# SITE REMEDIATION AND VALIDATION REPORT

Rushes Creek Poultry Production Farm, Rushes Creek Road, Rushes Creek, NSW 2346

**Prepared for:** 

ProTen Pty Ltd North Sydney, NSW, 2060

SLR

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## BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with ProTen Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client and appointed Site Auditor. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

## DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
610.30237.0000-R02-v1.4	16 February 2022	Jason Roesler	Ned Connolly	Ned Connolly
610.30237.0000-R02-v1.4	28 January 2022	Jason Roesler	Ned Connolly	Ned Connolly
610.30237.0000-R02-v1.2	23 December 2021	Jason Roesler	Hugh Selby	Hugh Selby (CEnvP-SC)

# EXECUTIVE SUMMARY

SLR Consulting Australia Pty Ltd (SLR) was engaged by ProTen Tamworth Pty Limited (ProTen) to prepare a site remediation and validation report following the remediation of soil impacted by arsenic near a former sheep dip at the proposed poultry production farm located at Rushes Creek Road, Rushes Creek, NSW (the site). The Site forms a small portion (approximately 700m<sup>2</sup>) of the larger Rushes Creek Poultry Production Farm (the Property), which was granted was granted Development Consent SSD 7704 by the Department of Planning Industry and Environment (DPIE) (as delegate for the Minister) on 16 April 2020. A Consolidated Consent was then issued on 15 June 2021, following modifications to the proposed approach to remediation of the soil impacted by arsenic. The site locality and site layout have been identified in **Figure 1** and **Figure 2** in **Appendix A** respectively.

Previous contamination investigations at the site identified arsenic impacted soils in surface and shallow soils (to approximately 0.7 metres below ground level) around a former Sheep Dip. The lateral extent of the arsenic impacted soils was approximately 700m<sup>2</sup>. A Remedial Action Plan (RAP) was developed and revised in 2021 (SLR, 2021a) which involved using low permeability soils from the Property to cap the area with the arsenic impacted soils.

During earthworks in a nearby portion of the Property in September 2021, a small amount of Asbestos Containing Material (ACM) was encountered. This ACM impacted material and timber from a sheep holding shed adjoining the arsenic impacted soils were placed on top of the arsenic impacted soil remediation area.

The remediation works were undertaken between 20 September 2021 and 29 October 2021 by TPE Civil (the Principal Contractor). The works included the following general steps:

- 1. Excavation of test pits to confirm the delineation of the arsenic impacted soils and capping extent.
- 2. Establishment of environmental controls around the remedial area.
- 3. Removal of vegetation to the extent practical without disturbing the impacted soil
- 4. Excavation of Virgin Excavated Natural Material (VENM) in the form of low permeability clay sourced from within the Property for use in the capping layers
- 5. The utilisation of stockpiled material (timber from the former sheep shed and ACM impacted soils) placed within the remediation area as the earth cover layer, as per **Section 8.6.6**
- 6. Placement and compaction of the VENM to form a cap over the arsenic impacted soils (as well as the timber and PACM impacted soils) in accordance the RAP (SLR, 2021a) as detailed in **Section 8.6.6**
- 7. Grassing of the capping and installation of a fence around the cap.
- 8. Survey of the capping and fencing.

9. Inspections of the capping works by an Environmental Consultant and the Site Auditor. SLR considers that the arsenic impacted soils have been remediated and validated in accordance with the RAP (SLR, 2021a) and the remediation criteria specified in the RAP (SLR, 2021a) has been met. SLR concludes that the site is suitable from a contamination perspective for use as a Poultry Production Farm, subject to the maintenance and monitoring of the capping as per the Long Term Environmental Management Plan (LTEMP) for the site.

# LIST OF ABBREVIATIONS

AHD	Australian Height Datum			
AS	Australian Standard			
ASC NEPM	National Environment Protection Council (1999, 2013 revision), National Environment Protection (Assessment of Site Contamination) Measure			
BTEXN	Benzene, toluene, ethylbenzene, xylene and naphthalene			
СОС	Chain of custody			
CoPC	Contaminants of Potential Concern			
CSM	Conceptual Site Model			
DQI	Data Quality Indicators			
DQO	Data Quality Objectives			
DSI	Detailed Site Investigation			
EIL	Ecological Investigation Levels			
ENM	Excavated Natural Material			
EPA	Environment Protection Authority			
EQL	Estimated Quantitation Limit			
GSW	General Solid Waste			
ha	hectare			
HIL	Health Investigation Limits			
HSL	Health Screening Levels			
Ils	Investigation Levels			
LOR	Limit of Reporting			
mbgl	metres below ground level			
mg/kg	Milligrams per kilogram			
NATA	National Association of Testing Authorities			
NEPM	National Environment Protection Measure			
NSW	New South Wales			
РАН	Polycyclic Aromatic Hydrocarbons			
PID	Photo-ionisation Detector			
ppm	Parts per million			
QA/QC	Quality Assurance / Quality Control			
RPD	Relative Percentage Difference			
SLR	SLR Consulting Australia Pty Ltd			
SOP	Standard Operating Procedures			
SPR	Source-Pathway-Receptor			
VENM	Virgin Excavated Natural Material			

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# **1** Introduction

SLR Consulting Australia Pty Ltd (SLR) was engaged by ProTen Tamworth Pty Limited (ProTen) to prepare a site remediation and validation report following the remediation of soil impacted by arsenic near a former sheep dip at the proposed poultry production farm located at Rushes Creek Road, Rushes Creek, NSW (the Site). The Site forms a small portion (approximately 700 m<sup>2</sup>) of the larger Rushes Creek Poultry Production Farm (the Project), which was granted Development Consent SSD 7704 by the Department of Planning, Industry and Environment (DPIE) (as delegate for the Minister) on 16 April 2020. A Consolidated Consent was then issued on 15 June 2021, following modifications to the proposed approach to remediation of the soil impacted by arsenic.

The site locality and site layout have been identified in **Figure 1** and **Figure 2** in **Appendix A** respectively. Photographs of the site before and after remediation have been presented in **Appendix B**.



# 2 Background Information

As part of the State Significant Development (SSD) approval process for four poultry farms (including individual poultry sheds), a Preliminary Site (contamination) Investigation (PSI) was prepared in 2018. The PSI identified the potential for contamination around a Sheep Dip within Poultry Farm 2 (refer to **Figure 2** in **Appendix A**). A Detailed Site (contamination) Investigation (DSI) undertaken around the Sheep Dip (the Site) in 2019, found concentrations of arsenic in shallow soils above the adopted site assessment criteria. A Remedial Action Plan (RAP) was prepared in 2019 which proposed offsite disposal of the arsenic impacted soils as the preferred remedial approach. The RAP was revised in 2021 to change the preferred remediation approach to capping, which was approved by DPIE as part of a Consolidated Consent issued on 15 June 2021. Further details on the previous investigations are provided in **Section 4.2**.

The following sections outline the objectives of the remediation and scope of works undertaken.

## 2.1 Objectives

The purpose of the works was to manage arsenic impacted soils at the Site, so that the arsenic impacted soils do not pose a risk to human health or the environment as part of a poultry production farm. Specifically, the objectives were to:

- remediate arsenic in soil at the site.
- validate the remediation and confirm the suitability of the Site for the proposed land use as part of a poultry production farm.
- meet the remediation goals of the RAP (SLR, 2021a) and document the remediation works to a standard that will generally comply with the NSW EPA *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land* (2020).

## 2.2 Scope of Works

The scope of works undertaken to meet the objectives included the following tasks:

- Review the PSI, DSI and RAP reports.
- Site Visits including:
  - Arsenic and capping delineation testing pitting with soil sampling.
  - Observation of an Unexpected find on the Property and placement of the asbestos impacted material on the Site.
  - Observation of the remediation works.
- Review of analytical results and comparison against adopted criteria for the Site.
- Preparation of this Site Remediation and Validation Report in general accordance with the NSW EPA (2020) *Contaminated Land Guidelines: Consultants reporting on contaminated land.*

 Table 9-3 in Section 9 provides a timeline of events for the remediation works.



# **3** Site Identification

The Project comprises the following land parcels:

- Lot 1 in Deposited Plan (DP) 44215
- Part Lot 1 in DP 1108119
- Lot 1 in DP 1132298
- Lots 26, 85, 86, 101, 118, 165, 166 and 171 in DP 752169
  - The Site covers approximately 700 m<sup>2</sup>, occupying a small portion of Lot 62 of DP 1276824. The Site is unsealed and adjacent to the former sheep dip. An old, abandoned sheep holding shed which was been demolished as part of the remediation works adjoins the Site.
- Part Lot 143 in DP 752189
- Lot 1 in DP 1132078
- Lot 1 in DP 1141148
- A section of unformed Council public road traversing through Lot 171 DP 752169.

The Project and Site locality are identified in **Figure 1** in **Appendix A**, with the location of the Site within the Project area is shown on **Figure 2 in Appendix A**. A summary of the site identification information is detailed below in **Table 3-1**.

Site Information	Details						
Site Address	Rushes Creek Road, Rushes Creek, NSW (the Site)						
Parcel Reference	Part Lot 62 DP1276824 (the Site)						
Site Area	0.01 hectares (Ha) (the Site)						
	1,016 Ha total Property area						
Current Land Use	RU1: Primary Production						
Proposed Future Land Use	Ongoing use as an RU1: Primary Production Poultry production farm						
Local Government	Tamworth Regional Council (TRC)						
Approximate Site – GPS Coordinates	Latitude: 30°48'49.91"S Zone: 56 J						
(Geocentric Datum of Australia 1994)	Longitude: 150°35'52.46" Easting: 270205.783 E						
	Northing: 6588558.235 S						

#### Table 3-1 Summary of site information

# **4** Site History

## 4.1 Summary of Site History

For the purposes of this Validation Report, information on site history is focussed on the Site including the area of the former sheep dip adjacent to the sheep holding yard which is subject to remediation for arsenic in soil (refer to **Figure 2** in **Appendix A**). The site history summary is based on historical aerial photographs, land title searches, NSW EPA searches, Tamworth Regional Council Planning Certificate (S149, now S10.7) as documented in the Preliminary Site Investigation (SLR, 2018).

As detailed in the PSI for the Property (SLR 2018), prior to purchase of the Property by ProTen, Ray Doyle owned the "Bundah" property since 1965, including Lot 62 of DP1276824in which the Site is located. Farmer and grazier Theodore George Tomlinson owned Property prior to 1965. The Property has been used for raising sheep and cattle, and growing wheat. A small number of free-range pigs were kept on the Property, but not to the extent or practice of a piggery.

Anecdotal evidence suggests that the sheep dip has not been in use since at least 1965, however, it is likely that it was used by a previous owner.



# **5** Site Condition and Surrounding Environment

Further to the site inspections undertaken as part of the PSI and DSI, an inspection of the Site was undertaken prior to and during the remediation works, with observations and photographs from these inspections summarised in **Table 5-1** below and **Appendix B**, respectively.

Features	Description
Features	• The Site is vacant land predominantly covered in low level grasses, shrubs, and Trees (Refer to Photographs 3 to 7 in Appendix B).
Site Drainage	<ul> <li>Site surface water from rainfall is expected to infiltrate into site soils with intense inundation exceeding infiltration capacity, excess water is expected to drain westerly with the slope of the surrounding area toward the Namoi River, located approximately 3.7 km to the west of the site.</li> </ul>
Fill and Waste Materials	Fill was not observed on the site
	• Evidence of waste materials being stored on the site was not observed prior to remediation. However, during remediation timber from the demolished shed (refer to Photograph 4 in Appendix B) and asbestos impacted soils from an Unexpected Find (refer to Photograph 10 in Appendix B) on the Property were stockpiled with the capping area. Refer to Section 7 for further details.
Underground and Above Ground Storage tanks	<ul> <li>No evidence of UST's for petroleum such as filling caps, vent pipes or bowser islands were observed.</li> </ul>
	No ASTs were observed on site.
Chemical and Other Hazardous Material Storage	• The storage of chemical and other hazardous materials was not observed during the site inspection.
Phyto-toxicity	• Evidence of phytotoxic impact was not observed on site during the site inspection.
Staining and Odours	Staining and odours were not observed on site at time of site inspection
Incidents and Complaints	Not applicable

#### Table 5-1 Site Inspection Observations

#### 5.1 Site Setting

Surrounding site uses are summarised in **Table 5-2** below.

#### Table 5-2 Summary of Surrounding Environment

Site Aspects	Description
Summary of surrounding land uses	<ul> <li>North: Agricultural</li> <li>South: Agricultural including proposed Farm Manager's Houses (refer to Figure 2 Appendix A)</li> <li>East: Agricultural including an existing residential dwelling to the south-east, inhabited by the Property Manager</li> <li>West: Agricultural</li> </ul>
Topography	<ul> <li>The site and adjacent land are predominantly flat, situated at approximately 373 metres Australian Height Datum (AHD)</li> <li>There is a slight downward slope towards the west of the site.</li> </ul>



Site Aspects	Descript	Description						
Nearest ecological receptor	•	Rushes Creek, located approximately 614 m to the east						
	•	Namoi River, located approximately 3.7 km to the west and 2.3 km to the north, and						
	•	Lake Keepit, located approximately 3.1 km to the west (dam full supply level).						

## 5.2 Hydrogeological Setting

The hydrogeological setting is summarised in **Table 5-3** below.

#### Table 5-3 Summary of Surrounding Environment and the Regional Hydrogeological Setting

Site Aspects	Description
Regional geology	<ul> <li>The NSW Government Manilla 1: 100,000 Geological Sheet 9036, First edition, 2013, indicates that the site is likely to be underlain primarily by Upper Devonian Mandowa Mudstone, comprising thinly bedded laminated and massive mudstone with subordinate, thin siltstone, and fine-grained sandstone beds.</li> </ul>
Aquifer Geological Unit	<ul> <li>The site is located within the New England Fold Belt. The New England Fold Belt groundwater system is characterised as a fractured rock system, with groundwater dominantly stored and transmitted within fractures rather than the rock mass itself.</li> </ul>
Groundwater depth	<ul> <li>Groundwater standing water levels (mbgl) is expected to be greater than nine metres across the site. The closest GW bore approximately 150 m from remediation area, GW011498 indicated a SWL of 9.05 mbgl</li> </ul>
Groundwater flow and seepage velocity	<ul> <li>Assumed to be towards the west based on site topography and nearby surface water receptors (Namoi River, located 3.7 km west of the site).</li> </ul>
Surface water runoff	<ul> <li>Site surface water is expected to infiltrate with intense inundation draining east to west with the slope of the surrounding area toward the Namoi River, located approximately 3.7km to the west of the site.</li> </ul>
Groundwater Quality	• Unknown
Registered Groundwater Bore Information	<ul> <li>A search of the NSW Government's online groundwater works database as part of the DSI (SLR 2019) identified five registered groundwater bores within 1,000 m of the former sheep dip location.</li> </ul>
	<ul> <li>Note: Unregistered groundwater bores may be present in the area that do not appear on relevant databases (<u>https://realtimedata.waternsw.com.au/;</u>)</li> </ul>
Acid Sulfate Soils (ASS)	• A review of the Australia Soil Resource Information System (ASRIS) indicated that there was no known occurrence of acid sulfate soils at or within the immediate vicinity of the site.

# 6 Previous Investigations

## 6.1 Preliminary Site Investigation

The PSI undertaken by SLR titled 'Stage 1 Preliminary Site Investigation Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek' dated July 2018 (SLR 2018) involved a desktop review (including land titles and aerial photographs) and site inspection of the Property. The PSI concluded that:

- An area of environmental concern (AEC) was identified for the Property (the former sheep dip on the Site).
- that the Development Site could be made suitable for the proposed redevelopment, subject to the undertaking of a targeted soil investigation addressing the AEC.
- Based on the nature of the COPC identified for the AEC, there are well established means of remediation and/or management that could be implemented to allow the Development to proceed, regardless of the findings of a targeted soil investigation.

Following exhibition of the Environmental Impact Statement (EIS), DPIE and the Environment Protection Authority (EPA) requested that a DSI be undertaken to assess the identified AEC prior to determination of the Development Application (DA).

## 6.2 Detailed Site Investigation

The DSI undertaken by SLR titled 'Detailed Site Investigation Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek NSW' dated February 2019 (SLR 2019) involved a desktop review of previous reports, site inspection and intrusive works at the site, undertaken over two separate mobilisations consisting of a total of 21 test pits. The DSI concluded that:

- Analytical results indicate that arsenic concentrations in soil ranged from below the HIL-A guideline value (100 mg/kg) to exceedances as high as 2,600 mg/kg, and is likely to be associated with the former sheep dip, is elevated above the relevant soil health investigation level (HIL) for standard residential with garden/accessible soil (HIL-A) guideline value in the National Environmental Protection Council's National Environmental Protection (Assessment of Site Contamination) Measure, as amended in 2013 (NEPM 2013)
- Soil sampling undertaken as part of the DSI has delineated the arsenic contamination to the north and south of the sheep dip, with low concentrations still exceeding the HIL-A guideline extending beyond the limit of the assessment to the east (assessment limited by the site shed) and to the west (with concentrations not expected to extend more than 10 metres west given the reducing concentrations from the source)
- Based on the guidance provided in NEPM 2013, SLR considers that the arsenic in soils contamination at the site presents an unacceptable risk to present and future site users, particularly during the proposed site redevelopment. Therefore, the arsenic identified in soils at the site is considered to warrant remedial action.

A groundwater assessment was not undertaken as part of the DSI due to the limited leaching potential of the identified arsenic (confirmed with toxicity characteristic leaching procedure analysis), the observed reduction in arsenic concentrations in soil with depth, and the anticipated depth of groundwater



## 6.3 Remedial Action Plan

A RAP titled 'Remedial Action Plan Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek, NSW' (SLR, 2019) was prepared and approved as part of the development consent for the poultry farm. The remedial strategy detailed in the 2019 RAP was to excavate the arsenic contaminated soil and dispose of this material offsite at a facility licensed to receive the waste.

It was identified that the landfill at Kemps Creek on the western fringes of Sydney is the only landfill licensed in NSW to take this type of contaminated soil. Given the time elapsed between preparation of the RAP and the proposed construction, review of Contractor pricing for the transport and disposal of the arsenic contaminated soil at Kemps Creek was deemed not feasible.

As such, an alternative remediation approach was proposed in the revised RAP (SLR 2021a). Based on the discussions with the client, consultation with the EPA, the risks posed to potential receptors including humans at the site and groundwater, and in consideration of the proposed development, the preferred alternative remedial strategy is on-site containment of arsenic contaminated soil. This involves placement of capping (4 layers, with a total thickness of approximately 1.3 m) across the arsenic impacted soils (approximately 700 m<sup>2</sup>). The extent of the capping is shown on **Figure 3** in **Appendix A**.



# 7 Conceptual Site Model

Based on the above characterisation of the site, a conceptual site model (CSM) has been developed to identify exposure pathways linking the source of contamination and the exposed receptors. The CSM for the site is summarised in **Table 7-1** below.

#### Table 7-1 Conceptual Site Model

Human Health Exposure Pathways													
PRIMARY SOURCES PRIMARY SOURCES (X) Contaminated Soil () Operational Spills, Leaks () Off-site (Up Gradient	SECONDARY SOURCES (X) Affected Surface Soils (<1m depth) () Affected Subsurface Soils (>1m depth)	Human Health E         TRANSPORT         MECHANISMS         (X) Wind Erosion &         Atmospheric Dispersion         () Volatilisation & Enclosed         space Accumulation         () Extraction of groundwater		OSURE Pathw Exposure Route Inhalation of Vapours Inhalation of dust Dral Ingestion Dermal Contact Jptake via Plants Inhalation of Vapours Inhalation of Vapour	Resi etis-u O	dent Off-site	Rec. User etis UO	Expo Com esite O 	/Ind r/ker 	oups Mainte Wo O U	enance rker Ott-site	Intru Wor O 	sive ker Ott-site
Contamination)	( ) Dissolved Groundwater Plume	for use () Volatilisation & Enclosed space Accumulation		Dermal Contact Dermal Contact nhalation of Vapours Date completed:	22-Dec-2	Rec. U: Com/In Comple Potenti Incomp	ser = R d = Cor ete or m ally con ilete or	ecreati mmercia najor pa nplete c insignifi	onal Us al/Indus thway or minor cant pa oject No	er strial Wo pathwa thway	orker ay 610.	30237.00	000
Site Location:	Rushes Creek Road, Rushes Creek,	NSW 2346	c	Completed by:	JR								



# 8 Implementation of Remediation Action Plan

**Table 8-1** provides a summary of the remedial activities implemented, with the activities detailed in the following sections.

Table 8-1	Summary	of Remedial	Activities
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Date	Activity	Detailed in Section
25 August 2021	Revised RAP Site Auditor comments closed	n/a
17 September 2021	Demolition of Sheep Holding Shed	n/a
20 September 2021	Arsenic Delineation test pits and sampling	8.2
20 September 2021	Capping Delineation test pits and sampling	8.3
20 September 2021	Management of Asbestos Unexpected Find	8.5
21 October	Issue of Interim Site Remediation and Validation Report	n/a
25 October 2021 to 26 October 2021	Capping Placement	8.6
16 November 2021	Site Survey	9.6.7
08 December 2021	Issue of Site Remediation and Validation Report	n/a

## 8.1 Remediation Goal

The primary remedial goal for this site is to reduce the risk posed to human and environmental receptors from the identified arsenic impacted soil and unexpected find of asbestos containing material.

#### 8.1.1 Remediation Criteria

The National Environmental Protection Council's National Environmental Protection (Assessment of Site Contamination) Measure, as amended in 2013 (NEPM 2013) 'Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater', provides a framework for the use of investigation and screening levels based on human health and ecological risks. Given the proximity of the site to low density residential housing, the criteria applied to the remediation is:

- NEPM 2013:
  - Health investigation levels (HILs) for soil contaminants HIL A Residential land use with garden/accessible soil, also including childcare centres, preschools, and primary schools; and
  - Health screening levels (HSLs) for asbestos contamination in soil HSL A Residential land use with garden/accessible soil also includes children's day care centres, preschools, and primary schools.

It should be noted that adoption of the *NEPM 2013 HIL A* is an extension from the criteria detailed within the RAP (SLR, 2021a), which specified the HIL A for arsenic as the primary action criteria. Justification for this extended remediation criteria was to ensure validation works were aligned with the overall remedial objective, which considered the site's intended redevelopment into low-density residential land use. Refer to **Table 8-2** for the Remediation Assessment Criteria



#### Table 8-2 Remediation Assessment Criteria

Contaminant of Potential Concern	Criteria (mg/kg)	Guideline
Arsenic	100	HIL A
Cadmium	20	
Chromium (III+VI)	100	
Copper	6,000	
Lead	300	
Mercury	40	
Nickel	400	
Zinc	7,400	
PAHs (Sum of total)	300	
Benzo(a)pyrene TEQ (LOR)	3	
Asbestos from ACM in Soil	0.01 % <sub>w/w</sub>	HSL A
Asbestos from FA & AF in Soil	0.001 % <sub>w/w</sub>	

 $%_{w/w}$  = percentage weight by weight

HIL A = Health investigation levels (HILs) for soil contaminants – Residential land use with garden/accessible soil

HSL A = Health screening levels (HSLs) for asbestos contamination in soil – Residential land use with garden/accessible soil

It should further be noted that as arsenic is the primary contaminant of interest, the HIL A for arsenic (100mg/kg) also reflects the Ecological Investigation Level for aged arsenic contamination in urban residential and public open space land use setting (100mg/kg). Hence, the arsenic remediation criteria and capping is considered protective of environmental receptors.

#### 8.2 Arsenic Delineation Sampling – September 2021

A data gap was identified during the DSI in relation to the lateral extent of arsenic impacts, as sampling was restricted due to the presence of a sheep holding shed. To address this data gap, subsequent to demolition of the shed (refer to **Photographs 1** to **5** in **Appendix B** showing the demolished shed) the following was undertaken on 20 September 2021:

- Excavation and sampling of test pits:
  - three (3) test pits (TP101-TP103) east former sheep dip in the footprint of the shed.
  - two (2) test pits (TP104-TP105) extending west from DSI sampling locations.
- The test pits were advanced using an excavator to a maximum depth of 0.7mbgl. The sampling locations are presented in **Figure 3**, **Appendix A**. Materials encountered during sampling logged were in accordance with the Unified Soil Classification System (USCS) and GPS location of test pits were recorded. All test pit logs, and GPS data are presented in **Appendix C**.
- Fifteen (15) soil samples were submitted to a (NATA) certified laboratory for analysis of arsenic. Refer to **Table 1** of **Appendix E** for the tabulated analytical results. Refer to **Appendix F** for a copy of the Certified Laboratory Reports. Discussion of the results is provided in **Section 10**.



Discussion of the results of the arsenic delineation sampling is included in **Section 11.1**, with the sampling confirming that arsenic did not extend further under the demolished shed. As shown in **Photographs 3** and **4** in **Appendix B**, a stockpile (approximately 30 m<sup>3</sup>) of timber from the shed was placed within the extent of the proposed cap.

