05					0.001					0.01	0.001					
NEPM 2013 Soil HSL D - Sensitive Setting																									
South Dunheved																									
DHS-07	13-Dec-17	577258	10	16300	0	0	0	643	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
QA20171212-01	13-Dec-17	577258	10	16300	0	0	0	669	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
QC20171212-01	13-Dec-17	182018	10	16300	0	0	0	583	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHS-15-0-0.1	12-Feb-18	584878	10	16300	0	0	0	1114	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHS-23-0-0.1	12-Feb-18	584878	10	16300	0	0	0	755	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHS-24-0-0.1	12-Feb-18	584878	10	16300	0	0	0	735	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHS-25-0-0.1	12-Feb-18	584878	10	16300	0	0	0	902	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHS-26-0-0.1	12-Feb-18	584878	10	16300	0	0	0	711	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
North Dunheved																									
DHN-8 0-0.1	04-May-18	597159	10	16300	0	0	0	459	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHN-26_0.4-0.5	07-May-18	597366	10	16300	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHN-35 0-0.1	08-May-18	597594	10	16300	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
DHN-71 0.4-0.5	08-May-18	597594	10	16300	0	0	0	498	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected

Stage 3 Data

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019



Legend:

- Former ADI St Marys Property
- Dunheved Precinct
- Stage 3 Boundary
- Proposed PFAS Remediation Areas
- Creeks
- Channels
- Soil Sample Location - Stage 3

JBS&G

0 20 40 metres

Central Precinct

SOIL SAMPLING LOCATIONS

Job No: 54782		Scale: 1:1,750		
Client: Minter Ellison		Coord. Sys. GDA 1994 MGA Zone 56		
Drawn By: RF	Checked By: GB	Version: R05 Rev A	Date: 15-Jul-2019	**FIGURE 3**

File Name: N:\Projects\Minter Ellison\54782 Jordan Springs PFAS Assessment\GIS\Maps\R05 Rev A\54782_03_Soil_Sampling_Locations.mxd
Time Saved: 13:08:50 20191228

Document Set ID: 8830565
Version: 1, Version Date: 28/08/2019

Table A - Soil Analytical Results
Project Number: 54782
Project Name: Stage 3 East West Connecto Road ESA

			Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEXN							Polycyclic Aromatic Hydrocarbons																
			Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C10-C16 less Naphthalene (F2)	>C6-C10 Fraction	>C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2	0.4	5	5	5	0.1	5	5	20	20	50	50	50	50	100	100	100	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEMP 2019 PFAS Human Health Screening Values - Industrial/Commercial																																														
NEPM 2013 EIL - Commercial Industrial (generic)			160		310	85	1800		55	110																			370																		
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																	1700	3300		170		215	75	165	135			180					1.4													
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																																													
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																													
NEPM 2013 Soil HIL D			3000	900	3600	240000	1500	730	6000	400000																								40	40	40									
HEPA 2019 PFAS Ecological Indirect Exposure - All landuses																																													
Sample ID	**Sample Date**	**Laboratory Report Number**																																												
ST3-01 0-0.1	7/07/2019	664672	2.9	<0.4	29	48	18	<0.1	22	110	<20	<20	87	220	307	<50	250	250	500	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5
ST3-02 0-0.1	7/07/2019	664672	7.8	<0.4	41	59	62	0.2	27	280	<20	<20	<50	86	86	<50	100	<100	100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5
QA20190707_01	7/07/2019	664672	7.3	<0.4	46	50	55	0.2	27	240	<20	<20	<50	50	50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	0.6	0.6	0.7	1	1.3	<0.5	0.5	<0.5	<0.5	<0.5	1	<0.5	0.6
QC20190707-01	7/07/2019	221255	5	<0.4	29	43	38	0.1	23	170	<25	<50	<100	110	-	<50	120	100	220	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<3	<1	<0.1	<0.1	<0.1	0.2	0.3	<0.5	<0.5	<0.5	0.3	0.3	=	0.2	<0.1	0.6	<0.1	0.2
ST3-03 0-0.1	7/07/2019	664672	4.8	<0.4	29	41	32	0.1	20	130	<20	<20	62	96	158	<50	130	<100	130	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	0.7	1.2	0.6	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5
ST3-04 0.8-0.9	7/07/2019	664672	10	<0.4	35	9.5	31	<0.1	6.2	21	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-04 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-05 0-0.1	7/07/2019	664672	7.5	<0.4	30	20	23	<0.1	19	56	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5
ST3-06 0-0.1	7/07/2019	664672	6.6	<0.4	17	12	26	<0.1	11	32	<20	<20	<50	62	62	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-08 0-0.1	7/07/2019	664672	19	<0.4	14	18	14	<0.1	8	20	<20	<20	76	66	142	<50	110	<100	110	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-09 0.4-0.5	7/07/2019	664672	3.8	<0.4	11	9.2	6.8	<0.1	<5	14	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-09 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-10 0-0.1	7/07/2019	664672	4.1	<0.4	18	20	14	<0.1	14	57	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-11 0-0.1	7/07/2019	664672	8.9	<0.4	17	26	20	<0.1	9.9	68	<20	<20	<50	79	79	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-12 0-0.1	7/07/2019	664672	3.8	<0.4	15	96	14	<0.1	8.8	76	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ST3-13 0-0.15	7/07/2019	664672	2.7	<0.4	42	23	22	<0.1	40	49	<20	<20	160	290	450	<50	370	260	630	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	0.6	0.7	0.8	1.1	1.4	<0.5	0.5	<0.5	0.5	<0.5	0.9	<0.5	0.5
ST3-14 0-0.1	7/07/2019	664672	7.1	<0.4	26	40	28	<0.1	13	130	<20	25	96	130	251	<50	180	<100	180	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	0.5	1.1	1.3	1.7	2	2.2	1	1.1	0.9	1	<0.5	3	<0.5	1
ST3-15 0-0.1	7/07/2019	664672	7.3	<0.4	33	25	29	<0.1	10	110	<20	<20	130	120	250	<50	220	<100	220	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	0.8	2.8	3.4	5.4	5.4	5.4	3	2.7	2	2.9	0.9	9.5	<0.5	2.2
ST3-16 0.3-0.5	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-16 0.8-1.0	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-17 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-17 1.0-1.2	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-18 0.3-0.4	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-18 1.0-1.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-19 0.5-0.7	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST319 1.0-1.2	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST320 0.2-0.3	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST320 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Data Comments
#1 No respirable fibres detected.
#2 Organic fibres detected.
#3 Nil

Table A - Soil Analytical Results
Project Number: 54782
Project Name: Stage 3 East West Connecto Road ESA

| | | | | | | Organochlorine Pesticides | | | | | | | | | | | | | | | | | | | | | | Chlorinated Alkanes | | | | | | | | | | | | | | | | | | |

Table A - Soil Analytical Results
Project Number: 54782
Project Name: Stage 3 East West Connecto Road ESA

			Chlorinated Alkenes								Solvents	Polychlorinated Biphenyls								PFAS																	
			4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	2-Propanone (Acetone)	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTS)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	1H,1H,2H,2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoropentanoic acid (PFPeA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorooctanoic acid (PFOA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorononanoic acid (PFNA)	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorodecanesulfonic acid (PFDS)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.01	0.005	0.005	0.005	0.005	0.005
NEMP 2019 PFAS Human Health Screening Values - Industrial/Commercial																																50							20	
NEPM 2013 EIL - Commercial Industrial (generic)																																								
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																																								
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																																								
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																								
NEPM 2013 Soil HIL D																			7																					
HEPA 2019 PFAS Ecological Indirect Exposure - All landuses																																								
Sample ID	**Sample Date**	**Laboratory Report Number**																																						
ST3-01 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	<5	<5	<5	<5	<5	<5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-02 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
QA20190707_01	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
QC20190707-01	7/07/2019	221255	<1	<1	<1	<1	<1	<1	<1	<1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001		<0.005	<0.0001	<0.0001	<0.001	0.0007	<0.001		<0.001	0.0004	<0.001		<0.001	<0.0001			0.0003	
ST3-03 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-04 0.8-0.9	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-04 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-05 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-06 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-08 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-09 0.4-0.5	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-09 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-10 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-11 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-12 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-13 0-0.15	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-14 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-15 0-0.1	7/07/2019	664672	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-16 0.3-0.5	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	0.013	<0.005	0.0094	<0.005
ST3-16 0.8-1.0	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-17 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-17 1.0-1.2	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	0.094	<0.005
ST3-18 0.3-0.4	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-18 1.0-1.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST3-19 0.5-0.7	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST319 1.0-1.2	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
ST320 0.2-0.3	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.015	<0.01	<0.005	<0.01	<0.005	<0.005	0.089	<0.005
ST320 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	0.013	<0.005

Data Comments
#1 No respirable fibres detected.
#2 Organic fibres detected.
#3 Nil

Table A - Soil Analytical Results
Project Number: 54782
Project Name: Stage 3 East West Connecto Road ESA

