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Part A Unregulated Area SAR
Roche Products Pty Ltd
20-Apr-2018
Doc No. 60484586_Part A Unreg_SAR_A

Site Audit Report

Part A Unregulated Area, 4-10 Inman Road, Dee Why, NSW

Site Audit Report

Part A Unregulated Area, 4-10 Inman Road, Dee Why, NSW

Client: Roche Products Pty Ltd

ABN: 70 000 132 865

Prepared by

AECOM Australia Pty Ltd
Level 21, 420 George Street, Sydney NSW 2000, PO Box Q410, QVB Post Office NSW 1230, Australia
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ABN 20 093 846 925

20-Apr-2018

Job No.: 60484586

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 AS/NZS4801 and OHSAS18001.

This site audit report was prepared for Roche Products Pty Ltd and provides the Auditor's review of documentation provided by Roche Products Pty Ltd (Roche) and Environmental Resources Management Australia Pty (ERM). Based on information provided by Roche, this audit is considered to be a non-statutory site audit under the New South Wales (NSW) *Contaminated Land Management Act 1997* (CLM Act). It is based on a review of the condition of the site at the time of the completion of investigation, remediation and validation works in the ERM reports. This site audit report has been prepared in consideration of the relevant guidelines used for contamination management in NSW at the time that the audit was performed. The Auditor notes that subsurface conditions can vary over short distances and it is possible that small areas of contaminated soil may have not been detected between the sampling points. However, in the opinion of the Auditor, these should not present an unacceptable risk to present or future occupants of the site based on the information provided for review.

Quality Information

Document Site Audit Report

Ref 60484586_Part A Unreg_SAR_A

Date 20-Apr-2018

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	20 April 2018	For issue	Paul Steinwede NSW EPA Accredited Contaminated Site Auditor No. 0303	

Table of Contents

Site Audit Statement

NSW Site Auditor Scheme

Site Audit Statement

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

This form was approved under the *Contaminated Land Management Act 1997* on 12 October 2017.

For information about completing this form, go to Part IV.

Part I: Site audit identification

Site audit statement no. PS65

This site audit is a:

- ❑ statutory audit
- ☑ non-statutory audit

within the meaning of the *Contaminated Land Management Act 1997*.

Site auditor details

(As accredited under the *Contaminated Land Management Act 1997*)

Name: Paul Steinwede

Company: AECOM Australia Pty Ltd

Address: 420 George Street, Sydney NSW

Postcode: 2000

Phone: +61 2 8934 0772

Email: Paul.Steinwede@aecom.com

Site details

Address: 4-10 Inman Road, Dee Why, NSW

Postcode: 2009

Property description

(Attach a separate list if several properties are included in the site audit.)

Part of Lot 100 in Deposited Plan 611332, area known as Part A Unregulated Area (Part A) per attached Survey Plan (CMS Surveyors Pty Ltd, Ref 823H regulated, dated 4/2/2016)

Note the CMS Survey plan also shows other areas of Lot 100 in DP 611332 which are subject to separate Site Audit Statements.

Local government area: Northern Beaches Local Government Authority

Area of site (include units, e.g. hectares): 43,589 m^2

Current zoning: IN1 General Industrial under the Warringah Local Environmental Plan 2011 (Warringah LEP, 2011).

Regulation and notification

To the best of my knowledge:

- ~~❑ **the site is** the subject of a declaration, order, agreement, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985,* as follows: (provide the no. if applicable)~~
  - ~~❑ Declaration no.~~
  - ~~❑ Order no.~~
  - ~~❑ Proposal no.~~
  - ~~❑ Notice no.~~
- ☑ **the site is not** the subject of a declaration, order, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985*.

To the best of my knowledge:

- ~~❑ the site **has** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*~~
- ☑ the site **has not** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*.

Site audit commissioned by

Name: Tim Woodhouse

Company: Roche Products Pty Limited

Address: 4-10 Inman Road, Dee Why, NSW

Postcode: 2099

Phone: 02 9454 9110

Email tim.woodhouse@roche.com

Contact details for contact person (if different from above)

Name

Phone

Email

~~Nature of statutory requirements~~ ~~(not applicable for non-statutory audits)~~

- ~~❑ Requirements under the *Contaminated Land Management Act* 1997 (e.g. management order; please specify, including date of issue)~~

- ~~❑ Requirements imposed by an environmental planning instrument (please specify, including date of issue)~~

- ~~❑ Development consent requirements under the *Environmental Planning and Assessment Act 1979* (please specify consent authority and date of issue)~~

- ~~❑ Requirements under other legislation (please specify, including date of issue)~~

Purpose of site audit

☑ **A1** To determine land use suitability

Intended uses of the land: Residential, Commercial/Industrial

OR

☐ ~~**A2** To determine land use suitability subject to compliance with either an active or passive environmental management plan~~

~~Intended uses of the land:~~

OR

(~~Tick all that apply~~)

- ☐ ~~**B1** To determine the nature and extent of contamination~~
- ☐ ~~**B2** To determine the appropriateness of:~~
  - ☐ ~~an investigation plan~~
  - ☐ ~~a remediation plan~~
  - ☐ ~~a management plan~~
- ☐ ~~**B3** To determine the appropriateness of a **site testing plan** to determine if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*~~
- ☐ ~~**B4** To determine the compliance with an approved:~~
  - ☐ ~~**voluntary management proposal** or~~
  - ☐ ~~**management order** under the *Contaminated Land Management Act 1997*~~
- ☐ ~~**B5** To determine if the land can be made suitable for a particular use (or uses) if the site is remediated or managed in accordance with a specified plan.~~

  ~~Intended uses of the land:~~

Information sources for site audit

Consultancies which conducted the site investigations and/or remediation:

Environmental Resources Management Australia Pty Ltd. (ERM)

Titles of reports reviewed:

- ERM (2015a), Phase 1 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW, 21 July 2015 (Ref: 0297050_Phase 1).
- ERM (2015b), Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW, 3 December 2015 (Ref: 0315053_Ph2ESA_Final V2).
- ERM (2015c), Supplementary Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW, 11 December 2015 (Ref: 0315053_Ph2ESA_Final V2).

- ERM (2017a), Part A Unregulated Area Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW, 25 October 2017 (Ref: 0330751 Final). This will hereafter be referred to as the 'Part A ESA'.
- ERM (2017b), Asbestos Investigation (Building 10) Part A Unregulated Area, Roche Products, 4-10 Inman Road, Dee Why NSW, 10 November 2017 (Ref: 0410233_L05_V2). This will hereafter be referred to as the 'Asbestos Investigation'.
- ERM (2018a), Unregulated Area Remedial Action Plan, 4-10 Inman Road, Dee Why NSW, 22 January 2018 (Ref: 0371068_RAP_Unregulated Areas_FINAL).
- ERM (2018b), Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW, 13 April 2018 (Ref: 0410233 Final).

Other information reviewed, including previous site audit reports and statements relating to the site:

Site audit report details

Title: Site Audit Report Part A Unregulated Area, 4-10 Inman Road, Dee Why, NSW

Report no.: 60484586_Part A Unreg_SAR_A_20 April 2018 Date: 20 April 2018

Part II: Auditor's findings

Please complete either Section A1, Section A2 or Section B, not more than one section. (Strike out the irrelevant sections.)

- Use **Section A1** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **without the implementation** of an environmental management plan.

- Use **Section A2** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **with the implementation** of an active or passive environmental management plan.

- Use **Section B** where the audit is to determine:
  - (B1) the nature and extent of contamination, and/or
  - (B2) the appropriateness of an investigation, remediation or management plan[1], and/or
  - (B3) the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or
  - (B4) whether the terms of the approved voluntary management proposal or management order have been complied with, and/or
  - (B5) whether the site can be made suitable for a specified land use (or uses) if the site is remediated or managed in accordance with the implementation of a specified plan.

[1] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

Section A1

I certify that, in my opinion:

The **site is suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

- ❑ ~~Residential, including substantial vegetable garden and poultry~~
- ❑ ~~Residential, including substantial vegetable garden, excluding poultry~~
- ☑ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- ☑ Day care centre, preschool, primary school
- ☑ Residential with minimal opportunity for soil access, including units
- ☑ Secondary school
- ☑ Park, recreational open space, playing field
- ☑ Commercial/industrial
- ❑ ~~Other (please specify):~~

OR

- ❑ ~~I certify that, in my opinion, the **site is not suitable** for any use due to the risk of harm from contamination.~~

Overall comments:

Given the nature of ongoing in-situ groundwater remediation works for the Regulated Area, the Contract of Sale for the Part A Unregulated area (between Roche and EG Developments) includes a restriction on the potential future development activities to slab on grade construction only, limiting the need for excavation below the water table and dewatering activities.

Therefore, the Auditor considers that the environmental condition of the Part A Unregulated Area does not present a risk to human health or ecological receptors and the Part A Unregulated Area is suitable for ongoing commercial/industrial and/or the proposed residential (slab on grade) land use.

Should basement car parking and/or other excavations potentially requiring dewatering of Part A be considered then reconsideration of the suitability of the Site may be required.

The Auditor is satisfied that soil validation works were robust enough to establish that remediation was undertaken to the extent practicable including removal of asbestos from void spaces beneath a former building. The Consultant noted that residual asbestos contamination may exist in some areas of the Part A Unregulated Area that were not able to be completely inspected (e.g. beneath building footprints).

It is noted that investigations, remediation and validation of other areas of Lot 100 in DP611332 (i.e. Part B Unregulated Area and Regulated Area) are subject to a separate review and do not form part of this SAS.

Section A2

I certify that, in my opinion:

Subject to compliance with the **attached** environmental management plan[2] (EMP), the site is suitable for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

- ☐ R esidential, including substantial vegetable garden and poultry
- ☐ Residential, including substantial vegetable garden, excluding poultry
- ☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- ☐ Day care centre, preschool, primary school
- ☐ Residential with minimal opportunity for soil access, including units
- ☐ Secondary school
- ☐ Park, recreational open space, playing field
- ☐ Commercial/industrial
- ☐ Other (please specify):

_____

EMP details

Title _____

Author _____

Date _____ No. of pages _____

EMP summary

This EMP (attached) is required to be implemented to address residual contamination on the site.

The EMP: (Tick appropriate box and strike out the other option.)

- ☐ requires operation and/or maintenance of **active** control systems[3]
- ☐ requires maintenance of **passive** control systems only[3].

[2] Refer to Part IV for an explanation of an environmental management plan.
[3] Refer to Part IV for definitions of active and passive control systems.