## 8.3 Capping Delineation – September 2021

To confirm the extent of the proposed cap, the following works were undertaken:

- Excavation of five (5) test pits (TP201-TP205) at the outer edge of the capping as identified in the RAP. The sampling locations are presented in **Figure 3**, **Appendix A**.
- The test pits were advanced using an excavator to a maximum depth of 0.7 mbgl. The sampling locations are presented in **Figure 3**, **Appendix A**. Materials encountered during sampling logged were in accordance with the Unified Soil Classification System (USCS) and GPS location of test pits were recorded. All test pit logs, and GPS data are presented in **Appendix C**
- Fifteen (15) soil samples were submitted to a (NATA) certified laboratory for analysis of arsenic. Refer to **Table 1** of **Appendix E** for the tabulated analytical results. Refer to **Appendix F** for a copy of the Certified Laboratory Reports. Discussion of the results is provided in **Section 10**.

Discussion of the results of the capping delineation sampling is included in **Section 11.2**, with the capping delineation sampling not identifying additional arsenic contamination that required capping. However, the capping extent was extended slightly to the locations of capping delineation test pits (TP201 to TP205) to demonstrate that the capping covered the arsenic impacted soils, extended to known locations without arsenic impacted soils and reduced the grade of the cap (refer to **Figure 3**, **Appendix A**).

## 8.4 Permeability Testing – September 2021

To confirm that the permeability of the material proposed to be used in the cap, TPE collected two samples from material sourced onsite and submitted them for permeability tests. The results of the permeability testing are discussed in **Section 10** and presented in **Appendix G**.

## 8.5 Unexpected Finds Material – September 2021

On 24 September 2021, during earthworks for the installation of a Detention Dam Farm 2 on the Property (refer **Figure 2** in **Appendix A**), some household rubbish including a small amount of Potential Asbestos Containing Material (PACM) was unearthed at the location shown on **Figure 4** in **Appendix A**. This triggered implementation of the Unexpected Finds Protocol as follows:

- Works were stopped and an SLR representative experienced in assessing land contamination attended the Property on 28 September 2021.
- Following inspection of the Unexpected Find, four (4) test pits (TP301-TP304) were excavated beyond the outer edge of the identified unexpected find (refer to **Photographs 13-18** of **Appendix B**).
- Material identified as containing PACM was excavated, transported, and stockpiled to within the proposed capping area at the Site (refer to **photographs 10-12** of **Appendix B**).



Six (6) samples were collected from the stockpiled material of approximately 130m<sup>3</sup>. The sampling locations are presented in Figure 5, Appendix A. The samples were submitted for analysis at a NATA accredited laboratory on Total Recoverable Hydrocarbons (TRH) / Benzene, Toluene, Ethylbenzene, Xylenes (BTEXN), Polycyclic Aromatic Hydrocarbons (PAHs), Metals 8, Organochlorine and Organophosphate (OPP). Refer to Table 3 of Appendix E for the tabulated analytical results. Refer to Appendix F for a copy of the Certified Laboratory Reports. The results are discussed in Section 10.

## 8.6 Capping Works

The capping works were undertaken at the site between 25 October 2021 and 26 October 2021 and included the following steps.

#### 8.6.1 Site Survey

A survey of the Site was undertaken before the capping works (Drawing 21079 Revision A), after the capping works (Drawing 21079 Revision K) and after the fencing was installed (Drawing 21079 Revision R) as presented in **Appendix H**.

#### 8.6.2 Site Establishment

Site establishment included the setup of appropriate fencing, barriers, and signage to delineate the Site from other work areas.

#### 8.6.3 Underground and Overhead Services

Prior to remediation works commencing on the 25 October 2021, underground and overhead services were identified by TPE Civil.

#### 8.6.4 Vegetation Removal

Prior to the placement of any material for the cap, vegetation in the remedial area was removed to the extent practical without disturbing the impacted soil. This included:

- mowing the area as close to ground level as possible
- flattening vegetation including removal of one tree near TP104 and TP203.

#### 8.6.5 Capping Area Preparation

Prior to placement of the capping material, the timber stockpile from the former sheep holding shed was:

- Spread across the extent of the capping area with an excavator
- Crushed and pressed into the soil surface using a pad foot roller (**Photograph 27** in **Appendix B**) to compact the material and remove voids (refer to **Photographs 19** to **22** in **Appendix B**).

The soils stockpiled within the capping extent from the Unexpected Find were then spread within the capping area to form part of the Earth Cover Layer (refer to **Photographs 23** and **24** in **Appendix B**).



#### 8.6.6 Capping Construction

Consistent with the RAP, the cap was constructed of the layers listed in **Table 8-3** and has an approximate grade of 10%, which enables surface runoff without erosion (refer Drawing 21079 Revision R in **Appendix H**).

 Table 8-3
 Remedial Area Capping Summary (from bottom to top)

Capping Layer No.	Description	Thickness (m)
Layer 1 – Earthen Cover Layer	The earth cover layer included site won (refer to <b>Figure 2</b> in <b>Appendix A</b> ) for the source location) clay rich soils (Virgin Excavated Natural Material [VENM]), plus excavated material stockpiled from an on-site unexpected finds containing ACM from the excavation of the Proposed Detention Dam at Farm 2 (refer to <b>Figure 2</b> in <b>Appendix A</b> ). No material was greater than 150 mm, and no more than 20% of the material had dimensions greater than 40 mm. As this material contained ACM a marker layer was installed prior to the introduction of low permeability clay layer (refer <b>Photographs 25</b> to <b>27</b> in <b>Appendix B</b> ).	0.3
Layer 2 – Low Permeability Compacted Clay Layer 3 – Topsoil Layer	The low permeability compacted clay layer (VENM) was placed over the earth cover layer to and will act to reduce surface water infiltration into the remedial area. The layer consisted of site won clay rich soils, with a permeability of 1 x10 <sup>-8</sup> or lower as discussed in <b>Sections 8.4</b> and <b>11.4</b> . The clay was free of material greater than 40 mm. The layer was a minimum of 0.3 m in thickness. The layer was compacted in maximum 200 mm (compacted) layer thickness. The soil was moisture conditioned during placement to make it workable into a uniform layer. The layer was compacted using a <b>Caterpillar 815f soil compactor</b> , and each layer scarified prior to placement of the overlying layers. In a deviation from the RAP, given the low permeability soils available onsite, Layers 2 (Low Permeability Clay) and Layer 3 (Upper Subsoil) were combined. This is not considered to alter the performance of the cap, as Layer 3 was to act a protection layer over the compacted clay and to add thickness of the cap. Prior to the introduction of the Topsoil layer a HILF density ratio test was conducted to validate the compaction of the low permeability compacted clay layer. HILF density ratio of 96.5% and 98.0% of the possible density of the soil was reported (HILF density ratio test report is presented in <b>Appendix I</b> ).	0.7
Layer 3 – Topsoll Layer	The topsoil layer was placed over the Low Permeability Compacted Clay. The topsoil was sourced from onsite and will accommodate shallow rooted vegetation (refer to grasses as shown in <b>Photographs 37</b> and <b>38</b> in <b>Appendix B</b> ). It was free of material greater than 150 mm. It will be capable of supporting vegetation. The topsoil layer is a minimum of 0.2 m thick and loosely placed and not compacted.	0.3
Total	-	1.3

#### 8.6.7 Vegetation Establishment

Following completion of the cap, the topsoil layer was seeded with grasses similar to existing grasses at the Site (refer to **Photograph 38** in **Appendix B**).

#### 8.6.8 Site Fencing and Final Survey

Between 03 and 07 December 2021, fencing was installed around the capping area including Danger Asbestos signs (refer to **Photographs 37 and 38** in **Appendix B**. The fencing was then surveyed (Refer to Drawing 21079 Revision R in **Appendix H**).

# 9 Sampling Analysis and Quality Plan, and Sampling Methodology

## 9.1 Data Quality Objectives

The Data Quality Objectives (DQOs) for the RAP are summarised in Table 9-1 below.

Table 9-1	Data	Quality	<b>Objectives</b>
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DQO Step	Description	
Step 1: State the Problem	Elevated concentrations of arsenic in shallow soils within the Site require management to make the Site suitable for the proposed land use.	
Step 2: Identify the decision / goal of the study	To validate that the remedial works have reduced the risk to human health and the environment, so that the Site is suitable for the proposed land use.	
Step 3: Identify the information inputs	<ol> <li>The decision inputs include:</li> <li>Assessment of samples advanced across the Site as part of the DSI and delineation soil sampling</li> <li>Assessment of analytical results against the adopted remediation criteria, based on the ongoing land use</li> <li>Survey of the Site before and after capping</li> <li>The type of capping material.</li> <li>Site inspections before, during and after capping.</li> </ol>	
Step 4: Define the boundaries of the study	<ol> <li>The boundaries of the study are:</li> <li>Lateral - the samples of soil are limited to the lateral extent of the remediation capping as illustrated in Figure 3, Appendix A.</li> <li>Vertical – the sampling of soil was limited to 0.7 mbgl as per the RAP (SLR 2021).</li> <li>Temporal – the previous arsenic soils sampling (DSI, 2019) prior to the remediation works, and the validation sampling program undertaken during the remediation works between September and October 2021.</li> </ol>	
Step 5: Develop the analytical approach	<ul> <li>and October 2021.</li> <li>The decision rules for the project will be as follows: <ol> <li>If the site inspections confirm that the capping layer has been installed as per the RAP, then the site will be considered suitable for the proposed land use.</li> <li>Note if there is insufficient information to confirm the nature of the capping layer installed, further assessments may be required to confirm the suitability of the site for the proposed land use.</li> </ol> </li> <li>Where laboratory analysis is required: <ol> <li>If the results of the laboratory analytical data and QAQC samples are acceptable, t data will be considered suitable for the purposes of the project. Data will be assessed for completeness, comparability, representativeness, precision, and accuracy</li> <li>If the results of the laboratory analytical data are below the RAC, then the level of contamination in the media assessed will be considered an acceptable exposure ri</li> <li>If the results of laboratory analytical data exceed the RAC, then the level of contamination in the media assessed may require further assessment, manageme or remediation.</li> </ol></li></ul>	

DQO Step	Description	
Step 6: Specify performance or acceptance criteria	This step also examines the certainty of conclusive statements based on the available new site data collected and includes the following points to quantify tolerable limits:	
	<ol> <li>A decision can be made based on a certainty assumption of 95% confidence in any given data set. A limit on the decision error will be 5% that a conclusive statement may be a false positive or false negative.</li> </ol>	
	A decision error in the context of the decision rule presented above would lead to eithe underestimation or overestimation of the risk level associated with a particular sampling area. The investigation program in <b>Section 8.2</b> and <b>8.3</b> has been implemented to minimise the following potential decision errors:	
	<ol> <li>Sampling errors may occur when the sampling program does not adequately detect the variability of a contaminant from point to point across the site.</li> </ol>	
	<ol> <li>Limitations in ability to acquire useful and representative information from the data collected.</li> </ol>	
	<ol> <li>Measurement errors can occur during sample collection, handling, preparation, analysis and data reduction.</li> </ol>	
Step 7: Develop the plan for obtaining data.	The work plan was designed to meet the project objectives in <b>Section 2.1</b> and the DQOs outlined above. The work plan will be optimised based on the ground conditions encountered during the field program.	

## 9.2 Data Quality Indicators

**Table 9-2** below provides the following Data Quality Indicators (DQIs) based on the DQOs.

#### Table 9-2 Data Quality Indicators

Field Considerations	Laboratory Considerations	Data Acceptance Criteria
Precision		
Sampling Analysis and Quality Plan and SLR's Standard Operating Procedures (SOPs) complied with	<ul> <li>Analysis of:</li> <li>Blind duplicates (intra-laboratory duplicates)</li> <li>Split duplicates (inter-laboratory duplicates)</li> <li>Laboratory duplicates</li> </ul>	<ul> <li>Field duplicates (both blind and split collected 1 per 20 samples.</li> <li>Relative Percentage Difference (RPD) calculations: <ul> <li>30% RPD, with RPDs&gt;30% reviewed in relation to sample heterogeneity and the concentration &lt;5*LOR</li> <li>Laboratory duplicates and RPDs as per the laboratory procedures</li> </ul> </li> </ul>
Accuracy		

Field Considerations	Laboratory Considerations	Data Acceptance Criteria
<ul> <li>Appropriate work instructions have been developed for the works and that these are complied with to avoid bias introduced:</li> <li>By chemicals during handling or transport</li> <li>From contaminated equipment</li> <li>From contaminated reagent</li> <li>During laboratory analysis</li> <li>During laboratory preparation and analysis (may be increased or reduced)</li> <li>Precision of preparation of analytical method</li> <li>During collection/transport (may be</li> </ul>	<ul> <li>Analysis of:</li> <li>Rinsate blanks</li> <li>Field blanks</li> <li>Reagent blanks</li> <li>Method blanks</li> <li>Matrix spikes</li> <li>Surrogate spikes</li> <li>Reference material</li> <li>Laboratory control samples</li> <li>Laboratory prepared spikes</li> </ul>	<ul> <li>Rinsate blanks - CoPC <lor< li=""> <li>Field blanks - CoPC <lor< li=""> <li>Method blanks - CoPC <lor< li=""> <li>Matrix spikes - 70% - 130%</li> <li>Surrogate spikes - 50% - 150%</li> <li>Laboratory control samples - 70% - 130%</li> </lor<></li></lor<></li></lor<></li></ul>
increased or reduced		
<ul> <li>Appropriate media sampled in accordance with this scope of works, including:</li> <li>Samples must be collected to reflect the characteristics of each medium.</li> <li>Sample analysis must reflect properties of field samples.</li> <li>Homogeneity of the samples.</li> <li>Appropriate collection handling, storage and preservation.</li> <li>Detection of laboratory artefacts (i.e. contamination blanks)</li> </ul>	Samples analysed according to this scope of works	All samples
Comparability		
<ul> <li>SOP implemented during sampling</li> <li>Experienced sampler</li> <li>Climatic conditions (temperature, rainfall, wind) recorded to quantify the influence (if any)</li> <li>Same types of samples collected (size fractions and sample containers) and handled in the same manner</li> </ul>	<ul> <li>Sample analytical methods:</li> <li>Laboratory analytical holding times met</li> <li>Laboratory practical quantification limits (PQLs) (justify/quantify if different)</li> <li>Same laboratories (justify/quantify if different)</li> <li>Same units (justify/quantify if different) if different)</li> </ul>	All samples
Completeness		



Field Considerations	Laboratory Considerations	Data Acceptance Criteria
<ul> <li>Critical locations sampled</li> <li>Work instructions appropriate and complied with</li> <li>Experienced sampler</li> <li>Documentation recording and keeping appropriate</li> </ul>	<ul> <li>Critical samples analysed in accordance with the scope response</li> <li>Analytes sampled in accordance with scope of works</li> <li>Appropriate methods and practical quantitation limit (PQLs)</li> <li>Sampling documentation recorded and kept in an appropriate manner</li> <li>Sample holding times are complied with</li> </ul>	<ul> <li>Critical locations sampled as per Section 10</li> <li>All field records complete</li> <li>Sampling undertaken by experienced samplers</li> </ul>

## 9.3 Validation Methodology

All works undertaken as part of this investigation were completed in general accordance with the following guidelines and standards.

- National Environment Protection Council (1999, 2013 revision), National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013).
- AS 4482.1-2005, Guide to the Sampling and Investigation of Potentially Contaminated Soil. Part 1: Non-volatile and semi-volatile compounds.

In addition, SLR's SOPs were followed to ensure integrity was maintained and sampling procedures were completed in accordance with the relevant guidelines and standards. Samples were collected in accordance with the following methodology outlined below in **Table 9-3**.

Activity	Detail / Comment		
Dates of Field Activity	<ul> <li>20 September 2021 – arsenic and capping delineation works.</li> <li>28 September 2021 – Asbestos unexpected find excavation.</li> <li>25 October 2021 to 29 October 2021 – inspection of capping layers</li> <li>21 September 2021 – Auditor site inspection</li> </ul>		
	02 November 2021 – Auditor site inspection		
Service Location	An underground services locator was contracted by TPE Civil on 20 September 2021 to locate and clear services in the proposed remediation area to avoid damage.		
Remediation Capping	<ul> <li>Arsenic Delineation. Samples were collected as follows:         <ul> <li>5 Test Pits (TP101 to TP105) to 0.7mbgl from the extent of the remediation capping. Soil samples at                 - Surface (0-0.1m hand tools before excavation), 0.1-0.2m 0.6m-0.7m</li> </ul> </li> <li>Capping Delineation. Samples were collected as follows:</li> </ul>		
	<ul> <li>5 Test Pits (TP201 to TP205) to 0.7mbgl from the extent of the remediation capping. Soil samples at         <ul> <li>Surface (0-0.1m hand tools before excavation), 0.1-0.2m 0.6m-0.7m</li> </ul> </li> <li>Capping Placement and Inspections - 25 October 2021 to 26 October 2021</li> </ul>		

#### Table 9-3 Summary of validation sampling program



Activity	Detail / Comment
Offsite Disposal of Excavated Soils	No materials were disposed of offsite as part of the remediation works.
Validation of Imported Soils	No soils were imported to the Site for the capping. Soils from the Property were used in the capping.
Soil Logging	Soils encountered were described and logged in general accordance with the Unified Soil Classification System. Test pit logs are presented in <b>Appendix C</b> , which describe lithology encountered and additional soil sampling undertaken to address identified data gaps from the DSI (SLR 2019). Photograph's representative of typical ground conditions are presented in <b>Appendix B</b> .
Sample collection	Sample collection was undertaken in general accordance with AS4482.1-2005 and SLR SOPs. Dedicated disposable nitrile gloves and laboratory supplied sample containers were used for soil sample collection. Soil samples were placed in laboratory provided glass and plastic jars and plastic sample bags and appropriately sealed.
Sample preservation	Samples were placed in laboratory supplied jars and were stored as close to 4°C as practicable, in insulated chilled containers while on site and in transit to the laboratory.
Sample submission	Chain of custody (COC) documentation was completed at the time of sample collection and accompanied the samples to the laboratory.
Sample analysis	All samples were submitted to NATA accredited laboratories for selected analysis. Eurofins Environment Testing Australia Pty Ltd (Eurofins) were used as the primary laboratory whilst Australian Laboratory Services Pty Ltd (ALS) was the nominated secondary laboratory. The selected samples were submitted to the aforementioned laboratories for analysis of Arsenic, as summarised below:
	• 30 primary soil samples as part of the additional soil sampling program (undertaken on 20 September 32021).
	• Two (2) intra-laboratory duplicate soil samples as part of the validation soil sampling program.
	• Two (2) inter-laboratory duplicate soil samples as part of the validation soil sampling program.
	• Two (2) rinsate samples as part of the validation soil sampling program.
Decontamination Procedure	Non dedicated soil sampling equipment were decontaminated using a triple wash physical method. The equipment was scrubbed using a brush in a bucket of tap water containing Alconox liquid detergent, rinsed in a second bucket containing tap water, and subsequently rinsed using laboratory supplied deionised water prior to the collection of each sample.

# **10** Validation Results and Discussion

The following subsections provide a discussion of the validation results.

#### **10.1 Arsenic Delineation**

The geology observed during the advancement and sampling of the test pit locations generally consisted of material described as

- Topsoil to maximum depth of 0.1 mbgl: Silty Clay, Dark brown, Low plasticity, Dry. Organic content
- Clay, Low plasticity, Brown, Dry extending to a maximum depth of 0.5 mbgl overlaying
- Gravelly Clay, Grey, Low plasticity, Grey, Dry (clay shale)

Except for samples TP101\_0.1 (160 mg/kg) and TP101\_0.2 (480 mg/kg), concentrations of arsenic in the delineation samples were less than the adopted remediation criteria (100 mg/kg).



As shown on **Figure 3**, **Appendix A**, based on the field observations and analytical results, the boundary of the capping encompasses TP101.

## **10.2** Capping Delineation

The geology observed during the advancement and sampling of the test pit locations generally consisted of material described as

- Topsoil to maximum depth of 0.1mbgl: Silty Clay, Dark brown, Low plasticity, Dry. Organic content
- Clay, Low plasticity, Brown, Dry extending to a maximum depth of 0.5mbgl overlaying
- Gravelly Clay, Grey, Low plasticity, Grey, Dry (clay shale)

Except for sample TP203\_0.2 (160 mg/kg), concentrations of arsenic in the capping delineation samples were less than the adopted remediation criteria (100 mg/kg). Calculation of the 95 % Upper Confidence Level (95 % UCL) for arsenic was 68.51 mg/kg (Refer to **Table 3** of **Appendix E).** This validates the capping extent as shown on **Figure 3**, **Appendix A**, as the boundary of the capping layer encompasses the extent of arsenic impacted soils and extends over TP203.

#### **10.3 Unexpected Find - PACM**

Following an Unexpected Find of Potential Asbestos Containing Material (PACM) on 23 / 24 September 2021. SLR attended Site on 28 September 2021 to assess the material. SLR delineated the extent of the impacted soil via excavation of four test pits on the edges of the unexpected find and supervised the excavation of potentially asbestos impacted soil. Approximately 130 m<sup>3</sup> of material was excavated and transported to the Site (arsenic remediation area) approximately 300 m east of the unexpected find, stockpiled and temporarily covered with HDPE within the designated capping perimeter of the arsenic remediation. The Unexpected Find, areas remaining soils were validated with a visual inspection and collection of 5 soil validation samples from the base and walls of the excavation area.

Six (6) soil samples were collected from the stockpiled material and submitted for analysis at a NATA accredited laboratory on Total Recoverable Hydrocarbons (TRH) / Benzene, Toluene, Ethylbenzene, Xylenes (BTEXN), Polycyclic Aromatic Hydrocarbons (PAHs), Metals 8, Organochlorine and Organophosphate (OPP).

• All results were below the adopted criteria for Health based Investigation criteria (HIL A) in all samples analysed

Two (2) PACM samples were collected from the stockpiled material and submitted for asbestos (absence / presence) analysis, with the results as follows:

• Positive results of Chrysotile asbestos were detected in both material samples submitted for analysis.

## **10.4 Permeability Testing**

TPE collected two (2) soil samples (Shed 12-2 and Shed 18-1) from material sourced onsite and submitted them for analysis at a NATA accredited laboratory (Trilab) for permeability tests (permeability by falling head) on 17 September 2021.

On 28 September 2021 Trilab reported the permeability of these samples as:

• Shed 12-2: k<sub>(20)</sub> = 4.7 x 10<sup>-10</sup> (m/sec)



• Shed 18-1: k<sub>(20)</sub> = 2.0 x 10<sup>-10</sup> (m/sec)

The permeability test on both materials achieved the permeability of  $1 \times 10^{-8}$  or lower as specified in the RAP (SLR, 2021) required for the low permeability compacted clay layer in the capping construction.

Permeability laboratory reports are presented in Appendix G

#### **10.5 Site Inspection**

Site Inspections undertaken on 26 October 2021 during the capping works observed:

- The timber stockpile created from the demolition of the sheep holding shed was spread, crushed, and compressed into the surface layer soil of the remediation area by the use of Caterpillar 815f soil compactor, no material was greater than 150 mm, and no more than 20 % of the material having dimensions greater than 40 mm. Refer to photographs **19-22** of **Appendix B**.
- Removal of one tree within the designated capping area. The tree was removed from the remediation area and stockpiled within the Property.
- Soil stockpiled from the Unexpected Find PACM was spread across the compacted timber and within the remediation area
- Additional material sourced from site won clay rich soils (Refer **Photograph 28** of **Appendix B**) was deposited to build up the Earth Cover Layer to obtain the required height
- A marker layer was installed across the entire Earth Cover Layer, prior to the introduction of low permeability clay layer. Refer to photographs **25** to **27** of **Appendix B**.
- Low permeability soil forming the compacted clay layer was placed over the marker layer, this soil was compacted in 200mm increments. Refer to photographs **31** and **32** of **Appendix B**
- A topsoil layer was placed over the low permeability clay, to an approximate thickness of 300 mm. Refer to **Photograph 34** of **Appendix B**.

SLR considers that the works have been undertaken in accordance with the RAP (SLR, 2021a), with the capping to be maintained and monitored in accordance with a Long-Term Environmental Management Plan (LTEMP).

# **11 Quality Assurance and Quality Control Evaluation**

Established quality assurance (QA) / quality control (QC) procedures to assess data quality were maintained throughout the project. The QA / QC program undertaken as part of the assessment by SLR is presented in **Table 11-1**.