												Monocyclic Aromatic Hydrocarbons					Miscellaneous Hydrocarbons						Chlorinated Benzenes					Trihalomethanes				: Sulfur Com	Other	EPA VIC - IWRG621			
			Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of WA DER PFAS (n=10)	Sum of PFASs (n=28)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	Bromobenzene	Isopropylbenzene	Styrene	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	Dibromomethane	Iodomethane	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Hexachlorobenzene	Bromodichloromethane	Chloroform	Dibromochloromethane	Tribromomethane	Carbon disulfide	% Moisture 103oC	Chlorinated Hydrocarbons EPAVic	Other Chlorinated Hydrocarbons EPAVic	Organochlorine Pesticides EPAVic	Other Organochlorine Pesticides EPAVic
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.05	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.1	0.1
NEMP 2019 PFAS Human Health Screening Values - Industrial/Commercial							20	20																													
NEPM 2013 EIL - Commercial Industrial (generic)																																					
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																																					
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																																					
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																					
NEPM 2013 Soil HIL D																											80										
HEPA 2019 PFAS Ecological Indirect Exposure - All landuses							0.01																														
Sample ID	**Sample Date**	**Laboratory Report Number**																																			
ST3-01 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	18	<0.5	<0.5	<2	<2
ST3-02 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.0081	0.0081	0.0081	0.0081	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	28	<0.5	<0.5	<0.2	<0.2
QA20190707_01	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.0074	0.0074	0.0074	0.0074	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	27	<0.5	<0.5	<0.2	<0.2
QC20190707-01	7/07/2019	221255					0.0068	-	-	-	-	-						<1			<1	<1		<1	<1	<1	<1	<0.1	<1	<1	<1							
ST3-03 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.0062	0.0062	0.0062	0.0062	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	16	<0.5	<0.5	<0.2	<0.2
ST3-04 0.8-0.9	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	19	<0.5	<0.5	<0.2	<0.2
ST3-04 0-0.1	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST3-05 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	18	<0.5	<0.5	<0.2	<0.2
ST3-06 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	6.7	<0.5	<0.5	<0.2	<0.2
ST3-08 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	11	<0.5	<0.5	<0.2	<0.2
ST3-09 0.4-0.5	7/07/2019	664672	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.2	<0.2
ST3-09 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-
ST3-10 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15	<0.5	<0.5	<2	<2
ST3-11 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	19	<0.5	<0.5	<0.2	<0.2
ST3-12 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	8.1	<0.5	<0.5	<0.2	<0.2
ST3-13 0-0.15	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	18	<0.5	<0.5	<0.2	<0.2
ST3-14 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	18	<0.5	<0.5	<0.2	<0.2
ST3-15 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	17	<0.5	<0.5	<0.2	<0.2
ST3-16 0.3-0.5	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.16	0.1694	0.16	0.1694	0.1694	0.1824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	-	-	-	-
ST3-16 0.8-1.0	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.03	0.03	0.03	0.03	0.03	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-
ST3-17 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.061	0.061	0.061	0.061	0.061	0.061	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-
ST3-17 1.0-1.2	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.05	0.0565	0.05	0.0565	0.0565	0.0565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	-	-	-
ST3-18 0.3-0.4	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.4	-	-	-	-
ST3-18 1.0-1.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.011	0.011	0.011	0.011	0.011	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-
ST3-19 0.5-0.7	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.1	-	-	-	-
ST319 1.0-1.2	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-
ST320 0.2-0.3	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.26	0.349	0.275	0.364	0.369	0.369	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-
ST320 0-0.1	7/07/2019	664672	<0.005	<0.005	<0.005	<0.005	0.13	0.143	0.13	0.143	0.143	0.143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	-	-	-	-

Data Comments
#1 No respirable fibres detected.
#2 Organic fibres detected.
#3 Nil

Table B - Asbestos in Soil Analytical Results
Project Number - 54782
Project Name - Stage 3 East West Connector Road ESA

			Asbestos Laboratory												Asbestos - Trace Analysis				
			Approx. Sample Mass	Asbestos from ACM in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Asbestos from FA & AF in Soil	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Total Asbestos#1	ACM>7 mm Estimation	FA and AF Estimation*#2	ACM - Comment	FA - Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
			g	%w/w	g	g	g	g	%w/w	g	g	g	g/kg	%w/w	%(w/w)	Comment	Comment	Comment	Comment	Comment
EQL																				
NEPM 2013 Soil HIL D				0.05					0.001					0.05	0.001					
NEPM 2013 Soil HSL D - Sensitive Setting																				
Field_ID	**Sampled_Date-Tim**	**Lab Report Number**																		
ST3-01 0-0.1	7/07/2019	664672	401	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-02 0-0.1	7/07/2019	664672	403	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
QA20190707_01	7/07/2019	664672	339	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
QC20190707-01	7/07/2019	09-Oct-2505	423	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-03 0-0.1	7/07/2019	664672	451	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-04 0-0.1	7/07/2019	664672	391	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-05 0-0.1	7/07/2019	664672	435	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-06 0-0.1	7/07/2019	664672	561	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-08 0-0.1	7/07/2019	664672	425	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-09 0-0.1	7/07/2019	664672	515	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-10 0-0.1	7/07/2019	664672	570	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-11 0-0.1	7/07/2019	664672	482	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-12 0-0.1	7/07/2019	664672	633	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-13 0-0.15	7/07/2019	664672	493	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-14 0-0.1	7/07/2019	664672	502	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected
ST3-15 0-0.1	7/07/2019	664672	281	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected

Table App C
Project Number: 54782
Project Name: Dunheved Investigation

	Explosives in Soil										Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)						BTEXN											
	PETN	Nitroglycerine	4-&2-AM-DNT(Isomeric Mixture)	Tetryl	4-Amino-2,6-dinitrotoluene	2-Amino-4,6-dinitrotoluene	HMX	2,4- & 2,6-Dinitrotoluene	4-Nitrotoluene (4-NT)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	GL-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C16 less Naphthalene (F2)	GL-C10 Fraction	GL-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene	Acenaphthene	Acenaphthylene	Anthrazene	Benz(a)anthracene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL								0.1	0.1	0.1	2	0.4	1	1	1	0.1	1	1	20	20	50	50	50	50	100	100	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1
NEPM 2013 EIL - Commercial Industrial (Site Specific)											160		850	310	1800		350	770																	370				
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																									1700	3300	170		215	75	165	135			180					
NEPM 2013 Soil HIL D											3000	900	3600	240000	1500	730	6000	400000																						
NEPM 2013 Soil HSL D - Sensitive Setting																											-		250	3	-	-			230	-				
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																																								
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																								
Field ID	**Date**	**Report Number**																																						
Dunheved South																																								
DHS-28-0-0.1	12-Feb-18	584878	-	-	-	-	-	-	-	-	-	8.5	<0.4	66	21	17	<0.1	6.8	15	<20	<20	<50	56	56	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5

Data Comments
#1 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#2 ESDAT Combined with Non-Detect Multiplier of 0.5.
#5 Chrysotile asbestos detected.
#6 Organic fibres detected.
#7 ESDAT Combined.
#8 50x35x3

Table App C
Project Number: 54782
Project Name: Dunheved Investigation

| | Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | | Organochlorine Pesticides | | | | | | | | | | | | | | | |

Table App C
Project Number: 54782
Project Name: Dunheved Investigation

	Polychlorinated Biphenyls						Chlorinated Benzenes	Nitrobenzenes			Nitrotoluenes				Ionic Balance		
	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	Hexachlorobenzene	1,3,5-trinitrobenzene	1,3-dinitrobenzene	Nitrobenzene	2,4,6-trinitrotoluene	2,4-dinitrotoluene	2-nitrotoluene	3-nitrotoluene	Cation Exchange Capacity	EC 1:5 soil:water	pH 1:5 soil:water
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	µS/cm	ph Units
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1		0.1	0.1	0.05	10	0.1
NEPM 2013 EIL - Commercial Industrial (Site Specific)																	
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																	
NEPM 2013 Soil HIL D						7	80										
NEPM 2013 Soil HSL D - Sensitive Setting																	
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																	
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																	
Field ID	**Date**	**Report Number**															
Dunheved South																	
DHS-28-0-0.1	12-Feb-18	584878	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-

Data Comments
#1 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#2 ESDAT Combined with Non-Detect Multiplier of 0.5.
#5 Chrysotile asbestos detected.
#6 Organic fibres detected.
#7 ESDAT Combined.
#8 50x35x3

Table App CResults
Job Number: 54782
Job Name: Dunheved Investigation

			Asbestos Field					Asbestos Laboratory													Asbestos - Trace Analysis				
			Approximate Volume of Soil	Approx. Sample Mass[1]	Mass ACM	Mass Asbestos in ACM[2]	Asbestos from ACM in soil[3]	Approx. Sample Mass	Asbestos from ACM in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Asbestos from FA & AF in Soil	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Total Asbestos#1	ACM>7 mm Estimation	FA and AF Estimation*#2	ACM - Comment	FA - Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
			l	g	g	g	%w/w	g	%w/w	g	g	g	g	%w/w	g	g	g	g/kg	%w/w	%(w/w)	Comment	Comment	Comment	Comment	Comment
EQL																									
NEPM 2013 Soil HIL D							0.05		0.05					0.001					0.01	0.001					
NEPM 2013 Soil HSL D - Sensitive Setting																									
South Dunheved																									
DHS-28-0-0.1	12-Feb-18	S84878	10	16300	0	0	0	735	0	0	0	0	0	0	0	0	0	-	-	-	No asbestos detected at the reporting limit of 0.001% w/w.*	NIL	NIL	Organic fibre detected	No respirable fibres detected

Table App C Analytical Results
Job number - 54782
Job Name - PFAS Assessment former St Mary's ADI Site

			PFAS																																						
			2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTS)	1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTS)	1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTS)	1H.1H.2H.2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	Perfluoropentanoic acid (PFPeA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	Perfluorononanoic acid (PFNA)	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of PFASs (n=28)	Sum of WA DER PFAS (n=10)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Z-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	N-ethyl-perfluorooctanesulfonamidoacetic-acid	N-methyl-perfluorooctanesulfonamidoacetic_acid
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01			
HEPA (2018) Ecological Indirect exposure - Residential																															0.01	0.01								
HEPA (2018) Human Health Screening Levels - Residential with Garden accessible Soils																0.1															0.009	0.009								
HEPA (2018) Human Health Screening Levels - Public Open Space																10															1	1								
HEPA (2018) Human Health Screening Levels - Commercial/Industrial																100															20	20								
HEPA (2018) Soil Indirect - Commercial and Industrial																															0.14	0.14								
OEH/NSW Health (2017) Soil Direct Toxicity - Commercial and Industrial																48															60	60								
HEPA (2018) Soil Direct Toxicity - Public Open Space																10															1	1								
Field_ID		**Sampled_Date-Time**																																						
DHS-42 0-0.1	DHS-42 0-0.1	04-05-18	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005	-	-	-

Notes
* It is noted that the SP30 footprint samples included are of the current surface level and following additional scrape up

Surface samples beneath SP30 which were scraped up and relocated to Dunheved, ie not representative of the current SP30 footprint surface

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APPENDIX E

Interim Advice IA2 Variation Section 34: Stages 1 to 3, East West Connector Road

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19197 IA2 final 15Aug19.docx

15 August 2019

Maryland Development Company Pty Limited
c/o Luke Walker
Minter Ellison
Governor Macquarie Tower
1 Farrer Place
Sydney NSW 2000

Via email: luke.walker@minterellison.com
cc: tara.kahrovic@minterellison.com

Dear Luke,

Re: Confidential & Privileged

Interim Advice IA2 Variation Section 34 – Stages 1 to 3, East West Connector Road, St Mary's NSW

1 Introduction

Minter Ellison, on behalf of Maryland Development Company Pty Limited (MDC) and St Marys Land Limited (St Marys), has appointed Kylie Lloyd of Zoic Environmental Pty Ltd (Zoic), a NSW EPA Auditor accredited (No. 0302) under the Contaminated Land Management (CLM) Act 1997, to conduct an Audit of the East West Connector Road (EWCR), associated Regional Open Space (ROS) and the Dunheved Link Road (DLR) ("the site"), as identified by the figure included as Attachment A to this letter.