~~Purpose of the EMP:~~

~~Description of the nature of the residual contamination:~~

~~Summary of the actions required by the EMP:~~

~~How the EMP can reasonably be made to be legally enforceable:~~

~~How there will be appropriate public notification:~~

~~Overall comments:~~

Section B

Purpose of the plan[4] which is the subject of this audit:

_____

_____

_____

I certify that, in my opinion:

(B1)

- ☐ The nature and extent of the contamination **has** been appropriately determined
- ☐ The nature and extent of the contamination **has not** been appropriately determined

AND/OR (B2)

- ☐ The investigation, remediation or management plan **is** appropriate for the purpose stated above
- ☐ The investigation, remediation or management plan **is not** appropriate for the purpose stated above

AND/OR (B3)

- ☐ The site testing plan:
  - ☐ **is** appropriate to determine
  - ☐ **is not** appropriate to determine

  if groundwater is safe and suitable for its intended use as required by the Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017

AND/OR (B4)

- ☐ The terms of the approved voluntary management proposal* or management order** (strike out as appropriate):
  - ☐ **have** been complied with
  - ☐ **have not** been complied with.

  *voluntary management proposal no. _____

  **management order no. _____

AND/OR (B5)

- ☐ The site **can be made suitable** for the following uses:

  (Tick all appropriate uses and strike out those not applicable.)

  - ☐ Residential, including substantial vegetable garden and poultry

[4] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

- ☐ Residential, including substantial vegetable garden, excluding poultry
- ☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- ☐ Day care centre, preschool, primary school
- ☐ Residential with minimal opportunity for soil access, including units
- ☐ Secondary school
- ☐ Park, recreational open space, playing field
- ☐ Commercial/industrial
- ☐ Other (please specify):

IF the site is remediated/managed* in accordance with the following plan (**attached**):

*Strike out as appropriate

Plan title

Plan author

Plan date No. of pages

SUBJECT to compliance with the following condition(s):

Overall comments:

Part III: Auditor's declaration

I am accredited as a site auditor by the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997.*

Accreditation no. 0303

I certify that:

- I have completed the site audit free of any conflicts of interest as defined in the *Contaminated Land Management Act 1997,* and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Contaminated Land Management Act 1997* for wilfully making false or misleading statements.

Signed 

Date 20 April 2018

Part IV: Explanatory notes

To be complete, a site audit statement form must be issued with all four parts.

How to complete this form

Part I

Part I identifies the auditor, the site, the purpose of the audit and the information used by the auditor in making the site audit findings.

Part II

Part II contains the auditor's opinion of the suitability of the site for specified uses or of the appropriateness of an investigation, or remediation plan or management plan which may enable a particular use. It sets out succinct and definitive information to assist decision-making about the use or uses of the site or a plan or proposal to manage or remediate the site.

The auditor is to complete either Section A1 or Section A2 or Section B of Part II, **not** more than one section.

Section A1

In Section A1 the auditor may conclude that the land is *suitable* for a specified use or uses OR *not suitable* for any beneficial use due to the risk of harm from contamination.

By certifying that the site is *suitable*, an auditor declares that, at the time of completion of the site audit, no further investigation or remediation or management of the site was needed to render the site fit for the specified use(s). **Conditions must not be** imposed on a Section A1 site audit statement. Auditors may include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section A2

In Section A2 the auditor may conclude that the land is *suitable* for a specified use(s) subject to a condition for implementation of an environmental management plan (EMP).

Environmental management plan

Within the context of contaminated sites management, an EMP (sometimes also called a 'site management plan') means a plan which addresses the integration of environmental mitigation and monitoring measures for soil, groundwater and/or hazardous ground gases throughout an existing or proposed land use. An EMP succinctly describes the nature and location of contamination remaining on site and states what the objectives of the plan are, how contaminants will be managed, who will be responsible for the plan's implementation and over what time frame actions specified in the plan will take place.

By certifying that the site is suitable subject to implementation of an EMP, an auditor declares that, at the time of completion of the site audit, there was sufficient information satisfying guidelines made or approved under the *Contaminated Land Management Act 1997* (CLM Act) to determine that implementation of the EMP was feasible and would enable the specified use(s) of the site and no further investigation or remediation of the site was needed to render the site fit for the specified use(s).

Implementation of an EMP is required to ensure the site remains suitable for the specified use(s). The plan should be legally enforceable: for example, a requirement of a notice under the CLM Act or a development consent condition issued by a planning authority. There should also be appropriate public notification of the plan, e.g. on a certificate issued under s.149 of *the Environmental Planning and Assessment Act 1979*.

Active or passive control systems

Auditors must specify whether the EMP requires operation and/or maintenance of active control systems or requires maintenance of passive control systems only. Active management systems usually incorporate mechanical components and/or require monitoring and, because of this, regular maintenance and inspection are necessary. Most active management systems are applied at sites where if the systems are not implemented an unacceptable risk may occur. Passive management systems usually require minimal management and maintenance and do not usually incorporate mechanical components.

Auditor's comments

Auditors may also include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section B

In Section B the auditor draws conclusions on the nature and extent of contamination, and/or suitability of plans relating to the investigation, remediation or management of the land, and/or the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or whether the terms of an approved voluntary management proposal or management order made under the CLM Act have been complied with, and/or whether the site can be made suitable for a specified land use or uses if the site is remediated or managed in accordance with the implementation of a specified plan.

By certifying that a site *can be made suitable* for a use or uses if remediated or managed in accordance with a specified plan, the auditor declares that, at the time the audit was completed, there was sufficient information satisfying guidelines made or approved under the CLM Act to determine that implementation of the plan was feasible and would enable the specified use(s) of the site in the future.

For a site that *can be made suitable*, any **conditions** specified by the auditor in Section B should be limited to minor modifications or additions to the specified plan. However, if the auditor considers that further audits of the site (e.g. to validate remediation) are required, the auditor must note this as a condition in the site audit statement. The condition must not specify an individual auditor, only that further audits are required.

Auditors may also include **comments** which are observations in light of the audit which provide a more complete understanding of the environmental context to aid decision-making in relation to the site.

Part III

In **Part III** the auditor certifies their standing as an accredited auditor under the CLM Act and makes other relevant declarations.

Where to send completed forms

In addition to furnishing a copy of the audit statement to the person(s) who commissioned the site audit, statutory site audit statements must be sent to

- the **NSW Environment Protection Authority**: nswauditors@epa.nsw.gov.au or as specified by the EPA

  AND

- the **local council** for the land which is the subject of the audit.

A3

Magnetic North (PLAN)

Approx.True North

SHORT LINE TABLE FOR EASEMENTS		
No.	BEARING	DISTANCE
1	28° 30'	18.6
2	208° 30'	21.05
3	180° 00'	6.05
4	0° 00'	6.05
5	269° 47' 20"	7.47
6	359° 47' 20"	4
7	89° 47' 20"	8

EASEMENTS

- EASEMENT FOR ELECTRICITY PURPOSES 2 WIDE (VIDE DEALING No. T899953)
- RIGHT OF WAY 1.9, 3 & 6 WIDE (VIDE DEALING No. T899953)
- EASEMENT FOR ELECTRICITY PURPOSES 2 WIDE (VIDE DEALING No. Y98090)
- RIGHT OF WAY ½, 7.3 & 10.05 WIDE (VIDE DEALING No. Y98090)
- RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES L26 & 4 WIDE (VIDE DEALING No. Y98090)

CAMPBELL AVENUE

PART A
AREA 43,589m²

PART B
UNREGULATED
AREA 16,587m²

PART B
REGULATED
AREA 14,494m²

BUILDING No. 9

BLOCK & METAL CLAD BUILDING No. 18

BUILDING No. 11

BUILDING No. 7

BUILDING No. 22

BUILDING No. 1

BUILDING No. 6

4-10 INMAN ROAD "ROCHE"

CARPARKING PAINT LINE

FACE OF BUILDING

FACE OF KERB

DRIVE

ABOUT 3.5 TO CENTRELINE STORMWATER ROAD

CREEK

SOUTH

ORLANDO ROAD (20.115 WIDE)

INMAN ROAD (20.115 WIDE)

NOT SURVEYED

NOTE:
LOT DIMENSIONS AND AREAS SUBJECT TO FINAL SURVEY AND APPROVAL BY RELEVANT AUTHORITIES. AREAS ARE APPROXIMATE ONLY.

1	FIRST ISSUE	31/01/17

PLAN SHOWING PART A AND PART B OVER LOT 100 IN D.P.611332 4-10 INMAN ROAD, DEE WHY NSW 2099

C.M.S. Surveyors Pty. Ltd.
A.C.N 096 240 201
PO Box 463 Dee Why NSW 2099
1/32 Campbell Avenue, Dee Why NSW 2099
Telephone: (02) 9971 4802 Facsimile: (02) 9971 4822
E-mail: info@cmssurveyors.com.au

SURVEYED	DRAWN	CHECKED	APPROVED
SM	GP	SM	SM
SURVEY INSTRUCTION	SCALE	DATE OF SURVEY	
823H	1:1250 @ A3	4/02/16	
DRAWING NAME: 823H regulated 1		ISSUE: 1	
CAD FILE: 823Hregulated 1.dwg			

Executive Summary

This Site Audit Report (SAR) relates to the independent review of environmental (contaminated land) documents prepared for part of 4-10 Inman Road, Dee Why, NSW 2099 (the Site). The Site is located on the northern beaches of Sydney approximately 20 km north of the Sydney Central Business District (CBD), as illustrated on Figure 1 (from ERM (2018b), included in **Appendix A** of this SAR).

Throughout the course of this Audit, the Site was divided into three separate areas as follows:

- Part A Unregulated Area – the eastern and northern portions of the Site (the subject of this SAR).
- Part B Unregulated Area – the central western portion of the Site.
- Regulated Area – the south western portion of the Site (currently subject to a declaration of significantly contaminated land (No. 20161101) issued by the New South Wales Environment Protection Authority (NSW EPA)).

The abovementioned areas and other site features are illustrated on Figure 2a (from ERM (2018b), included in **Appendix A** of this SAR).

Paul Steinwede of AECOM Australia Pty Ltd (AECOM), in his role as a NSW EPA Accredited Site Auditor (Accreditation No. 0303), was engaged by Roche Products Pty Ltd (Roche) to review documentation relating to the investigation, remediation and validation works being undertaken for the Part A Unregulated Area. This Audit for Part A is considered to be a non-statutory site audit under Section 47 of the *Contaminated Land Management Act 1997* (CLM Act).