#### Table 11-1 Summary of QA/QC

QA/QC Aspect	Implemented (Y/N) and Reference
Use of appropriately qualified and trained staff	Y – the validation was undertaken by suitably qualified and experienced personnel
Decontamination of non-disposable sampling equipment before and between sampling events	Y - Non dedicated soil sampling equipment were decontaminated using a triple wash physical method
Samples were identified using a unique sampling location identifier and sample depth intervals (e.g. AEC01_VB01)	Y - refer to results are presented in Table 1 and Table 2 of Appendix E



QA/QC Aspect	Implemented (Y/N) and Reference
Preservation of samples with ice during transport from the field to the laboratory	Y – refer to sample receipt notification in Appendix F
Transportation of samples with accompanying COC documentation	Y – refer to sample receipt notification in Appendix F
Compliance with sample holding times	Y – refer to sample receipt notification in Appendix F
Review of results of blind (inter-laboratory) duplicate sample	Y – refer to results presented in Table 1 of <b>Appendix E,</b> and discussed in Section 11.1.1 below.
Review of results of split (intra-laboratory) duplicate sample	Y – refer to results presented in Table 1 of <b>Appendix E,</b> and discussed in Section 11.1.1 below.
Collection of rinsate and review of analytical results	Y – refer to results presented in Table 2 of <b>Appendix E, and</b> discussed in <b>Section 12.1.2 below.</b>
Review of internal analysis of laboratory duplicates, spikes and blanks; and	Y – refer to discussion in Table 11-2 with laboratory reports presented in of <b>Appendix F</b>
Comparison of field and analytical data.	Y - review of the survey information as provided in Appendix H.

## 11.1 QA/QC Program

The QC program employed during the investigation was in accordance with the general requirements set out in the Australian Standard (AS) 4482.1-2005 *Guide to the investigation and sampling of soils with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.* QC samples provide information that discounts or potentially identifies errors due to possible sources of cross contamination, and inconsistencies in sampling and analytical techniques used.

The QC program completed included the collection and analysis of duplicate samples. The duplicate samples collected included blind duplicate and split duplicate samples, as described below:

- **Split duplicate samples** are also known as "intra-laboratory duplicate" samples split in the field, with one sample being sent to a secondary laboratory for check analysis. Intra-laboratory field duplicates were collected on an average frequency of one sample per twenty samples collected (5%), with a minimum of one per batch (exclude samples collected for asbestos analysis).
- Blind duplicate samples are also known as "inter-laboratory duplicate" samples and are coded duplicate samples submitted to the primary laboratory, for analysis as individual samples without any indication to the laboratory that they have been duplicated. Inter-laboratory field duplicates were collected on an average frequency of one sample per twenty samples collected (5%) with a minimum of one per batch (exclude samples collected for asbestos analysis).

#### **11.1.1 Relative Percentage Difference Results**

A quantitative measure of the accuracy of the check analyses results obtained was made using calculated relative percentage difference (RPD) values of the following:

- Dup 101 (inter-Lab) and 102 (intra\_Lab)
- Dup 201 (inter-Lab) and 202(intra\_Lab)
  - Dup 101 and TP102\_0.1
  - Dup 102 and TP102\_0.1



- Dup 201 and TP204\_0.2
- Dup 202 and TP204\_0.2

The results of the QC program and calculated RPD values are presented in **Table 1** of **Appendix E**. Calculated RPDs were generally within the acceptable range of 0 and 30%, with the exception of

- Dup 202 and TP204\_0.2
- Dup 101 and TP102\_0.1
- Dup 102 and TP102\_0.1
- Dup 202 and Dup 201

This is attributed to the difference in the detection limits between the primary and secondary laboratories. A comparison between RPD values across primary, inter-lab, and intra-lab samples is presented in **Table 4**, **Appendix E**. The comparison demonstrates that comparable values were obtained samples (e.g., between inter-laboratory and intra-laboratory, or primary and inter/intra-laboratory).

Overall, the results of the QC program demonstrate that the data is suitable to support the findings of the assessment.

## **11.2 Laboratory Quality Control**

The laboratory data quality was reviewed and is summarised in Table 11-2.

#### QA/QC Aspect Implemented (Y/N) and Reference Method Blank Y - Analytical Results < Estimated Quantification Limit (EQL) Surrogate % Recovery Y = 50 % - 150 %Lab Control Sample % Recovery Y - 70 % - 130 % Spike % Recovery Y – (70 %-130 % inorganics) and (60 %-140 % organics) RPD No limit when Analytical Results < 10 times EQL • 50 % when Analytical Results = 10-20 times EQL 30 % when Analytical Results > 20 times EQL • Internal Duplicates Y 0 – 30 % Y 70 % - 130 % Matrix Spikes

#### Table 11-2 Summary of Laboratory QA/QC

The results of the laboratory QC program are considered to provide confidence in the analytical program, with the analytical data set considered to be valid and acceptable to base conclusions on the contamination status of the site.

# **12** Conclusions

SLR Consulting Australia Pty Ltd (SLR) was engaged by Proten Pty Ltd to prepare a Site Remediation and Validation Report following the remediation of arsenic impacted soils at the Site within the Property located at Rushes Creek Rd, Rushes Creek NSW (the "site"), (**Figure 1** and **2**, **Appendix A**). The need for remediation was based on preliminary and detailed site investigations which identified arsenic impacted shallow soils around a former sheep dip at the Site.

The remediation works were undertaken between 20 September 2021 and 29 October 2021 by TPE Civil (the Principal Contractor). The works included the following general steps:

- 1. Excavation of test pits to confirm the delineation of the arsenic impacted soils and capping extent.
- 2. Establishment of environmental controls around the remedial area.
- 3. Removal of vegetation to the extent practical without disturbing the impacted soil
- 4. Excavation of Virgin Excavated Natural Material (VENM) in the form of low permeability clay sourced from within the Property for use in the capping layers
- 5. The utilisation of stockpiled material (timber from the former sheep shed and ACM impacted soils) placed within the remediation area as the earth cover layer, as per **Section 8.6.6**
- 6. Placement and compaction of the VENM to form a cap over the arsenic impacted soils (as well as the timber and PACM impacted soils) in accordance the RAP (SLR, 2021a) as detailed in **Section 8.6.6**
- 7. Grassing of the capping and installation of a fence around the cap.
- 8. Survey of the capping and fencing.
- 9. Inspections of the capping works by an Environmental Consultant and the Site Auditor.

SLR considers that the arsenic impacted soils have been remediated and validated in accordance with the RAP (SLR, 2021a) and the remediation criteria specified in the RAP (SLR, 2021a) has been met. SLR concludes that the site is suitable from a contamination perspective for use as a Poultry Production Farm, subject to the maintenance and monitoring of the capping as per the Long Term Environmental Management Plan (LTEMP) for the site.

The conclusions presented above should be read in conjunction with the report in its entirety and the limitations provided in **Section 14**.

# **13 References**

**AS 4482.1-2005 (2005)** Guide to Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile Compounds.

AS 4482.2-1999 (1999) Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances.

**ASTM (2014)** Standard Guide for Developing Conceptual Site Models for Contaminated Sites. ASTM E1689-95. American Society for Testing and Materials ASTM International.

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

**CSIRO Land & Water (2011)** Atlas of Australian Acid Sulfate Soils. Commonwealth Scientific and Industrial Research Organisation Australia. Available at <u>https://doi.org/10.4225/08/512E79A0BC589</u>. Last viewed on 29 March 2018.

NEPC (1999)National Environment Protection (Assessment of Site Contamination)Measure 1999, as amendedin2013.NationalEnvironmentProtectionCouncil.Availableathttps://www.legislation.gov.au/Details/F2013C00288Last viewed on 26 July 2018. Referred to as ASC NEPM.

**National Environment Protection Council (NEPC) (1999)**, 'Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013'. (NEPM 2013a)

**National Environment Protection Council (NEPC) (1999)**, 'Schedule B(2) Guideline on Site Characterization, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013'. (NEPM 2013b)

**National Environment Protection Council (NEPC) (1999)**, 'Schedule B(5a) Ecological Risk Assessment, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013'. (NEPM 2013e)

**NSW EPA (2020)** Contaminated Land Guidelines: Consultants Reporting on Contaminated Land.

NSW EPA (2014) Waste Classification Guidelines.

**Standards Australia (2005)** *Guide to the Sampling and Investigation of Potentially Contaminated Soil. Part 1: Non-volatile and semi-volatile compounds*. AS 4482.1-2005. Standards Australia, Homebush NSW.

**SLR (2018)** Preliminary Site Investigation, Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek dated July 2018 (SLR Ref No: 610.16117.00400-R01-v0.2)

**SLR (2019)** Detailed Site Investigation, Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek dated February 2019 (SLR Ref No: 610.18456-R01-v1.2)

**SLR (2021a)** Remedial Action Plan, Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek dated April 2021 (SLR Ref No: 610.30237.00000-R01-v2.1)



**SLR (2021b)** Incident Report: Asbestos Unexpected Find, Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek dated October 2021 (SLR Ref No: 610.30237.00000-R03-v1.0)

# **14 Limitations**

The following information will assist in understanding the uncertainties relating to the interpretation of the data obtained during this investigation and the recommendations presented in the report and help with assessment and interpretation of the report.

SLR assumes no responsibility for the quality or accuracy of data obtained from external sources, or for occurrences outside the scope of works defined in this report.

All work conducted, and reports produced by SLR are prepared for a particular Client's objective including use by a Site Auditor and are based on a specific scope, conditions and limitations, as agreed upon between SLR and the Client. Information and/or report(s) prepared by SLR may therefore not be suitable for any use other than the intended objective.

Before passing on to a third party any information and/or report(s) prepared by SLR, the Client is to inform fully the third party of the objective and scope, and all limitations and conditions, including any other relevant information which applies to the information and/or report(s) prepared by SLR.

It is the responsibility of third parties to investigate fully to their satisfaction if any information and/or report(s) prepared by SLR, is suitable for a specific objective.

Services were conducted in a conscientious and professional manner. The nature of the task, however, and the likely disproportion between any damage or loss which might arise from the work and any report prepared as a result and the cost of our services is such that SLR cannot guarantee that all issues of concern/contamination have been identified.

The report(s) and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.
## **Appendix A**

Figures





**Remediation Area** 

FIGURE 2









**SLR** 

202 Submarine School, Sub Base Platypus, North Sydney, NSW, 2060

T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com

Ref: 610.30237.00000 Site Validation Report Poultry Production Farm, Rushes Creek, NSW

Figure 6 Capping and Fencing perimeter (indicative)

15<sup>th</sup> November 2021



Prepared: JR 15/11/2021 Checked: HS 15/11/2021



Site Photographs















Photograph 37 – Capping area showing fencing and revegetation   Date: 07/12/2021				
<b>Photograph 38 -</b> Capping area showing fencing with asbestos signage and revegetation				
Date: 07/12/2021				
Notes:			Site:	RUSHE
		SLR	Project: Date: Drawing:	Rемед 08 Dec <b>Рнот</b>

## ES CREEK ROAD, RUSHES CREEK, NSW 2346

DIATION AND SITE VALIDATION REPORT

OGRAPHIC LOG

Appendix B



**Borehole Logs** 





PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

СОММ	COMMENTS			
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations
	TP101_0.1	77.77.77.77.77.77.77.77.77.77.77.77.77.	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content	
-	TP101_0.2		Clay, Low plasticity, Brown, Dry	
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)	
_	TP101_0.7			
			Termination Depth at: 0.7m	



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek

Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

сомм	COMMENTS			
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations
_	TP102_0.1	77 77 77 77 77 77 77 77 77 77 77 77 77 77	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content	Dup101 & DUP102
-	TP102_0.2		Clay, Low plasticity, Brown, Dry	
- 0.5	TP102_07		Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)	
			Termination Depth at: 0.7m	



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

СОМИ	COMMENTS			
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations
	TP103_0.1	۲۲ ۲۲ ۲۲ ۲ ۲۲ ۲۲ ۲۲ ۲۳ ۲۳ ۲۲ ۲ ۲۳ ۲۲ ۲ ۲۳ ۲۳ ۲۲	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content	
_	TP103_0.2		Clay, Low plasticity, Brown, Dry	
-				
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry ( clay	
_	TP103_0.7		shale)	
			Termination Depth at: 0.7m	



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

СОММ	COMMENTS			
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations
	TP104_0.1	77.77.77. 77.77.77.77 77.77.77.77 77.77.	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content	
_	TP104_0.2		Clay, Low plasticity, Brown, Dry	
_				
- 0.5				
_			Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)	
	IP104_0.7			
			Termination Depth at: 0.7m	



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek

Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

СОММ	COMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
	TP105_0.1	77 77 77 77 77 77 77 77 77 77 77 77 77 77	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
	TP105_0.2		Clay, Low plasticity, Brown, Dry		
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)		
	TP105_0.7				
			iermination Depth at: 0.7m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

соми	COMMENTS			
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations
	TP202_0.1	۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲ ۲۲ ۲۲ ۲ ۲۲ ۲۲	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content	
	TP202_0.2		Clay, Low plasticity, Brown, Dry	
-				
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)	
	TP202_0.7		Tampiantian Dapth et 0.7m	
			iermination Depth at: 0.7m	



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

соми	COMMENTS			
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations
	TP202_0.1	۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۳۲ ۲۲ ۲۲ ۲ ۲۲ ۲۲ ۲ ۲ ۲۲ ۲۲	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content	
	TP202_0.2		Clay, Low plasticity, Brown, Dry	
-				
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)	
	TP202_0.7		Tampiantian Dapth et 0.7m	
			iermination Depth at: 0.7m	



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

СОММ	COMMENTS			
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations
	TP203_0.1	۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content	
_	TP203_0.2		Clay, Low plasticity, Brown, Dry	
_				
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry (clay shale)	
	TP203_0.7			
			Termination Depth at: 0.7m	



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek

Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

сомм	COMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
_	TP204_0.1	т т т т т т т т т т т т т т т т т т т	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
	TP204_0.2		Silty Clay, Low plasticity, Brown, Dry	Dup201 & 202	
-					
0.5			Gravelly Clay, Low plasticity, Grey, Dry (clay shale)		
	TP204_0.7				
			Termination Depth at: 0.7m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek

Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

сомм	COMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
	TP205_0.1	77 77 77 77 77 77 77 77 77 77 77 77 77 77	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
_	TP205_0.2		Silty Clay, Low plasticity, Brown, Dry		
-					
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry (clay shale)		
_	TP205_0.7				
			Termination Depth at: 0.7m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

СОММ	COMMENTS			
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations
	TP101_0.1	77. 77. 77. 77. 77. 7 77. 77. 77. 77. 77.	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content	
-	TP101_0.2		Clay, Low plasticity, Brown, Dry	
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)	
_	TP101_0.7			
			Termination Depth at: 0.7m	



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek

Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

сомм	OMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
_	TP102_0.1	77 77 77 77 77 77 77 77 77 77 77 77 77 77	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content	Dup101 & DUP102	
-	TP102_0.2		Clay, Low plasticity, Brown, Dry		
- 0.5	TP102_07		Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)		
			Termination Depth at: 0.7m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

СОММ	OMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
	TP103_0.1	۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
_	TP103_0.2		Clay, Low plasticity, Brown, Dry		
-					
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry ( clay		
_	TP103_0.7		shale)		
			Termination Depth at: 0.7m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

СОММ	OMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
	TP104_0.1	77.77.77. 77.77.77.77 77.77.77.77 77.77.	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
_	TP104_0.2		Clay, Low plasticity, Brown, Dry		
_					
- 0.5					
_			Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)		
	IP104_0.7				
			Termination Depth at: 0.7m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

СОММ	OMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
	TP105_0.1	77 77 77 77 77 77 77 77 77 77 77 77 77 77	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
_	TP105_0.2		Clay, Low plasticity, Brown, Dry		
-					
-					
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)		
	TP105_0.7				
			Termination Depth at: 0.7m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

соми	OMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
	TP202_0.1	۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
	TP202_0.2		Clay, Low plasticity, Brown, Dry		
-					
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)		
	TP202_0.7		Tampingting Depth of 0.7m		
			iermination Depth at: 0.1m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

соми	OMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
	TP202_0.1	۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
	TP202_0.2		Clay, Low plasticity, Brown, Dry		
-					
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry ( clay shale)		
	TP202_0.7		Tampingting Depth of 0.7m		
			iermination Depth at: 0.1m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

СОММ	OMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
	TP203_0.1	۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲۲ ۲ ۲۲ ۲۲ ۲ ۲۲ ۲۲	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
_	TP203_0.2		Clay, Low plasticity, Brown, Dry		
_					
- 0.5			Gravelly Clay, Low plasticity, Grey, Dry (clay shale)		
	TP203_0.7				
			Iermination Depth at: 0.7m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek

Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

сомм	OMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
_	TP204_0.1	т т т т т т т т т т т т т т т т т т т	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
	TP204_0.2		Silty Clay, Low plasticity, Brown, Dry	Dup201 & 202	
-					
0.5			Gravelly Clay, Low plasticity, Grey, Dry (clay shale)		
_	TP204_0.7				
			Termination Depth at: 0.7m		



PROJECT NUMBER 610.30237.00000 PROJECT NAME Rushes Creek CLIENT ProTen Pty Ltd ADDRESS Rushes Creek Rd, Rushes Creek

Excavation DATE 21/09/2021 COMPANY TPE Civil DRILLER RH DRILLING METHOD Excavator TOTAL DEPTH 0.7

LOGGED BY JR CHECKED BY HS

сомм	OMMENTS				
Depth (m)	Samples	Graphic Log	Material Description	Additional Observations	
	TP205_0.1	77 77 77 77 77 77 77 77 77 77 77 77 77 77	TOPSOIL: Silty Clay, Dark brown, Low plasticity, Dry. Organic content		
_	TP205_0.2		Silty Clay, Low plasticity, Brown, Dry		
-					
— 0.5			Gravelly Clay, Low plasticity, Grey, Dry (clay shale)		
_	TP205_0.7				
			Termination Depth at: 0.7m		
# **Appendix D**

Analytical Results Summary



SLR Ref No: 610.30237.00000 Proten Pty Ltd Site Validation Report Poultry Production Farm, Rushes Creek Road, Rushes Creek, NSW

Table 1 Analtycal Summary Arsenic Delineation



		Ars	enic
		ma/ka	ug/l
FOI		2	µg/∟ 1
NEDM 2013 Table 14(1) Hills Des A Seil		100	1
		100	
Field ID	Date		
TP101_0.1	21-09-2021	160	-
TP101_0.2	21-09-2021	480	-
TP101_0.7	21-09-2021	40	-
TP102_0.1	21-09-2021	75	-
TP102_0.2	21-09-2021	17	-
TP102_0.7	21-09-2021	7.8	-
TP103_0.1	21-09-2021	41	-
TP103_0.2	21-09-2021	10	-
TP103_0.7	21-09-2021	5.8	-
TP104_0.1	21-09-2021	53	-
TP104_0.2	21-09-2021	10	-
TP104_0.7	21-09-2021	6.1	-
TP105_0.1	21-09-2021	32	-
TP105_0.2	21-09-2021	14	-
TP105_0.7	21-09-2021	5.9	-
DUP101 of TP102_0.1	21-09-2021	57	-
DUP102 of TP102_0.1	21-09-2021	77	-
RB101	21-09-2021	-	<1

SLR Ref No: 610.30237.00000 Proten Pty Ltd Site Validation Report Poultry Production Farm, Rushes Creek Road, Rushes Creek, NSW

Table 2 Analtycal Summary Capping Delineation



	Ars	enic	
		mg/kg	µg/L
EQL		2	1
NEPM 2013 Table 1A(1) HILs Res A Soil		100	
Field ID	Date		
TP201_0.1	21-09-2021	17	-
TP201_0.2	21-09-2021	11	-
TP201_0.7	21-09-2021	7.2	-
TP202_0.1	21-09-2021	14	-
TP202_0.2	21-09-2021	8.6	-
TP202_0.7	21-09-2021	7.8	-
TP203_0.1	21-09-2021	37	-
TP203_0.2	21-09-2021	160	-
TP203_0.7	21-09-2021	4.7	-
TP204_0.1	21-09-2021	8.4	-
TP204_0.2	21-09-2021	9.3	-
TP204_0.7	21-09-2021	6.9	-
TP205_0.1	21-09-2021	11	-
TP205_0.2	21-09-2021	17	-
TP205_0.7	21-09-2021	7.5	-
DUP201 of TP204_0.2	21-09-2021	7.5	-
DUP202 of TP204_0.2	21-09-2021	5	-
RB102	21-09-2021	-	<1

# Table 395% Upper Confidence Level Statistics



	UCL Statis	tics for Unc	ensored Full Data Sets	
User Selected Options				
Date/Time of Computation	ProUCL 5.107-Oct-2021	10:38:44 AN	Λ	
From File	WorkSheet.xls			
Full Precision	OFF			
Confidence Coefficient	95%			
Number of Bootstrap Operations	2000			
	L			
		/	Ar	
		General	Statistics	
Total	Number of Observations	18	Number of Distinct Observations	13
			Number of Missing Observations	0
	Minimum	8.4	Mean	30.29
	Maximum	160	Median	15.5
	SD	37.2	Std. Error of Mean	8.767
	Coefficient of Variation	1.228	Skewness	2.839
			· · · · ·	
		Normal	GOF Test	
S	Shapiro Wilk Test Statistic	0.618	Shapiro Wilk GOF Test	
5% S	hapiro Wilk Critical Value	0.897	Data Not Normal at 5% Significance Level	
	Lilliefors Test Statistic	0.306	Lilliefors GOF Test	
5	% Lilliefors Critical Value	0.202	Data Not Normal at 5% Significance Level	
	Data Not	Normal at §	% Significance Level	
	As	suming Nor	mal Distribution	
95% No	ormal UCL		95% UCLs (Adjusted for Skewness)	
	95% Student's-t UCL	45.55	95% Adjusted-CLT UCL (Chen-1995)	50.98
			95% Modified-t UCL (Johnson-1978)	46.52
		Gamma	GOF Test	
	A-D Test Statistic	1.326	Anderson-Darling Gamma GOF Test	
	5% A-D Critical Value	0.76	Data Not Gamma Distributed at 5% Significance Level	
	K-S Test Statistic	0.287	Kolmogorov-Smirnov Gamma GOF Test	
	5% K-S Critical Value	0.208	Data Not Gamma Distributed at 5% Significance Level	
	Data Not Gamr	na Distribut	ed at 5% Significance Level	



Gamma Statistics												
k hat (MLE)	1.333	k star (bias corrected MLE)	1.148									
Theta hat (MLE)	22.72	Theta star (bias corrected MLE)	26.39									
nu hat (MLE)	48	nu star (bias corrected)	41.33									
MLE Mean (bias corrected)	30.29	MLE Sd (bias corrected)	28.27									
		Approximate Chi Square Value (0.05)	27.6									
Adjusted Level of Significance	0.0357	Adjusted Chi Square Value	26.52									
Ass	suming Gan	nma Distribution										
95% Approximate Gamma UCL (use when n>=50))	45.37	95% Adjusted Gamma UCL (use when n<50)	47.21									
	Lognorma	I GOF Test										
Shapiro Wilk Test Statistic	0.871	Shapiro Wilk Lognormal GOF Test										
5% Shapiro Wilk Critical Value	0.897	Data Not Lognormal at 5% Significance Level										
Lilliefors Test Statistic	0.241	Lilliefors Lognormal GOF Test										
5% Lilliefors Critical Value	0.202	Data Not Lognormal at 5% Significance Level										
Data Not I	ognormal a	t 5% Significance Level										
	Lognorma	I Statistics										
Minimum of Logged Data	2.128	Mean of logged Data	2,991									
Maximum of Logged Data	5.075	SD of logged Data	0.847									
Maximum or Eogged Data	0.070		0.017									
المعرفة	imina Loan	ormal Distribution										
95% H-UCI	16.80	90% Chebyshev (MVLIE) LICI	15.83									
95% Chobychov (MV/LE) UCL	54.01	97.5% Chebyshev (MVUE) UCL	45.05									
	87.67	77.5% Chebyshev (WVOL) UCL	05.57									
	07.07											
Nonnaramo	tric Distribu	tion From LICL Statistics										
Norma	omotrio Dia	tribution Free LICLe										
	44.72		45.55									
95% Standard Bootstrap UCL	44.26	95% Bootstrap-t UCL	64.91									
95% Hall's Bootstrap UCL	101.4	95% Percentile Bootstrap UCL	46.23									
95% BCA Bootstrap UCL	51.38											
90% Chebyshev(Mean, Sd) UCL	56.6	95% Chebyshev(Mean, Sd) UCL	68.51									
97.5% Chebyshev(Mean, Sd) UCL	85.05	99% Chebyshev(Mean, Sd) UCL	117.5									
	Suggested	UCL to Use										
95% Chebyshev (Mean, Sd) UCL	68.51											
Note: Suggestions regarding the selection of a 95%	UCL are pr	ovided to help the user to select the most appropriate 95% UCL.										
Recommendations are bas	ed upon dat	a size, data distribution, and skewness.										
These recommendations are based upon the resul	Its of the sin	nulation studies summarized in Singh, Maichle, and Lee (2006).										
However, simulations results will not cover all Real W	orld data se	ts; for additional insight the user may want to consult a statisticia	n.									