Minter Ellison is acting on behalf of MDC and St Marys to agree draft conditions of consent with both Penrith and Blacktown Local Government Areas (LGA's) for the proposed development.

To address Penrith Council's concerns and address and their duties under Clause 7 of SEPP55, the reports listed in Section 3 below have been reviewed as part of an audit to assess suitability of the site for the proposed use. As such, this is the initial step of an audit.

It is noted that as required in Section 3.6.2 of the NSW EPA (2017) Contaminated Land Management Guidelines for the NSW Site Auditor Scheme (3rd edition), use of an Interim Audit Advice is permissible to provide interim advice on works or plans, but that all Interim Advice letters must specify the interim advice does not constitute a site audit report or statement and cannot pre-empt the conclusion to be drawn at the end of the audit process. An interim advice letter cannot be issued independent of an SAS or SAR. The Audit will be prepared as defined under Section 4 of the Contaminated Land Management Act 1997 (as amended).

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2 Scope of Audit and Nature of Interim Advice

NSW EPA (2017) describes the site assessment and audit process as:

1. *Consultant is commissioned to assess contamination*. The contaminated site consultant designs and undertakes the site assessment and, where required, all remediation and validation activities to achieve the objectives specified by the owner or developer; and
2. *Site auditor reviews the consultant's work*. The site owner or developer commissions the Auditor to review the consultant's work. The Auditor then prepares a SAR and SAS at the conclusion of the review, which are given to the owner or developer.

Therefore, the contaminated land consultant and other relevant parties should be satisfied that the work to be conducted conforms to all appropriate regulations, standards and guidelines and is suitable based on the site history and the proposed land use.

The audit is currently non-statutory in nature. Should conditions be issued requiring Auditor involvement, the audit will become statutory and require notification to NSW EPA.

3 Current Interim Advice

In preparing this interim audit advice, the Auditor has reviewed the following reports related to land contamination assessment that have been recently updated due to comments made in Interim Advice No. 1 (19197 IA1, 25 July 2019):

- JBS&G (14 August 2019) Additional Targeted Assessment of Dunheved Portion (Stage 2b) of Stage 2 East West Connector Road, Dunheved Precinct, St Marys NSW (Ref: 54782-121646 (Rev 0))
- JBS&G (14 August 2019) Phase 2 Environmental Site Assessment (ESA) Stage 3 East West Connector Road, Links Road St Mary's, NSW (Ref: 54782/123128 (Rev 0));
- JBS&G (14 August 2019) Contamination Management Plan (CMP) for Stages 1 to 3 of the East West Connector Road, St Mary's, NSW (Ref: 54782/123244 (Rev 0)).
- JBS&G (14 August 2019) Remedial Action Plan Stage 2b and Stage 3 – East West Connector Road St Marys, NSW (Ref: 54782/123642 Rev 0).

Documents previously referred to in other interim advices and pertinent to this Interim Advice include:

- JBS&G Australia Pty Limited (JBS&G) (17 April 2019) Phase 1 Preliminary Site Assessment East West Connector Road, Jordan Springs East, NSW (Ref: 54782/121318 (Rev 2));
- JBS&G (6 February 2019) Environmental Site Assessment and Unexploded Ordnance Clearance for Stage 2 of the East West Connector Road, Ropes Crossing to Jordan Springs East, NSW (54020/118884 (Rev 0);
- JBS&G (31 December 2018) Additional Analytes Summary Letter for the Dunheved Industrial Precinct, St Mary's, NSW (54020-119670 (Rev0));
- JBS&G (17 July 2019) Environmental Site Assessment (ESA) W Series Buildings within Regional Open Space – Central Precinct, NSW (Ref: 54020/12316 (Rev A)); and
- JBS&G (12 February 2019) Characterisation of the Munitions Bund within the Regional Open Space Area, Central Precinct, Llandilo, NSW (Ref: 54158-117693 Rev 0).

The purpose of the current Interim Audit Advice (IA2) is to document Auditor findings following the review of existing information related to site conditions and contamination status. This advice also outlines any data gaps identified in the existing information which

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should be addressed by the appointed consultant as either part of any further investigation works, or as part of any remedial or validation works that may be required at the site.

4 Background

4.1 Former ADI St Marys property

In 1993 the NSW Government endorsed the release of the 1535 hectare former ADI St Marys property for Urban Development. As the property straddles the boundary between two local government areas (Blacktown and Penrith), the NSW Government endorsed a regional environmental plan to cover the development of the property. State Regional Environmental Plan SREP30 was gazetted and zones the land for a combination of urban, employment, regional open space and regional park land uses.

Whilst the SREP30 identified six development precincts known as Western Precinct, Central Precinct, North and South Dunheved Precincts, Ropes Creek Precinct and Eastern Precinct, the environmental investigations were completed for these areas denoting them as sectors; Western Sector, North Western Sector, Central Sector West, Southern Sector West, Northern Sector, Southern Sector East, Central Sector East, North Eastern Sector and Eastern Sector.

The former ADI St Marys property has undergone previous environmental investigation works including extensive environmental assessment and remediation works in the mid 1990's. Following investigation and remediation works, the site was historically validated as part of Southern Sector East and the Southern Sector west, within the Southern Sector West and the Southern Sector East validation reports (ADI 1996). The site is covered by the following three historical Site Audit Statements prepared by HLA-Envirosciences (CHK001/1 Kidd 1999), (CHK001/6 Kidd 1999) and (CHK001/7 Kidd 1999). The reports confirm that the property was suitable for proposed uses with the exception of excluded areas including footprints of original buildings, car parks, roads and stockpiles that were inaccessible for remedial and validation works when previous works were conducted.

4.2 The Site Description

The site is identified in the figure included as Attachment A to this letter. The following highlights key features:

- Stage 1 – an approximately 4.58 hectare area of former paved road, excluded from previous investigations located within Blacktown Council, being developed as road.
- Stage 2A – an approximately 1.93 hectare area of former paved road, excluded from previous investigations located within Penrith Council, being developed as a road.
- Stage 2B – an approximately 3.36 hectare area of former ADI St Marys property adjacent to Site 12 where filling occurred, located within Blacktown and Penrith Council and currently being developed as a road within Dunheved Industrial Precinct
- Stage 2C – an approximately 24.33 hectare area of former ADI St Marys property adjacent Site 11 where filling may have occurred and containing part of former X Series and W Series building footprints which were excluded from previous investigations located within Penrith Council and proposed for future development as parkland and sports field area (subject to future development consents).
- Stage 3 – an approximately 0.67 hectare area of former ADI St Marys property adjacent to Site 12 where filling occurred, located within Penrith Council and currently being developed as a road within Dunheved Industrial Precinct and within the adjacent Links Road

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4.3 Deferred Commencement Conditions

As part of the approval of the EWCR, ROS, and DLR the client has been provided with two draft conditions to enable approval of the Stage 2 works (DA 18/0221) and Stage 3 (DA18/0381) works.

Concerns have been raised regarding the Schedule 1 Deferred Commencement conditions as it is considered the following conditions are likely to be unlawful:

- Stage 2 Draft Conditions Without Prejudice – DA18/0221
  - Draft Condition B, which relates to investigation of the contamination status of the site in accordance with an Auditor endorsed sampling analysis and quality plan (SAQP)
  - Draft Condition E, a Site Audit Statement (SAS) or Interim Advice (IA) is provided confirming that *"all land subject to the development is suitable for use."*
- Stage 3 Draft Conditions Without Prejudice – DA18/0381
  - Draft Condition D, which relates to investigation of the contamination status of the site in accordance with an Auditor endorsed SAQP
  - Draft Condition G, a SAS or IA is provided confirming that "all land subject to the development is suitable for use."

5 Summary of Investigation

5.1 Stage 1

JBS&G completed an Environmental Site Assessment for Stage 1 of the EWCR with the objective to characterise contamination in accordance with the Auditor approved Sampling Analysis and Quality Plan drawing conclusions on the suitability of the site for the proposed use.

These works comprised soil investigations and pavement investigations during August 2018 and were reviewed and assessed by the Auditor as suitable pending receipt of UXO clearance. The UXO clearance was subsequently provided and confirmed as appropriate.

As a result Stage 1 was considered suitable for proposed commercial/industrial land use providing pavement material was tracked and placed below pavement only and not within landscape verges.

5.2 Stage 2A

In October 2018, JBS&G completed an Environmental Assessment for Stage 2 (considered to be approximately Stage 2A of the current site). Similarly to Stage 1, the objective of works for Stage 2 was to characterise contamination in accordance with the Auditor approved Sampling Analysis and Quality Plan drawing conclusions on the suitability of the site for the proposed use.

These works comprised soil investigations and pavement investigations during October 2018 and were reviewed. The Auditor raised questions regarding the absence of testing in an 'approximate bridge location' identified by GTEK as 'South Creek Bridge'.

Additional works were requested to meet the required soil characterisation for PFAS and this is proposed to be addressed as part of Section 5.6.6 of the JBS&G (14 August 2019) Contaminant Management Plan.

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In addition, it was considered that pavement material from this stage should also be tracked and placed below pavement only and not within landscape verges of any newly proposed roads. As documented in Section 5.1 of the Contaminant Management Plan (JBS&G 14 August 2019) all bitumen material are required to be tracked and only reused within the paved road portion of the site.

5.3 Stage 2B

In December JBS&G provided a report that characterised potential contamination for all non PFAS data collected over the past 18 months within the Dunheved Precinct which incorporates the Stage 2B site.

As documented in the Auditor's interim advice dated 21 September 2018, JBS&G completed an assessment on whether PFAS, as attributed to the former ADI St Marys property, has caused significant levels of PFAS contamination to be present within soils, groundwater, surface water, sediment and/or biota within or in proximity to the property. Further objectives of the JBS&G assessment included where PFAS is identified, to determine whether PFAs impact poses a potential human health or ecological risk under the current and/or proposed future site uses.