The Environmental Consultant for the Project, Environmental Resources Management Australia Pty Ltd. (ERM), was commissioned by Roche to complete environmental investigations and undertake remediation and validation works for the Part A Unregulated Area. The remediation and validation works included removal of surface waste (including Asbestos Containing Materials (ACM)), sub-surface infrastructure and associated contaminated soils encountered on the Part A Unregulated Area.

The purpose of this Audit was to assess that the environmental investigations and remediation works conducted for the Part A Unregulated Area have demonstrated that no significant risk is posed to human health or the environment. The Site is currently zoned IN1 General Industrial under the Warringah Local Environmental Plan 2011 (Warringah LEP, 2011), however it is understood that the future land use for the Part A Unregulated Area may be more sensitive e.g. residential.

The methods employed in the investigation, remediation and validation work as reported in the documents listed in **Section 1.2** typically complied with the relevant NSW EPA guidelines. Where deviations occurred, the Auditor is generally satisfied that these did not adversely impact on the outcome of the work conducted, and hence the proposed residential land use of the Part A Unregulated Area. The Auditor considers the documents generally followed an appropriate analytical methodology and, when taken as a whole, were sufficient for investigation and remediation of soil and groundwater at the Part A Unregulated Area. The Auditor is satisfied that validation works were robust enough to establish that remediation was undertaken to the extent practicable.

The Auditor notes that investigations, remediation and validation of other areas of the Site (i.e. Part B Unregulated Area and Regulated Area) are subject to a separate review and do not form part of this SAR.

Given the nature of ongoing in-situ groundwater remediation works for the Regulated Area, the Contract of Sale for the Part A Unregulated area (between Roche and EG Developments) includes a restriction on the potential future development activities to slab on grade construction only, limiting the need for excavation below the water table and dewatering activities.

Therefore, the Auditor considers that the environmental condition of the Part A Unregulated Area does not present a risk to human health or ecological receptors and the Part A Unregulated Area is suitable for ongoing commercial/industrial and/or the proposed residential (slab on grade) land use.

Should basement car parking and/or other excavations potentially requiring dewatering of Part A be considered then reconsideration of the suitability of the Site may be required.

1.0 Introduction

1.1 Background

This Site Audit Report (SAR) relates to the independent review of environmental (contaminated land) documents prepared for part of 4-10 Inman Road, Dee Why, NSW 2099 (the Site). The Site is located on the northern beaches of Sydney approximately 20 km north of the Sydney Central Business District (CBD), as illustrated on Figure 1 (from ERM (2018b), included in **Appendix A** of this SAR).

Throughout the course of this Audit, the Site was divided into three separate areas as follows:

- Part A Unregulated Area – the eastern and northern portions of the Site (the subject of this SAR).
- Part B Unregulated Area – the central western portion of the Site.
- Regulated Area – the south western portion of the Site (currently subject to a declaration of significantly contaminated land (No. 20161101) issued by the New South Wales Environment Protection Authority (NSW EPA)).

The abovementioned areas and other site features are illustrated on Figure 2a (from ERM (2018b), included in **Appendix A** of this SAR).

The purpose of this Audit was to assess that the environmental investigations and remediation works conducted for the Part A Unregulated Area have demonstrated that no significant risk is posed to human health or the environment. The Site is currently zoned IN1 General Industrial under the Warringah Local Environmental Plan 2011 (Warringah LEP, 2011), however it is understood that the future land use for the Part A Unregulated Area may be more sensitive e.g. residential.

This SAR was prepared at the request of Tim Woodhouse on behalf of Roche Products Pty Ltd. (Roche). The review was conducted by Mr Paul Steinwede, employed by AECOM Australia Pty Ltd (AECOM), a NSW EPA Accredited Site Auditor (Accreditation No. 0303) under the NSW Site Auditor Scheme (*Contaminated Land Management Act* 1997 [CLM Act]) and follows Guidelines for the NSW Site Auditor Scheme (3rd edition) (NSW EPA, 2017) and subsequent guidance notes.

This Site Auditor has reviewed the investigation, remediation and validation reports prepared by Environmental Resources Management Australia Pty Ltd (ERM) to assess the suitability of the Part A Unregulated Area for residential and/or industrial/commercial use. The Auditor has reviewed the documents in accordance with the requirements of the NSW EPA guidelines.

1.2 Documents Considered

The following documents were considered as part of this Site Audit:

- ERM (2015a), *Phase 1 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW,* 21 July 2015 (Ref: 0297050_Phase 1). This will hereafter be referred to as the 'Phase 1 ESA'.
- ERM (2015b), *Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW,* 3 December 2015 (Ref: 0315053_Ph2ESA_Final V2). This will hereafter be referred to as the 'Phase 2 ESA'.
- ERM (2015c), *Supplementary Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW,* 11 December 2015 (Ref: 0315053_Ph2ESA_Final V2). This will hereafter be referred to as the 'Supplementary ESA'.
- ERM (2017a), *Part A Unregulated Area Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW,* 25 October 2017 (Ref: 0330751 Final). This will hereafter be referred to as the 'Part A ESA'.
- ERM (2017b), *Asbestos Investigation (Building 10) Part A Unregulated Area, Roche Products, 4-10 Inman Road, Dee Why NSW,* 10 November 2017 (Ref: 0410233_L05_V2). This will hereafter be referred to as the 'Asbestos Investigation'.

- ERM (2018a), *Unregulated Area Remedial Action Plan, 4-10 Inman Road, Dee Why NSW,* 22 January 2018 (Ref: 0371068_RAP_Unregulated Areas_FINAL). This will hereafter be referred to as the 'Unregulated Area RAP'.
- ERM (2018b), *Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW,* 13 April 2018 (Ref: 0410233 Final). This will hereafter be referred to as the 'Part A Validation Report'.

1.3 Previous Site Audit Advice

The following Interim Site Audit advice relating to Part A Unregulated Area has been completed to date (and are included in **Appendix B** of this SAR):

- AECOM (2016a), *Site Auditor Interim Advice - Phase 1 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW,* 22 March 2016 (Ref. 60484586_L002_Phase 1_22 March 2016).
- AECOM (2016b), *Site Auditor Interim Advice - Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW,* 23 March 2016 (Ref. 60484586_L003_Phase 2_23 March 2016).
- AECOM (2016c), *Site Auditor Interim Advice - Review of ERM Supplementary Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW,* 4 May 2016 (Ref. 60484586_L05_Supp Phase 2_4 May 2016).
- AECOM (2017a), *Site Auditor Interim Advice – Review of ERM Proposed Residential Area Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW,* 11 May 2017 (Ref. 60484586_L016_Part A Unreg ESA_11 May 2017).
- AECOM (2017b), *Site Auditor Interim Advice – Review of ERM Draft Remediation Action Plan, Unregulated Area, 4-10 Inman Road, Dee Why NSW,* 1 August 2017 (Ref. 60484586_L019_Unreg RAP_1 August 2017).
- AECOM (2017c), *Site Auditor Interim Advice – Review of ERM Part A Unregulated Area Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW,* 15 October 2017 (Ref. 60484586_L022_Final Part A Unreg ESA_15 Oct 2017).
- AECOM (2017d), *Site Auditor Interim Advice – Review of ERM Asbestos Investigation (Building 10) Part A Unregulated Area, 4-10 Inman Road, Dee Why NSW,* 8 November 2017 (Ref. 60484586_L023_Asbestos Inv_8 Nov 2017).
- AECOM (2017e), *Site Auditor Interim Advice – Review of ERM Asbestos Investigation (Building 10) Part A Unregulated Area, 4-10 Inman Road, Dee Why NSW,* 17 November 2017 (Ref. 60484586_L025_Asbestos Inv_17 Nov 2017).
- AECOM (2018a), *Site Auditor Interim Advice – Review of ERM Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW,* 5 February 2018 (Ref. 60484586_L031_Part A Unreg Val_5 Feb 2018).
- AECOM (2018b), *Site Auditor Interim Advice – Review of ERM Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW,* 6 April 2018 (Ref. 60484586_L034_Part A Unreg Val_6 April 2018).
- AECOM (2018c), *Site Auditor Interim Advice – Review of ERM Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW,* 20 April 2018 (Ref. 60484586_L037_Part A Unreg Val_20 April 2018).

2.0 The Site Audit Process

2.1 Legislative Background

The CLM Act defines a Site Audit as an independent review:

(a) that relates to management (whether under this Act or otherwise) of the actual or possible contamination of land, and

(b) that is conducted for the purpose of determining any one or more of the following matters:

  (i) the nature and extent of any contamination of the land,

  (ii) the nature and extent of any management of actual or possible contamination of the land,

  (iii) whether the land is suitable for any specified use or range of uses,

  (iv) what management remains necessary before the land is suitable for any specified use or range of uses,

  (v) the suitability and appropriateness of a plan of management, long-term management plan or a voluntary management proposal.

The Site Audit process is undertaken by an Auditor, accredited by NSW EPA under the CLM Act and comprises an independent review of reports prepared by an environmental consultant.

The audit is considered to be a non-statutory site audit under Section 47 of the CLM Act.

2.2 General Stages of a Site Audit

The Site Audit process generally includes review of assessment and investigation reports prepared by an environmental consultant pertaining to the environmental condition of the land and the suitability of the land for a given land use. The Site Audit may also include the review of a Remedial Action Plan (RAP) which, if implemented, may render the land suitable for a given land use(s). Until the RAP has been adequately implemented, the Auditor cannot certify the suitability of the land. The Site Audit may also review the Validation Plan, which is prepared by an environmental consultant to document the requirements for successful completion of the requirements of a RAP. At the conclusion of any remedial works, the Site Audit process also includes review of the Validation Report, which documents the successful completion of the works outlined in the RAP and, where applicable, the Validation Plan.

Site Audit Reports may also be completed throughout the site audit to document review of reports at project milestones. The Audit process is completed by preparation of a Site Audit Report (SAR), which reviews the report prepared by the consultant.

The investigation of the environmental condition of the land and any required management is carried out by the environmental consultant by reference to guidelines endorsed by the NSW EPA under Section 105 of the CLM Act. If the report(s) prepared by the consultant are in substantial conformance with the guidelines, the Auditor is entitled to accept the results and conclusions stated therein and complete the SAR. The Auditor is entitled to form other opinions based on the results and conclusions stated in the report(s) by the consultant.

The Auditor does not normally carry out independent sampling or chemical analyses of soil, fill, groundwater or other media on the subject site, but rely on the testing and reporting that has been carried out by the consultant if it has been demonstrated to be of adequate reliability by reference to quality indicators listed in the endorsed guidelines.