SLR Ref No: 610.30237.00000 Proten Pty Ltd Site Validation Report Poultry Production Farm, Rushes Creek Road, Rushes Creek, NSW Table 4 Analytical Summary Unexpected Find



		Arsenic	Cadmium	Chromium (III+VI)	Lead	Mercury	Nickel	Benzene	Ethylbenzene	Toluene	Xylene Total	Naphthalene	ප-භ -	TRH C10-C36 (Total)	PAHs (Sum of total)	, Benzo(a) pyrene	Chlorpyrifos	Scheduled chemicals	Moderately harmful pesticides	Asbestos In Building Material	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil
FOI		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Pos/Neg	%w/w	%w/w
		Z	0.4	5	5	0.1	5	0.1	0.1	0.1	0.5	0.5	20	30	0.5	0.5	0.2	(Total)	(Total)			
NSW 2014 Gene	ral Solid Waste	100	20	100.	100	4	40	10	600	200	1 000		650	10.000	200			15.0	250			
CTT (NO Leachin	g)	100	20	IUUA	100	4	40	10	600	288	1,000		650	10,000	200	0.8	4	<50	250			
NSW 2014 Restr	icted Solid																					
Waste CT2 (No L	eaching)	400	80	400a	400	16	160	40	2,400	1,152	4,000		2,600	40,000	800	3.2	16	<50	1000			
Field ID	Date																					
SP_ACM01	9-9-2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	positive	-	-
SP_ACM02	9-9-2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	positive	-	-
SPO1	9-9-2021	8.1	<0.4	18	13	<0.1	16	<0.1	<0.1	<0.1	<0.3	<0.5	<20	<50	<0.5	<0.5	<0.2	<0.2	<0.2	-	-	-
SPO2	9-9-2021	7.0	<0.4	15	11	<0.1	13	<0.1	<0.1	<0.1	<0.3	<0.5	<20	<50	<0.5	<0.5	<0.2	<0.2	<0.2	-	-	-
SPO3	9-9-2021	9.0	<0.4	20	19	<0.1	17	<0.1	<0.1	<0.1	<0.3	<0.5	<20	56	<0.5	<0.5	<0.2	<0.2	<0.2	-	-	-
SPO4	9-9-2021	8.7	<0.4	16	12	<0.1	15	<0.1	<0.1	<0.1	<0.3	<0.5	<20	<50	<0.5	<0.5	<0.2	<0.2	<0.2	-	-	-
SPO5	9-9-2021	8.0	<0.4	19	13	<0.1	15	<0.1	<0.1	<0.1	<0.3	<0.5	<20	<50	<0.5	<0.5	<0.2	<0.2	<0.2	-	-	-
SPO6	9-9-2021	7.4	<0.4	15	12	<0.1	12	<0.1	<0.1	<0.1	<0.3	<0.5	<20	<50	<0.5	<0.5	<0.2	<0.2	<0.2	-	-	-
TP301	9-9-2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0000	0.0000
TP302	9-9-2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0000	0.0000
TP303	9-9-2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0000	0.0000
TP304	9-9-2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0000	0.0000
TP305	9-9-2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0000	0.0000

Note: A. Chromium (VI)



**QA-QC** Results



### QA / QC

The QC program employed during the investigation was in accordance with the general requirements set out in the Australian Standard (AS) 4482.1-2005 *Guide to the investigation and sampling of soils with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.* QC samples provide information that discounts or potentially identifies errors due to possible sources of cross contamination, and inconsistencies in sampling and analytical techniques used.

A quality review of the data was conducted. In summary, the data quality review did not identify significant systematic errors in the data collection process. Therefore, the data set is considered to be valid, complete and can be relied upon for the purposes of this assessment.

Established quality assurance (QA) / quality control (QC) procedures to assess data quality were maintained throughout the project. The QA/QC program undertaken as part of the assessment by SLR is presented in **Table E1**, with a review of the laboratory controls presented in **Table E2**.



a Quality Indicator	Acceptance Criteria	Comment
cision		
Field Sampling		
<ul> <li>RAP methodology (SLR 2021a) complied with.</li> <li>Investigation by suitably qualified and experienced personnel</li> <li>Collection of duplicate (blind and split) samples</li> </ul>	<ul> <li>The RAP (SLR 2021a) was generally complied with.</li> <li>Fieldwork was undertaken by staff trained in environmental sampling</li> <li>Field duplicates (both blind and split) were collected at a rate of 1 per 20 samples as shown in Appendix D.</li> </ul>	• N/A.
Laboratory		
<ul> <li>Analysis of the following at NATA accredited laboratories:</li> <li>Blind duplicates (intralaboratory duplicates)</li> <li>Split duplicates (interlaboratory duplicates)</li> <li>Laboratory internal duplicates</li> </ul>	<ul> <li>As shown in the laboratory reports in Appendix F, NATA accredited laboratories Eurofins (primary) and ALS (secondary) undertook the analysis.</li> <li>As shown in Tables D2 in Appendix D, RPD calculations between primary and duplicate samples generally met the 30% RPD criteria, with the exception of majority of the metals and TRH fractions. This was attributed to the heterogeneity of the samples (Table E3, Appendix E).</li> <li>Laboratory duplicates and RPDs as per the laboratory procedures.</li> </ul>	<ul> <li>Where RPDs were &gt;30%, blind and split samples, sconcentrations reported Arsenic were below taboratory EQL for one or boanalytes in the duplicate pail</li> <li>As discussed in Section 11.1 all of the primary lab repohad an exceedance of tainternal laboratory duplicates. RPD. However, these were noted to pass Eurofins' Acceptance Criteria. In sominstances, exceedance of tainternal laboratory duplicates. RPD was noted to be due sample heterogeneity, and not considered to impact tainters. As discussed in Section 11.1 none of the secondary reports had an exceedance</li> </ul>

### Table E1 Summary of Data Quality Indicators, Acceptance and Comment

Data Quality Indicator	Acceptance Criteria	Comment
<ul> <li>Appropriate work instructions have been followed</li> <li>Collection of trip blanks and rinsate samples</li> <li>Compliance with holding times</li> <li>Analysis of:         <ul> <li>Trip blanks</li> <li>Rinsate blanks</li> <li>Method blanks</li> <li>Matrix spikes</li> <li>Surrogate spikes</li> <li>Laboratory prepared spikes</li> </ul> </li> </ul>	<ul> <li>&lt;5% Holding time exceedances</li> <li>Trip blanks - COPC &lt; LOR</li> <li>Rinsate blanks - COPC &lt; LOR</li> <li>Method blanks - COPC &lt; LOR</li> <li>Matrix spikes - 70% - 130%</li> <li>Surrogate spikes - 50% - 150%</li> <li>Laboratory control samples - 70% - 130%</li> </ul>	<ul> <li>Results for Trip blanks were less than the LOR</li> <li>Results for Rinsate blanks were less than the LOR</li> <li>Method blanks were less than the LOR</li> <li>Matrix spikes were within specified limits</li> <li>Surrogate spikes were within specified limits.</li> <li>Laboratory control samples were within specified limits.</li> </ul>
Representativeness		
<ul> <li>Appropriate media sampled in accordance with the SAQP, including:         <ul> <li>Samples must be collected to reflect the characteristics of each medium.</li> <li>Sample analysis must reflect properties of field samples.</li> <li>Homogeneity of the samples.</li> <li>Appropriate collection handling, storage and preservation.</li> <li>Detection of laboratory artefacts (i.e. contamination blanks)</li> </ul> </li> </ul>	<ul> <li>All samples were collected in appropriate sampling containers and analysed for the COPC as described in the DSI (SLR 2020a) and RAP (SLR 2020b).</li> </ul>	<ul> <li>As per the sample receipt documentation in Appendix F, samples were collected in the appropriate sample containers supplied by the laboratory for the analysis of COPC specified in the RAP (SLR 2020b).</li> </ul>

Data Quality Indicator	Acceptance Criteria	Comment
<ul> <li>Standard Operating Procedures implemented by experienced samplers during sampling.</li> <li>Climatic conditions (temperature, rainfall, wind) recorded to quantify the influence (if any).</li> <li>Same types of samples collected (size fractions and sample containers) and handled in the same manner.</li> <li>Analysis of split sample (1 in 20 samples)</li> <li>Sample analytical methods across primary and secondary laboratory</li> <li>Laboratory practical quantification limits (PQLs) and units of measure (justified/quantified if different)</li> </ul>	<ul> <li>Fieldwork was undertaken by staff trained in environmental sampling</li> <li>As shown in the laboratory reports in Appendix F, sample preservation was appropriate.</li> <li>As shown in Table D2 in Appendix D, split samples have been collected at a rate of more than 1:20 samples.</li> <li>Laboratory duplicates and RPDs as per the laboratory procedures.</li> <li>As shown in the laboratory reports in Appendix F, analytical methods and PQLs were generally consistent.</li> </ul>	• NA
Completeness		L
<ul> <li>Critical locations sampled.</li> <li>Documentation and record keeping appropriate.</li> </ul>	<ul> <li>Critical samples analysed in accordance with the scope response.</li> <li>Analytes sampled in accordance with scope of works.</li> <li>Sampling documentation recorded and kept in an appropriate manner.</li> </ul>	• NA

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Poultry Production Farm,

Rushes Creek Road,

Rushes Creek, NSW

### Table 4 Interlab and Intralab Relative Pecentive Difference



	Field or	Interlab Duplicates		
				Arsenic mg/kg
EQL				2
Lab Report Number	Field ID	Matrix Type	Date	
826821	TP102_0.1	soil	21-09-2021	75
826821	DUP101	soil	21-09-2021	57
RPD				27%
826821	TP102_0.1	soil	21-09-2021	75
ES2134685	DUP102	soil	21-09-2021	77
RPD				3%
826821	TP204_0.2	soil	21-09-2021	9.3
826821	DUP201	soil	21-09-2021	7.5
RPD				21%
826821	TP204_0.2	soil	21-09-2021	9.3
ES2134685	DUP202	soil	21-09-2021	5
RPD				60%
826821	DUP101	soil	21-09-2021	57
ES2134685	DUP102	soil	21-09-2021	77
RPD				30%
826821	DUP201	soil	21-09-2021	7.5
ES2134685	DUP202	soil	21-09-2021	5
RPD				40%

\*RPDs have only been considered where a concentration is greater than 1 times the EQL.

\*\*Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 81 (1 - 10 x EQL); 50 (10 - 30 x EQL); 30 ( > 30 x EQL) )

\*\*\*Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

SLR Ref No: 610.30237.00000 Proten Pty Ltd Site Validation Report Poultry Production Farm, Rushes Creek Road, Rushes Creek, NSW Table 2 QAQC Rinsate



		Field Rinsate		
				Metals
				Arsenic
EQL				1
Lab Report Number	Field ID	Matrix Type	Date	
826821	RB101	water	21-09-2021	<1
826821	RB102	water	21-09-2021	<1



Laboratory Reports

CH	IAIN OF CUSTOD	PROJECT	BRISBANE: Leve Terrace, Spring	el 2, 15 Astor Hill, QLD 4000	GOLD COAST Varsity Lakes	: 194 Varsity Parade, , QLD 4227	Sydney: 202 Subm	arine Schoo;, D Lar	WCASTLE: 10 Kings mbton, NSW 2305	Road, New	D AUCK	AND: 68 Beac	h Road, Auckland			
SLR	Consulting Australia Pty I	Ltd			OFFICE	CANBERRA: GP	O 410, Canberr	a, 🛛 MACKAY: 21 QLD 4740	River Street, Mackay,	<ul> <li>Sub Base Platypus, NSW, 20</li> </ul>	60 PE	RTH: Ground Floor, eet, Perth, WA 600	503 Murray O	D 7010	NN: 5 Duncan S VZ	treet, Port Nelson,
ABN	29 001 584 612				(Tick one)	DARWIN: 5 Foe	lsche Street, O	MELBOURNE Avenue, Haw	: Suite 2, 2 Domville thorn, VIC 3122			CKHAMPTON: ckhampton@slrcon:	sulting.com	D Stree	PLYMOUTH: Le East, New Ply	vei 2, 10 Devon nouth, 4310 NZ
CLIE	NT: ProTen Tamworth Pty L	td			<u>.</u>	LABORATO	LABORATORY: Eurofin							l Time	COC Num	ber
PRO	JECT: Remediation Delineat	ion				LABORATORY ADDRESS: Lane Cove							(TAT)	1	1	of 3
PRO	JECT NUMBER: 610.30237					SAMPLER: Jason Roesler							✓ Standard	TAT		
PRO.	JECT MANAGER: Hugh Selby	/				SAMPLER CONTACT No: 0421 039 534							Non Standard or Urgent TAT			
PM (	CONTACT No: 0447 241 473					Email Repo	orts and In	voices to: LQRSY	D@slrconsulting	g.com, jroesler@s	Irconsulting.com		Required TAT:	:	_	
CON	IMENTS OR ADDITIONAL D	RECTIONS			1	REDUESTED	ANALYSIS	Arsenic					ОТОН	Add (Commen or	<b>itional Inf</b> on any gross pecific requi	ormation s contamination rements)
No.	Io. Sample ID Date & Time Matrix Cont (Soil, water, ACM, etc.)					nd Preservatives										
	TP101_0.1	21	/09/2021	Soil				×								
	TP101_0.2	21	/09/2021	Soil			4	×								
	TP101_0.7	21	/09/2021	Soil				×								
	TP102_0.1	21	/09/2021	Soil				×								
	TP102_0.2	21	/09/2021	Soil				×								
	TP102_0.7	21	/09/2021	Soil				×								
	TP103_0.1	21	/09/2021	Soil			3	ĸ								
	TP103_0.2	21,	/09/2021	Soil			1	×	_							
	TP103_0.7	21,	/09/2021	Soil				ĸ								
	TP104_0.1	21,	/09/2021	Soil				K								
	TP104_0.2	21,	/09/2021	Soil				ĸ								
	TP104_0.7	21,	/09/2021	Soil				×								
I attest that the proper field sampling procedures were used during the collection of these samples.           Relinquished By Sampler         Sign         Date / Time						22-09-2021 @1440 <b>Received by</b>			Sign	26	2	Date / Time	22/9/2		Temperatur	e Received:
Relinquished By Sign Date / Time					Date / Time	Received by			Sign			Date / Time			10 - 3	-
Relin	Relinquished By Sign Date / Time							Received by	Sign			Date / Time				

# SLR

Сŀ	IAIN OF CUSTOD	Y DOCUMEN	ITATION		PROJECT	BRISBANE: Terrace, Sp	: Level 2, 15 Astor pring Hill, QLD 4000	GOLD COAST Varsity Lakes	: 194 Varsity Parade, s, QLD 4227	Sydne Sub Ba	ey: 202 Submarine Schoo se Platypus, North Sydne	, D Lamb	CASTLE: 10 Kings oton, NSW 2305	Road, New	AUCK/ 1010/	.AND: 68 Beacl	h Road, Auckland
SLR	Consulting Australia Pty I	Ltd			OFFICE	ACT 2600	A: GPO 410, Canberr	MACKAY: 21 QLD 4740	River Street, Mackay,		NSW, 2060	D Stree	'H: Ground Floor, et, Perth, WA 6000	503 Murray	D 7010	N: 5 Duncan S IZ	treet, Port Nelson,
ABN	29 001 584 612				(Tick one)	DARWIN: 5 Darwin, NT	5 Foelsche Street, T 0800	Avenue, Bay	: Suite 2, 2 Domville vthorn, VIC 3122			C ROCH	(HAMPTON: hampton@slrcons	ulting.com	NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ		
CLIE	NT: ProTen Tamworth Pty Lt	td				LABOR	LABORATORY: Eurofin							Turnaroun	d Time	COC Num	ber
PRO	JECT: Remediation Delineat	ion				LABOR/	ATORY ADDR	SS: Lane Cove						(TAT)	)	2	of 3
PRO	JECT NUMBER: 610.30237					SAMPL	SAMPLER: Jason Roesler							✓ Standard TAT			
PRC	JECT MANAGER: Hugh Selby	1				SAMPLER CONTACT No: 0421 039 534							Non Star	idard or U	rgent TAT		
PM	CONTACT No: 0447 241 473					Email R	Email Reports and Invoices to: LQRSYD@slrconsulting.com, jroesler@slrconsulting.com							Required TAT:			
COMMENTS OR ADDITIONAL DIRECTIONS							REQUESTED ANALYSIS	Arsenic						ПОН	Add (Commen or	<b>itional Inf</b> t on any gros. specific requi	<b>Drmation</b> s contamination rements)
No. Sample ID Date & Time Matrix (Soll, water, ACM, etc)						and Preser	vatives		_								
	TP105_0.1		21/09/2021	Soil				×			_						
	TP105_0.2		21/09/2021	Soil				×			_						
	TP105_0.7 21/09/2021 Soil							×									
	TP201_0.1		21/09/2021	Soil				×									
	TP201_0.2		21/09/2021	Soil				×									
	TP201_0.7		21/09/2021	Soil				×									
	TP202_0.1 /		21/09/2021	Soil				×									
	TP202_0.2		21/09/2021	Soil				×	_		_						
	TP202_0.7		21/09/2021	Soil				×									
L	TP203_0.1		21/09/2021	Soil				×	_		_						
	TP203_0.2 21/09/2021 Soil							×									
	70202 0 7 21/09/2021 Soil							×			1						
l atte	attest that the proper field sampling procedures were used during the collection of these samples.  Date / Tim Date / Tim Date / Tim						22-09-2021 @1440 Received by Sign			Sign Date / Time			Date / Time	20/0/01 Temperature Received			re Received:
Reli	Relinguistied By Sign Date / Time							Received by	Sign	Sign Date / Tin			Date / Time	пе 10.3°С			3°C
Reli	Lelinquished By Sign D							Received by	Sign	Sign Date / Time			Date / Time	le			

CI					PROJECT	BRISBANE: Terrace, Spi	Level 2, 15 Astor ring Hill, QLD 400	GOLD COAST: 1 Varsity Lakes, C	.94 Varsity Parade, QLD 4227	Sydney:	202 Submarine Scho Platvous, North Svd	no;, 🗖 NEV Lam	VCASTLE: 10 Kings Ibton, NSW 2305	Road, New	AUCH 1010	LAND: 68 Beach Road, Auckland NZ
SLF	Consulting Australia Pty	Ltd			OFFICE	ACT 2600	: GPO 410, Canbe	na, MACKAY: 21 Riv QLD 4740	ver Street, Mackay,		NSW, 2060	D PER'	TH: Ground Floor, et, Perth, WA 600	. 503 Murray 0	D 7010	DN: 5 Duncan Street, Port Nelson, NZ
ABI	N 29 001 584 612				(Tick one)	DARWIN: 5 Darwin, NT	Foelsche Street, 0800	MELBOURNE: S Avenue, Hawth	iuite 2, 2 Domville orn, VIC 3122			C ROC rock	KHAMPTON: thampton@sircon	sulting.com	Stree	PLYMOUTH: Level 2, 10 Devon : East, New Plymouth, 4310 NZ
CLII	NT: ProTen Tamworth Pty L	td				LABORA	TORY: Euro	ĩn						Turnaround Time COC Number		
PRO	JECT: Remediation Delineat	ion				LABORATORY ADDRESS: Lane Cove							(TAT	(TAT) <u>3 of 3</u>		
PRO	DJECT NUMBER: 610.30237					SAMPLER: Jason Roesler								✓ Standard TAT		
PRO	DJECT MANAGER: Hugh Selb	Y				SAMPLER CONTACT No: 0421 039 534							Non Standard or Urgent TAT			
PM	CONTACT No: 0447 241 473					Email Re	eports and I	voices to: LQRSYD	@slrconsultir	ng.com, jroe	esler@sirconsu	ulting.com		Required TA	:	
COI	VIMENTS OR ADDITIONAL D	RECTIONS					REQUESTED ANALYSIS	Arsenic						ПОН	Ada (Comment or	itional Information t on any gross contamination specific requirements)
No	. Sample II	D	Date & Time	Matrix (Soil, water, ACM, etc)	Containers ar	nd Preserv	atives									
	TP204_0.1		21/09/2021	Soil				×								
	TP204_0.2		21/09/2021	Soil	1			×								
	TP204_0.7		21/09/2021	Soil				×								
L	TP205_0.1		21/09/2021	Soil				×								
	TP205_0.2		21/09/2021	Soil				×								
	TP205_0.7		21/09/2021	Soil				×								
	DUP 101		21/09/2021	Soil				×								
	DUP 201		21/09/2021	Soil				×								
	RB101		21/09/2021	Water				×								
	RB201		21/09/2021	Water				×								
	DUP102		21/09/2021	Soil				*PI	ease foi	rward	to ALS fo	or Ars	enic			
*	* <b>DUP202</b> 21/09/2021 Soil							*PI	ease foi	rward	to ALS f	or Ars	enic			
i att Reli	attest that the proper field sampling procedures were used during the collection of these samples.           elinquished By Sampler         Sign         Date / Time			Date / Time	22-09	9-2021 @1440	<u>Received by</u>	Sign	he	In	/	Date / Time	22/91	21	Temperature Received:	
Reli	Alinguished By Sign Date / Time			Date / Time	Received by			Sign	Sign Date / Time					10.32		
Reli	ellnquished By Sign Dat			Date / Time	Date / Time Received by Sign					Date / Time						



### **Eurofins Environment Testing Australia Pty Ltd**

Melbourne 6 Monterey Road Dandenong South VIC 3175 16 Mars Road Phone : +61 3 8564 5000 Lane Cove We NATA # 1261 Site # 1254

ABN: 50 005 085 521

Sydney Brisbane Unit F3, Building F NATA # 1261 Site # 18217

 
 Muraris Road
 Muraris QLD 4172

 Lane Cove West NSW 2066
 Phone : +61 7 3902 4600

 Phone : +61 2 9900 8400
 NATA # 1261 Site # 10017
 1/21 Smallwood Place NATA # 1261 Site # 20794 www.eurofins.com.au

### Eurofins ARL Pty Ltd ABN: 91 05 0159 898

Perth 46-48 Banksia Road Welshpool WA 6106 Phone: +61 8 6253 4444 NATA # 2377 Site # 2370

EnviroSales@eurofins.com

**Eurofins Environment Testing NZ Limited** NZBN: 9429046024954

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

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

### **Sample Receipt Advice**

Company name:	SLR Consulting (Sydney)
Contact name:	Hugh Selby
Project name:	REMEDIATION DELINEATION
Project ID:	610.30237
Turnaround time:	5 Day
Date/Time received	Sep 22, 2021 4:19 PM
Eurofins reference	826821

### **Sample Information**

A detailed list of analytes logged into our LIMS, is included in the attached summary table.

Newcastle

4/52 Industrial Drive

Mayfield East NSW 2304 PO Box 60 Wickham 2293

Phone : +61 2 4968 8448

NATA # 1261 Site # 25079

- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- X Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- X Split sample sent to requested external lab.
- X Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

### Notes

DUP102, DUP202 FORWARDED TO ALS

### Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Hugh Selby - hselby@slrconsulting.com.

Note: A copy of these results will also be delivered to the general SLR Consulting (Sydney) email address.