JBS&G summarised the following areas as potential historical storage and handling locations of PFAS materials:

- Historical Areas of Fires
- Fire Station
- Storage of Biosolids (SP30 and Dunheved)
- Offsite sources including an adjacent industrial area, a number of tributaries flowing into Dunheved Precinct from the surrounding rural, residential and commercial areas and adjacent waste water treatment processes.

As a result, JBS&G completed a staged assessment of the potential presence of PFAS on the former ADI St Marys property, and subsequent development areas to delineate impact and/or assess the potential for complete exposure pathways / linkages to be present. The detailed investigation on Dunheved Precinct, and SP30 reported:

- Significant concentrations of PFAS were identified in soils:
  - Within historical biosolids as associated with SP30 and characterised as a mixture of carboxylic and sulfonic forms of PFAS; and
  - Within soils in proximity of the Open Channel passing though the south-western portion of the Dunheved portion of the site. PFAS is typically present as sulfonic forms only.
- Significant concentrations of PFAS were identified in groundwater:
  - Adjoining and a short distance hydrogeologically downgradient of Stockpile SP30. Groundwater impact is characterised as being a mixture of carboxylic and sulfonic forms of PFAS, but free of PFOS;
  - In proximity of the Open Channel passing though the south-western portion of the Dunheved Precinct. The highest concentrations of PFAS are associated with less saline water. Sulfonic forms of PFAS are present at higher concentrations than carboxylic forms, with PFOS and PFHxS the predominant forms present;

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- Underlying an area of North Dunheved characterised as being a mixture of carboxylic and sulfonic forms of PFAS, but free of PFOS. The northern extent of this impact is not delineated as investigations have been restricted in the north; and
- Adjoining the northern portion of the western boundary to the Sydney Water STP. Groundwater impact has been characterised as being a mixture of carboxylic and sulfonic forms of PFAS.

A number of questions were raised by the Auditor and have yet to be addressed regarding the appropriateness of conclusions and suitability of the site which require resolution pending consultation with NSW EPA.

Recent investigations (as reported JBS&G 7 August 2019) were completed to assess the extent and source of PFAS impacted soils within the Stage 2B portion of the site, specifically around location DHN-72. JBS&G concluded that a significant source of PFAS impact was previously identified to the west of the south-eastern portion of the Stage 2 corridor associated with an off-site inflow of PFAS impacted surface water. This impact has been identified to extent into the EWCR boundary and will require remediation as per the JBS&G RAP.

JBS&G further concluded that the localised PFAS impact that had been identified with sample location DHN-72 was likely to be consequent of the historical storage and handling of PFAS affected biosolids to the east of the Stage 2 corridor. JBS&G considered this is the highest level of PFAS impact within the EWCR Stage 2 corridor and should be considered as an appropriate starting point for interim management works.

Notwithstanding the above, an Environmental Site Assessment is required for the entire Stage 2B site, ensuring suitable testing, confirming depth of fill both within the Dunheved Industrial Precinct, and north, where Stage 2B joins Stage 1 and Stage 2A interchange. This has been included as part of a data gap assessment as documented in Section 5.4 of the JBS&G Remediation Action Plan for Stage 2b and Stage 3 EWCR (14 August 2019).

5.4 Stage 2C

Although JBS&G has not completed a site wide assessment of the Stage 2C Regional Open Space area, several investigations have been completed within this stage.

In July 2019, JBS&G completed an environmental site assessment on the W Series Building Footprints to characterise potential contamination at the site as outlined the Penrith City Council consent conditions and in accordance with the JBS&G (2017) SAQP and relevant NSW EPA guidelines, and to draw conclusions regarding the suitability of the site for the proposed open space land use. JBS&G concluded

Similarly, in February 2019, approximately 5000 m^3 of material stockpiled and known as the munitions bund was assessed at a rate of 1 sample per 125 m^3. JBS&G concluded this material was suitable for reuse in the regional open space.

As identified in in previous interim advices, any deviations of the works on the W Series building from the approved SAQP will be required to be addressed as part of confirmation works proposed in Section 5.6 of the Contaminant Management Plan for Stages 1 to 3 of the EWCR (14 August 2019). Based on works completed and reviewed of the munitions bund, the Auditor concurs that stockpiles are to be managed in accordance with the Contamination Management Plan during construction works to ensure they are suitable for the end use and contain no unacceptable aesthetic impact.

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It is noted that a culvert is identified within this Stage 2C that has been identified as not previously having UXO clearance. As required as part of the previous audit conditions, upon removal as part of the EWCR construction works, this area will be cleared of any UXO presence.

5.5 Stage 3

In December 2018, JBS&G provided a report that characterised potential contamination for all non PFAS data collected over the past 18 months within the Dunheved Precinct which incorporates the Stage 2B site. In addition, a detailed investigation on Dunheved Precinct, and SP30 was completed to assess the presence of PFAS.

This work was supplemented with sampling at 15 locations across the site. Samples were analysed for selected heavy metals, PAH, TRH/BTEX, OCPs, PCBs, VOCs, asbestos and PFAS.

JBS&G recommended that a Remediation Action Plan be prepared that is specific to the PFAS impacted areas identified within Stage 3 of the EWCR and a Contaminant Management Plan be prepared to manage requirements associated with pavement removal, unexpected finds and imported fill. This has been included as part of a data gap assessment as documented in Section 5.4 of the Remediation Action Plan for Stage 2b and Stage 3 EWCR (14 August 2019).

6 Auditor Comments

Based on the review of documents outlined in Section 3 above, the Auditor considers that the site is capable of being made suitable for the proposed EWCR development, subject to the following conditions:

1. An updated Phase 1 should be prepared to cover all stages of the EWCR site and include accurate legal identifiers (Lot and DP numbers) site area, registered surveyed figures showing boundary coordinates confirming historical summary.
2. Sampling as identified as part of the Additional Characterisation of the Site Areas outlined within Section 5.6 of the Construction Management Plan (JBS&G 14 Aug 2019) and the Data Gap Requirements within Section 5.4 of the Remediation Action Plan (JBS&G 14 Aug 2019) will be completed. The culmination of these works will be included in a Data Gap Assessment report as required in Section 7.6 of the Remediation Action Plan (JBS&G, 14 August 2019) for review by the Auditor;
3. Adequate assessment of potential groundwater impact associated with the former sewage sludge and the PFAS impact together with a conceptual site model.
4. Following confirmation of acceptable PFAS criteria from NSW EPA for the Dunheved Precinct, the Remedial Action Plan for the EWCR should be reviewed to ensure compliance with EPA requirements.
5. On completion of the remediation works, a suitably qualified and experienced Environmental Consultant must collate detailed documentation regarding materials tracking and prepare a Validation Report in accordance with guidelines made or approved by NSW EPA confirming that the remediation works have been completed in accordance with the RAP and that the site is suitable for the proposed use. The Validation Report must be reviewed and endorsed by the Auditor in the form of Interim Advice prior to finalisation.
6. On receipt of all final documents, a Site Audit Statement and associated Site Audit Report is required confirming that the site is suitable for the proposed land use.

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7 Closure

This interim advice does not constitute a Site Audit Statement or a Site Audit Report, but rather is provided to assist the Client in the assessment and management of contamination issues at the site. The information provided herein should not be considered pre-emptive of the final Audit conclusions. It represents the Auditor's opinion based on the review of currently available information.

Should you have any queries or wish to discuss any points, please do not hesitate to contact the undersigned.

Yours sincerely,





Kylie Lloyd
Contaminated Site Auditor (0302)
Zoic Environmental Pty Ltd

Diana Turner
Senior Environmental Scientist
Zoic Environmental Pty Ltd

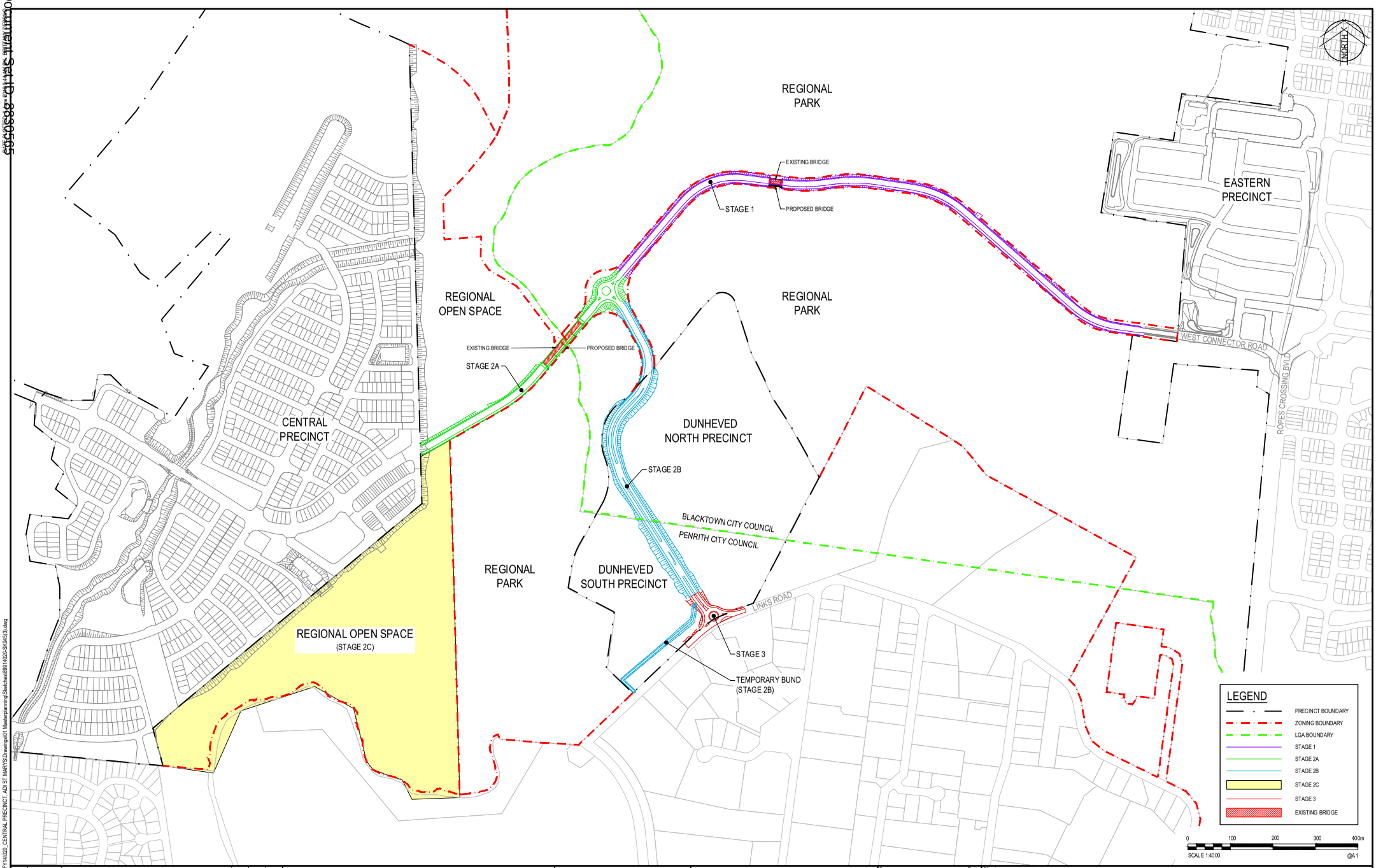
Attachments: Attachment A – Figure of Site
Attachment B – Tables