It is expressly recognised that, even when a qualified environmental consulting firm has substantially followed guidelines endorsed by the NSW EPA, unidentified contamination or sub-surface structures may remain present. The processes of investigation, remediation and validation are statistically based and no liability is accepted by the Auditor for unidentified contamination or sub-surface structures subsequently found to be present on a site, which has been subjected to investigation, remediation and validation processes that are in substantial conformance to guidelines endorsed by the NSW EPA. In addition, this Site Audit has not addressed geotechnical or engineering suitability of the site, for which specialist advice is required to be obtained outside the Site Audit process.

2.3 Purpose of the Site Audit

The purpose of this Site Audit was to:

- Review the environmental investigation, remediation and validation activities (including reporting) conducted by ERM on the Part A Unregulated Area.
- Document compliance with the requirements of relevant guidelines endorsed by the NSW EPA.
- Provide an opinion on the suitability of the Part A Unregulated Area for divestment by Roche for ongoing commercial or future residential use.

2.4 Inspection of the Part A Unregulated Area

The Auditor and/or Auditor's Assistants have conducted inspections of the Part A Unregulated Area on two occasions throughout the investigation and remediation works as summarised in **Table 1**.

Table 1 Part A Unregulated Area Site Visits

Date	Audit Personnel and Site Representatives	Purpose	Key Observations
18 July 2016	Lesley Limage (AECOM) Tim Woodhouse (Roche) ERM field staff	Site inspection	• Inspected the areas in which asbestos investigation works had been completed on the Part A Unregulated Area e.g. adjacent to Building 50, adjacent to Building 10, within the orchard and vegetated areas in the northeast corner of the Site. • The grid size was understood to be 10 m by 10 m and at each intersection a 1 m by 1 m area (i.e. 1 m^2) was raked and visually assessed for potential asbestos containing material (ACM).
7 February 2017	Paul Steinwede Lesley Limage Tim Woodhouse (Roche) ERM Personnel	Site meeting	• Meeting on site to discuss finalising RAP
22 August 2017 7 September 2017	Paul Steinwede and Lesley Limage (AECOM) Tim Woodhouse (Roche) ERM field staff	Site inspections	• Inspected the Part A Unregulated Area following the asbestos remediation works. Building 50 (former site shed) had been removed. It is understood that a total of 887.4 tonnes of asbestos impacted soil was removed. The area around Building 50 had been backfilled with 805 tonnes of Virgin Excavated Natural Material (VENM) imported from Badgery's Creek Quarry and topped with wood chip mulch. • Inspected the additional asbestos investigation (via test pitting) being undertaken on behalf of a potential buyer by Trace Environmental and ERM. It is understood that a total of 16 test pits were excavated with a soil sample collected from each and no asbestos fragments were observed. However, it is understood that four fragments were found on the surface underneath Building 10.

3.0 Site Information

3.1 Site Identification and Description

The following information in **Table 2** provides details of the Site and specific details relating to the Part A Unregulated Area as identified in the Phase 1 ESA, Phase 2 ESA, Part A ESA and the Part A Validation Report (ERM, 2015a, 2015b, 2017a and 2018b).

Table 2 Site Identification Information

Item	Description
Site Address	4-10 Inman Road, Dee Why, NSW 2099. The Part A Unregulated Area forms the eastern and northern portions of the Site.
Legal Description	Part Lot 100 in Deposited Plan (DP) 611332. A copy of the Certificate of Title and a survey plan showing the extent on the Part A Unregulated Area (Part A) are presented in **Appendix C** of this SAR.
Site Owner	The Site owner is Roche Products Pty Ltd. As of 5 December 2017, the Part A Unregulated Area was owned by EG Developments.
Site Occupier	The Site does not currently have any permanent site users. The Part A Unregulated Area was occupied by Roche Products Pty Ltd until May 2017.
Local Government Authority	Northern Beaches Local Government Authority (LGA).
Zoning	IN1 General Industrial under the Warringah Local Environmental Plan 2011 (Warringah LEP, 2011).
Current Land Use	The Site does not currently have any permanent uses, however during most of the environmental works on the Part A Unregulated Area the Site was operating as a dedicated distribution facility of imported packaged goods for Roche and also included administrative offices.
Heritage (Aboriginal and European) (refer to **Section3.4.2** for further details)	• The following Aboriginal heritage items were identified following a search of the Aboriginal Heritage Information Management System (AHIMS) on 23 April 2015 and review of an Aboriginal Heritage Report prepared by Dominic Steel Consultancy Archaeology in 2012: - Sandstone outcrop on the north-western portion of the Site showed evidence of rock carvings - Sandstone outcrop adjacent to the Site on Orlando Road (north of the Site) which also showed evidence of rock carvings may be indicative of the existence of further undiscovered artefacts in buried shallow sandstone on the north-eastern portion of the Site. • The following European heritage items were identified in the Warringah LEP (2011) following a search of the Australian and NSW Heritage database on 23 April 2015: - The 'Roche Building' (Building 17), and - The former Givaudan-Roure Office (Building 19) located at 96 South Creek Road. Both of these buildings are located within the Part A Unregulated Area.
Proposed Land Use	Low and high density residential
Site Elevation (m AHD)	Approximately 25 metres Australian Height Datum (mAHD) to the north of the Site and 14 mAHD at the southern boundary
Site Area (Total)	Site: approximately 8 hectares (ha) Part A Unregulated Area: approximately 4.4 ha

Item	Description
Coordinates	The coordinates of the Site were: 33°44'17.61"S (latitude) 151°17'15.08"E (longitude)
Site Location Plan and Site Layout	Site Location Plan and Site Features Plan were presented as Figure 1 and Figure 2a, respectively, of the Part A Validation Report and are presented in **Appendix A** of this SAR. The Part A Unregulated Area forms the eastern and northern portions of the Site.
Environmental Setting (refer to **Section 3.3** for further details)	The Part A Unregulated Area generally slopes from north to south and is covered by approximately 80% grass/vegetated areas and the remaining 20% asphalt roadways, carparks and buildings. A tributary (partially lined) to Dee Why Creek is located on the Part A Unregulated Area running from north to south. The Part A Unregulated Area is predominantly underlain by sand, clayey sands, clay and sandstone. Groundwater was identified within an unconfined aquifer at approximately 2.8 to 5.7 metres below ground level (mbgl) within weathered sandstone bedrock on the northern portion and within sands and clayey sands on the southern portion of the Part A Unregulated Area (ERM, 2017a). Groundwater was generally inferred to flow in a south westerly direction within the eastern portion and a southerly direction in the northern and western portions of the Part A Unregulated Area.

The Auditor considers that ERM (2015a, 2015b, 2017a and 2018b) reported the Part A Unregulated Area description and details in general accordance with NSW EPA guidelines. The Auditor/Audit Team have undertaken several site visits throughout the investigation, remediation and validation works and considers that the information presented adequately defines the subject site, i.e. Part A Unregulated Area.

3.2 Surrounding Land Use

Information relating to the surrounding land use was presented in the Phase 1 ESA, Phase 2 ESA, Part A ESA and the Part A Validation Report (ERM, 2015a, 2015b, 2017a and 2018b) and is summarised in **Table 3**.

Table 3 Surrounding Land Use

Direction	Description
North	Low density residential dwellings and a child care centre were located adjacent to the Part A Unregulated Area. A light commercial/industrial area is located north of Orlando Road i.e. approximately 50 m from the Part A Unregulated Area boundary.
East	Low density residential dwellings were located adjacent to the Part A Unregulated Area.
South	The eastern portion of the Part A Unregulated Area: South Creek Road runs along the southern boundary of the Part A Unregulated Area, beyond which was a light commercial area. Dee Why Creek was located approximately 250 m south of the Part A Unregulated Area boundary. Dee Why Creek flows into the Dee Why Lagoon located approximately 900 southeast of the Part A Unregulated Area. The northern portion of the Part A Unregulated Area: The Part B Unregulated Area and Regulated Area were located to the south, beyond which were South Creek Road and a light commercial area.

Direction	Description
West	The eastern portion of the Part A Unregulated Area: The Part B Unregulated Area and Regulated Area were located to the west, beyond which were Inman Road and the Northern Beaches Secondary School including associated infrastructure and recreational grounds. The northern portion of the Part A Unregulated Area: Inman Road and the Northern Beaches Secondary School including associated infrastructure and recreational grounds.

The Auditor considers that ERM (2015a, 2015b, 2017a and 2018b) provided sufficient information in the text of the reports to identify the surrounding land uses.

3.3 Environmental Setting

3.3.1 Topography and Drainage

The Part A Validation Report (ERM, 2018b) described the Site (inclusive of Part A) as generally sloping from north to south with a change in elevation from approximately 25 mAHD to the north and 14 mAHD to the south. Local surface runoff is expected to generally flow towards the south of the Part A Unregulated Area, with surface water channelled via stormwater infrastructure to municipal stormwater.

A natural tributary, which is partially concrete lined, is present on the Part A Unregulated Area running from north to south. This natural tributary connects to Dee Why Creek located approximately 250 m south of the Part A Unregulated Area boundary. Dee Why Creek flows into the Dee Why Lagoon located approximately 900 southeast of the Part A Unregulated Area.

3.3.2 Geology, Hydrogeology and Meteorology

The Part A Validation Report (ERM, 2018b) presented a summary of the regional and site geology, with reference to the 1:100 000 Geological Survey of New South Wales Sydney Map (1983) and investigations undertaken by ERM for the Part A Unregulated Area (ERM 2015b, 2015c and 2017a).

The Part A Validation Report (ERM, 2018b) identified that the Site is located on the border of two lithology groups. The northern portion of the Site is located on the Narrabeen Group comprising interbedded laminate, shale and quartz to lithic-quartz sandstone. The southern portion of the Site is located on quaternary sediments comprising silty to peaty quartz sand, silt and clay. Based on intrusive investigations (refer to **Section 4.0**), the Part A Unregulated Area was understood to be underlain by sands, clayey sands, clays and sandstone.

A search of the Bureau of Meteorology (BoM) Australian Groundwater Explorer identified 15 registered bores within 1 km of the Site ranging from depths between 3 mbgl and 106.3 mbgl (ERM, 2018b). The registered use of these bores were water supply (5), irrigation (3), commercial/industrial (3), monitoring (2) and other (2). Further details of each registered bore were provided in Annex C of the Part A ESA (ERM, 2017a). The estimated groundwater yield was not provided in the reports prepared by ERM.