Global Leader - Results you can trust

•	eurofins				Eurofins Environmer	nt Tes	sting A	Australia Pty Lto	I		Eurofins ARL Pty Ltd	Eurofins Environment Testing NZ Limited		
web: w email: E	ww.eurofins.com.au	u tins.com		Melbourne 6 Monterey Road Dandenong South VIC 3175 Phone : +61 3 8564 5000 NATA # 1261 Site # 1254		Sydney         E           Unit F3, Building F         1           5 16 Mars Road         M           Lane Cove West NSW 2066         F           Phone: +61 2 9900 8400         N           NATA # 1261 Site # 18217         N		Brisbane 1/21 Smallwood Place Murarrie QLD 4172 Phone : +61 7 3902 4600 NATA # 1261 Site # 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290		
Co Ad	mpany Name: dress:	SLR Consult Tenancy 202 North Sydne NSW 2060	ing (Sydney) 2, Submarine y	School, Sub B	ase Platypus,		Oi Re Pi Fa	rder No.: eport #: none: ax:	826821 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 22, 2021 4:19 Sep 29, 2021 5 Day Hugh Selby	РМ	
Pro Pro	ject Name: ject ID:	REMEDIATI 610.30237	ON DELINEA	TION							Eurofins Analytical Se	ervices Manager : Ar	ndrew Black	
		Sa	mple Detail			Arsenic	Moisture Set							
Melb	ourne Laborato	ory - NATA # 12	61 Site # 125	4				-						
Sydr	ley Laboratory	- NATA # 1261	Site # 18217	4		X	X	-						
May	ield Laboratory	Y - NATA # 120	Sito # 25070	<b>+</b>				-						
Perti	l aboratory - N	1ATA # 2377 Si	5110 # 23073					1						
Exte	rnal Laboratory							1						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	TP101_0.1	Sep 21, 2021		Soil	S21-Se46753	Х	Х							
2	TP101_0.2	Sep 21, 2021		Soil	S21-Se46754	Х	Х							
3	TP101_0.7	Sep 21, 2021		Soil	S21-Se46755	Х	x							
4	TP102_0.1	Sep 21, 2021		Soil	S21-Se46756	Х	х	-						
5	TP102_0.2	Sep 21, 2021		Soil	S21-Se46757	Х	X	-						
6	TP102_0.7	Sep 21, 2021		Soil	S21-Se46758	Х	X	-						
7	TP103_0.1	Sep 21, 2021		Soil	S21-Se46759	Х	X	-						
8	TP103_0.2	Sep 21, 2021		Soil	S21-Se46760	Х	X	-						
9	TP103_0.7	Sep 21, 2021		Soil	S21-Se46761	Х	Х	J						

🔅 eurofi	fine		Eurofins Environmen ABN: 50 005 085 521	nt Tes	sting Au	ustralia Pty Ltd	I	Eurofins ARL Pty Ltd ABN: 91 05 0159 898	Eurofins Environment Testing NZ Limited NZBN: 9429046024954		
web: www.eurofins.con email: EnviroSales@eu	n.au urofins.com	vironment Testing	Melbourne 6 Monterey Road Dandenong South VIC 3175 Phone : +61 3 8564 5000 NATA # 1261 Site # 1254		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	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
Company Nan Address:	ne: SLR Consu Tenancy 20 North Sydno NSW 2060	lting (Sydney) i2, Submarine School, Sub ey	Base Platypus,		Orc Rej Pho Fax	der No.: port #: one: k:	826821 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 22, 2021 4:19 Sep 29, 2021 5 Day Hugh Selby	РМ
Project Name: Project ID:	REMEDIAT 610.30237	ION DELINEATION						I	Eurofins Analytical Se	ervices Manager : Ar	ndrew Black
	Si	ample Detail		Arsenic	Moisture Set						
Melbourne Labo	oratory - NATA # 1	261 Site # 1254									
Sydney Laborat	tory - NATA # 1261	Site # 18217		Х	X						
Brisbane Labor	atory - NATA # 126	51 Site # 20794									
Mayfield Labora	atory - NATA # 126	1 Site # 25079									
Perth Laborator	r <b>y - NATA # 2377 S</b>	ite # 2370									
External Labora	Sop 21, 2021	Roil	S21 Sc46762	v	v						
10 TP104_0.1	Sep 21, 2021	Soil	S21-Se40762	×							
12 TP104_0.2	Sep 21, 2021	Soil	S21-Se40703	× X							
12 <u>TI 104_0.7</u> 13 TP105_0.1	Sep 21, 2021	Soil	S21-Se46765	x	X						
14 TP105 0.2	Sep 21, 2021	Soil	S21-Se46766	X	x						
15 TP105 0.7	Sep 21, 2021	Soil	S21-Se46767	X	X						
16 TP201 0.1	Sep 21, 2021	Soil	S21-Se46768	Х	X						
17 TP201_0.2	Sep 21, 2021	Soil	S21-Se46769	Х	x						
18 TP201_0.7	Sep 21, 2021	Soil	S21-Se46770	Х	X						
19 TP202_0.1	Sep 21, 2021	Soil	S21-Se46771	Х	Х						
20 TP202_0.2	Sep 21, 2021	Soil	S21-Se46772	х	Х						

	eurofins			Eurofins Environme ABN: 50 005 085 521	nt Te	sting A	ustralia Pty Lto	I		Eurofins ARL Pty Ltd ABN: 91 05 0159 898	Eurofins Environment Testing NZ Limited NZBN: 9429046024954		
web: w email:	ww.eurofins.com.au EnviroSales@eurofins	Env	rironment Testing	Melbourne 6 Monterey Road Dandenong South VIC 3 Phone : +61 3 8564 5000 NATA # 1261 Site # 125	S U 175 10 D La 4 P N	Sydney Unit F3, Building F 5 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	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290	
Co Ad	mpany Name: Idress:	SLR Consul Tenancy 20 North Sydne NSW 2060	lting (Sydney) 2, Submarine School, St ey	ub Base Platypus,		Oi Re Pi Fa	der No.: port #: none: nx:	826821 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 22, 2021 4:19 Sep 29, 2021 5 Day Hugh Selby	РМ	
Pro Pro	oject Name: oject ID:	REMEDIAT 610.30237	ION DELINEATION							Eurofins Analytical S	ervices Manager : Ar	ndrew Black	
		Sa	ample Detail		Arsenic	Moisture Set							
Melt	oourne Laborato	ory - NATA # 12	261 Site # 1254										
Syd	ney Laboratory	- NATA # 1261	Site # 18217		Х	X							
Bris	bane Laborator	y - NATA # 126	i1 Site # 20794										
May	field Laboratory	/ - NATA # 126'	1 Site # 25079										
Pert	h Laboratory - N	NATA # 2377 Si	ite # 2370										
EXTE		Sep 21 2021	Coil	C21 Ca46772	v								
21	TP202_0.7	Sep 21, 2021	Soil	S21-S040773									
22	TP203_0.1	Sep 21, 2021	Soil	S21-Se40774	×								
23	TP203_0.7	Sep 21, 2021	Soil	S21-Se46868	X	X							
25	TP204_0.1	Sep 21, 2021	Soil	S21-Se46869	X	X							
26	TP204 0.2	Sep 21, 2021	Soil	S21-Se46870	X	X							
27	TP204 0.7	Sep 21, 2021	Soil	S21-Se46871	X	x							
28	TP205_0.1	Sep 21, 2021	Soil	S21-Se46872	х	X							
29	TP205_0.2	Sep 21, 2021	Soil	S21-Se46873	х	X	1						
30		Sep 21, 2021	Soil	S21-Se46874	Х	Х							
31	DUP101	Sep 21, 2021	Soil	S21-Se46875	Х	Х	]						

	eurofins			Eurofins Environme	ent Tes	sting A	ustralia Pty Lto	ł		Eurofins ARL Pty Ltd	Eurofins Environment Testing NZ Limited		
	eurofin	S			ABN: 50 005 085 521						ABN: 91 05 0159 898	NZBN: 9429046024954	
web: w email:	www.eurofins.com.au EnviroSales@eurofins.com	" Envi	ironment Te	sting	Melbourne 6 Monterey Road Dandenong South VIC 3 Phone : +61 3 8564 500 NATA # 1261 Site # 125	5 U 175 16 0 La 4 Pl N	ydney nit F3, B 6 Mars F ane Cov hone : + ATA # 1	uilding F Road e West NSW 2066 61 2 9900 8400 261 Site # 18217	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 Phone : +61 7 3902 4600 NATA # 1261 Site # 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
Cc Ac	ompany Name: Idress:	SLR Consult Tenancy 202 North Sydne NSW 2060	ting (Sydney) 2, Submarine Scho 89	ool, Sub B	Base Platypus,		Or Re Ph Fa	der No.: port #: ione: x:	826821 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 22, 2021 4:19 Sep 29, 2021 5 Day Hugh Selby	РМ
Pr Pr	oject Name: oject ID:	REMEDIATI 610.30237	ON DELINEATIO	N							Eurofins Analytical S	ervices Manager : Ar	drew Black
		Sa	ample Detail			Arsenic	Moisture Set						
Mell	bourne Laboratory	- NATA # 12	261 Site # 1254										
Syd	ney Laboratory - N	ATA # 1261	Site # 18217			X	Х						
Bris	bane Laboratory -	NATA # 126	1 Site # 20794										
May	field Laboratory -	NATA # 1261	I Site # 25079										
Pert	th Laboratory - NA	TA # 2377 Si	te # 2370										
Exte	ernal Laboratory		, ,										
32	DUP201 S	ep 21, 2021	Soi	il	S21-Se46876	Х	Х						
33	RB101 S	ep 21, 2021	Wa	ater	S21-Se46877	Х							
34	RB102 S	ep 21, 2021	Soi	il	S21-Se46878	Х	Х						
Test	t Counts					34	33						



## SLR Consulting

Tenancy 202, Submarine School, Sub Base Platypus, North Sydney NSW 2060





NATA Accredited Accreditation Number 1261 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	

Hugh Selby

Report	826821-S
Project name	REMEDIATION DELINEATION
Project ID	610.30237
Received Date	Sep 22, 2021

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	TP101_0.1 Soil S21-Se46753 Sep 21, 2021	TP101_0.2 Soil S21-Se46754 Sep 21, 2021	TP101_0.7 Soil S21-Se46755 Sep 21, 2021	TP102_0.1 Soil S21-Se46756 Sep 21, 2021
Heavy Metals						
Arsenic	2	mg/kg	160	480	40	75
% Moisture	1	%	20	19	8.2	19

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	TP102_0.2 Soil S21-Se46757 Sep 21, 2021	TP102_0.7 Soil S21-Se46758 Sep 21, 2021	TP103_0.1 Soil S21-Se46759 Sep 21, 2021	TP103_0.2 Soil S21-Se46760 Sep 21, 2021
Heavy Metals						
Arsenic	2	mg/kg	17	7.8	41	10
% Moisture	1	%	18	12	15	17

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled	LOR	Lipit	TP103_0.7 Soil S21-Se46761 Sep 21, 2021	TP104_0.1 Soil S21-Se46762 Sep 21, 2021	TP104_0.2 Soil S21-Se46763 Sep 21, 2021	TP104_0.7 Soil S21-Se46764 Sep 21, 2021
Heavy Metals	LOIX	Onit				
Arsenic	2	mg/kg	5.8	53	10	6.1
% Moisture	1	%	9.3	19	26	13



Client Sample ID Sample Matrix			TP105_0.1 Soil	TP105_0.2 Soil	TP105_0.7 Soil	TP201_0.1 Soil
Eurofins Sample No.			S21-Se46765	S21-Se46766	S21-Se46767	S21-Se46768
Date Sampled			Sep 21, 2021	Sep 21, 2021	Sep 21, 2021	Sep 21, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	32	14	5.9	17
% Moisture	1	%	24	22	12	12

Client Sample ID			TP201_0.2	TP201_0.7	TP202_0.1	TP202_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Se46769	S21-Se46770	S21-Se46771	S21-Se46772
Date Sampled			Sep 21, 2021	Sep 21, 2021	Sep 21, 2021	Sep 21, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	11	7.2	14	8.6
% Moisture	1	%	23	12	26	26

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled			TP202_0.7 Soil S21-Se46773 Sep 21, 2021	TP203_0.1 Soil S21-Se46774 Sep 21, 2021	TP203_0.2 Soil S21-Se46775 Sep 21, 2021	TP203_0.7 Soil S21-Se46868 Sep 21, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	7.8	37	160	4.7
% Moisture	1	%	17	20	20	11

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled			TP204_0.1 Soil S21-Se46869 Sep 21, 2021	TP204_0.2 Soil S21-Se46870 Sep 21, 2021	TP204_0.7 Soil S21-Se46871 Sep 21, 2021	TP205_0.1 Soil S21-Se46872 Sep 21, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	8.4	9.3	6.9	11
% Moisture	1	%	20	19	19	9.1



Client Sample ID Sample Matrix			TP205_0.2 Soil	TP205_0.7 Soil	DUP101 Soil	DUP201 Soil
Eurotins Sample No.			521-5646873	521-5646874	521-5646875	521-5646876
Date Sampled			Sep 21, 2021	Sep 21, 2021	Sep 21, 2021	Sep 21, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	17	7.5	57	7.5
% Moisture	1	%	15	16	14	22



### Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Sydney	Sep 28, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Sep 23, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

	eurofi	nc			Eurofins Environmen ABN: 50 005 085 521	t Te	sting A	Australia Pty Ltd	I		Eurofins ARL Pty Ltd ABN: 91 05 0159 898	Eurofins Environment	Testing NZ Limited
web: web: web: web: web: web: web: web:	ww.eurofins.com.au EnviroSales@eurofins	Environment Testing		Melbourne 6 Monterey Road Dandenong South VIC 317 Phone : +61 3 8564 5000 NATA # 1261 Site # 1254	Sydney           Unit F3, Building F           175         16 Mars Road           Lane Cove West NSW 2066           Phone : +61 2 9900 8400           NATA # 1261 Site # 18217		Building F Road re West NSW 2066 61 2 9900 8400 261 Site # 18217	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 Phone : +61 7 3902 4600 NATA # 1261 Site # 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290	
Co Ad	mpany Name: dress:	SLR Consult Tenancy 202 North Sydne NSW 2060	ting (Sydney) 2, Submarine y	School, Sub B	ase Platypus,		Or Re Pr Fa	rder No.: eport #: none: ax:	826821 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 22, 2021 4:19 Sep 29, 2021 5 Day Hugh Selby	РМ
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		Sa	mple Detail			Arsenic	Moisture Set						
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Sydr	ney Laboratory	- NATA # 1261	Site # 18217			Х	X	-					
Brist	bane Laborator	y - NATA # 126 <sup>-</sup>	1 Site # 2079	4									
Mayf	ield Laboratory	/ - NATA # 1261	Site # 25079										
Perti	h Laboratory - N	NATA # 23// Sit	te # 2370										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	TP101_0.1	Sep 21, 2021	_	Soil	S21-Se46753	Х	х						
2	TP101_0.2	Sep 21, 2021		Soil	S21-Se46754	Х	Х						
3	TP101_0.7	Sep 21, 2021		Soil	S21-Se46755	Х	Х						
4	TP102_0.1	Sep 21, 2021		Soil	S21-Se46756	Х	х						
5	TP102_0.2	Sep 21, 2021		Soil	S21-Se46757	Х	X						
6	TP102_0.7	Sep 21, 2021		Soil	S21-Se46758	Х	Х						
7	TP103_0.1	Sep 21, 2021		Soil	S21-Se46759	Х	X						
8	TP103_0.2	Sep 21, 2021		Soil	S21-Se46760	Х	X						
9	TP103_0.7	Sep 21, 2021		Soil	S21-Se46761	Х	X	]					

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web: www.eurofins.com. email: EnviroSales@euro	au ofins.com	Environment Testing		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           2066 Phone : +61 7 3902 4600           00 NATA # 1261 Site # 20794           217	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
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15 TP105_0.2	Sep 21, 2021	Soil	S21-Se40700	^ X	X					
16 TP201 0 1	Sep 21, 2021	Soil	S21-Se46768	X	x					
17 TP201 0.2	Sep 21, 2021	Soil	S21-Se46769	X	x					
18 TP201 0.7	Sep 21, 2021	Soil	S21-Se46770	X	x					
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web: www.eurofins.c email: EnviroSales@	.com.au @eurofins.com	Environment Testing		ting	6 Monterey Road Dandenong South VIC 3175 Phone : +61 3 8564 5000 NATA # 1261 Site # 1254		Unit F3, Building F 16 Mars Road Lane Cove West NSW 2066 F Phone : +61 2 9900 8400 N NATA # 1261 Site # 18217		1/21 Smallwood Place Murarrie QLD 4172 Phone : +61 7 3902 4600 NATA # 1261 Site # 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
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23 TP203_0	0.2 Sep	21, 2021	Soil		S21-Se46775	Х	X	-					
24 TP203_0	0.7 Sep	21, 2021	Soil		S21-Se46868	Х	X	-					
25 TP204_0	0.1 Sep	21, 2021	Soil		S21-Se46869	Х	X	4					
26 TP204_0	0.2 Sep	21, 2021	Soil		S21-Se46870	Х	X	4					
27 TP204_0	0.7 Sep	21, 2021	Soil		S21-Se46871	Х	X	4					
28 TP205_0	0.1 Sep	21, 2021	Soil		S21-Se46872	Х	X	-					
29 TP205_0	0.2 Sep	21, 2021	Soil		S21-Se46873	Х	X	-					
30 TP205_0	0.7 Sep	21, 2021	Soil		S21-Se46874	Х	X	4					
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Sydn	ey Laboratory - I	NATA # 1261	Site # 18217			X	X	-					
Brisk	bane Laboratory	- NATA # 126	51 Site # 20794					-					
Mayt	ield Laboratory -	NATA # 126	1 Site # 250/9					-					
Pertr	Laboratory - NA	ATA # 23// S	ite # 2370			-		{					
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### Internal Quality Control Review and Glossary

#### General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site 1. 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.
- 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.
- This report replaces any interim results previously issued. 9.

### **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
сос	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
СР	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.
- 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 5. 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									
Heavy Metals									
Arsenic			mg/kg	< 2			2	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	100			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery				-					
Heavy Metals				Result 1					
Arsenic	S21-Se46759	CP	%	97			75-125	Pass	
Spike - % Recovery				-			-		
Heavy Metals				Result 1					
Arsenic	S21-Se46871	CP	%	105			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Se46758	CP	mg/kg	7.8	6.1	25	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Se46768	CP	mg/kg	17	17	1.0	30%	Pass	
Duplicate			1						
				Result 1	Result 2	RPD			
% Moisture	S21-Se46873	CP	%	15	14	4.0	30%	Pass	



### Comments

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

### Authorised by:

Andrew Black John Nguyen Analytical Services Manager Senior Analyst-Metal (NSW)

Glenn Jackson General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



# **SLR Consulting**

Arsenic

Tenancy 202, Submarine School, Sub Base Platypus, North Sydney NSW 2060



< 0.001



< 0.001

NATA Accredited Accreditation Number 1261 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	Hugh Selby							
Report	826821-W							
Project name	REMEDIATION DELINEATION							
Project ID	610.30237							
Received Date	Sep 22, 2021							
Г		1	1					
Client Sample ID				RB101	RB102			
Sample Matrix				Water	Water			
Eurofins Sample No.		S21-Se46877	S21-Se46878					
Date Sampled				Sep 21, 2021	Sep 21, 2021			
Test/Reference		LOR	Unit					
Heavy Metals								

0.001

mg/L



### Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Sydney	Sep 28, 2021	28 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

ABN: 50 005 085 521						ent Testing Australia Pty Ltd					Eurofins ARL Pty Ltd ABN: 91 05 0159 898	Eurofins Environment Testing NZ Limited NZBN: 9429046024954		
web: www.eurofins.com.au email: EnviroSales@eurofins.com		.com	Environment Testing		Melbourne 6 Monterey Road Dandenong South VIC 317 Phone : +61 3 8564 5000 NATA # 1261 Site # 1254		Sydney Unit F3, Building F '5 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	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 76 Phone : 0800 856 450 IANZ # 1290	
Coi Ade	Company Name:       SLR Consulting (Sydney)         Address:       Tenancy 202, Submarine School, Sub Base Platypus,         North Sydney       NSW 2060				Base Platypus,		Order No.: Report #: Phone: Fax:		826821 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 22, 2021 4:19 Sep 29, 2021 5 Day Hugh Selby	РМ	
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1	TP101_0.1	Sep 21, 2021	_	Soil	S21-Se46753	Х	х							
2	TP101_0.2	Sep 21, 2021		Soil	S21-Se46754	Х	Х							
3	TP101_0.7	Sep 21, 2021		Soil	S21-Se46755	Х	Х							
4	TP102_0.1	Sep 21, 2021		Soil	S21-Se46756	Х	х							
5	TP102_0.2	Sep 21, 2021		Soil	S21-Se46757	Х	X							
6	TP102_0.7	Sep 21, 2021		Soil	S21-Se46758	Х	Х							
7	TP103_0.1	Sep 21, 2021		Soil	S21-Se46759	Х	X							
8	TP103_0.2	Sep 21, 2021		Soil	S21-Se46760	Х	X							
9	TP103_0.7	Sep 21, 2021		Soil	S21-Se46761	Х	X	]						
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Mayfield Laborator	y - NATA # 126 <sup>-</sup>	1 Site # 25079												
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15 TP105 0 7	Sep 21, 2021	Soil	S21-Se46767	X	x									
16 TP201 0.1	Sep 21, 2021	Soil	S21-Se46768	X	x									
17 TP201 0.2	Sep 21, 2021	Soil	S21-Se46769	X	X									
18 TP201_0.7	Sep 21, 2021	Soil	S21-Se46770	Х	x									
	Sep 21, 2021	Soil	S21-Se46771	Х	X									
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web: www.eurofins.com.au email: EnviroSales@eurofins.co		.com	• Environment Testing		5 16 75 16 25 Pl N	Sydney         Sydney           Unit F3, Building F         1           16 Mars Road         1           Lane Cove West NSW 2066         1           Phone : +61 2 9900 8400         1           NATA # 1261 Site # 18217         1		Brisbane 1/21 Smallwood Place Murarrie QLD 4172 Phone : +61 7 3902 4600 NATA # 1261 Site # 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
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Brist	bane Laborator	y - NATA # 126′	1 Site # 20794									
Mayf	ield Laboratory	- NATA # 1261	Site # 25079									
Perth	h Laboratory - N	IATA # 2377 Sit	te # 2370									
Exte	TD202 07	San 21, 2021	Soil	S21 Se46772	v	v						
21	TP202_0.7	Sep 21, 2021	Soil	S21-Se46773	×							
22	TP203_0.1	Sep 21, 2021	Soil	S21-Se40774	×							
23	TP203_0.2	Sep 21, 2021	Soil	S21-Se40775	×	x						
24	TP203_0.7	Sep 21, 2021	Soil	S21-Se40808	X	x						
26	TP204_02	Sep 21, 2021	Soil	S21-Se46870	X	x						
27	TP204 0.7	Sep 21, 2021	Soil	S21-Se46871	X	x						
28	TP205 0.1	Sep 21, 2021	Soil	S21-Se46872	X	x						
29	TP205_0.2	Sep 21, 2021	Soil	S21-Se46873	Х	x						
30	TP205_0.7	Sep 21, 2021	Soil	S21-Se46874	Х	x						
31	DUP101	Sep 21, 2021	Soil	S21-Se46875	Х	Х						

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web: v email:	WWW.eurofins.com.au	IS Environment Testing		Melbourne 6 Monterey Road Dandenong South VIC Phone : +61 3 8564 500 NATA # 1261 Site # 129	Syd         Syd           ponterey Road         Unit           denong South VIC 3175         16 M           ne : +61 3 8564 5000         Lan           CA # 1261 Site # 1254         Phc           NAT         NAT		Building F Road re West NSW 2066 61 2 9900 8400 1261 Site # 18217	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 Phone : +61 7 3902 4600 NATA # 1261 Site # 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290	
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Pr Pr	oject Name: oject ID:	REMEDIATI 610.30237	ION DELINEATION							Eurofins Analytical S	ervices Manager : Ar	ndrew Black	
		Sa	ample Detail		Arsenic	Moisture Set							
Mel	bourne Laboratory	/ - NATA # 12	261 Site # 1254			_	-						
Syd	ney Laboratory - N	IATA # 1261	Site # 18217		X	X	4						
Bris	bane Laboratory -	NATA # 126	1 Site # 20794				-						
May	rtield Laboratory -	NATA # 1261	1 Site # 25079				-						
Perth Laboratory - NATA # 23/7 Site # 23/0						{							
22		op 21 2021	Soil	S21 S046976	×	v	+						
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					-	-	1						



#### Internal Quality Control Review and Glossary

#### General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site 1. 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.
- 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.
- This report replaces any interim results previously issued. 9.

#### **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
СР	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.
- 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 5. 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									
Heavy Metals									
Arsenic			mg/L	< 0.001			0.001	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	92			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery							_		
Heavy Metals				Result 1					
Arsenic	S21-Se46878	CP	%	90			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Se46877	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	



### Comments

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

#### Authorised by:

Andrew Black John Nguyen Analytical Services Manager Senior Analyst-Metal (NSW)

Glenn Jackson General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



## **CERTIFICATE OF ANALYSIS**

Work Order	ES2134685	Page	: 1 of 2
Client	SLR Consulting Australia Pty Ltd	Laboratory	: Environmental Division Sydney
Contact	: HUGH SELBY	Contact	: Tyler Anderson
Address	SUB BASE PLATYPUS 202/120 HIGH STREET NORTH SYDNEY 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	:	Telephone	: +61 2 8784 8555
Project	: 610.30237 REMEDIATION DELINEATION	Date Samples Received	: 24-Sep-2021 17:20
Order number	:	Date Analysis Commenced	28-Sep-2021
C-O-C number	:	Issue Date	01-Oct-2021 13:03
Sampler	: JASON ROESLER		Hac-MRA NATA
Site	:		
Quote number	: EN/032/20 Primary Work Only		Accorditation No. 925
No. of samples received	: 2		Accredited for compliance with
No. of samples analysed	: 2		ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

## Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



## **General Comments**

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key: CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	DUP102	DUP202	 	
Sampling date / time				21-Sep-2021 00:00	21-Sep-2021 00:00	 	
Compound	CAS Number	LOR	Unit	ES2134685-001	ES2134685-002	 	
				Result	Result	 	
EA055: Moisture Content (Dried @ 105-110	)°C)						
Moisture Content		0.1	%	13.8	19.2	 	
EG005(ED093)T: Total Metals by ICP-AES							
Arsenic	7440-38-2	5	mg/kg	77	5	 	



## **QUALITY CONTROL REPORT**

Work Order	: ES2134685	Page	: 1 of 3
Client	: SLR Consulting Australia Pty Ltd	Laboratory	: Environmental Division Sydney
Contact	: HUGH SELBY	Contact	: Tyler Anderson
Address	SUB BASE PLATYPUS 202/120 HIGH STREET NORTH SYDNEY 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	:	Telephone	: +61 2 8784 8555
Project	: 610.30237 REMEDIATION DELINEATION	Date Samples Received	: 24-Sep-2021
Order number	:	Date Analysis Commenced	: 28-Sep-2021
C-O-C number	:	Issue Date	: 01-Oct-2021
Sampler	: JASON ROESLER		Hac-MRA NATA
Site	:		
Quote number	: EN/032/20 Primary Work Only		Accreditation No. 825
No. of samples received	: 2		Accredited for compliance with
No. of samples analysed	: 2		ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

 Signatories
 Position
 Accreditation Category

 Ivan Taylor
 Analyst
 Sydney Inorganics, Smithfield, NSW



### **General Comments**

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key: Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

RPD = Relative Percentage Difference

# = Indicates failed QC

### Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Sample ID	Method: Compound	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)			
EG005(ED093)T: Tota	I Metals by ICP-AES (QC Lo	ot: 3927197)									
ES2134685-002	DUP202	EG005T: Arsenic	7440-38-2	5	mg/kg	5	5	0.0	No Limit		
ES2134600-015	Anonymous	EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit		
EA055: Moisture Con	EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3925233)										
ES2134600-013	Anonymous	EA055: Moisture Content		0.1	%	9.8	12.6	24.5	0% - 50%		
ES2134722-007	Anonymous	EA055: Moisture Content		0.1	%	29.7	29.6	0.5	0% - 20%		



## Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL			Method Blank (MB)	Laboratory Control Spike (LCS) Report						
				Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)		
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High		
EG005(ED093)T: Total Metals by ICP-AES(QCLot: 3927197	)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	88.1	88.0	113		

## Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL			Matrix Spike (MS) Report						
				Spike	SpikeRecovery(%)	Acceptable I	.imits (%)		
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High		
EG005(ED093)T: To	otal Metals by ICP-AES (QCLot: 3927197)								
ES2134600-015	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	88.0	70.0	130		



	QA/QC Compliance Ass	essment to assist wit	h Quality Review	
Work Order	: ES2134685	Page	: 1 of 4	
Client	: SLR Consulting Australia Pty Ltd	Laboratory	: Environmental Division Sydney	
Contact	: HUGH SELBY	Telephone	: +61 2 8784 8555	
Project	: 610.30237 REMEDIATION DELINEATION	Date Samples Received	: 24-Sep-2021	
Site	:	Issue Date	: 01-Oct-2021	
Sampler	: JASON ROESLER	No. of samples received	: 2	
Order number	:	No. of samples analysed	: 2	

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

## Summary of Outliers

## **Outliers : Quality Control Samples**

This report highlights outliers flagged in the Quality Control (QC) Report.