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Attachment A – Figure of Site

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Rev.	Date	Description	Des.	Verif.	Appd.
3	06.06.19	REISSUED FOR INFORMATION	BJD		ARM
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1	05.06.19	ISSUED FOR INFORMATION	BJD		ARM

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Drawn	BJD	Date 05.06.19
Checked	ARM	Date 05.06.19
Designed	BJD	Date 05.06.19
Verified		Date
Approved	ARM	05.06.19

Client: LENDLEASE
Project: JORDAN SPRINGS EAST
EAST WEST CONNECTOR ROAD
Title: GENERAL ARRANGEMENT PLAN

Status: FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum		Scale	Size
A.H.D.		1:4000	A1

Drawing Number: 89914020-SK945
Revision: 3

XREFs: Xref-89914020-SK945.dwg
CAD File: N:\Planning\89PRY\4020_CENTRAL PRECINCT_ADJ ST MARYS\Drawings\01 Masterplanning\Sketches\89914020-SK945(3).dwg

Attachment B - Tables

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Table A: Summary of Site Information

Title	Details
Street Address:	
Property Description:	• Stage 1: Part Lot 102 DP1249590 • Stage 2A: Part Lot 6 DP 1248480 • Stage 2B: Part Lot 102 DP1249590, Part Lot 3 DP1133301, Part Lot 1 DP1132380 • Stage 2C: Part Lot 6 DP 1248480 • Stage 3: Part Lot 1 DP1132380
Current Site Ownership:	Maryland Development Company Pty Limited
Geographical Coordinates At approximate centre of site:	Lat: -33.733259 ° Long: 150.759603 °
Property Size:	• Stage 1: 4.58 hectares • Stage 2A: 1.93 hectares • Stage 2B: 3.36 hectares • Stage 2C: 24.33 hectares • Stage 3: 0.67 hectares
Local Government Area:	• Stage 1: Blacktown Council - DA17-00963 • Stage 2A: Penrith Council - DA2018/0221 • Stage 2B: Penrith Council - DA2018/0221 • Stage 2C: Penrith Council - DA2018/0221 • Stage 3: Penrith Council - DA2018/0381
Current and past Use:	• Stage 1: Past and Current – East-West component former and current road traversing east-west from Ropes Crossing to Jordan Springs East • Stage 2A: Past and Current – East-West component former and current road traversing east-west from Ropes Crossing to Jordan Springs East • Stage 2B: Past – Former ADI St Marys property + adjacent to Site 12 where filling occurred. Current - Part of Dunheved industrial precinct • Stage 2C: Past – adjacent to Site 11 where filling may have occurred, Containing part of X Series Buildings and W Series Buildings Current– used for staging current Jordan Springs East development that is proposed to be developed as park land and sports field area (subject to future development consents – known as Regional Open Space) adjacent to the Jordan Springs East development • Stage 3: Past– Former St Marys buffer land + adjacent to TNT Filling station. Current – Part of Dunheved industrial precinct

Table B: Immediate Site Surrounds

Title	Details
North:	Regional Open Space as part of former ADI St Marys property and Central Precinct Development
East:	Regional Open Space, Ropes Crossing Development and Wianamatta Regional Park
South:	Dunheved industrial Precinct, Dunheved Golf Course and regional open space
West:	Regional Open Space, Jordan Springs East Development

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Table C: Summary of Works Completed

Date	Report Objectives, Scope and Outcomes
JBS&G (26 February 2018), Sampling Analysis and Quality Plan for the East West Connector Road (Ref 54158/113437 (Rev 0)	The objective of the report was: • to provide an approach to characterise potential contamination on the EWCR and draw conclusions regarding the suitability of the site for proposed use as a roadway The scope of the report included: • A conceptual site model for the site identifying potential contaminants of concern. • A stratified sampling approach was adopted on a 20m linear transect through the length of the paved road. • Although some fill was anticipated, it was considered that deep fill would be unlikely. As a result, any deep fill would result in an increased sampling density. • Any locations with samples exceeding the nominated criteria appropriate for ongoing commercial/industrial use (appropriate for a road), would be delineated. The Auditor endorsed the report in Interim Advice IA84 (14124, IA84, 28 February 2018) with the following requirement: • At the completion of works, a final survey will be prepared which overlays the proposed road (pavement and verges) with the current paved road boundary. If areas over the current road are not covered by the proposed road (being assessed to meet HIL D), these area will require assessment to meet Regional Open Space landuse criteria (HIL C). It is noted the SAQP covered the east west component of Stage 1 and Stage 2A only.
JBS&G (10 October 2018) Environmental Site Assessment for Stage 1 EWCR (Ref: 54020/117855 (Rev A)	The objective of the report was: • to characterise contamination in accordance with the SAQP, drawing conclusions on the suitability of the site for the proposed use and to assess the suitability of road pavement for use as engineering fill across the former ADI St Marys property The scope of the report included: • JBS&G completed a detailed site investigation and soil sampling at the site on the 15th, 16th, 17th and 20th of August 2018. • Pavement sampling was completed earlier, on the 13th August 2018. • 76 test pits were excavated and fill was described as light brown, silty gravelly clay soil with inclusions of shale and igneous gravels. • Samples were collected from each testpit location and analysed based on field work observations • Three samples of road pavement were also collected. The outcome of the report was: • The site comprised a bitumen paved road with no curbing extending east to west from approximately 150 m east of South Creek to the boundary of the Western Collector Road Extension. The road was generally level. • No visible ACM, odours or staining were noted in the fill. • Minor amounts of bituminous fragments were observed within shallow soils. Fill was recorded across the site from the surface to a maximum depth of 1.5 m below ground surface (bgs). Natural soils comprised red/grey/brown to grey mottled clay of medium plasticity at depths ranging from 0.3 m to 2.1 m bgs. • JBS&G identified that pavement materials contained coal tar and elevated concentrations of B(a)P were reported in shallow fill. By using multiple extraction procedure (MEP), JBS&G reported the PAHs were not leaching. • No potential risks to human health are present on the site from exploded ordnance items;

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Date	Report Objectives, Scope and Outcomes
	• Pavement materials identified for re-use were affected by elevated concentrations of PAHs and unsuitable for direct exposures. No significant leachable levels of constituents were measured, and the material is considered suitable to be used as engineered fill on a future roadway where it is placed underlying a future roadway pavement. • Soils are suitable for the proposed use of the site as a roadway; and • No aesthetic issues are present at the site. Based on the conclusions of this assessment, JBS&G reported Stage 1 of the EWCR is suitable for the proposed land use (roadway), subject to the management of existing pavement materials. JBS&G recommended the following actions: • Appropriate tracking and placement survey to confirmation the placement of pavement material beneath the future paved/sealed road; and • The unexpected finds protocol as per the Contamination Management Plan (CMP, JBS&G 2018) is followed. The Auditor endorsed the report in Interim Advice IA84 (28 February 2018) with the following requirement: • UXO clearance report to confirm the UXO clearance discussion presented in the ESA; • Pavement material generated from the Stage 1 area may only placed beneath sealed roadway only, and not within any adjacent landscape verges. • Placement of the pavement material is be completed under detailed material tracking protocol, including documentation of the initial pavement removal, temporary stockpiling and testing, volume and depth of materials placed beneath the new road, as well as off-site disposal requirements (if required).
JBS&G (10 October 2018) Environmental Site Assessment for Stage 2 EWCR (Ref: 54020/117855 (Rev A) *[Stage 2 comprises approximately Stage 2A of the current site]*	The objective of the report was: • to characterise contamination in accordance with the SAQP, drawing conclusions on the suitability of the site for the proposed use and to assess the suitability of road pavement for use as engineering fill across the former ADI St Marys property The scope of the report included: • JBS&G completed a detailed site investigation and soil sampling for Stage 2A of EWCR on the 18th October 2018. • Pavement sampling was completed earlier, on the 13th August 2018. • A total of 19 test pits were excavated, and fill was described as light brown, silty gravelly clay soil with inclusions of shale and igneous gravels, at depths of up to 0.5m below ground surface. • Samples were collected from each testpit location and analysed based on field work observations • Three samples of road pavement were also collected. The outcome of the report was: • The site comprised a bitumen paved road with no curbing extending east to west from approximately 150 m east of South Creek to the boundary of the Western Collector Road Extension. The road was generally level, with cut and fill completed in some areas. JBS&G reported that significant filling of site won material was required near the banks of South Creek, to achieve finished design levels in this area. • No visible ACM, odours or staining were noted in the fill. • Minor amounts of bituminous fragments were observed within shallow soils. Fill was recorded across the site from the surface to a maximum depth of 1.5 m below ground surface (bgs). Natural soils comprising red/grey/brown to grey mottled clay of medium plasticity at depths ranging from 0.5 m to 6.0 m bgs.