Groundwater gauging was undertaken on the Part A Unregulated Area (and other areas of the Site) in September 2015 (Phase 2 ESA, ERM, 2015b), November 2015 (Supplementary ESA, ERM, 2015c) and March 2016 (Part A ESA, ERM, 2017a). There were 14 groundwater monitoring wells monitored specific to the Part A Unregulated Area (refer to Figure 3 of the Part A ESA included in **Appendix A** of this SAR). Groundwater was identified within an unconfined aquifer at approximately 2.8 mbgl (MW02) to 5.7 mbgl (MW36) or 8.9 mAHD (MW37) to 22.5 mAHD (MW02) within weathered sandstone bedrock on the northern portion and within sands and clayey sands on the southern portion of the Part A Unregulated Area (ERM, 2017a).

The Part A Validation Report (ERM, 2018b) inferred that groundwater flow would in a south westerly direction within the eastern portion and a southerly direction in the northern and western portions of the Part A Unregulated Area. This groundwater flow direction was consistent with previous investigations including the Part A ESA (ERM, 2017a). The groundwater flow direction was illustrated on Figure 3 of the Part A ESA (ERM, 2017) and is presented in **Appendix A** of this SAR.

3.3.3 Sensitive Local Environments

A search of the Protected Matters Search Tool was undertaken by ERM (2015a) to identify matters of national environmental significance or other matters protected by the *Environment Protection and Biodiversity Conservation Act 1999* relevant to the Site and the surrounding environment. One listed threatened ecological community, Coastal Upland Swamps in the Sydney Basin Bioregion was identified within 1 km of the Site. Additionally, 27 listed threatened species and 13 listed migratory species were recorded within 1 km of the Site. It was considered unlikely that these species would utilise the habitat located at the Site given its disturbed and fragmented nature.

Dee Why Creek supports three endangered ecological communities; the Sydney Coastal Estuary Swamp Forest Complex, Sydney Freshwater Wetlands and Coastal Saltmarsh in the Sydney Basin (Warringah Council, 2015) (ERM, 2015a).

The Auditor considers that ERM (2015a, 2015b, 2015c, 2017a and 2018b) adequately identified and reported the environmental setting, including topography, drainage, geology and hydrogeology of the Part A Unregulated Area in accordance with NSW EPA guidelines.

The Auditor also considers that the borehole logs provided in the Phase 2 ESA, Supplementary ESA and Part A ESA (ERM, 2015b, 2015c and 2017a) provided suitable information on the lithology encountered during the investigations and were sufficient for the purposes of a contamination assessment.

The Auditor notes that no information was presented on the potential presence of acid sulfate soils (ASS) on the Part A Unregulated Area or the Site. The Auditor's review of the Warringah LEP *(*2011) – ASS Map Sheet ASS_009, indicated that the Part A Unregulated Area was not identified as an area with potential ASS.

The Auditor notes that no information was presented on meteorology for the Part A Unregulated Area or the Site. The Auditor has undertaken a review of data from the Bureau of Metrology (BOM) website for the Terry Hills AWS (number 066059) located approximately 6.6 km from the Site. The meteorological review indicated that the area experiences a mean minimum temperature in July with an average of 7.6°C and an average maximum temperature in January of 26.8°C. The annual average rainfall for the area is 1089.9 mm, with the wettest month being June (mean of 148.4 mm) and the driest month being May (mean of 53.3 mm) (information accessed from **www.bom.gov.au** on 26 March 2018).

3.4 History of the Site

3.4.1 Overview

The Phase 1 ESA (ERM, 2015a) provided a summary of the history of the Site. The following summarises the key activities relevant to the Part A Unregulated Area:

- Roche purchased three land lots in 1962 to form the 'original site'. Prior to this, the original site was used as a market garden. The original site was used by Roche as a pharmaceutical manufacturing and distribution facility.
- From 1962 to 1990, Roche undertook a program of acquisition of properties in proximity to the original site for the expansion of operations.
- Various manufacturing and laboratory activities are known to have occurred at the Site including diagnostics (Building 10) on the Part A Unregulated Area. Building 19 was also used to manufacture perfumes by Givaudan-Roure prior to Roche ownership.
- Manufacturing operations ceased on December 2006 and quality control testing ceased at the Site in 2007, while import and distribution of packaged pharmaceutical products continued until 2017.

3.4.2 Heritage Assessment

The Phase 1 ESA (ERM, 2015a) indicated that a heritage assessment undertaken by ERM identified two European heritage items on the Part A Unregulated Area as follows:

- The 'Roche Building' (Building 17)
- The former Givaudan-Roure Office (Building 19).

The Roche Building, constructed in 1965, was identified in the Warringah LEP (2011) as a '*substantial & excellent example of an industrial complete in the late 20th Century international style'*. It is seen as socially significant due it its landmark nature. The former Givaudan-Roure Office, constructed between 1926 and 1950, was identified in the Warringah LEP (2011) as '*a representative example of an inter-war dwelling'*. It was stated that the Northern Beaches Council (Council) would likely require a Statement of Heritage Impact (SOHI) prepared by a heritage consultant prior to making a determination on the removal or alterations of structures on-site.

Additionally, a number of Aboriginal heritage items were identified from the NSW Office of Environment and Heritage (OEH) AHIMS as follows:

- Sandstone outcrop on the north-western portion of the Site showed evidence of rock carvings
- Sandstone outcrop adjacent to the Site on Orlando Road which also showed evidence of rock carvings may be indicative of the existence of further undiscovered artefacts in buried shallow sandstone on the north-eastern portion of the Site.

It was recommended that an archaeologist be present for any works in these areas of the Site which may disturb potential artefacts.

3.4.3 Potential Sources of Contamination and Contaminants of Concern

Based on the history and findings of investigations (**Section 4.0**) potential sources of contamination were identified at the Part A Unregulated Area as part of the Phase 1 ESA (ERM, 2015a). A summary of the potential contamination sources and the identified primary contaminants of potential concern (CoPC) (based on the Sampling Analysis and Quality Plan (SAQP) presented as Annex F of ERM, 2015a) are presented in **Table 4**.

Table 4 Part A Unregulated Area Potential Sources of Contamination and Contaminants of Concern

Areas of Potential Concern	Description (Section 5.2 of ERM, 2015a)	Primary CoPC
Former Underground Storage Tanks (USTs)	• No active USTs on the Part A Unregulated Area (or the Site). • No information relating to potential contamination was available for the three USTs historically located on the Part A Unregulated Area (refer to Figure 2a, ERM 2018b as presented in **Appendix A** of this SAR). • Two of the USTs (i.e. unnamed semi-buried tank observed near Building 19 and Depot 19C located west of Building 19) were confirmed to have been removed via documentation. • No removal documentation was available for one UST (Depot 19B), located in the car park west of Building 19, however the UST could not be located during previous a GPR survey (ERM, 2015b).	TRH, BTEX, PAH, phenols and heavy metals, VOCs, SVOCs and asbestos.
Use of fill material	• Fill material has been used across the Site, however no details were available on the source.	TRH, BTEX, PAH, phenols and heavy metals, VOCs, SVOCs, pesticides (OCP/OPP) and asbestos.
Historic use of potentially contaminating building material	• Use of ACM and/or lead based paints within/on buildings located within the Part A Unregulated Area may have resulted in contamination of soils in the vicinity of these buildings.	Asbestos and lead.
Diesel generators	• An un-bunded generator with a fuel tank containing 230 L of diesel located south of Building 19 was observed to be leaking during the Phase 1 ESA site visit (ERM, 2015a). The location of the diesel generator was illustrated on Figure 2a (ERM 2018b) as presented in **Appendix A** of this SAR.	TRH, BTEX, PAH, phenols and heavy metals, VOCs, SVOCs and asbestos.
Storage of hazardous materials	• Site reconnaissance and the Dangerous Goods Record (DGR) identified that various laboratory related hazardous chemicals were historically stored at various locations across the Site, including Buildings 4 (Roofed Store), 10 (Flammable Liquid Cabinet) and 19 (Roofed Store). The DGR was provided as Annex D in the Phase 1 ESA (ERM, 2015a).	TRH, BTEX, PAH, phenols and heavy metals, VOCs, SVOCs, pesticides (OCP/OPP) and asbestos.
Use of pesticides and herbicides	• Notifiable quantities of pesticides were historically stored at the Site which may have been applied to building footings (for pest control) or grounds (for weed control). Dichloro-diphenyl-trichloroethane (DDT) had historically been reported in shallow soils to the east of Building 9 (refer to **Section 4.1.1**).	Herbicides and pesticides (OCP/OPP).
Potential historical storage of radioactive materials	• Radioactive materials may have been stored within Building 10, however this is unconfirmed. An isotope survey of the building concluded that no radiation was present above background levels (ERM, 2015a).	Not applicable.

Notes:
BTEX – benzene, toluene, ethylbenzene and xylene, GPR - Ground Penetration Radar, TRH – total recoverable hydrocarbons, PAHs – polycyclic aromatic hydrocarbons, PCBs – polychlorinated biphenyls, VOCs – volatile organic compounds, SVOCs – semi volatile organic compounds, OCP – organochlorine pesticides and OPP – organophosphorus pesticides

The Auditor considers that the Phase 1 ESA (ERM, 2015a) generally presented the history of Part A Unregulated Area (and the remainder of the Site) in accordance with NSW EPA guidance.

The Auditor considers that the information presented provided sufficient basis to identify the potential sources of contamination and the associated CoPC.

3.5 Community Consultation

Community consultation works, in particular with surrounding land owners and Council, has been undertaken by Roche with support from ERM. It is understood that Roche made available a direct line for any member of the community wishing to obtain further information regarding the assessments on and off the Site. Additionally, the Unregulated Area RAP (ERM, 2018a) stated that a community fact sheet was prepared and was available to all stakeholders requesting information.

The Auditor reviewed initial fact sheets as part of the community consultation plans as part of this Site Audit. In addition, the Site Auditor was invited to an initial meeting with adjacent stakeholders regarding the regulated portion of the property. In addition, the Auditor understands that Roche conducted further consultation with relevant stakeholders including the surrounding land owners, prior to, during and following the investigation and remediation works.

4.0 Summary of Investigations

4.1 Previous Investigations

A number of intrusive investigations have been undertaken within the Part A Unregulated Area and the remainder of the Site as summarised in the Phase 1 ESA and Part A Validation Report (ERM, 2015a and 2018b). A previous investigation undertaken within the Part A Unregulated Area was as follows and is summarised below:

- Environmental Investigation Services (EIS), 2004. *Environmental Site Screening for Proposed Subdivision* (Ref: E18749FRPT) (EIS, 2004).