- <u>NO</u> Method Blank value outliers occur.
- <u>NO</u> Duplicate outliers occur.
- <u>NO</u> Laboratory Control outliers occur.
- <u>NO</u> Matrix Spike outliers occur.
- For all regular sample matrices, <u>NO</u> surrogate recovery outliers occur.

## **Outliers : Analysis Holding Time Compliance**

• NO Analysis Holding Time Outliers exist.

## **Outliers : Frequency of Quality Control Samples**

• <u>NO</u> Quality Control Sample Frequency Outliers exist.



## Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL					Evaluation	: × = Holding time	breach ; 🗸 = Withi	n holding time.
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
DUP102,	DUP202	21-Sep-2021				28-Sep-2021	05-Oct-2021	✓
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
DUP102,	DUP202	21-Sep-2021	29-Sep-2021	20-Mar-2022	✓	29-Sep-2021	20-Mar-2022	✓



## **Quality Control Parameter Frequency Compliance**

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: SOIL				Evaluation	n: × = Quality Co	ntrol frequency r	not within specification ; $\checkmark$ = Quality Control frequency within specification.
Quality Control Sample Type		Co	ount		Rate (%)		Quality Control Specification
Analytical Methods	Method	00	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	18	11.11	10.00	$\checkmark$	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	$\checkmark$	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	$\checkmark$	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	$\checkmark$	NEPM 2013 B3 & ALS QC Standard



## **Brief Method Summaries**

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).

																	- Share	
СН	AIN OF CUSTO	DY DOCU	MENTAT	ION	PROJECT	BRISBANE: I Terrace, Spi	Level 2, 15 As ring Hill, QLD	stor 4000	GOLD COAST: 194 Varsity Lakes, QL	Varsity Parade, 0 4227	Sydne	y: 202 Submarine Schoo;	Lambton, NSW 2305	s Road, New	AUCKLAN 1010 NZ	ID: 68 Beach Road, A	luckland	
SLR	Consulting Australia P	'ty Ltd				CANBERRA: ACT 2600	GPO 410, Ca	nberra, 🔲	MACKAY: 21 River	Street, Mackay,	V SUD Ba	NSW, 2060	PERTH: Ground Floor Street, Perth, WA 60	r, 503 Murray 100	NELSON: 7010 NZ	5 Duncan Street, Po	rt Nelson,	
ABN	29 001 584 612				(Tick one)	DARWIN: 5 Darwin, NT	Foelsche Stre 0800	eet, 🖸	MELBOURNE: Sui Avenue, Hawthor	nsulting.com NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ								
CLIE	NT: ProTen Tamworth Pty	y Ltd				LABORA	LABORATORY: Eurofin									Turnaround Time COC Number		
PRO.	IECT: Asbestos validation	1				LABORA		DRESS: La	ne Cove	(TAT) 1 of 1								
PRO.	JECT NUMBER: 610.30237	7				SAMPLER: Jason Roesler									✓ Standard TAT			
PRO.	IECT MANAGER: Hugh Se	elby				SAMPLE	SAMPLER CONTACT No: 0421 039 534									Non Standard or Urgent TAT		
PM (	CONTACT No: 0447 241 4	73				Email Re	eports an	id Invoices	to: LQRSYD@	sirconsultin	g.com, jro	esler@sirconsultir	ng.com	Required TA	NT:			
CON	IMENTS OR ADDITIONAL	DIRECTIONS					REQUESTED ANALYSIS	Suite B10	tos Identification in Soil (AS 4964)	tos Identification in uilding Material				алон	Addit (Comment a or sp	i <b>onal informal</b> n any gross canta ecific requirement	t <b>ion</b> mination ts)	
No.	Sample ID	>	Date & Time	(Soil, water, ACM, etc)	Containers an	d Preserv	vatives		Asbes	Asbes B					<u> </u>			
	TP301		9/28/2021	Soil					×									
	TP302		9/28/2021	Soil					×									
	ТР303		9/28/2021	Soil					×									
	TP304		9/28/2021	Soil					×									
	TP305		9/28/2021	Soil					×									
	SP01		9/28/2021	Soil				×										
	SP02		9/28/2021	Soil				×		1								
	SP03		9/28/2021	Soil				×		- M								
	SP04		9/28/2021	Soil				×						1				
	SP05		9/28/2021	Soil				×		~								
	SP06		9/28/2021	Soil				×		/								
	SP_ACM01		9/28/2021	Soil				1.0	1	×								
	SP_ACM02		9/28/2021	Soil					1					×				
l atte Relin	st that the proper field samp quished By Sampler	sign	ere used during t	he collection of thes	e samples. Date / Time	29-0	9-2021 @1	1530 <b>Re</b>	ceived by	Sign		M·H	Date / Tim	ie	Т	emperature Re	ceived:	
Relinquished By Sign Date / Time					Re	ceived by	s jign		29,9,21	Date / Tim	ie		# 81 BE	371				
Relinguished By Sign Date / Time			Date / Time			Re	ceived by	Sign			Date / Tim	Time						

100

CL D



### **Eurofins Environment Testing Australia Pty Ltd**

Melbourne 6 Monterey Road Dandenong South VIC 3175 16 Mars Road Phone : +61 3 8564 5000 Lane Cove We NATA # 1261 Site # 1254

ABN: 50 005 085 521

Sydney Brisbane Unit F3, Building F NATA # 1261 Site # 18217

 
 Muraris Road
 Muraris QLD 4172

 Lane Cove West NSW 2066
 Phone : +61 7 3902 4600

 Phone : +61 2 9900 8400
 NATA # 1261 Site # 10017
 1/21 Smallwood Place NATA # 1261 Site # 20794

Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079 www.eurofins.com.au

#### Eurofins ARL Pty Ltd ABN: 91 05 0159 898

Perth 46-48 Banksia Road Welshpool WA 6106 Phone: +61 8 6253 4444 NATA # 2377 Site # 2370 **Eurofins Environment Testing NZ Limited** NZBN: 9429046024954

EnviroSales@eurofins.com

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

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

## **Sample Receipt Advice**

Company name:	SLR Consulting (Sydney)
Contact name:	Jason Roesler
Project name:	ASBESTOS VALIDATION
Project ID:	610.30237
Turnaround time:	5 Day
Date/Time received	Sep 29, 2021 4:42 PM
Eurofins reference	828871

## **Sample Information**

- 1 A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- X Split sample sent to requested external lab.
- X Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

#### Notes

## Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Jason Roesler - jroesler@slrconsulting.com.

Note: A copy of these results will also be delivered to the general SLR Consulting (Sydney) email address.

Global Leader - Results you can trust

eurofins AB				ABN: 50 005 085 521	nt Tes	sting A	ustra	lia Pty	Ltd		Eurofins ARL Pty LtdABN: 91 05 0159 898	Eurofins Environmen NZBN: 9429046024954	t Testing NZ Limited		
web: wv email: E	ww.eurofins.com.au	Env	ironment	Testing	Melbourne 6 Monterey Road Dandenong South VIC 31 Phone : +61 3 8564 5000 NATA # 1261 Site # 1254	5 U 75 16 La Pl N	Unit F3, Building F 16 Mars Road Lane Cove West NSW 2066 Phone : +61 2 9900 8400 NATA # 1261 Site # 18217			066 0 17	Brisbane I/21 Smallwood Place Wurarrie QLD 4172 Phone : +61 7 3902 4600 NATA # 1261 Site # 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
Coi Ade	mpany Name: dress:	SLR Consul Tenancy 20 North Sydne NSW 2060	ting (Sydney) 2, Submarine ey	School, Sub E	Base Platypus,		Order No.: Report #: Phone: Fax:			828871 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 29, 2021 4:42 Oct 7, 2021 5 Day Jason Roesler	PM	
Pro Pro	Project Name:ASBESTOS VALIDATIONProject ID:610.30237												Eurofins Analytical S	ervices Manager : A	ndrew Black
		Sa	ample Detail			Asbestos - AS4964	Asbestos Absence /Presence	HOLD	Moisture Set	Eurofins Suite B10					
Melb	ourne Laborato	ory - NATA # 12	261 Site # 125	54											
Sydn	ey Laboratory	- NATA # 1261	Site # 18217			Х	X	Х	X	X	4				
Brisk	oane Laborator	y - NATA # 126	1 Site # 2079	4							4				
Mayf	ield Laboratory	/ - NATA # 1261	1 Site # 25079								4				
Perth	Laboratory - N	NATA # 2377 Si	ite # 2370							-	-				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						_				
1	TP301	Sep 09, 2021		Soil	S21-Oc01074	Х									
2	TP302	Sep 09, 2021		Soil	S21-Oc01075	Х				L					
3	TP303	Sep 09, 2021		Soil	S21-Oc01076	Х									
4	TP304	Sep 09, 2021		Soil	S21-Oc01077	Х									
5	TP305	Sep 09, 2021		Soil	S21-Oc01078	Х									
6	SPO1	Sep 09, 2021		Soil	S21-Oc01079				Х	Х					
7	SPO2	Sep 09, 2021		Soil	S21-Oc01080				Х	Х	_				
8	SPO3	Sep 09, 2021		Soil	S21-Oc01081				Х	X	4				
9	SPO4	Sep 09, 2021		Soil	S21-Oc01082				Х	Х					

					Eurofins Environme	ent Tes	sting A	ustra	lia Pty	Ltd			Eurofins ARL Pty Ltd	Eurofins Environment	Testing NZ Limited
	eurofi	ns			ABN: 50 005 085 521	5	vdnov			-	richano	Newcastle	ABN: 91 05 0159 898	NZBN: 9429046024954	Christchurch
web: w email: E	veb: www.eurofins.com.au email: EnviroSales@eurofins.com		ironment 1	Testing	6 Monterey Road Dandenong South VIC 3175 Phone : +61 3 8564 5000 NATA # 1261 Site # 1254		Unit F3, Building F 75 16 Mars Road Lane Cove West NSW 2066 Phone : +61 2 9900 8400 NATA # 1261 Site # 18217			1 066 P 0 N 17	/21 Smallwood Place /urarrie QLD 4172 /hone : +61 7 3902 4600 IATA # 1261 Site # 20794	4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
Cor Ade	Company Name:       SLR Consulting (Sydney)         Address:       Tenancy 202, Submarine School, Sub Base Platypus, North Sydney NSW 2060         Project Name:       ASBESTOS VALIDATION						Order No.: Report #: Phone: Fax:				828871 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 29, 2021 4:42 Oct 7, 2021 5 Day Jason Roesler	РМ
Pro Pro	Project Name:ASBESTOS VALIDATIONProject ID:610.30237											I	Eurofins Analytical So	ervices Manager : An	drew Black
		Sa	Imple Detail			Asbestos - AS4964	Asbestos Absence /Presence	HOLD	Moisture Set	Eurofins Suite B10					
Melb	ourne Laborato	ry - NATA # 12	261 Site # 1254	1											
Sydr	ey Laboratory -	NATA # 1261	Site # 18217			X	Х	х	Х	Х	1				
Brist	oane Laboratory	/ - NATA # 126	1 Site # 20794								1				
Mayf	ield Laboratory	- NATA # 1261	Site # 25079								4				
Perth	h Laboratory - N	ATA # 2377 Si	te # 2370								_				
Exte	rnal Laboratory		, r								_				
10	SPO5	Sep 09, 2021		Soil	S21-Oc01083				X	X	_				
11 12	SPO6 SP_ACM01	Sep 09, 2021 Sep 09, 2021		Soil Building Materials	S21-Oc01084 S21-Oc01085		x		X	X	-				
13	SP_ACM02	Sep 09, 2021		Building Materials	S21-Oc01086			x							
Test	Counts					5	1	1	6	6					



**Project Name** 

## Certificate of Analysis

# Environment Testing

SLR Consulting Tenancy 202, Subn North Sydney NSW 2060	narine School, Sub Base Platypu	Hac-MRA	NATA	NATA Accredited Accreditation Number 1261 Site Number 18217 Accredited for compliance with ISO/IEC 17025–Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.
Attention:	Jason Roesler			
Report	828871-AID			

ASBESTOS VALIDATION

Project ID	610.30237
Received Date	Sep 29, 2021
Date Reported	Oct 11, 2021
Methodology:	
Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. <i>NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.</i>
Bonded asbestos- containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004. NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01% " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.





Accredited for compliance with ISO/IEC 17025–Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Project Name	ASBESTOS VALIDATION
Project ID	610.30237
Date Sampled	Sep 09, 2021
Report	828871-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP301	21-Oc01074	Sep 09, 2021	Approximate Sample 467g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP302	21-Oc01075	Sep 09, 2021	Approximate Sample 463g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP303	21-Oc01076	Sep 09, 2021	Approximate Sample 431g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP304	21-Oc01077	Sep 09, 2021	Approximate Sample 504g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP305	21-Oc01078	Sep 09, 2021	Approximate Sample 541g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
SP_ACM01	21-Oc01085	Sep 09, 2021	Approximate Sample 3g / 45x15x5mm Sample consisted of: Grey fibre cement fragments	Chrysotile asbestos detected.
SP_ACM02	21-Oc01086	Sep 09, 2021	Approximate Sample 15g / 180x50x4mm Sample consisted of: Grey fibre cement fragments	Chrysotile asbestos detected.



## **Sample History**

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

### Description

Asbestos - LTM-ASB-8020 Asbestos - LTM-ASB-8020

Testing Site	Extracted	Holding Time
Sydney	Oct 07, 2021	Indefinite
Sydney	Oct 07, 2021	Indefinite

ABN: 50 005 085 521				Eurofins Environmen ABN: 50 005 085 521	nt Te	sting A	ustra	lia Pty	_td		Eurofins ARL Pty Ltd ABN: 91 05 0159 898	Eurofins Environment Testing NZ Limited NZBN: 9429046024954		
web: www.eurofins.com.au email: EnviroSales@eurofins.com		Environment Testing		Melbourne         Sy           6 Monterey Road         Un           Dandenong South VIC 3175         16           Phone : +61 3 8564 5000         La           NATA # 1261 Site # 1254         Ph		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 66 Phone : +61 7 3902 4600 NATA # 1261 Site # 20794 7	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290	
Company Name: Address:	SLR Consult Tenancy 202 North Sydne NSW 2060	ing (Sydney) 2, Submarine y	School, Sub B	ase Platypus,		Or Re Ph Fa	der Neport none: nx:	No.: #:	828871 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 29, 2021 4:42 Oct 7, 2021 5 Day Jason Roesler	РМ	
Project Name: Project ID:	ASBESTOS 610.30237	VALIDATION									Eurofins Analytical Se	ervices Manager : Ar	ndrew Black	
	Sa	mple Detail			Asbestos - AS4964	Asbestos Absence /Presence	Moisture Set	Eurofins Suite B10						
Melbourne Laborato	ry - NATA # 12	61 Site # 125	4											
Sydney Laboratory -	NATA # 1261	Site # 18217			Х	X	Х	Х						
Brisbane Laboratory	- NATA # 1261	1 Site # 2079	4											
Mayfield Laboratory	- NATA # 1261	Site # 25079												
Perth Laboratory - N	ATA # 23// Sit	te # 2370												
No Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1 TP301	Sep 09, 2021		Soil	S21-Oc01074	Х									
2 TP302	Sep 09, 2021		Soil	S21-Oc01075	Х									
3 TP303	Sep 09, 2021		Soil	S21-Oc01076	Х									
4 TP304	Sep 09, 2021		Soil	S21-Oc01077	Х									
5 TP305	Sep 09, 2021		Soil	S21-Oc01078	Х									
6 SPO1	Sep 09, 2021		Soil	S21-Oc01079			Х	Х						
7 SPO2	Sep 09, 2021		Soil	S21-Oc01080			Х	Х						
8 SPO3	Sep 09, 2021		Soil	S21-Oc01081			Х	Х						
9 SPO4	Sep 09, 2021		Soil	S21-Oc01082			Х	Х						

•	ourofi				Eurofins Environme	ent Te	sting A	Austra	lia Pty	Ltd		Eurofins ARL Pty Ltd ABN: 91 05 0159 898	Eurofins Environmen NZBN: 9429046024954	Testing NZ Limited
web: www.eurofins.com.au email: EnviroSales@eurofins.c		.com	Environment Testing		Melbourne 6 Monterey Road Dandenong South VIC 3 Phone : +61 3 8564 500 NATA # 1261 Site # 125	Sydney           Unit F3, Building F           : 3175         16 Mars Road           00         Lane Cove West NSW 2066           254         Phone : +61 2 9900 8400           NATA # 1261 Site # 18217		Brisbane           1/21 Smallwood Place           Murarrie QLD 4172           66 Phone : +61 7 3902 4600           NATA # 1261 Site # 20794           7	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290		
Co Ad	mpany Name: dress:	SLR Consul Tenancy 20 North Sydne NSW 2060	ting (Sydney) 2, Submarine Schoo 9y	ol, Sub B	ase Platypus,		O Re Pl Fa	rder I eport hone: ax:	No.: #:	828871 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 29, 2021 4:42 Oct 7, 2021 5 Day Jason Roesler	РМ
Pro Pro	oject Name: oject ID:	ASBESTOS 610.30237	VALIDATION									Eurofins Analytical So	ervices Manager : Ar	ndrew Black
		Sa	ample Detail			Asbestos - AS4964	Asbestos Absence /Presence	Moisture Set	Eurofins Suite B10					
Melk	ourne Laborato	ory - NATA # 12	261 Site # 1254											
Sydi	ney Laboratory	- NATA # 1261	Site # 18217			X	X	X	X					
Bris	bane Laboratory	y - NATA # 126	1 Site # 20794											
Pert	h Laboratory - N	- ΝΑΤΑ # 1261	1 Site # 230/9											
Exte	rnal Laboratory													
10	SPO5	Sep 09, 2021	Soil		S21-Oc01083			Х	х					
11	SPO6	Sep 09, 2021	Soil		S21-Oc01084			х	х					
12	SP_ACM01	Sep 09, 2021	Build Mate	ding erials	S21-Oc01085		x							
13	SP_ACM02	Sep 09, 2021	Build Mate	ding erials	S21-Oc01086		x							
Test	Counts					5	2	6	6					



#### Internal Quality Control Review and Glossary General

- QC data may be available on request. All soil results are reported on a dry basis, unless otherwise stated. Samples were analysed on an 'as received' basis. 2 3
- Information identified on this report with the colour blue indicates data provided by customer that may have an impact on the results. Information identified on this report with the colour orange indicates sections of the report not covered by the laboratory's scope of NATA accreditation. This report replaces any interim results previously issued. 4. 5.
- 6.

Holding Times Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units % w/w: F/fld F/mL g, kg g/kg L, mL L/min min	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (% w/w) Airborne fibre filter loading as Fibres (N) per Fields counted (n) Airborne fibre reported concentration as Fibres per millilite of air drawn over the sampler membrane (C) Mass, e.g. of whole sample (M) or asbestos-containing find within the sample (m) Concentration in grams per kilogram Volume, e.g. of air as measured in AFM (V = r x t) Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (r) Time (t), e.g. of air sample collection period
Calculations	
Airborne Fibre Concentration:	$C = \left(\frac{n}{a}\right) \times \left(\frac{n}{r}\right) \times \left(\frac{1}{r}\right) = K \times \left(\frac{n}{r}\right) \times \left(\frac{1}{v}\right)$
Asbestos Content (as asbestos):	$\% w/w = \frac{(m \times P_A)}{M}$
Weighted Average (of asbestos):	$\mathscr{H}_{WA} = \sum \frac{(m \times P_A)_x}{x}$
Terms %asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 Appendix 2, else assumed to be 15% in accordance with WA DOH Appendix 2 (P <sub>A</sub> ).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (% w/w).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, Asbestos: The Analysts Guide, 2nd Edition (2021).
HSG264	UK HSE HSG264, Asbestos: The Survey Guide (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (K) as derived from the effective filter area of the given AFM membrane used for collecting the sample (A) and the projected eyepiece graticule area of the specific microscope used for the analysis (a).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004 May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbests.
WA DOH	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia (updated 2021), including Appendix Four: Laboratory analysis
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (%wa).