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	• No potential risks to human health are present on the site from exploded ordnance items; • Pavement materials identified for re-use were affected by elevated concentrations of PAHs and unsuitable for direct exposures. No significant leachable levels of constituents were measured, and the material is considered suitable to be used as engineered fill on a future roadway where it is placed underlying a future roadway pavement. • Soils are suitable for the proposed use of the site as a roadway; and • No aesthetic issues are present at the site. Based on the conclusions of this assessment, JBS&G reported Stage 1 of the EWCR is suitable for the proposed land use (roadway), subject to the management of existing pavement materials. JBS&G recommended the following actions: • Appropriate tracking and placement survey to confirmation the placement of pavement material beneath the future paved/sealed road; and • The unexpected finds protocol as per the Contamination Management Plan (CMP, JBS&G 2018) is followed. The Auditor endorsed the report in Interim Advice IA99 (18 December 2018) with the following requirement: • As JBS&G identifies an 'approximate bridge location' and GTEK figure identifies an 'South Creek Bridge' which were excluded from each assessment, clearance of this portion of the road as suitable for the intended land use is required. Please include confirmation that the portion of the road on either side of South Creek is suitable for the proposed landuse, meeting the required soil characterisation, and is clear of UXO. • Pavement material generated from the Stage 2 area may only be placed beneath sealed roadway, and not within any adjacent landscape verges. • Placement of the pavement material is be completed under detailed material tracking protocol, including documentation of the initial pavement removal, temporary stockpiling and testing, volume and depth of materials placed beneath the new road, as well as off-site disposal requirements (if required).
GTEK (22 November 2018)	The objective of the report was: • To confirm the absence of a 20mm Projectile at 150mm grading to a 20 Pdr Projectile at 1m below ground surface along the East West connector road within the former ADI St Marys property The scope of the report included: • GTEK personnel collected data with a TM7 EMU Electromagnetic instrument used over the site with a line spacing of 0.5m at sample interval of 20 readings per meter. Positional control was maintained utilising fibreglass survey chains, flags and DGNSS positioning data • Data was gridded and interpreted to identify anomalies at the 50emu amplitude, ensuring all complete 20mm cannon projectiles were identified at a depth of 150mm and items of the size of a 20 Pdr projectile were located at 1m depth. • Dig sheets were prepared at each interpretation location. Finds were recorded on the dig sheet. When a metallic item was removed, the location was searched again to ensure a deeper item was not being masked. The outcomes of the report were: • GTEK found no munitions along the site searched. • It is noted GTEK states data was collected over 100%, but no data was collected at the Ropes Creek Deviation Bridge (located outside of the site boundary) or the South Creek Bridge (located within the site boundary) were not included.

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JBS&G (31 December 2018) Additional Analytes Summary Letter for the Dunheved Industrial Precinct, St Mary's, NSW (Ref: 54020-119670 (Rev0));	The objectives of the report were: • Characterise potential contamination at the site using all non PFAS data collected over the past 18 months and • To use this information to draw conclusions regarding the suitability of the site for the proposed use or make recommendations to enable such conclusions The scope of the report included: • Site Inspection; • Soil investigations conducted in November 2017, February 2018 and between May and September 2018; • Analysis of soil samples and groundwater samples for a range of contaminants including Heavy Metals, total recoverable hydrocarbons (TRH), Benzene, Toluene, Ethylbenzenes and Xylenes (BTEX), Polyaromatic hydrocarbons (PAHs), Organochlorine pesticides (OCPs), Polychlorinated biphenyls (PCBs) and Asbestos; and • Preparation of this additional analysis letter report The outcomes of the report were: • Soils at the site were not identified to pose an aesthetic risk noting the proposed commercial/industrial use of the site; • Soil analytical results were reported at concentrations below the adopted criteria; and • Groundwater analytical results were generally reported at concentrations below the adopted criteria. Elevated concentrations of heavy metals identified were not considered to pose a risk given groundwater is not used as a resource and has limited migration potential;
JBS&G (6 February 2019) Environmental Site Assessment and Unexploded Ordnance Clearance for Stage 2 of the East West Connector Road, Ropes Crossing to Jordan Springs East, NSW (54020/118884 (Rev 0);	The objectives of the report were: • The to characterise potential contamination within the site in accordance with the SAQP (JBS&G 2018a) and relevant NSW EPA guidelines, and to draw conclusions regarding the suitability of the site for the proposed use • To assess the suitability of road pavement materials as present on the existing roadway for use as engineering fill on the wider site The scope of the report included: • Review previous Environmental Investigation and Site Audit Reports; • Site inspection of roadway and adjacent verges following pavement removal; • Assessment of pavement materials, Unexploded Ordnance (UXO) Clearance; • Testpiting along the paved road at 20 m intervals on the 18th of October 2018 and 21st January 2019. • Pavement sampling was completed earlier on the 13 August 2018; • Analysis of selected soil samples for potential contaminants of concern (PCOCs); • Interpretation of laboratory analytical results including comparison against relevant NEPC landuse criteria; and • Preparation of this Environmental Assessment Report in general accordance with guidelines made or approved by the NSW Environment and Protection Authority (EPA). Scope 1 The outcomes of the report were: • No potential risks to human health are present on the site from exploded ordnance items; • Pavement materials identified for re-use were affected by elevated concentrations of PAHs and unsuitable for direct exposures. No significant leachable levels of constituents were measured, and the material is considered suitable to be used as engineered fill on a future roadway where it is placed underlying a future roadway pavement.

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<table>
<tr><th>Date</th><th>Report Objectives, Scope and Outcomes</th></tr>
<tr><td></td><td>
• Soils are suitable for the proposed use of the site as a roadway; and
• No aesthetic issues are present at the site.
Based on the conclusions of this assessment, JBS&G reported Stage 2 of the EWCR is suitable for the proposed land use (roadway), subject to the management of existing pavement materials. JBS&G recommended the following actions:
• Appropriate tracking and placement survey to confirmation the placement of pavement material beneath the future paved/sealed road; and
• The unexpected finds protocol as per the Contamination Management Plan (CMP, JBS&G 2018) is followed.
</td></tr>
<tr><td>JBS&G (17 April 2019)
Phase 1 Preliminary Site Assessment East West Connector Road, Jordan Springs East, NSW
(Ref: 54782/121318 (Rev 2))</td><td>
The objectives of the report were:
• to draw conclusions that the site can be made suitable for the proposed land use.
• JBS&G noted that as historical roads were excluded from previous site audits (as is the case for the EWCR), the historical audit did not cover portions of the current site. Further, potential impacts regarding PFAS is required as is now specified under current guidance
The scope of the report included:
• JBS&G completed a desktop review of local and regional background documents,
• reviewed previous soil and groundwater sampling for the site,
• completed a site inspection
• developed a conceptual site model (CSM)
• identified potential areas of environmental concern and chemicals of potential concern.
The outcomes of the report were that the following were identified
<table>
<tr><td>East West Connector Road</td><td>Fill materials underlying the road</td><td>Heavy metals PAHs, TRH, BTEX, OCPs, OPPs, PCBs, asbestos, explosives Metallic debris UXO</td></tr>
<tr><td>East West Connector Road</td><td>Paved Road asphalt</td><td>Heavy metals, PAHs, TRH/BTEX, asbestos and explosives, Coal Tar</td></tr>
<tr><td>East West Connector Road</td><td>Fly tipping</td><td>Heavy metals, PAHs, TRH/BTEX, OCPs, OPPs, PCBs and asbestos</td></tr>
<tr><td>Dunheved Link Road</td><td>Historical use of the site for sewage sludge and</td><td>Heavy metals, PAHs, TRH/BTEX, OCPs, OPPs, PCBs, asbestos and PFAS</td></tr>
<tr><td>Dunheved Link Road</td><td>Effluent storage</td><td>PFAS</td></tr>
<tr><td>Dunheved Link Road</td><td>Impact associated with the Dunheved Open Channel</td><td>Heavy metals, PAHs, TRH/BTEX, OCPs, OPPs, PCBs, asbestos</td></tr>
<tr><td>Regional open Space</td><td>flytipping</td><td>Heavy metals, PAHs, TPH/BTEX, OCPs, PCBs and asbestos</td></tr>
<tr><td>Regional open Space</td><td>Building Footprints</td><td>Heavy metals, PAHs, TPH/BTEX, OCPs, PCBs, asbestos and</td></tr>
<tr><td>Regional open Space</td><td>Fill materials and impact from demolition works, use of Paved Road asphalt</td><td>Explosives (RDX (research department explosive), TNT</td></tr>
</table>
</td></tr>
</table>

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			(trinitrotoluene), 2,4-DNT (2,4-Dinitrotoluene) and 2,6-DNT (2,6-dinitrotoluene)
	JBS&G concluded that the site can be made suitable for the proposed use in accordance with clause 7 of SEPP 55 subject to the following actions • The EWCR requires further investigation including a SAQP covering required pavement removal, UXO clearance and a detailed site assessment with soil sampling and analysis of soils present underlying roadways. The SAQP and investigations require review and endorsement by the Site Auditor; • Sampling works can only occur following removal of the existing roadway; • Formerly inaccessible areas of the ROS including building footprints require UXO clearance and assessment in accordance with the existing JBS&G SAQP for JSE (JBS&G 2017); • The previously prepared Remedial Action Plan (JBS&G 2018) should be updated to address PFAS impacted soils and groundwater identified within the Dunheved Links Road; and • A Site Audit Statement will be required as specific to the roadway, to confirm the site as suitable for the proposed use.		
JBS&G (14 August 2019) Additional Targeted Assessment of Dunheved Portion (Stage 2b) of Stage 2 East West Connector Road, Dunheved Project, St Marys NSW (Ref: 54782-121646 Rev 0);	The objectives of the report were • To determine the extent and source of PFAS impacted soils present at location DHN-72 located within the road corridor within Stage 2B of the site. • to collect additional sampling and analysis along the western boundary of the south-eastern portion of the Stage 2 portion of the east-west connector road to determine: • Whether PFAS impact requiring remediation is present at the extent of the area identified as a portion of Stage 2B Site • To provide additional data to assess whether the impact at DHN-72 within Stage 2B is consequent of historical storage and handling of biosolids as occurred to the east of the road corridor or consequent of inflow of PFAS impacted surface water to Dunheved as occurred to the west of the road corridor. The scope of the report included: • Review previous relevant JBS&G reports from Dunheved; • Sample soils from surface to 0.1m, 0.8-1.0m at locations ST201, ST204, ST206, ST208 adjoining the western boundary of SE portion of Stage 2B EWCR. The sample locations were in close proximity to the western boundary of the roadway; • Analysis of samples for PFAS with appropriate QA/QC • Assessment of the levels of PFAS and development of advice as to the likely extent of PFAS impact within the road corridor The outcomes of the report were: • Soils were generally found to be consistent with conditions as reported in JBS&G (2018). • Levels of PFAS constituents were below detection limits in each of the primary samples apart from a detection of PFHxS at sample location ST204 at a depth of 0.8-1.0 m. The detection very slightly exceeded the laboratory detection limit, however was well below any potentially applicable criteria. The conclusions of the report were: • A significant source of PFAS impact was previously identified to the west of the southeastern portion of the Stage 2 corridor as associated with an off-site inflow of PFAS impacted surface water. This impact has been		