4.1.1 Environmental Site Screening for Proposed Subdivision (EIS, 2004)

As described in the Phase 1 ESA and Part A Validation Report (ERM, 2015a and 2018b), EIS advanced 21 soil bores across the eastern portion of the Site (i.e. east of the natural drainage line within the Part A Unregulated Area) in order to assess the suitability for potential subdivision and redevelopment. Whist widespread contamination was not reported, concentrations of PAH and DDT were reported above the laboratory limit of reporting (LOR) in samples from one soil bore located adjacent to (east of) Building 9. However, as the PAH and DDT concentrations were reported to be below the adopted screening levels EIS concluded that the area was suitable for commercial/industrial redevelopment and potentially residential redevelopment if the sampling density was increased.

The Auditor considers that the Phase 1 ESA and Part A Validation Report (ERM, 2015a and 2018b) provided a suitable summary of previous investigations undertaken within the Part A Unregulated Area. The Auditor has not conducted a review of the EIS (2004) but considers that the subsequent investigation works undertaken by ERM provided appropriate characterisation of the Part A Unregulated Area.

4.2 Screening Criteria

The Phase 2 ESA, Supplementary ESA, Part A ESA and Part A Validation Report (ERM, 2015b, 2015c, 2017a and 2018b) adopted guidance made or endorsed by the NSW EPA under the provisions of the CLM Act. The adopted Tier 1 screening criteria was selected based on a review of the following reference documents:

- ASC NEPM (2013), *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013). National Environment Protection Council (NEPC).
- ANZECC/ARMCANZ (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian and New Zealand Environment and Conservation Council (ANZECC) and Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ), October 2000.
- CRC CARE (2011), *Technical Report No. 10: Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater*. Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE).
- NHMRC (2008), *Guidelines for Managing Risks in Recreational Water.* National Health and Medical Research Council (NHMRC).
- US EPA (2017), *Regional Screening Levels* (RSLs). November 2017.
- WA DoH (2009), *Guidelines for the Assessment and Remediation and Management of Asbestos-Contaminated Sites in Western Australia.* Western Australian Department of Health (WA DoH).
- WHO (2011), *Guidelines for Drinking-Water Quality, Fourth Edition*. World Health Organisation (WHO).

The soil and groundwater screening criteria are discussed in the following sections of this SAR.

4.2.1 Soil Screening Criteria

The screening criteria for soil for the Part A Unregulated Area were stated to be selected based on the potential future uses of the Part A Unregulated Area and the surrounding land uses (i.e. commercial/industrial, recreational/public open space and residential) with consideration of the following values to be protected:

- Ecosystem protection
- Human health
- Buildings and structures (asbestos)
- Aesthetics.

The following provides an overview of the soil screening criteria.

Ecosystem Protection

The investigation reports listed in **Section 4.2** identified that ecological investigation levels (EILs) and ecological screening levels (ESLs), as defined in the ASC NEPM (2013), were adopted for the assessment of soil contamination in the investigations to assess the suitability of the Part A Unregulated Area for the protection of ecosystems, by comparison with soil concentrations found at each sample location. The following was noted:

- EILs were adopted for selected metals and organic substances and were applicable for assessing risk to terrestrial ecosystems. EILs are dependent on the soil physicochemical properties and land use scenarios and only apply to the top 2 m of soil. Site specific EILs were calculated using data collected at the Site during the Phase 2 ESA (ERM, 2015b) (i.e. pH, cation exchange capacity (CEC), clay content and background concentrations of metals data) and were considered to be appropriate for use on the Part A Unregulated Area. The calculation sheets for deriving the EILs were provided as Annex J of the Part A ESA (ERM, 2017a).
- ESLs were adopted for selected petroleum hydrocarbon compounds and fractions and were also applied for assessing the risk to terrestrial ecosystems. ESLs broadly apply to coarse and fine grained soils and various land use scenarios and only apply to the top 2 m of soil.

Human Health

The investigation reports identified that health investigation levels (HILs) and health screening levels (HSLs), as defined in the ASC NEPM (2013), were adopted for the assessment of soil contamination in the investigation to assess the suitability of the Part A Unregulated Area for the protection of human health, by comparison with soil concentrations found at each sample location. Specifically, commercial/industrial (HIL D and HSL D), recreational (HIL C and HSL C) and residential (HIL A, HIL B and HSL A&B) were adopted to assess the potential risk to human health via inhalation and direct contact with CoPC. Direct contact criteria for petroleum hydrocarbons were also adopted from CRC CARE (2011) for the abovementioned land uses, as well as for intrusive maintenance workers for the upper 2 m of the soil profile. The relevant HSLs were adopted based on geology (i.e. sand) and sample depth.

Where Australian specific guidance was not available (e.g. for selected VOCs), the US EPA (2017) RSLs were adopted. For the carcinogenic CoPC, the Incremental Lifetime Cancer Risk (ILCR) was applied i.e. $1x10^{-5}$ in accordance with ASC NEPM (2013).

Asbestos

The investigation reports referred to guidance provided in the ASC NEPM (2013) and WA DoH (2009) for the assessment of asbestos in soil. This included HSLs for bonded ACM and friable asbestos and the requirement of no visible asbestos in the surface for all forms of asbestos.

Aesthetics

As identified above, in accordance with the ASC NEPM (2013) and WA DoH (2009), there is a requirement for no visible asbestos in the surface for all forms of asbestos.

Soil Waste Classification

The investigation reports referred to the NSW EPA Publication *Waste Classification Guidelines – Part 1: Classifying waste* (NSW EPA, 2014) for waste classification. The waste categories as defined in Clause 49 of Schedule 1 of the *Protection of the Environment Operations Act 1997* included:

- Special waste
- Liquid waste
- Hazardous waste
- Restricted solid waste
- General solid waste (putrescible)
- General solid waste (non-putrescible).

Asbestos waste was classified as a “Special Waste” while soils were classified as one of three possible classifications (in order of increasing contaminant concentrations):

- General solid waste (non-putrescible)
- Restricted solid waste
- Hazardous waste.

4.2.2 Groundwater Screening Criteria

The screening criteria for groundwater for the Part A Unregulated Area were stated to be selected based on the potential future uses of the Part A Unregulated Area and the surrounding land uses (i.e. commercial/industrial, recreational/public open space and residential) with consideration of the following values to be protected:

- Ecosystem protection
- Drinking water
- Recreation and aesthetics.

The following provides an overview of the groundwater screening criteria.

Ecosystem Protection

The investigation reports identified that freshwater groundwater investigation levels (GILs), as defined in the ASC NEPM (2013), were adopted for the assessment of groundwater contamination in the investigation to assess the suitability of the Part A Unregulated Area for the protection of ecosystems, by comparison with groundwater concentrations detected at each sample location. The following was noted:

- Freshwater GILs were adopted due to the presence of an on-site natural drainage line which flows into Dee Why Creek. The ultimate receptor of water flowing off-site through this pathway would be the Dee Why Lagoon which is understood to be a brackish environment. However, given the freshwater GILs were generally more conservative than the marine GILs, the freshwater GILs were used in the assessment.

Human Health

The investigation reports identified that HSLs, as defined in the ASC NEPM (2013), were adopted for the assessment of groundwater contamination in the investigation to assess the suitability of the Part A Unregulated Area for the protection of human health, by comparison with groundwater concentrations detected at each sample location. Specifically, commercial/industrial (HSL D), recreational (HSL C) and residential (HSL A&B) were adopted to assess the potential risk to human health via inhalation of CoPC. HSLs for petroleum hydrocarbons were also adopted from CRC CARE (2011) for intrusive maintenance workers. The relevant HSLs were adopted based on geology (i.e. sand) and depth to groundwater.

Groundwater Investigation Levels (GILs) for drinking water, as defined in the ASC NEPM (2013), were conservatively adopted for the assessment. However, it was noted that there is a low likelihood that groundwater would be used for drinking water purposes given the municipal supply in the Dee Why area. The NHMRC (2008) recreational guidelines were therefore adopted to more accurately assess direct risk from non-potable groundwater uses.

Where Australian specific guidance was not available (e.g. for TCE), the WHO (2011) drinking water criteria were adopted.

Recreation and Aesthetics

The investigation reports reported that the guidelines for managing risk in recreational waters (GMRRW) (NHMRC, 2008) were adopted to more accurately assess direct risk from non-potable groundwater uses. The NHMRC (2008) criteria adopted for the investigation were 10 times the stipulated drinking water guidelines. This was on the basis of the NHMRC (2008) criteria being based on the Australian Drinking Water Guidelines (NHMRC, 2016) whereby ingestion of water during recreational activities is assumed to be 10% of drinking water consumption.

The Auditor considers that the Phase 2 ESA, Supplementary ESA, Part A ESA and Part A Validation Report (ERM, 2015b, 2015c, 2017a and 2018b) provided a suitable assessment of the adopted screening criteria.

The Auditor considers that given the proposed end use for the Part A Unregulated area (commercial/industrial or residential) and surrounding land uses (commercial/industrial, residential and recreational), the adopted screening criteria provided an appropriate level of protection to human health receptors.

The Auditor considers that given the proposed end use for the Part A Unregulated area (commercial/industrial or residential), and the presence of a tributary to Dee Why Creek and ultimately Dee Why Lagoon, the adopted ecological screening criteria provides an appropriate level of protection to ecological receptors.

The Auditor notes that the Phase 2 ESA stated that the potential human health impacts from contaminated groundwater were limited to abstraction from shallow groundwater for the drinking water. It was considered unlikely that the shallow groundwater would be abstracted for this purpose given the municipal supply of drinking water in the Dee Why Area.

4.3 Investigation Results

4.3.1 Ground Conditions

The ground conditions across the Part A Unregulated Area were described in the Part A Validation Report (ERM, 2018b). The ground conditions encountered were described as follows:

- The northern and north-eastern portion of the Part A Unregulated Area were underlain by sand and clayey sand which graded to consolidated sandstone bedrock.
- The consolidated sandstone bedrock was not encountered within the centre and southern portions of the Part A Unregulated Area to the depth of investigation i.e. 26 mbgl.
- A sandy clay layer was also encountered at depth in some areas of the Part A Unregulated Area.
- Fill material containing various building rubble (e.g. bricks, concrete, tiles and scrap metal) was observed to a maximum depth of 1.8 mbgl near the former site shed (located west of Building 10).