### Comments

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

#### **Qualifier Codes/Comments**

Code	Description
N/A	Not applicable

#### Asbestos Counter/Identifier:

Chamath JHM Annakkage Senior Analyst-Asbestos (NSW)

#### Authorised by:

Laxman Dias

Senior Analyst-Asbestos (NSW)

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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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## SLR Consulting

Tenancy 202, Submarine School, Sub Base Platypus, North Sydney NSW 2060





NATA Accredited Accreditation Number 1261 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Jason Roesler

Report Project name Project ID Received Date 828871-S ASBESTOS VALIDATION 610.30237 Sep 29, 2021

Client Sample ID			SPO1	SPO2	SPO3	SPO4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc01079	S21-Oc01080	S21-Oc01081	S21-Oc01082
Date Sampled			Sep 09, 2021	Sep 09, 2021	Sep 09, 2021	Sep 09, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons	2011	Onit				
TRH C6-C9	20	ma/ka	< 20	< 20	< 20	< 20
TRH C10-C14	20	ma/ka	< 20	< 20	< 20	< 20
TRH C15-C28	50	ma/ka	< 50	< 50	< 50	< 50
TRH C29-C36	50	ma/ka	< 50	< 50	56	< 50
TRH C10-C36 (Total)	50	ma/ka	< 50	< 50	56	< 50
Naphthalene <sup>N02</sup>	0.5	ma/ka	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	ma/ka	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	ma/ka	< 20	< 20	< 20	< 20
TRH >C10-C16	50	ma/ka	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	106	100	69	107
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5



Client Sample ID			SPO1	SPO2	SPO3	SPO4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc01079	S21-Oc01080	S21-Oc01081	S21-Oc01082
Date Sampled			Sen 09 2021	Sen 09 2021	Sep 09 2021	Sen 09 2021
		Linit	000 00, 2021	000 00, 2021	000 00, 2021	000 00, 2021
Polyovelia Aromatia Hydrosorbona	LUK	Unit				
	0.5		0.5	0.5	0.5	0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Prienanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH"	0.5	mg/кg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobipnenyi (surr.)	1	%	88	83	87	84
p-Terphenyl-d14 (surr.)	1	%	68	66	11	70
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosultan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCF (Total)	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutuleblerendete (curr.)	0.1	0/	< 0.1	< 0.1	< 0.1	< 0.1
Totrachloro m vylopo (surr.)	1	/0 0/	75	71	62	72
Organonhosphorus Posticidos	1	/0	75	/1	02	13
	0.0	mallea	.0.2	.0.2	.0.2	.0.2
Azimphos-methyi	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfonvinghos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorowrifes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorovrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumanhos	<u>0.2</u>	mg/kg	~ 0.2	< 0.2	~ 0.2	~ 0.2
Demeton-S	<u> </u>	mg/kg	<0.2	<0.2	<0.2	<0.2
Demeton-O	0.2	mg/kg	~ 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	ma/ka	< 0.2	< 0.2	< 0.2	< 0.2
Dichloryos	0.2	ma/ka	~ 0.2	~ 0.2	~ 0.2	~ 0.2
Dimethoate	0.2	ma/ka	< 0.2	< 0.2	< 0.2	< 0.2
	· ·-					



Client Sample ID			SPO1	SPO2	SPO3	SPO4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc01079	S21-Oc01080	S21-Oc01081	S21-Oc01082
Date Sampled			Sep 09, 2021	Sep 09, 2021	Sep 09, 2021	Sep 09, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	123	126	135	150
Heavy Metals		-				
Arsenic	2	mg/kg	8.1	7.0	9.0	8.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	18	15	20	16
Copper	5	mg/kg	41	35	59	54
Lead	5	mg/kg	13	11	19	12
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	16	13	17	15
Zinc	5	mg/kg	72	58	150	74
% Moisture	1	%	19	31	18	16

Client Sample ID			SPO5	SPO6
Sample Matrix			Soil	Soil
Eurofins Sample No.			S21-Oc01083	S21-Oc01084
Date Sampled			Sep 09, 2021	Sep 09, 2021
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5



Client Sample ID			SPO5	SPO6
Sample Matrix			Soil	Soil
Eurofins Sample No.			S21-Oc01083	S21-Oc01084
Date Sampled			Sep 09, 2021	Sep 09, 2021
Tost/Poference		Linit	000 00, 2021	000 00, 2021
Total Recoverable Hydrocarbons	LOK	Unit		
	20	malka	< 20	< 20
	20	mg/kg	< 20	< 20
	<u> </u>	mg/kg	< 20	< 20
TRH > C10 C16 loss Norbtholons (E2) <sup>N01</sup>	50	mg/kg	< 50	< 50
	100	mg/kg	< 100	< 50
TPH > C24 C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100
BTEX	100	під/ку	< 100	< 100
Banzana	0.1	malka	- 0.1	- 0.1
Teluene	0.1	mg/kg	< 0.1	< 0.1
	0.1	mg/kg	< 0.1	< 0.1
	0.1	mg/kg	< 0.1	< 0.1
	0.2	mg/kg	< 0.2	< 0.2
	0.1	mg/kg	< 0.1	< 0.1
A Promofluorobonzono (ourr.)	0.5	0/	< 0.3	< 0.3
4-Biomonaulobenzene (san.)	I	70	95	100
	0.5			
Benzo(a)pyrene TEQ (lower bound)	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)	0.5	mg/kg	0.6	0.6
Accessible and a second by the	0.5	mg/kg	1.2	1.2
Acenaphthelana	0.5	mg/kg	< 0.5	< 0.5
Acenaphinylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene Benz(e)enthreesene	0.5	mg/kg	< 0.5	< 0.5
Benze(a)anunacene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthono	0.5	mg/kg	< 0.5	< 0.5
Chrysono	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a b)anthracene	0.5	ma/ka	< 0.5	< 0.5
	0.5	ma/ka	< 0.5	< 0.5
Fluorene	0.5	ma/ka	< 0.5	< 0.5
Indeno(1.2.3-cd)nyrene	0.5	ma/ka	< 0.5	< 0.5
Nanhthalene	0.5	ma/ka	< 0.5	< 0.5
Phenanthrene	0.5	ma/ka	< 0.5	< 0.5
Pyrene	0.5	ma/ka	< 0.5	< 0.5
Total PAH*	0.5	ma/ka	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	<u>%</u>	84	72
p-Terphenyl-d14 (surr.)	1	%	88	
Organochlorine Pesticides		,.		
Chlordanes - Total	0.1	ma/ka	< 0.1	< 0.1
4 4'-DDD	0.05	ma/ka	< 0.05	< 0.05
4.4'-DDE	0.05	ma/ka	< 0.05	< 0.05
4.4'-DDT	0.05	ma/ka	< 0.05	< 0.05
a-HCH	0.05	ma/ka	< 0.05	< 0.05
Aldrin	0.05	ma/ka	< 0.05	< 0.05
b-HCH	0.05	ma/ka	< 0.05	< 0.05
d-HCH	0.05	ma/ka	< 0.05	< 0.05
Dieldrin	0.05	ma/ka	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05



Client Sample ID			SPO5	SPO6
Sample Matrix			Soil	Soil
Eurofins Sample No.			S21-Oc01083	S21-Oc01084
Date Sampled			Sep 09, 2021	Sep 09, 2021
Test/Reference	LOP	Linit		
Organochlorine Pesticides	LOI	Offic		
Endosulfan II	0.05	ma/ka	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	ma/ka	< 0.05	< 0.05
	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	ma/ka	< 0.05	< 0.05
g-HCH (Lindape)	0.05	ma/ka	< 0.05	< 0.05
Heptachlor	0.05	ma/ka	< 0.05	< 0.05
Heptachlor epoxide	0.05	ma/ka	< 0.05	< 0.05
Hexachlorobenzene	0.05	ma/ka	< 0.05	< 0.05
Methoxychlor	0.05	ma/ka	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	Q09INT	63
Tetrachloro-m-xylene (surr.)	1	%	109	133
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2
	0.2	mg/kg	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2
Penthion	0.2	mg/kg	< 0.2	< 0.2
Marahaa	0.2	mg/kg	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2
	0.2	mg/kg	< 0.2	< 0.2
Monocrotophos	2	ma/ka	~ 0.2	~ 0.2
Naled	02	ma/ka	<02	<02
Omethoate	2	ma/ka	- 2	< 2
Phorate	0.2	ma/ka	<02	<02
Pirimiphos-methyl	0.2	ma/ka	< 0.2	< 0.2
Pyrazophos	0.2	ma/ka	< 0.2	< 0.2
Ronnel	0.2	ma/ka	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2
	-			



Client Sample ID Sample Matrix			SPO5 Soil	SPO6 Soil
Eurofins Sample No.			S21-Oc01083	S21-Oc01084
Date Sampled			Sep 09, 2021	Sep 09, 2021
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	53	64
Heavy Metals				
Arsenic	2	mg/kg	8.0	7.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	19	15
Copper	5	mg/kg	37	36
Lead	5	mg/kg	13	12
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	15	12
Zinc	5	mg/kg	71	64
% Moisture	1	%	28	17



## Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 07, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 07, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 07, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Oct 07, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Oct 07, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Oct 07, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Oct 07, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Metals M8	Sydney	Oct 07, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Oct 01, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

🎎 eurofins 🛛			Eurofins Environmen ABN: 50 005 085 521	t Te:	sting A	lustra	lia Pty	Ltd		Eurofins ARL Pty Ltd ABN: 91 05 0159 898	Eurofins Environment NZBN: 9429046024954	t Testing NZ Limited			
web: www.eurofins.com.au email: EnviroSales@eurofins.com		Testing	Melbourne 6 Monterey Road Dandenong South VIC 317 Phone : +61 3 8564 5000 NATA # 1261 Site # 1254		Sydney           Unit F3, Building F           5 16 Mars Road           Lane Cove West NSW 2066           Phone : +61 2 9900 8400           NATA # 1261 Site # 18217			066   0   17	Brisbane I/21 Smallwood Place Vurarrie QLD 4172 Phone : +61 7 3902 4600 NATA # 1261 Site # 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290		
Co Ad	mpany Name: dress:	SLR Consult Tenancy 202 North Sydne NSW 2060	ting (Sydney) 2, Submarine 9	School, Sub Ba	ase Platypus,		Or Re Pr Fa	rder N eport none: ax:	No.: #:		828871 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 29, 2021 4:42 Oct 7, 2021 5 Day Jason Roesler	РМ
Pro Pro	oject Name: oject ID:	ASBESTOS 610.30237	VALIDATION										Eurofins Analytical So	ervices Manager : Ar	ndrew Black
Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	HOLD	Moisture Set	Eurofins Suite B10					
Melb	ourne Laborato	ory - NATA # 12	61 Site # 125	4							_				
Sydi	ney Laboratory	- NATA # 1261	Site # 18217			Х	X	X	X	Х	_				
Bris	bane Laborator	y - NATA # 126	1 Site # 2079	4							-				
Nay	h Laboratory	/ - NATA # 1261	Site # 250/9								-				
Fyto	rnal Laboratory - r	NATA # 2377 51 ,	te # 23/0								-				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						-				
1	TP301	Sep 09, 2021		Soil	S21-Oc01074	Х									
2	TP302	Sep 09, 2021		Soil	S21-Oc01075	Х									
3	TP303	Sep 09, 2021		Soil	S21-Oc01076	Х									
4	TP304	Sep 09, 2021		Soil	S21-Oc01077	Х									
5	TP305	Sep 09, 2021		Soil	S21-Oc01078	Х					4				
6	SPO1	Sep 09, 2021		Soil	S21-Oc01079				Х	Х	4				
7	SPO2	Sep 09, 2021		Soil	S21-Oc01080		ļ		Х	Х	4				
8	SPO3	Sep 09, 2021		Soil	S21-Oc01081		ļ		Х	Х	4				
9	SPO4	Sep 09, 2021		Soil	S21-Oc01082				Х	Х					

web: www.eurofins.com.au email: EnviroSales@eurofins.com					Eurofins Environme ABN: 50 005 085 521	ent Te	sting /	Austra	lia Pty	Ltd		Eurofins ARL Pty Ltd ABN: 91 05 0159 898	Eurofins Environment Testing NZ Limited NZBN: 9429046024954		
		Environment Testing		sting	Melbourne 6 Monterey Road Dandenong South VIC 3 Phone : +61 3 8564 500 NATA # 1261 Site # 125	rne         Sydney           ırey Road         Unit F3, Building F           ong South VIC 3175         16 Mars Road           +61 3 8564 5000         Lane Cove West NSW 2066           1261 Site # 1254         Phone : +61 2 9900 8400           NATA # 1261 Site # 18217		E 1 066 F 0 N 17	3risbane /21 Smallwood Place /lurarrie QLD 4172 /hone : +61 7 3902 4600 IATA # 1261 Site # 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290		
Company Name:       SLR Consulting (Sydney)         Address:       Tenancy 202, Submarine School, Sub Base Platypus,         North Sydney       NSW 2060						Order No Report #: Phone: Fax:			Order No.: Report #: 828871 Phone: 02 9428 8100 Fax:		828871 02 9428 8100		Received: Due: Priority: Contact Name:	Sep 29, 2021 4:42 Oct 7, 2021 5 Day Jason Roesler	PM
Pro Pro	oject Name: oject ID:	ASBESTOS 610.30237	VALIDATION										Eurofins Analytical S	ervices Manager : Ar	ndrew Black
Sample Detail					Asbestos - AS4964	Asbestos Absence /Presence	HOLD	Moisture Set	Eurofins Suite B10						
Melk	ourne Laborato	ory - NATA # 12	61 Site # 1254								_				
Sydi	hey Laboratory	- NATA # 1261	Site # 18217			X		X	X	X	_				
Mav	field Laboratory	- NATA # 126	Site # 20794								-				
Pert	h Laboratory - N	IATA # 2377 Sit	te # 2370								_				
External Laboratory									-						
10	SPO5	Sep 09, 2021	Soi		S21-Oc01083				X	Х	-				
11	SPO6	Sep 09, 2021	Soi		S21-Oc01084				Х	Х					
12	SP_ACM01	Sep 09, 2021	Bui Mat	lding terials	S21-Oc01085		x								
13	SP_ACM02	Sep 09, 2021	Bui Mat	lding terials	S21-Oc01086			х							
Test	Counts					5	1	1	6	6					



#### Internal Quality Control Review and Glossary

#### General

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

#### **Holding Times**

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

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

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

### Units

Units		
mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	<b>ppb:</b> 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
СР	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
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

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

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

#### **QC Data General Comments**

- 1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- 2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- 3. pH and Free Chlorine analysed in the laboratory Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- 4. Recovery Data (Spikes & Surrogates) where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- 5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- 6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.


# **Quality Control Results**

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



Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05	0.05	Pass	
Endrin ketone	mg/kg	< 0.05	0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05	0.05	Pass	
Heptachlor	mg/kg	< 0.05	0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05	0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05	0.05	Pass	
Methoxychlor	mg/kg	< 0.05	0.05	Pass	
Toxaphene	mg/kg	< 0.5	0.5	Pass	
Method Blank			-		
Organophosphorus Pesticides	-				
Azinphos-methyl	mg/kg	< 0.2	0.2	Pass	
Bolstar	mg/kg	< 0.2	0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2	0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2	0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2	0.2	Pass	
Coumaphos	mg/kg	< 2	2	Pass	
Demeton-S	mg/kg	< 0.2	0.2	Pass	
Demeton-O	mg/kg	< 0.2	0.2	Pass	
Diazinon	mg/kg	< 0.2	0.2	Pass	
Dichlorvos	mg/kg	< 0.2	0.2	Pass	
Dimethoate	mg/kg	< 0.2	0.2	Pass	
Disulfoton	mg/kg	< 0.2	0.2	Pass	
EPN	mg/kg	< 0.2	0.2	Pass	
Ethion	mg/kg	< 0.2	0.2	Pass	
Ethoprop	mg/kg	< 0.2	0.2	Pass	
Ethyl parathion	mg/kg	< 0.2	0.2	Pass	
Fenitrothion	mg/kg	< 0.2	0.2	Pass	
Fensulfothion	mg/kg	< 0.2	0.2	Pass	
Fenthion	mg/kg	< 0.2	0.2	Pass	
Malathion	mg/kg	< 0.2	0.2	Pass	
Merphos	mg/kg	< 0.2	0.2	Pass	
Methyl parathion	mg/kg	< 0.2	0.2	Pass	
Mevinphos	mg/kg	< 0.2	0.2	Pass	
Monocrotophos	mg/kg	< 2	2	Pass	
Naled	mg/kg	< 0.2	0.2	Pass	
Omethoate	mg/kg	< 2	2	Pass	
Phorate	mg/kg	< 0.2	0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2	0.2	Pass	
Pyrazophos	mg/kg	< 0.2	0.2	Pass	
Ronnel	mg/kg	< 0.2	0.2	Pass	
Terbufos	mg/kg	< 0.2	0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2	0.2	Pass	
	mg/kg	< 0.2	0.2	Pass	
Trichloronate	mg/kg	< 0.2	0.2	Pass	
Method Blank					
Heavy Metals		0	-	Dese	
Arsenic	mg/kg	<2	2	Pass	
Chromium	mg/Kg	< 0.4	0.4	Pass	
Connormum	mg/kg	< 5	5	Pass	
	mg/kg	< 5	5	Pass	
Moroupy	mg/kg	< C	C 1	Pass	
	mg/kg	< 0.1	0.1 E	Pass	
	mg/Kg	< 5	5	Pass	
	під/кд	< ၁	C 1	rass	



Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery		1	1	_		
Total Recoverable Hydrocarbons						
TRH C6-C9	%	105		70-130	Pass	
TRH C10-C14	%	93		70-130	Pass	
Naphthalene	%	94		70-130	Pass	
TRH C6-C10	%	100		70-130	Pass	
TRH >C10-C16	%	89		70-130	Pass	
LCS - % Recovery		1	L L	1	1	
BTEX						
Benzene	%	111		70-130	Pass	
Toluene	%	102		70-130	Pass	
Ethylbenzene	%	101		70-130	Pass	
m&p-Xylenes	%	104		70-130	Pass	
o-Xylene	%	103		70-130	Pass	
Xylenes - Total*	%	104		70-130	Pass	
LCS - % Recovery		I	1 1	1	1	
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	%	99		70-130	Pass	
Acenaphthylene	%	96		70-130	Pass	
Anthracene	%	101		70-130	Pass	
Benz(a)anthracene	%	96		70-130	Pass	
Benzo(a)pyrene	%	103		70-130	Pass	
Benzo(b&j)fluoranthene	%	91		70-130	Pass	
Benzo(g.h.i)perylene	%	121		70-130	Pass	
Benzo(k)fluoranthene	%	106		70-130	Pass	
Chrysene	%	100		70-130	Pass	
Dibenz(a.h)anthracene	%	118		70-130	Pass	
Fluoranthene	%	101		70-130	Pass	
Fluorene	%	102		70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	116		70-130	Pass	
Naphthalene	%	104		70-130	Pass	
Phenanthrene	%	97		70-130	Pass	
Pyrene	%	101		70-130	Pass	
LCS - % Recovery		1	1	1	1	
Organochlorine Pesticides						
Chlordanes - Total	%	77		70-130	Pass	
4.4'-DDD	%	74		70-130	Pass	
4.4'-DDE	%	80		70-130	Pass	
4.4'-DDT	%	81		70-130	Pass	ļ
a-HCH	%	70		70-130	Pass	
Aldrin	%	78		70-130	Pass	
b-HCH	%	75		70-130	Pass	
d-HCH	%	81		70-130	Pass	
Dieldrin	%	74		70-130	Pass	
Endosulfan I	%	79		70-130	Pass	
Endosulfan II	%	74		70-130	Pass	
Endosulfan sulphate	%	83		70-130	Pass	
Endrin	%	70		70-130	Pass	
Endrin aldehyde	%	79		70-130	Pass	
Endrin ketone	%	71		70-130	Pass	
g-HCH (Lindane)	%	76		70-130	Pass	
Heptachlor	%	89		70-130	Pass	
Heptachlor epoxide	%	80		70-130	Pass	
Hexachlorobenzene	%	79		70-130	Pass	



Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor			%	89		70-130	Pass	
LCS - % Recovery						-		
Organophosphorus Pesticides								
Diazinon			%	130		70-130	Pass	
Dimethoate			%	118		70-130	Pass	
Ethion			%	82		70-130	Pass	
Fenitrothion			%	125		70-130	Pass	
Methyl parathion			%	115		70-130	Pass	
Mevinphos			%	71		70-130	Pass	
LCS - % Recovery				T	1 1	1		
Heavy Metals								ļ
Arsenic			%	96		80-120	Pass	
Cadmium			%	98		80-120	Pass	
Chromium			%	100		80-120	Pass	
Copper			%	101		80-120	Pass	
Lead			%	91		80-120	Pass	
Mercury			%	86		80-120	Pass	
Nickel			%	101		80-120	Pass	
Zinc			%	101		80-120	Pass	
Test	Lab Sample ID	QA	Units	Result 1		Acceptance	Pass	Qualifying
Snike - % Recovery		Source				Linits	Linits	Code
Total Recoverable Hydrocarbons				Result 1		1		
TRH C6-C9	S21-Se59513	NCP	%	92		70-130	Pass	
Naphthalene	S21-Se59513	NCP	%	108		70-130	Pass	
TRH C6-C10	S21-Se59513	NCP	%	89		70-130	Pass	
Spike - % Recovery					н н	1		
BTEX				Result 1				
Benzene	S21-Se59513	NCP	%	105		70-130	Pass	
Toluene	S21-Se59513	NCP	%	97		70-130	Pass	
Ethylbenzene	S21-Se59513	NCP	%	96		70-130	Pass	
m&p-Xylenes	S21-Se59513	NCP	%	97		70-130	Pass	
o-Xylene	S21-Se59513	NCP	%	97		70-130	Pass	
Xylenes - Total*	S21-Se59513	NCP	%	97		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons	6			Result 1				
Acenaphthene	N21-Se61128	NCP	%	99		70-130	Pass	
Acenaphthylene	N21-Se61128	NCP	%	98		70-130	Pass	
Anthracene	N21-Se61128	NCP	%	70		70-130	Pass	
Benz(a)anthracene	N21-Se61128	NCP	%	81		70-130	Pass	
Benzo(a)pyrene	N21-Se61128	NCP	%	91		70-130	Pass	
Benzo(b&j)fluoranthene	N21-Se61128	NCP	%	82		70-130	Pass	ļ
Benzo(g.h.i)perylene	N21-Se61128	NCP	%	91		70-130	Pass	ļ
Benzo(k)fluoranthene	N21-Se61128	NCP	%	96		70-130	Pass	ļ
Chrysene	N21-Se61128	NCP	%	93		70-130	Pass	ļ
Dibenz(a.h)anthracene	N21-Se61128	NCP	%	86		70-130	Pass	
Fluoranthene	N21-Se61128	NCP	%	89		70-130	Pass	
Fluorene	N21-Se61128	NCP	%	99		70-130	Pass	
Indeno(1.2.3-cd)pyrene	N21-Se61128	NCP	%	88		70-130	Pass	
Naphthalene	N21-Se61128	NCP	%	103		70-130	Pass	
Phenanthrene	N21-Se61128	NCP	%	100		70-130	Pass	
Pyrene	N21-Se61128	NCP	%	89		70-130	Pass	
Spike - % Recovery						1		
Heavy Metals	004.0.040	NGT	<i></i>	Result 1				
Arsenic	S21-Oc04648	NCP	%	93		75-125	Pass	Ĺ



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium	S21-Oc04648	NCP	%	91			75-125	Pass	
Chromium	S21-Oc04648	NCP	%	93			75-125	Pass	
Copper	S21-Se62146	NCP	%	93			75-125	Pass	
Lead	S21-Oc04648	NCP	%	89			75-125	Pass	
Mercury	S21-Oc04648	NCP	%	85			75-125	Pass	
Nickel	S21-Oc04648	NCP	%	93			75-125	Pass	
Zinc	S21-Oc04648	NCP	%	92			75-125	Pass	
Spike - % Recovery		•					•		
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S21-Oc01081	CP	%	86			70-130	Pass	
TRH >C10-C16	S21-Oc01081	CP	%	82			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons	1			Result 1	Result 2	RPD			
TRH C6-C9	S21-Se54821	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S21-Oc04650	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-Oc04650	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S21-Oc04650	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	S21-Se54821	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-Se54821	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S21-Oc04650	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-Oc04650	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-Oc04650	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate				I			1		
BTEX	i			Result 1	Result 2	RPD			
Benzene	S21-Se54821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-Se54821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-Se54821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-Se54821	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-Se54821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-Se54821	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons	5			Result 1	Result 2	RPD			
Acenaphthene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
- Fluoranthene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Huorene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	N21-Se61127	NCP	mg/kg "	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	N21-Se61127	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	