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	identified to extend into the EWCR boundary and will require remediation as per the RAP (JBS&G 2019c); • Gross levels or widespread indicators of PFAS impact were not identified during the additional targeted investigation as undertaken to determine if the source to the west had substantially affected the corridor; and • Localised PFAS impact has been previously identified at sample location DHN-72 (JBS&G 2018) as more than likely consequent of the historical storage and handling of PFAS affected biosolids to the east of the Stage 2 corridor. This is the highest level of PFAS impact within the Stage 2 corridor and should be considered as an appropriate starting point for interim management works that are otherwise being documented in the RAP developed for the roadworks (JBS&G 2019c)
JBS&G (19 July 2019) Environmental Site Assessment W Series Buildings within Regional Open Space – Central Precinct, NSW (Ref: 54020/12316 (Rev B));	The objectives of the report were: • to characterise potential contamination at the site as outlined the Penrith City Council consent conditions and in accordance with the JBS&G (2017) SAQP and relevant NSW EPA guidelines, and to draw conclusions regarding the suitability of the site for the proposed open space land use. The scope of the report included: • Management of ordnance contractor to complete metallic debris removal and ordnance survey works across the site. • Drilling 35 borehole locations using hand auger method to 0.5m below ground surface (mbgs). • Borehole logging and sample collection. Selected soil samples were submitted to NATA accredited laboratories for the analysis of heavy metals, TRH, BTEX, PAHs, OCP, PBCs, explosives and asbestos. • Data collection and ESA report preparation The outcomes of the report were: • Fill materials were generally observed to be limited to surface soils of approximately 0-0.3m depth. It is noted that slightly deeper fill was identified at locations T01 and W11-01 to W11-05 of greater than 0.5 m in depth, the deeper fill was observed to be reworked materials for building foundations. • A single ACM fragment was observed at the surface in the vicinity of the W series building footprints, the fragment was collected and disposed of safely. • Concentrations of heavy metals were below HIL-A and EIL with the exception of chromium. Following statistical analysis, the 95% UCL was 35.38mg/kg which was below HIL-A. • Concentrations of BTEX, PAHs, OCPs, PCBs, explosives were below HIL-A. Minor detection of TRH was identified, but below HSL and ESL. • E coli and salmonella were tested from soil samples recovered from the former septic tank, with recorded concentrations noted to be consistent with anticipated background levels in no-contaminated soils. • No visible ACM was observed within the boreholes, a single ACM fragment was observed in the vicinity of the W series buildings, the fragment was collected and disposed of appropriately. • G-tek concluded the no munitions were identified at the site and JBS&G concluded that • the site is 'free of UXO'. • No potential risk to human health is present on the site from exploded ordnance items; • No potential risk to human health or ecological health are present associated with potential contaminants of concern, heavy metals, TRH/BTEX, PAHs, OCPs/PCBs, explosive residues or asbestos; and

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	• No aesthetic issues associated with staining, odours or soils heavily impacted with building rubble and other anthropogenic materials are present on the site area.
JBS&G (12 February 2019) Characterisation of the Munitions Bund within the Regional Open Space Area, Central Precinct, Llandilo, NSW (Ref: 54158-117693 Rev 0)	The objectives of the report are to characterise the munition bund soils to confirm if they are suitable for reuse at the Central Regional Open Space area which requires significant filling. The scope of the report included: • Collection of 40 samples from 20 locations along the munitions bund mound; • Analysis of samples for TRH, BTEX, PAHs, OCPs, PCBs PFAS and asbestos; and • Preparation of a material characterisation letter. The outcomes of the report were: • JBS&G considered the munitions bund material is considered suitable for reuse within the Central Regional Open Space Area (central ROS area) without further assessment, remediation or management. • As the central ROS area requires filling to meet design levels and any large unsuitable materials will be screened out during filling and compaction; • Material tracking of reused material will be required in accordance with the SRAP (JBS&G 2017) and the Stockpile Work Plan (JBS&G 2018b)
JBS&G (14 August 2019) Contamination Management Plan (CMP) for Stages 1 to 3 of the East West Connector Road, St Mary's, NSW (Ref: 54782/123244 (Rev 0).	The objective of the report is to provide a framework to manage potential contamination issues that may be encountered during the roadway construction works. The report provides approaches for: • Areas of Concern during works • Unexpected Finds Protocol • Potential Explosive Ordnance Materials identification and management • Asbestos identification and management • Stockpile, Soil and Material Management • Additional Characterisation of Site Areas and stockpiles (including Stage 2C).
JBS&G (14 August 2019) Phase 2 Environmental Site Assessment – Stage 3 East West Connector Road (Ref: 54782/123128 (Rev 0).	The objectives of the report were: • To characterise potential contamination at the site as outlined in the Penrith City Council (PCC, Council) consent conditions; • to draw conclusions on whether the site can be made; and • to identify any recommendations for management required for the proposed development. The scope of the report included: • Desktop review of available local, regional background, and historical environmental information • Review of previous soil and groundwater sampling and analysis works • Development of a Conceptual Site Model • Detailed site inspection • Systematic sampling (at 15 locations) across the site and targeted sampling in proximity to the Dunheved Open Channel and associated stormwater culvert underlying Links Rd (5 locations) and known to be a source of PFAS contamination, with the aid of a push tube. Samples were collected to generally 1.2mbgl, which was generally at least 0.5m into natural material. Deeper fill was observed at ST3-16 and ST3-20 and natural soil was not achieved. • Laboratory analysis for heavy metals, PAH, TRH/BTEX, OCPs, PCBs, VOCs and asbestos (14 samples), PFAS (24 samples) and comparison to HIL D and HSL D.

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	JBS&G concluded: • No potential risk to human health or ecological health are present associated with potential contaminants of concern, heavy metals, TRH/BTEX, PAHs, OCPs/PCBs, VOCs or asbestos; • PFAS impact to soils adjacent to the Dunheved Open Channel were identified; • No aesthetic risks were identified at the site; • A Remedial Action Plan (RAP) is required to address PFAS impacted soils. The RAP can require the affected soils currently held within the Dunheved portion of the St Marys development site; and • Surplus soils and/or demolition materials as generated by future road construction works should be managed consistent with a Contamination Management Plan (CMP) as specific to the roadworks project. JBS&G recommended • A new RAP be prepared that is specific to the PFAS impacted areas identified within Stage 3 of the EWCR; and • A Contamination Management Plan (CMP) be prepared to cover all stages of the EWCR and include management requirements associated with pavement removal, unexpected finds and imported fill.
JBS&G (14 August 2019) Remedial Action Plan Stage 2b and Stage 3 – East West Connector Road St Marys, NSW (Ref: 54782/123642 Rev 0)	The objectives of the RAP are to: • Characterise and document the known extent of PFAS impact via presentation of a conceptual site model (CSM); • Develop a remedial strategy to remove all PFAS impacted soil within the EWCR; and • Identify the requirements for validation requirements following site remediation. • To confirm that the site is suitable for the proposed landuse. The RAP is for Stage 2b and Stage 3 only. The contaminants being managed are PFAS in soil and groundwater, asbestos if encountered and other COPCs if encountered. It is noted that, groundwater impact will be addressed on a broader site scale as part of the Dunheved Industrial Precinct and is not addressed specifically in this RAP. The preferred remedial strategy is removal of impacted soil from Stage 2b and Stage 3 EWCR site and placement within the designated PFAS impacted soils stockpiling area to undergo remediation at a later stage and following EPA endorsement of remedial strategies. The RAP also provides: • Data Gap Assessment for Stage 2b and Stage 3. • Material tracking plan • Validation plan • Contingency plan • Regulatory and planning requirements • Environmental management • Health and safety

Table D: Review of JBS&G (14 August 2019) CMP

Requirement	CMP	Auditor Comment
What is the nature and location of the residual contamination on site?	Section 1.1 states that three SAS issued by HLA Envirosciences in 1999 confirmed that the property was suitable for use excluding areas of original	It is noted the main contaminant of concern identified is PFAS, but other potential contaminants of concern will be identified or excluded as part of the data gap assessment works.

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Requirement	CMP	Auditor Comment
	buildings, car parks, roads and stockpiles that were inaccessible at the time. JBS&G has since conducted addition investigations in previously inaccessible areas (refer to Sections 3 and 4 above) together with a comprehensive PFAS investigation (JBS&G 2018). Section 1.2 states that extensive sampling indicates that the site was generally environmentally suitable from a contamination perspective but portion of Stage 2 and Stage 3 were found to be impacted by elevated levels of PFAS in soils. The proposed interim strategy for management of PFAS impacted soil within the Dunheved precinct is being implemented while consultation with NSW EPA occurs to determine the significance of these levels. The strategy involves removal of all soil with detectable levels of PFAS within the corridor to the existing storage area.	It is understood that soil remediation on the site will be sufficient to remove potential future risk to groundwater and the environment. Whilst Section 4.1 of the CMP states that asbestos has not been detected during investigations, a fragment was found in works conducted on Stage 2C and additional investigation is required.
What are the objectives of the CMP?	Section 1.2 states that the CMP provides a framework to manage potential contamination issues that may be encountered during the roadway construction works. It is also understood that imported fill materials will be required to create the proposed site levels during construction works. As such imported fill materials and site reused soils will be required to comply with the procedures of the existing Imported Fill Protocol (IFP). It is additionally noted that the procedures provided for UXO will only come into operation if additional non cleared items are identified as unexpected finds during the construction works (all apparent areas as visible at the surface as paved areas / former buildings have been cleared at the time of preparation of this CMP). Asbestos management will only come into operation if either greater than 10 m2 of ACM is identified or if friable asbestos (FA) or asbestos fines (AF) are encountered as unexpected finds during works.	These objectives are appropriate for the purposes as a CMP.
How are the contaminants going to be managed?	Sections 3, 4, 5 and 6 of the CMP note the following: • Where Areas of Concern (AOC) are identified during the works, the area will be quarantined • Contamination AOC will be inspected by the Consultant who will advise regarding required investigation / removal requirements	The management actions are considered to be appropriate