4.3.2 Soil Results

As part of the Phase 2 ESA (ERM, 2015b), ERM conducted two investigations at the Site to established a baseline of soil conditions in the context of future divestment. A total of two test pits and 15 soil bores were advanced within the Part A Unregulated Area with 78 primary soil samples collected. The key findings were:

- Exceedance of the adopted residential EIL (8 mg/kg) and commercial/industrial EIL (10 mg/kg) for nickel in one soil sample (MW16_0.3, 15 mg/kg) located within the vicinity of Building 19.

- Exceedance of the adopted residential EIL (140 mg/kg) and commercial/industrial EIL (10 mg/kg) for zinc in one soil sample (MW14_0.5, 201 mg/kg) located within the vicinity of Building 19.
- Exceedance of the adopted residential HSL (240 mg/kg), residential ESL (120 mg/kg), commercial/industrial ESL (170 mg/kg) for TRH C_{10}-<C_{16} less naphthalene in one soil sample (SB09_1.0, 530 mg/kg) located north of Building 18 (i.e. in the proximity of a diesel generator on the Regulated Area).
- Exceedance of the adopted residential ESL (300 mg/kg) for TRH C_{16}-<C_{34} in one soil sample (SB09_1.0, 370 mg/kg) located north of Building 18 (i.e. in the proximity of a diesel generator on the Regulated Area).

The Phase 2 ESA soil exceedance locations were illustrated on Figure 4 of the Phase 2 ESA (ERM, 2015b) as presented in **Appendix A** of this SAR. The soil analytical results were presented in Table 10 to Table 13 of the Phase 2 ESA (ERM, 2015b) as presented in **Appendix D** of this SAR.

An additional soil bore (MW28) was advanced within the Part A Unregulated Area with two primary soil samples collected during the Supplementary ESA (ERM, 2015c). Contaminant concentrations were reported below the laboratory LOR and/or adopted screening criteria. However, it is noted that a soil bore (SB23) was advanced north of Building 18 (i.e. in the proximity of a diesel generator on the Regulated Area). An exceedance of the adopted residential EIL (8 mg/kg) and commercial/industrial EIL (10 mg/kg) for nickel was reported in one sample (SB23_0.2, 180 mg/kg). The Supplementary ESA soil exceedance locations were illustrated on Figure 4 of the Supplementary ESA (ERM, 2015c) as presented in **Appendix A** of this SAR. The soil analytical results were presented in Table 7 to Table 9 of the Supplementary ESA (ERM, 2015c) as presented in **Appendix D** of this SAR.

The Part A ESA (ERM, 2017a) works were staged with Stage 1 comprising a soil investigation (total of 16 boreholes and five test pits, with 42 primary soil samples collected), Stage 2 comprising a data gap investigation of asbestos (total of three trenches and eight test pits, with 41 primary soil samples collected) and Stage 3 comprising an additional asbestos investigation (total of seven trenches and nine test pits, with 16 primary soil samples). The key findings were:

Stage 1

- Exceedance of the adopted residential EIL (8 mg/kg) and commercial/industrial EIL (10 mg/kg) for nickel in three soil samples (MW37_0.5, SB31_0.5 and SB35_0.3), with a maximum concentration of 56 mg/kg.
- An ACM (chrysotile and amosite) fragment was collected from surface soil at soil bore location SB41. No asbestos fibres were reported in samples collected from beneath this ACM fragment.
- Soil bore SB41 was advanced on the Part A Unregulated Area east of previous soil bore locations SB09 (ERM, 2015b) and SB23 (ERM, 2015c). Analytical results from this location indicated that TRH and nickel impacts do not extend laterally into the Part A Unregulated Area.

The Part A ESA soil exceedance locations for Stage 1 were illustrated on Figure 4a of the Part A ESA (ERM, 2017a) as presented in **Appendix A** of this SAR.

Stage 2

- Three ACM fragments were collected from surface soil during hand-picking activities. Two of the fragments were classified as chrysotile and one fragment was classified as a combination of chrysotile, amosite and crocidolite.
- Three ACM fragments were collected from surface soil during grid-based hand-picking activities. Two of the fragments were classified as chrysotile and amosite and one fragment was classified as chrysotile and crocidolite. No asbestos fibres were reported beneath these ACM fragments.
- Four ACM fragments were collected from three trenches (i.e. PRA_TRENCH, PRA_TRENCH_02 and PRA_TRENCH_03) at depths ranging from 0.1 to 0.3 mbgl. The fragments were classified as either chrysotile or a combination of chrysotile and amosite. No asbestos fibres were reported beneath these ACM fragments within the fill material.
- Three ACM fragments were collected from test pit TP15 at depths ranging from 0.4 to 1 mbgl, and one ACM fragment was collected from test pit TP18 at 0.5 mbgl. The fragments were classified as

either chrysotile or a combination of chrysotile and amosite. No asbestos fibres were reported beneath these ACM fragments within the fill material.

- Asbestos fibres were detected at the adopted residential HSL (0.001% w/w) in one soil sample collected from test pit TP14 at a depth of 0.1 mbgl.

The Part A ESA soil exceedance locations for Stage 2 were illustrated on Figure 4a of the Part A ESA (ERM, 2017a) as presented in **Appendix A** of this SAR.

Stage 3

- Three ACM fragments were collected from surface soil in close proximity to or within the void space beneath the former Building 10. The fragments were classified as a combination of chrysotile and amosite. No asbestos fibres were detected in soil samples collected from these locations.

The Part A ESA soil analytical results were presented in Table 9 to Table 13c of the Part A ESA (ERM, 2017a) as presented in **Appendix D** of this SAR.

The Part A ESA (ERM, 2017a) provided a summary and discussion of the soil results which concluded that the heavy metal (i.e. nickel and zinc) exceedances of the adopted ecological screening criteria were generally reported in the upper 0.5 m of fill material used beneath capped surfaces such as roads and car parking areas. Therefore, it was considered unlikely that ecological receptors would be exposed to this material. Additionally, as the heavy metal exceedances were reported in a fill material typically comprised of gravel road base, it was considered unlikely that this material would support vegetation under any future land use scenario.

Based on the asbestos investigations undertaken as part of the Part A ESA (ERM, 2017a), it was concluded that the asbestos detections were isolated in nature and not evident of a wide spread burial of building rubble across the Part A Unregulated Area. A small quantity of building waste containing asbestos appeared to have been used as fill material east of the natural drainage line and west of the former Building 10 (an area of approximately 0.15 ha) to a depth of approximately 1 mbgl (Stage 1 and Stage 2). The identified asbestos were considered to be associated with the use of ACM in buildings on-site e.g. a small building structure formerly located north of the former Building 10 footprint, however this could not be verified. This area is later referred to ‘Area 1’ in the Unregulated Area RAP and Part A Validation Report (ERM, 2018a and 2018b), refer to Figure 2b of ERM (2018b) as provided in **Appendix A** of this SAR. Additionally, ACM fragments were identified within the void space of the former Building 10 (Stage 3). The asbestos impacts appeared to be limited to the surface and the upper 0.1 m of the soil profile and defined to an area measuring approximately 20 m by 12 m beneath the carpark area of the former Building 10. The ACM was considered to be associated with the building materials associated with demolition of former buildings and construction of a small storage room as there was no indication of asbestos material being previously present in fill material beneath the void space. This area is later referred to ‘Area 4’ in the Part A Validation Report (ERM, 2018b), refer to Figure 2b of ERM (2018b) as provided in **Appendix A** of this SAR.

As discussed within the Part A Validation Report (ERM 2018b), investigations within the adjacent Part B Unregulated Area identified petroleum hydrocarbon contamination in soil within proximity to the Part A Unregulated Area. Therefore, delineation investigations were undertaken comprising the advancement of five boreholes on the Part A Unregulated Area. This area was referred to as ‘Area 2’ in the Part A Validation Report (ERM, 2018b) and Area 2 was illustrated on Figure 2c and Figure 6 of ERM (2018b) as provided in **Appendix A** of this SAR. Based on field observations and soil analytical results (i.e. all CoPC concentrations reported below the laboratory LOR and/or human health and ecological screening criteria), the petroleum hydrocarbon contamination did not appear to extend laterally into the Part A Unregulated Area.

The Part A Validation Report soil analytical results were presented in Table 9a to Table 9d of the Part A Validation Report (ERM 2018b) as presented in **Appendix D** of this SAR.

4.3.3 Groundwater Results

ERM conducted three rounds of groundwater monitoring events on the Part A Unregulated Area between 2015 and 2016 (ERM, 2015b, 2015c and 2017a). The groundwater analytical results were presented in Table 14 to Table 17 of the Phase 2 ESA (ERM, 2015b), Table 10 to Table 12 of the

Supplementary ESA (ERM, 2015c) and Table 14 to Table 18 of the Part A ESA (ERM, 2017a), as presented in **Appendix D** of this SAR.

The findings presented in the Part A ESA (ERM, 2017a) indicated the following:

- Exceedance of the adopted ecological freshwater GIL (0.008 mg/L) for zinc in 11 groundwater samples (MW01, MW02, MW12, MW13, MW14, MW15, MW28, MW34, MW35, MW36 and MW39), with a maximum concentration of 0.026 mg/L.
- Exceedance of the adopted ecological freshwater GIL (0.0014 mg/L) for copper in two groundwater samples (MW12 and MW39), with a maximum concentration of 0.014 mg/L.
- Exceedance of the adopted ecological freshwater GIL (0.0034 mg/L) and drinking water GIL (0.01 mg/L) for lead in one groundwater sample (MW12) located south of Building 10, with a concentration of 0.016 mg/L.
- Exceedance of the adopted drinking water GIL (0.0003 mg/L) for vinyl chloride in one groundwater sample (MW36) located southwest of Building 10, with a concentration of 0.0004 mg/L.
- It was noted that for a number of analytes (e.g. chromium, mercury, selenium, zinc, OCP/OPP and benzo(a)pyrene) the laboratory LOR was above the adopted screening criteria. As these were not considered to be CoPC for the Part A Unregulated Area, ERM stated that these non-conformances would not materially impact the outcome of the investigation.
- All existing groundwater monitoring wells located within the Part A Unregulated Area were re-sampled during the Part A ESA (ERM, 2017a) and the results were consistent with previous groundwater results i.e. those reported in 2015.

The Part A ESA groundwater exceedance locations were illustrated on Figure 5 of the Part A ESA (ERM, 2017a) as presented in **Appendix A** of this SAR, while the groundwater exceedance locations for the Phase 2 ESA and Supplementary ESA were illustrated on Figure 5 (ERM, 2015c and 2015c) in **Appendix A**.