Organochlorine Pesticides         Result 1         Result 1         Result 2         RPD         Image: Color of the co	Duplicate									
Chotomas - Total         N21-5801127         NOP         mg/kg         < 0.1	Organochlorine Pesticides		-	-	Result 1	Result 2	RPD			
44-DDD         N21-5861127         NCP         mg/kg         < <0.05         < <1         30%         Pass           44-DDT         N21-5861127         NCP         mg/kg         < <0.05	Chlordanes - Total	N21-Se61127	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4-DDE         N21-Sei1127         NCP         mg/kg         < 0.05         < 1         30%         Pass           aHOH         N21-Sei1127         NCP         mg/kg         < 0.05	4.4'-DDD	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4-DDT         N21-Se61127         NCP         mg/kq         < 0.05         < 1         30%         Pass           Aldrin         N21-Se61127         NCP         mg/kq         < 0.05	4.4'-DDE	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
aH-CH         N21-Se61127         NCP         mg/kg         < 0.05         < 1         30%         Pass           Addin         N21-Se61127         NCP         mg/kg         < 0.05	4.4'-DDT	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin         N21-Se61127         NCP         mg/kg         < 0.05         < 1         30%         Pass           bHCH         N21-Se61127         NCP         mg/kg         < 0.05	а-НСН	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b+ICH         N21-Sei127         NCP         mg/kg         < 0.05         < <1         30%         Pass           Dieldrin         N21-Sei127         NCP         mg/kg         < 0.05	Aldrin	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d+HCh         N21-Sei127         NCP         mg/kg         < 0.05         < <1         30%         Pass           Delddin         N21-Sei127         NCP         mg/kg         < 0.05	b-HCH	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrim         N21-Sent127         NCP         mg/kg         < 0.05         < 1         30%         Pass           Endosulfan II         N21-Sent127         NCP         mg/kg         < 0.05	d-HCH	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I         N21-Señ1127         NCP         mg/kg         < 0.05         < <1         30%         Pass           Endosulfan sulphate         N21-Señ1127         NCP         mg/kg         < 0.05	Dieldrin	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II         N21-Se61127         NCP         mg/kg         < 0.05         < 0.05         < 1         30%         Pass           Endosulfan sulphate         N21-Se61127         NCP         mg/kg         < 0.05	Endosulfan I	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate         N21-Se61127         NCP         mg/kg         < 0.05         < 0.05         < 1         30%         Pass           Endrin aldehyde         N21-Se61127         NCP         mg/kg         < 0.05	Endosulfan II	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endnin         N21-Se61127         NCP         mg/kg         < 0.05         < 0.05         < 1         30%         Pass           Endrin aldehyde         N21-Se61127         NCP         mg/kg         < 0.05	Endosulfan sulphate	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endin aldehyde         N21-Se61127         NCP         mg/kg         < 0.05         < 0.05         < 1         30%         Pass           Endrin katone         N21-Se61127         NCP         mg/kg         < 0.05	Endrin	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endimistone         N21-Se61127         NCP         mg/kg         < 0.05         < 0.05         < 1         30%         Pass           g-HCH (Lindane)         N21-Se61127         NCP         mg/kg         < 0.05	Endrin aldehyde	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-H-CH (Lindane)         N21-Se61127         NCP         mg/kg         < 0.05         < 0.05         < 1         30%         Pass           Heptachior spoxide         N21-Se61127         NCP         mg/kg         < 0.05	Endrin ketone	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor         N21-SeG1127         NCP         mg/kg         <0.05         <0.05         <1         30%         Pass           Heptachlor opxide         N21-SeG1127         NCP         mg/kg         <0.05	g-HCH (Lindane)	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide         N21-Se61127         NCP         mg/kg         < 0.05         < 0.05         < 1         30%         Pass           Hexachlorobenzene         N21-Se61127         NCP         mg/kg         < 0.05	Heptachlor	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene         N21-Se61127         NCP         mg/kg         < 0.05         < 0.05         < 1         30%         Pass           Duplicate         NCP         mg/kg         < 0.05	Heptachlor epoxide	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor         N21-Se61127         NCP         mg/kg         < 0.05         < 1         30%         Pass           Dupiese          Result         Result         Rev P             Azinphos-methyl         N21-Se61127         NCP         mg/kg         < 0.2	Hexachlorobenzene	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate         Vertical set in the second set in the set in the set in therese in theresecond set in the second set in the set in the secon	Methoxychlor	N21-Se61127	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Organophosphorus Pesticides         VIII         Result 1         Result 2         RPD         Image: March 2           Azinphos-methyl         N21-Se61127         NCP         mg/kg         <0.2	Duplicate									
Azinphos-methyl         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Bolstar         N21-Se61127         NCP         mg/kg         < 0.2	Organophosphorus Pesticides				Result 1	Result 2	RPD			
Bolstar         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Chlorprinfos         N21-Se61127         NCP         mg/kg         < 0.2	Azinphos-methyl	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Chlorpyrifos         N21-Se61127         NCP         mg/kg         < 0.2	Bolstar	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Columpyrifos-methyl         N21-Se61127         NCP         mg/kg         < 0.2	Chlorfenvinphos	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Coumaphos         N21-Se61127         NCP         mg/kg         < 2	Chlorpyrifos	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos         N21-Se61127         NCP         mg/kg         < 2         < 2         < 1         30%         Pass           Demeton-S         N21-Se61127         NCP         mg/kg         < 0.2	Chlorpyrifos-methyl	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-S         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Demeton-O         N21-Se61127         NCP         mg/kg         < 0.2	Coumaphos	N21-Se61127	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-O         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Diazinon         N21-Se61127         NCP         mg/kg         < 0.2	Demeton-S	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon         N21-Se61127         NCP         mg/kg         < 0.2         < 1         30%         Pass           Dichlorvos         N21-Se61127         NCP         mg/kg         < 0.2	Demeton-O	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dicklorvos         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Dimethoate         N21-Se61127         NCP         mg/kg         < 0.2	Diazinon	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Disulfoton         N21-Se61127         NCP         mg/kg         < 0.2	Dichlorvos	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton         N21-Se61127         NCP         mg/kg         < 0.2         < 1         30%         Pass           EPN         N21-Se61127         NCP         mg/kg         < 0.2	Dimethoate	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Ethion         N21-Se61127         NCP         mg/kg         < 0.2	Disulfoton	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Ethoprop         N21-Se61127         NCP         mg/kg         < 0.2	EPN	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Ethyl parathion         N21-Se61127         NCP         mg/kg         < 0.2	Ethion	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Fenitrothion         N21-Se61127         NCP         mg/kg         < 0.2	Ethoprop	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Fensulfothion         N21-Se61127         NCP         mg/kg         < 0.2	Ethyl parathion	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Fenthion         N21-Se61127         NCP         mg/kg         < 0.2	Fenitrothion	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Malathion         N21-Se61127         NCP         mg/kg         < 0.2	Fensulfothion	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Merphos         N21-Se61127         NCP         mg/kg         < 0.2	Fenthion	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Methyl parathion         N21-Se61127         NCP         mg/kg         < 0.2	Malathion	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Mevinphos         N21-Se61127         NCP         mg/kg         < 0.2	Merphos	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Monocrotophos         N21-Se61127         NCP         mg/kg         < 2	Methyl parathion	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos         N21-Se61127         NCP         mg/kg         < 2         < 2         < 1         30%         Pass           Naled         N21-Se61127         NCP         mg/kg         < 0.2	Mevinphos	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Naled         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Omethoate         N21-Se61127         NCP         mg/kg         < 2	Monocrotophos	N21-Se61127	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Omethoate         N21-Se61127         NCP         mg/kg         < 2         < 2         < 1         30%         Pass           Phorate         N21-Se61127         NCP         mg/kg         < 0.2	Naled	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Phorate         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Pirimiphos-methyl         N21-Se61127         NCP         mg/kg         < 0.2	Omethoate	N21-Se61127	NCP	mg/ka	< 2	< 2	<1	30%	Pass	
Pirimiphos-methyl         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Pyrazophos         N21-Se61127         NCP         mg/kg         < 0.2	Phorate	N21-Se61127	NCP	mg/ka	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass           Ronnel         N21-Se61127         NCP         mg/kg         < 0.2	Pirimiphos-methyl	N21-Se61127	NCP	mg/ka	< 0.2	< 0.2	<1	30%	Pass	
Ronnel         N21-Se61127         NCP         mg/kg         < 0.2         < 0.2         < 1         30%         Pass	Pyrazophos	N21-Se61127	NCP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
	Ronnel	N21-Se61127	NCP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Terbufos   N21-Se61127   NCP   ma/ka   < 0.2   < 0.2   <1   30%   Pass	Terbufos	N21-Se61127	NCP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos N21-Se61127 NCP mg/kg < 0.2 < 0.2 <1 30% Pass	Tetrachlorvinphos	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	



Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Tokuthion	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	N21-Se61127	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate					-				
				Result 1	Result 2	RPD			
% Moisture	S21-Oc01079	CP	%	19	18	9.0	30%	Pass	
Duplicate					-				
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Oc01080	CP	mg/kg	7.0	8.5	20	30%	Pass	
Cadmium	S21-Oc01080	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Oc01080	CP	mg/kg	15	19	26	30%	Pass	
Copper	S21-Oc01080	CP	mg/kg	35	41	15	30%	Pass	
Lead	S21-Oc01080	CP	mg/kg	11	14	22	30%	Pass	
Mercury	S21-Oc01080	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Oc01080	CP	mg/kg	13	16	22	30%	Pass	
Zinc	S21-Oc01080	CP	mg/kg	58	73	23	30%	Pass	
Duplicate									
Heavy Metals		-		Result 1	Result 2	RPD			
Arsenic	S21-Oc01082	CP	mg/kg	8.7	8.4	3.0	30%	Pass	
Cadmium	S21-Oc01082	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Oc01082	CP	mg/kg	16	18	13	30%	Pass	
Copper	S21-Oc01082	CP	mg/kg	54	41	26	30%	Pass	
Lead	S21-Oc01082	CP	mg/kg	12	13	13	30%	Pass	
Mercury	S21-Oc01082	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Oc01082	CP	mg/kg	15	15	2.0	30%	Pass	
Zinc	S21-Oc01082	CP	mg/kg	74	90	19	30%	Pass	



# Comments

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

# **Qualifier Codes/Comments**

Code Description

N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC

# Authorised by:

Emma Beesley Andrew Sullivan John Nguyen Roopesh Rangarajan

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.

Analytical Services Manager

Senior Analyst-Metal (NSW)

Senior Analyst-Volatile (NSW)

Senior Analyst-Organic (NSW)

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**Permeability Tests** 

East West	82 Plain St	Tamworth NSW 2340		- 1 UZ 0/02 1/33 E N3 6765 9100	E admin@eastwestonline com au	W www.eastwestonline.com.au				Comments	Provide as much information about the sample as you can					Lab use only:	Samples received: Cool or Ambient	Temperature Received at:	Transported by: Hand delivered / Courier
	har / Site ato (in rowart titlo).	33.) 33.]					łay turnaround is required – surcharoes annlv	i Cidada na Granna na manana kana kana na ma		ts Required						TRICAS Artes	Corent Nuers	13/9/2021	Û
STODY – Client	Client Project Name / Num	EN 215	PO No:	East West Quote Number:	Date results required:		Or choose: Standard / 5 ( Note: Inform lathin advance if urgen	Lab comments:		Tes	(emedition	(11 0	8			Received by (Company):	Print Name:	Date and Time:	Signature:
CHAIN OF CU		oney field.	hell.	West				: 0429 411 933	line . Low . q	ation	Date Type of Sample	. Pr. 7.9.7.1 disputed.	in 7.9.21 disturbed			st West	edt.		
eastwest	Jot	ct Person: Richard He	it Mgr. Steven Mite	ler: W.S. Erst	iss:	Rushes Creek		: 02 67621 733 Mobile.	steve. in Q east weston	Sample Inform	lest         Client Sample ID         Deptl           e ID         or information         Deptl	331 Shed 18-1 0.6-0	331 Shed 12-2 0-0.			uished by (Company): Ea.	Vame: Steven Mitch	and Time: 10 . 9 . 2 /	ure:



**Brisbane** 346A Bilsen Road, Geebung QLD 4034 Ph: +61 7 3265 5656

Perth 2 Kimmer Place, Queens Park WA 6107 Ph: +61 8 9258 8323

		PERMEAB	ILITY BY FAL Test Method	LING HEAD T	EST REPOR	Т					
Cli	ient	East West Enviroag Pty L	td		Report No.	21090455-FHPT					
					Workorder No. 0009088						
Ad	Idress	82 Plain Street, Tamworth	n NSW 2340		Test Date	17/09/20	)21				
					Report Date	28/09/20	)21				
Pre	oject	EW215331 - Material Eva	Iluation - Rushes C	reek							
Cli	ient ID	Shed 18 - 1			Depth (m)	0.60-0.9	0				
Des	cription	CLAY-brown			Sample Type	Remould Specime	led Soil ກ				
			RESULT	S OF TESTING							
Comp	action Me	thod	AS1289.5.1.1 - S	tandard Compaction							
Maxim	num Dry D	Density (t/m <sup>3</sup> )	1.62	Hydraulic Gradient				9.5			
Optim	um Moistu	ure Content (%)	22.6	Surcharge (kPa)				2.9			
Placer	ment Mois	sture Content (%)	22.2	Head Pressure Applie	ed (kPa)		1	0.79			
Moistu	ure Ratio (	(%)	98.4	Water Type			Deaerated				
Placer	ment Wet	Density (t/m <sup>3</sup> )	1.94	Percentage Material F	Retained/Sieve Size (	0 % /	0 % /9.5 mm				
Densit	ty Ratio (%	6)	98.3	Sample Height and D	iameter (mm)		116.13 /	101.45 mm			
	F	PERMEABILITY	k <sub>(20)</sub> =	<b>4.7</b> 2	<b>x 10</b> <sup>-10</sup>	(m/s	ec)				
			Per	meability							
	9.000E-10										
	8.000E-10										
	7.000E-10										
	6.000E-10										
/sec)	5.000E-10										
(20 (m	4.000E-10										
	3.000E-10										
	2 000E-10										
	1 000E 10										
	1.000E-10 C	2000	4000 600 El	00 8000 apsed Time of Test (mins)	10000	12000		14000			
Rema	irks:	The above specimen was rem	oulded to a target of 98	3% of Standard Maximu	m Dry Density and a	t Optimum	Moisture	Content.			
Samp	le/s suppli	ied by client The com	paction data was supp	lied by the client.		Page	: 1 of 1	REP06301			
The r	Accredit esults of the documer	ed for compliance with ISO/IEC 17025 e tests, calibrations, and/or measurement at are traceable to Australian/National S	- Testing. hts included in this tandards.	Authorised Sig	gnatory						
		Tested at Trilab Brisbane Laboratory		C. Channo	on	COMPETENCE Laboratory No. 9926					

The results of calibrations and tests performed apply only to the specific instrument or sample at the time of test unless otherwise clearly stated. Reference should be made to Trilab's "Standard Terms and Conditions of Business" for further details. Trilab Pty Ltd ABN 25 065 630 506



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						BII	ITV	RV		1.11				CT I		DT				
			ſ					DI Test N	lethod		289 6.7.2	<b>LA</b> 2, 5.1. <sup>-</sup>		.51 r	VERC					
Cli	ent	East V	Nest I	Envir	oag Pty	/ Ltd								Repo	ort No.	2109	0456-FH	РΤ		
										Workorder No. 000908										
Ad	dress	82 Pla	ain Str	eet,	Tamwo	rth	NSW	234	40					Test	Date	17/09	9/2021			
														Repo	ort Date	<b>e</b> 28/09	)/2021			
Pro	oject	EW21	5331	- Ma	terial E	valua	ation	- Rusl	nes C	Cree	k									
Cli	ent ID	Shed	12 - 2											Dept	h (m)	0.00-	0.30			
Desc	cription	CLAY	-brow	'n										Sam	ple Typ	be Rem Spec	oulded So imen	il		
								RE	SULT	'S OI	F TESTII	NG								
Compa	action Me	thod					AS1	289.5.	1.1 - S	Stand	lard Cor	npac	tion							
Maxim	Maximum Dry Density (t/m <sup>3</sup> ) 1.49										draulic (	Gradie	ent					9.4		
Optim	um Moistu	ire Conte	ent (%)	)				26.7		Su	ırcharge	(kPa)	)					2.9		
Placen	ment Mois	ture Con	ntent (%	6)				26.6		He	ad Pres	sure	Applied	(kPa)				10.79		
Moisture Ratio (%) 99.8										W	ater Typ	е					De	Deaerated		
Placement Wet Density (t/m <sup>3</sup> ) 1.85								1.85		Pe	ercentage	e Mat	erial Re	tained/	Sieve Si	ze (mm)	0 %	9.5 mm		
Densit	y Ratio (%	6)						98.1		Sa	mple He	eight a	and Dia	meter (	mm)		116.5	/ 101.49 mm		
	F	PERI	ME	AB	ILIT	Y		<b>k</b> (2	20) =			2.	0 x	10	-10	(m	/sec)			
									Per	rmea	bility									
	5.000E-10																			
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K2					+++															
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	1.000E-10																			
	C		500		1000		1500		2000 E	lapsed	2500 Time of Te	st (mins	3000 )	3	8500	4000	4500	5000		
Remar	rks:	The ab	ove sp	ecime	en was re	emoul	ded to	a targe	et of 9	8% c	of Standa	ard Ma	aximum	Dry De	ensity an	id at Optim	um Moisture	e Content.		
Sampl	e/s suppli	ed by cli	ent		The co	ompa	ction d	ata wa	s sup	plied	by the c	lient.					Page: 1 of 1	REP06301		
The re	Accredite esults of the documer	ed for com tests, calil it are trace Tested at T	pliance brations able to <i>i</i>	with IS , and/o Australi	O/IEC 170 r measurer ian/Nationa pratory	25 - Te ments i al Stand	esting. ncluded dards.	in this			А 	uthoris	sed Signa Acceleration	atory						

The results of calibrations and tests performed apply only to the specific instrument or sample at the time of test unless otherwise clearly stated. Reference should be made to Trilab's "Standard Terms and Conditions of Business" for further details. Trilab Pty Ltd ABN 25 065 630 506

# **Appendix H**

Site Surveys

LEGEND (EXISTING - UCHT PROPOSED - DARKER)     Rev.       CENTRE UNE KER AND COTTER UNE OF BATTER DISCOGE DOMINACE ENCELNE ENCENNE UNA ENCENNENT ENCENNENT SERVERMAN STREMMER DEAL STREMMER DEAL OVERHELD POWER OVERHELD POWER OVER	7. The survey locations where on top of the disturbed	<ol> <li>In the event that there are EXACAS of CONFLICT information provided you MUST contact the Office 1 clarification</li> <li>All dimensions are in millimeters unless stated othe</li> <li>This site survey was carried out using Differential G Navigational Satellite System technology (GNSS) o</li> <li>Test Pit reference numbers and approximate locatic been taken from SLR sketch (App A_F3_CappingE) received on 22.10.2021</li> </ol>	<ol> <li>This sketch is to be read in conjunction with the lett email issued for these works</li> <li>The information provided in this sketch is to assist in construction process</li> </ol>	NOTE
DESCRIPTION APPROVED	(visual) areas	or immediate nvise n 22.10.2021 ns have (tent_01.pdf)	er and / or 1 the	TP 105 TP
DATE Ced: 21079 Rev A Civilead: 21079V20 Survey: L.Smith Drawn: M.Beath Designed: N/A T7.11.21 Checked: J.Herdegen			TP 202	NOS B
Original A3 Drawing Scale Bar: 2.5 00 Scale 1230 (P. 5.0 Detum Description: PM 117735 RL 349.753 GDA 2020 Located on the eastern side of Rushes Creek Rd 130m south of Rushes Creek		Scale Contours at 0		371.5
BATH STE Survey fice@bathstewart.com.au		1:250 1:250 .1m Intervals		Sheep Dip TP 101
EVELOPMENT ASSOCIATI EVELOPMENT CONSULTAN Proves - ENGINEERS - PLANNERS - PROJECT MA 239 Marius Street TAMWORTH NSW 2340 ephone (02) 6766 5966 A.C.N. 002 745 sent Lyban / during / sketch is the copyright property of Bath Street the approval, nor shall it be used scopt for the Development and St			TP 201	TP 102 TP 103
FROTEN       PROTEN         NTS       1582       RUSHES       CREEK       RD       RUSHES       CREEK         AMAGERS       1582       RUSHES       CREEK       RD       RUSHES       CREEK       RUSHES       REEK       RUSHES       RUSHES<	SKETCH DATA         Showing the location and level taken around the sheep (         DATE OF WORK:       Friday 22nd October 2021         SURVEY WORK BY:       Lachlan Smith & Michael Be	TP 201       270214.68       6588545.69       371.59         TP 202       270184.93       6588547.63       371.41         TP 203       270185.08       6588569.40       371.30         TP 204       270195.33       6588574.59       371.44         TP 205       270206.77       6588574.82       371.50         Survey completed on 22.10.2021 for the existing site       level       level	Location         Northing         Easting         Level           Sheep Dip         270205.61         6588558.17         371.57           TP 101         270206.25         6588557.27         371.50           TP 102         270214.17         6588557.27         371.52           TP 103         270219.99         6588556.29         371.45           TP 104         270182.50         6588563.78         371.29           TP 105         270178.36         6588563.78         371.27	



	16.11.2021 - SHEEP DIP RE
> 752169         State to : 01 of 01           Meridan :         K	LOT 171 DI
RD RUSHES CREEK 21079	PROT 1582 RUSHES CREEK
Lachlan Smith & Luke Berman	SURVEY WORK BY:
Tuesday 16th November 2021	DATE OF WORK:
id level taken on the completed remediation roposed fencing for the Sheep Dip Area	Showing the location ar works and associated p
	SKETCH DAT
	<ul> <li>Butt fence to shed</li> </ul>
	Galvanised Iron Shed
	Butt fence to shed
	New fence (30m)
This site survey was carried out using Differential Global Navigational Satellite System technology (GNSS) on 16.11.2021	<u>.</u>
All dimensions are in millimeters unless stated otherwise	- <u>4</u>
MUST contact the Office for immediate clarification	
assist in the construction process In the event that there are ERRORS or CONFLICTING information provided you	<u>ى</u>
works The information provided in this sketch is to	<u>2</u>
This sketch is to be read in conjunction with the letter and / or email issued for these	<u>.</u>
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LECEND (EXISTING - LIGHT PROPOSED - DARKER) Re RE UNE NUD COTTER SAND COTTER SA	Witabeforeyoudig.com.au DIAL1100 BEFORE YOU DIG		, upd Z
V. DESCRIPTION	LEGEND 心 <sup>妙</sup> Location & Level of fi	States Flores	BUIH / LUOP / LUOP / LUOP / LOOP OF
APPROVED DATE Cod: 21079 Rev R Civilicad: 21422V24 Survey: L.S. & L.B. Drawn: M Reath	inish surface	New fence (56m)	Existing fence (56m) be removed (45m) 372 372 372 372 372 372 372 372 372 372
Original A3 Drawing Scale Bar:	Location         Easting           1         270219.7           2         270220.8           3         270164.2           4         270169.5           5         270225.0	LAYOUT PLAN	And
	g         Northing         Level           78         6588534.51         371.69           34         6588543.70         371.83           29         6588542.06         371.23           57         6588580.71         371.07           57         6588573.19         371.77	Fence	NOTE: Batter in this area to be extended out (as shown) crop has been harvested fence removed
ASSOCIATES AENT CONSULTANTS TRS - PLANNERS - PROJECT MANAGERS eet TAMWORTH NSW 2340			
1582		But	Ga Unew fr

MEDIATION AND TENCE OF OTOTIONICO (Bub Saved & Associes Py Lid	11212021 — SHIEL DH KEMEDR
1 DP 752169	LOT 171 D
ROTEN Ref. No: EK RD RUSHES CREEK 21079	582 RUSHES CREEK
Y: Lachlan Smith & Luke Berman	SURVEY WORK BY:
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on and level taken on the completed remediation the proposed fencing for the Sheep Dip Area	Showing the location at works and associated p
λατα	SKETCH DA-
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e	Galvanised Iron Shed
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assist in the construction process 3. In the event that there are ERRORS or CONFLICTING information provided you MUST contact the Office for immediate clarification	. <u>ω</u>
<ol> <li>This sketch is to be read in conjunction with the letter and / or email issued for these works</li> <li>The information provided in this sketch is to</li> </ol>	2. <u>1</u> .
NOTE	N
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**Compaction Test results** 

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J	

ABN 82 125 442 382 124 ph 02 6762 1733 fax 02 6765 9109 East West Enviroag Pty Limited 82 Plain Street Tamworth NSW 2340

# HILF DENSITY RATIO TEST REPORT

(1) And (2)						
<b>CLIENT:</b> Tamworth Precision Excavation	S					
CLIENT ADDRESS: PO Box 3297 Tamwor	th NSW	/ 2340		REPORT NO:	EW215331-5	
<b>PROJECT:</b> Commercial Development				PROJECT NO:	EW215331	
SITE LOCATION: Rushes Creek Road - F	oultry	Farm				
<b>DATE OF TESTING:</b> 26/10/2021				DATE OF REPOR	T: 2/11/2021	
TECHNICIAN: B.F.				DATE SAMPLED	26/10/2021	
TEST METHOD/S		AS1289.5.8.1	AS1289.2.1.1 AS1289.5	7.1 AS1289.5.4.1	1101 101 101	
SAMPLING METHOD:		AS1289.1.2.1.6.4b	AS1289.1.2.1.6.5.3	□ AC1280 1 2 1 6 5 4		
Test No:		21	22			
Time of Test		10.10	10.15			
Test Location / Chainage		Sheed Dip Remediation - Centre of Pad	Sheed Dip Remediation - North East End of Pad			
Level		Earth Cover Layer	Earth Cover Layer			
Test Depth	mm	300	300			
Thickness of Soil Layer	mm	300	300			
Material Description		Silty CLAY	Silty CLAY			
Field Wet Density	t/m³	1.80	1.84			
Sieve Size to Determine	mm	19	19			
Percentage of Oversize	%	0	0			
Moisture Content	%	15.9	15.8			
Peak Converted Wet Density	t/m³	1.86	1.87			
Adjusted Peak Converted Wet Density	t/m³	t				
Compactive Effort Standard / Modified		Standard	Standard			
Moisture Variation	%	2.5 Dry	2.5 Dry			
Moisture Variation Adjusted for Oversize	%					
<b>Optimum Moisture Content</b>	%	e				
Moisture Ratio	%	e				
HILF DENSITY RATIO	%	96.5	98.0			
Accredited for compliance with ISO/IEC 1702	5 - Testing			Signatory Nan	Signed: Approved Signat	,, Kuc
TECHNICAL COMPETENCE	pt in rull.			Document ID:	REP-105	

SU/IEC 1/UZS - Lesting This document shall not be produced, except in full. NATA Accredited Laboratory Number. 12360

Signatory Name S Mitchell Document ID: REP-105 Issue No: 2 Date of Issue: 24 April 2013 Page 1 of 1

# **Appendix J**

Tree removal and disposal letter

# Tamworth Precision Excavations

ABN: 96 643 471 050

TPE ENTERPRISES PTY. LTD. P.O BOX 3297 TAMWORTH NSW 2340

 PHONE:
 (02) 6760 7722

 FAX:
 (02) 6760 7755

 EMAIL:
 richard@tpecivil.com.au

 WEB:
 www.tpecivil.com.au



Date: 11/01/2022

SLR Consulting Australia, 202 Submarine School, Sub Base Platypus North Sydney, NSW 2060.

# **ATTENTION: Hugh Selby**

# Re: ProTen Rushes Creek Poultry Farm, Farm 2, Sheep Dip Remediation Works

With regards to our ProTen Rushes Creek Poultry Farm, Farm 2, Sheep Dip Remediation Works, we confirm an existing tree was located in the proposed capping area in the approximate location indicated on the attached marked up plan.

On Monday 25<sup>th</sup> October 2021, as instructed and supervised by the onsite SLR Consulting representative, the tree was removed using an excavator and stockpiled adjacent to the stockpile of other cleared trees from the site. Any tree roots, or parts of the tree below existing ground level, remained in the capping area and were covered by the full extent of the cap.

Please do not hesitate to contact Richard Honeyfield should you feel you need further information or clarification.

Yours faithfully,

Richard Honeyfield General Manager TPE



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### **GOLD COAST**

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