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Requirement	CMP	Auditor Comment
	• UXO AOC will be managed in accordance with the protocols outlined in Section 3 • Asbestos AOC will be managed in accordance with the protocols outlined in Section 4 • Bitumen pavement removal, cut to fill works involving off site disposal and reuse of site stockpiles (including Stage 2 ROS from UXO clearance and demolition) and importation of fill for use to create site levels will occur in accordance with the protocols outlined in Section 5 and the Imported Fill Protocols. • Movement of all bulk quantities of construction materials will be subject to the material tracking system outlined in Section 6	
Who is responsible for the implementation of the CMP?	Section 1.5 states that the Property Owner, or their nominated representative (project manager, Principal Contractor, Superintendent, etc.) is required to manage the implementation of the CMP.	This requirement is considered to have been met.
Does the CMP provide a summary of actions required by the CMP?	The CMP presents the following Sections to address necessary management actions: • Section 2: Unexpected Finds Protocol (UFP) • Section 3: Explosive Ordnance Materials (UXO) • Section 4: Asbestos Management Plan (AMP) • Section 5: Stockpile Soil and Material Management (SSMM) • Section 6: Material Tracking Protocol (MTP)	The relevant sections of the CMP present the necessary actions for each element that requires management.
Over what timeframe will the CMP be implemented?	Section 1.2 states that the CMP will apply during construction works of the EWCR	The requirement has been met.
How is off site migration of contamination being managed?	Section 4.1 states that the objectives of the AMP are to outline, monitor and enforce safe environmental conditions for all persons outside the AOC. Section 4.2.3 states that airborne asbestos monitoring and dust monitoring will be completed during any asbestos works.	The removal of PFAS impacted area (as detailed in the RAP for Stage 2b and 3) will manage potential offsite migration.
Does the remaining contamination affect groundwater quality?	Section 5.10 states that groundwater assessment is not proposed, but will be assessed in the broader scale RAP for the former St Marys Development site. The removal of PFAS impacted soil from Stage 2b and Stage 3 will mitigate impacts to groundwater.	The requirement has been met.

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Requirement	CMP	Auditor Comment
How will the integrity of the cap be maintained in the long term?	No information provided	Not applicable as soils will be suitable for use in their final areas of deposition
Is there any risk to human health in structures overlying the cap?	No information provided	Not applicable as soils will be suitable for use in their final areas of deposition
Is the CMP a stand alone document?	Not applicable	The CMP is generally a standalone document with reference to managing contamination on the site, but does not cover remediation of the site for site suitability. The exception relates to Importation of Material and reference to the RAP for Stage 2b and 3 (JBS&G 14 August 2019), Imported Fill Protocol (2015) and Addendum IFP (2017), which are considered acceptable in this instance.

Table E: Review of JBS&G (14 August 2019) RAP

Requirement	Consultant Consideration	Auditor Comment
Remediation Goal:	Section 1.2 of the RAP states the objective of the RAP are to: • Characterise and document the known extent of PFAS impact via presentation of a conceptual site model (CSM); • Develop a remedial strategy to remove all PFAS impacted soil within the EWCR; and • Identify the requirements for validation requirements following site remediation. • To confirm that the site is suitable for the proposed land use. Section 5.1 states that the remedial goals are to: • Prevent potential direct contact of human and ecological populations within the site to impacted soils retained / present at the site; • Prevent potential phyto-toxicity effects of flora contact to impacted soils (where applicable); • Remove potential ongoing sources of environmental contamination (i.e. unexpected finds, if encountered); and • Mitigate direct contact to underlying groundwater affected by PFAS.	The remediation goal is appropriate, given the road will be paved reducing any residual leaching potential.
Extent of remediation required as outlined in RAP:	Section 4.1 states the COPCs were limited to PFAS in soil, noting that groundwater impact will be addressed on a broader site scale.	Section 4.1 section should be expanded to discuss other COPCs. As sufficient characterisation of the road footprint has not been completed a contingency is

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Requirement	Consultant Consideration	Auditor Comment
	Section 5.3 and Figure 3 provide extent of PFAS impacted material. The average depth of impact was estimated to be 1mbgl. Groundwater impact was not targeted as it is not considered to pose a potential risk for onsite use as no direct exposure pathways are anticipated. Surface water has been excluded as no surface water bodies exist within the impacted areas of the site.	required for remediation of non-PFAS contaminants. The Auditor accepts the exclusion of groundwater and surface water from this RAP, only under the provision it will be included within the RAP for the broader Dunheved property. Section 5.3 and Figure 3 are currently not accepted by the Auditor as the area of PFAS impact given the limited sampling within the road footprint. As a result, prior to the implementation outlined in the RAP, the Auditor requires a detailed site suitability assessment be provided which addresses data gaps, including for COPCs other than PFAS. This report shall also confirm the extent of PFAS impact requiring remediation.
Discussion of possible remediation options:	Section 5.2 provides discussion of remediation options, which included: • On-site treatment of soil • Off-site treatment of soil • Consolidation and isolation of soil with appropriately designed barrier • Removal of contaminated soil to an approved site or facility • Implementation of management strategy	The appropriate remediation options have been considered.
Selected remediation option:	Section 5.2 states that temporary strategy for the PFAS is to remove the impacted soils from Stage 2b and Stage 3 EWCR site and placement within the designated PFAS impacted soils stockpiling area to undergo remediation at a later stage and following EPA endorsement of remedials strategies.	This strategy is considered appropriate for PFAS contaminated material. A contingency should be considered for non-PFAS impacted soils identified during additional characterisation (See below)
Rationale for selected remedial option:	Section 5.2 states that the remedial option was selected until EPA endorsement of remedial strategies is obtained.	The rationale for the remedial strategy is appropriate.
Basis for selected remediation criteria:	Section 7.5 provides validation criterion: • Soil criterion to meet Eurofins MGT laboratory limit of reporting of 0.005mg/kg for PFOS, PFOA and PFHxS. • The potential leaching of PFAS from soil be considered should excavation be identified to be close to groundwater depth.	The criterion is appropriate, noting: • The adopted soil criterion is above the interim ecological terrestrial biota guideline value for the protection of birds (0.0019mg/kg) and mammalian diet (0.0046mg/kg) for PFOS/PFHxS. This is appropriate, noting the road and associated footpaths will be paved. JBS&G have provided a risk based argument which is acceptable.
Data gap assessment	Section 5.4 provides the following data gap assessment: • Sampling from 52 locations approximately 20m grid along the	This requirement has been met

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	current roadway on Stage 2b and Stage 3 with particular focus beneath paved roads. • At least 1 sample per location will be analysed for a range of analytes including metals, TRH/BTEX, PAH, OCPs, PCBs PFAS and asbestos.	
Proposed testing to validate the site after remediation:	Section 7 provides validation plan, which includes: • DQOs • 1 per 5m for walls and 1 per 25m^2 for bases for excavations within Stage 3 • 1 per 10m for walls and 1 per 100m^2 for bases for excavations within Stage 2	This requirement has been met
Contingency plan for remediation:	Section 8 provides contingency plan, which includes: • Unexpected finds protocol • Remedial strategy failure • Complaints • Severe weather	JBS&G provide appropriate contingencies.
Interim site management plan prior to implementation of remediation (health, safety & environment):	Section 5.1 states that interim management is as per the procedures in JBS&G (2018) PFAS Management Plan, Central Precinct and Dunheved Developments, St Marys NSW (Rev A).	This is considered appropriate, noting that the document has not been reviewed by the Auditor.
Site management plan for remediation works (environment)	Section 10.1 requires preparation of a remediation environmental management plan by the Principal Contractor, which documents the environmental monitoring and management measures. The required elements of the REMP include: • Dust and airborne hazard control • Flora and fauna • Heritage/archaeological • Visual impacts • Emergency response • Noise control • Traffic • Protection of adjoining structures' • Odour control • Handling of contaminated soil and groundwater • Soil storage/placement areas • Sediment control • Operation of site office • Decontamination of heavy equipment • Environmental monitoring • Environmental criteria • Material classification • Community relations plan	This requirement has been adequately addressed.

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Requirement	Consultant Consideration	Auditor Comment
	• Incident reporting • Security and signage • EMP review • Training • Contact details Section 6 provides material tracking plan.	
Site management plan for remediation works (health & safety)	Section 10.2 provides requirement of health and safety, which includes: • Requirement of preparation of work health and safety management plan by the Principal Contractor • Additional site-specific elements/procedures • Additional consideration of chemical contaminants	Section 10.2 is considered to appropriately address this requirement.
Remediation schedule	Section 10.1.4 states the appointed Remediation Contractor will prepare proposed schedule within the REMP.	It is considered appropriate for the Remediation Contractor to identify the remediation schedule. This will be based on additional characterisation.
Hours of operation	Section 10.1.4 states the hours of operation will be restricted to: • Mondays to Fridays 7am to 6pm • Saturdays 7am to 1pm (if inaudible on neighbouring residential premises), otherwise 8am to 1pm • No works permitted on Sundays and public holidays	JBS&G states that the working hours are in accordance with Draft consent conditions, and therefore considered to be appropriate. This should be confirmed once the DA consent is finalised.
Contingency plans for incidents:	Section 10.1.2 requires procedures for emergency response be provided in the REMP.	Contingency measure preparation by the Remediation Contractor is appropriate.
Licenses and approvals:	Section 9.1 has considered the following permits/approvals/notifications: • SEPP55 – The proposed remedial works are considered to be Category 1 remediation, requires development consent. • PoEO Act – The development is not considered to be scheduled activity under this Act. • PoEO (Waste) Regulation 2014 – The regulation includes non-licensed activities and waste transporting. • NSW EPA (2014) Waste Classification Guidelines – Waste for offsite disposal shall be waste classified under these guidelines. • Water Management Act 2000 – Dewatering is not required. Controlled activities are not anticipated. • Sydney Regional Environmental Plan (SERP) No 30 – St Marys	The requirement has been addressed, noting that: • The Penrith City Council consent conditions provide requirement for discharge of liquid waste to sewer main. • EPA consent is required for discharge of chemicals into the environment.

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Requirement	Consultant Consideration	Auditor Comment
	• St Marys Environmental Planning Strategy (EPS) 2000. • Penrith City Council consent conditions. • Blacktown Council consent conditions • SafeWork NSW and NSW WHS Regulations	
Contact persons	Section 10.1.2 states that contact persons will be provided in the REMP.	This is considered acceptable.
Community relations (where applicable)	Section 10.1.2 states that community relations plan will be provided in the remediation environmental management plan.	This is considered acceptable.
Staged progress reporting (where applicable)	Not provided	This is not anticipated to be required.
Long term site management plan	Not provided	This is not anticipated given the proposed remedial strategy.

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