The Part A ESA (ERM, 2017a) provided a summary and discussion of the groundwater results which concluded that the heavy metal (i.e. zinc and copper) exceedances of the adopted ecological criteria were considered to be representative of elevated background conditions due to the relatively widespread and consistent nature of the concentrations. Additionally, groundwater was considered unlikely to infiltrate the on-site natural drainage line given the water table was measured at depths 1 to 3 m greater than the creek bed. Therefore, it was concluded that a significant risk to aquatic ecological receptors was unlikely to be present on the Part A Unregulated Area.

The lead exceedance of the ecological freshwater and drinking water GILs was considered to be isolated in nature and the reported concentration was considered unlikely to represent a significant groundwater issue on the Part A Unregulated Area. Additionally, the concentration of lead was reported below the recreational GIL which was considered to be more appropriate for use at the Site.

The vinyl chloride exceedance of the drinking water GIL was reported downgradient of Building 10, and minor concentrations of related chlorinated compounds (i.e. dichloroethene (DCE) and trichloroethene (TCE)) were also reported above the laboratory LOR but below the screening criteria in downgradient locations (i.e. MW12 and MW14). Given the distribution of the chlorinated compound detections, it was considered that the source may be the maintenance workshop within Building 10. However, given that solvents were not currently stored in Building 10, the groundwater impacts were considered to be likely associated with historical activities/practices. Given the isolated nature and the reported concentration of vinyl chloride, it was considered unlikely to represent a significant groundwater issue on the Part A Unregulated Area. Additionally, it was noted that the concentration of vinyl chloride was reported below the recreational GIL which was considered to be more appropriate for use at the Site.

4.3.4 Surface Water and Sediment Results

ERM conducted surface water sampling of the natural drainage line as part of the Phase 2 ESA (ERM, 2015b). Surface water samples were collected upstream where the natural drainage line enters the Site (SW01) and downstream where the natural drainage line exits the Site (SW02), as illustrated on Figure 4 and Figure 5 of the Phase 2 ESA (ERM, 2015b) and presented in **Appendix A** of this SAR . A sediment sample was also collected at the downstream location.

The surface water and sediment analytical results were presented in Table 18 to Table 21 of the Phase 2 ESA (ERM, 2015b) as presented in **Appendix D** of this SAR. The results indicated that no significant contamination was entering the natural drainage line and CoPC concentrations were below the laboratory LOR and/or ecological freshwater GILs.

After an independent review of the information presented in the ERM reports (2015b, 2015c, 2017a and 2018b), the Auditor was satisfied that ERM provided a suitable summary of the contamination investigation results that was generally consistent with NSW EPA reporting requirements.

4.4 Summary of Findings and Conceptual Site Model

The Part A Validation Report (ERM, 2018b) provided a summary of the investigation findings and provided a conceptual site model (CSM) which assessed the sources, pathways and receptors for the identified contamination and hazardous materials.

All potential sources of contamination, as identified in **Section 3.4.3**, were discussed and those considered to present a complete source-pathway-receptor (SPR) linkage were further assessed as part of the CSM.

The soil investigations (refer to **Section 4.3.2**) identified that on the basis of the soil results, the Part A Unregulated Area was considered to be suitable for ongoing commercial/industrial or a future residential land use scenarios with the exception of the following area:

- Area 1: A total of 14 ACM fragments and one friable asbestos fibre were identified within the upper 1 m of the soil profile and defined to an area that measured approximately 50 m x 30 m (0.15 ha) as detailed in ERM (2017a). The ground surface was noted to be covered by grass and mulch and a distinct mound was visible in the impacted area which sloped from the north to the south. Area 1 impacts were illustrated on Figure 3a of ERM (2018b) as provided in **Appendix A** of this SAR.

Additionally, the following areas were discussed as part of the CSM:

- Area 2: As discussed in **Section 4.3.2**, petroleum hydrocarbon impacts in soil were not reported in Area 2 and therefore no further remediation works were considered to be warranted.
- Area 3: Two buried conduits containing asbestos were identified during the adjacent Part B Unregulated Area remediation activities. These conduits were found to extend onto the Part A Unregulated Area. A sample from the conduits was collected on 5 September 2017 confirming the presence of asbestos. Therefore, it was considered warranted to remove the conduits and collected validation samples of the remaining soils as part of the remediation works on the Part A Unregulated Area.
- Area 4: Three ACM fragments were reported in the void space beneath the former Building 10. Therefore, it was considered warranted to remediate and validate the accessible areas of the void space in conjunction with the Area 1 remediation works. Area 4 impacts were illustrated on Figure 3b of ERM (2018b) as provided in **Appendix A** of this SAR.

The groundwater (refer to **Section 4.3.3**), surface water and sediment (refer to **Section 4.3.4**) investigations identified that groundwater within the Part A Unregulated Area was considered to be suitable for ongoing commercial/industrial or a future residential land use scenarios. The groundwater impacts reported on the adjacent Regulated Area are currently being managed under a Voluntary Management Plan (VMP). However, it was noted there is a potential that groundwater impacts from the Regulated Area may migrate onto the Part A Unregulated Area in the future under certain circumstances e.g. if redevelopment works required dewatering of groundwater to facilitate construction activities (ERM, 2018b).

The outcomes of the CSM identified the following complete exposure pathways to contamination:

- Current commercial/industrial land use scenario:
  - Inhalation of asbestos fibres that have become airborne from contaminated soils or degraded ACM by on-site commercial workers or intrusive maintenance workers.
- Future residential land use scenario:
  - Inhalation of asbestos fibres that have become airborne from contaminated soils or degraded ACM by on-site residents.

After an independent review of the contamination investigations undertaken for the Part A Unregulated Area (both desktop and intrusive), together with several site visits by the Auditor/Auditor Assistants, the Auditor was satisfied that ERM provided adequate assessment of the investigation findings and the CSM for the Part A Unregulated Area.

5.0 Remediation Action Plan

5.1 Recommendations for Remediation

Based on the findings of the investigations across the Part A Unregulated Area, a Remedial Options Assessment (ROA) was prepared which was presented in Annex E of the Unregulated Area RAP (ERM, 2018a). The ROA was developed to identify and assess potential remediation and management options (including 'no action') for the identified asbestos contamination on the Part A Unregulated Area. It should be noted that the Unregulated Area RAP (ERM, 2018a) only applies to 'Area 1' as the other areas requiring remediation were identified following the preparation of this document.

Based on the outcomes of the ROA, the selected remedial option for Area 1 was 'excavation and removal off-site'. This option was considered the most feasible given the accessibility and potential future land use scenarios. It was understood that a substantial volume of soil waste would be generated requiring off-site disposal at an appropriately licenced facility.

As discussed in **Section 4.3.2**, Stage 3 of the Part A ESA (ERM, 2017a) identified ACM within the void space beneath the former Building 10. An Asbestos Investigation letter (ERM, 2017b) was prepared to summarise the methodology to complete additional investigation and undertake removal of any identified ACM within the void space i.e. within remediation 'Area 4'.

After an independent review of the contamination investigations undertaken for Area 1 and Area 4 of the Part A Unregulated Area and the Unregulated Area RAP (ERM, 2018a) and Asbestos Investigation letter (ERM, 2017b), the Auditor was satisfied that ERM provided adequate assessment of the remediation requirements for Part A Unregulated Area, specifically Area 1 and Area 4.

5.2 Risk Mitigation Works

Asbestos management was discussed within the Interim Environmental Management Plan (IEMP) presented in the Unregulated Area RAP (ERM, 2018a). Under the Work Health and Safety Regulation (2011), asbestos is to be handled in accordance with Part 8.7 including the requirements of a licenced demolition contractor and the development of an Asbestos Removal Control Plan prior to undertaking demolition. This also includes conducting any demolition works in accordance with Safe Work Australia Code of Practice and WorkCover NSW guidance including mandatory notification prior to works commencing and implementation of controls such as wetting down of materials, use of Personal Protective Equipment (PPE), air monitoring and the establishment of exclusion zones.

As discussed in the Unregulated Area RAP (ERM, 2018a) and Asbestos Investigation letter (ERM, 2017b), an airborne fibre monitoring program was required during bulk earthworks associated with the excavation and vehicle loading of asbestos impacted soil/material. The objective of the monitoring program was to verify that on-site controls were effective in preventing impacts to on-site workers and off-site residents. Due to the reported asbestos fines reported in one test pit (TP14), the monitoring program was designed, maintained and implemented by a Safe Work NSW licenced asbestos assessor.

5.3 Remediation Goals

The remediation goals set out in the Unregulated RAP (ERM, 2018a) aimed to address the risks associated with the identified impacts and were as follows:

- asbestos impacted soils to the extent that concentrations are below the human health assessment criteria for a sensitive land use (residential), and
- all visible ACM present on the soil surface and within the top 10 cm of the soil profile is removed.

5.4 Overview of Remediation Works

The Unregulated Area RAP (ERM, 2018a) outlined the following key remediation tasks for Area 1 of the Part A Unregulated Area:

- Preparation of a waste classification letter to support the off-site disposal of all asbestos impacted soil/material to the selected licenced facility.
- Obtain development consent from Council for the removal of six trees located within the immediate vicinity if the asbestos impacted area in accordance with the Warringah LEP (2011). ERM submitted the development application (DA2017/0236) and the approval from Council was provided in Annex K of the Unregulated Area RAP (ERM, 2018a).
- The remediation works in Area 1 were defined as Category 2 works (being all remediation works not defined as Category 1) as a development permissible without consent under the State Environment Planning Policy 55 – Remediation of Land (SEPP 55).
- Clearance of six trees and trimming of vegetation within Area 1 prior to excavation works. Trees and vegetation were segregated and managed for reuse on the Site (e.g. mulching purposes).
- Excavation and direct loading of asbestos impacted soil/material and transport to a licenced Type 2 Special Waste facility. The inferred vertical extent was estimated to be 1.3 mbgl on the southern side and up to 1.8 mbgl on the northern side of the proposed excavation boundary.
- The precise lateral and vertical extent of the excavation was to be informed by field observations noting that in accordance with the WA DoH (2009) and ASC NEPM (2013) guidance that the vertical extent would be a depth corresponding to 0.3 m below the deepest observed impact or the natural soil interface. Additionally an extra 1 m was to be removed in all directions beyond the measured lateral boundaries.
- Completion of a visual inspection by a suitably qualified and/or competent asbestos assessor.
- Validation of the excavation via the collection of one soil sample from each wall per five metre length of soil strata and one soil sample per 25 m^2 from the base of the excavation. Submission of samples to a NATA accredited laboratory for asbestos fines quantification analysis. If the excavation was to extend to bedrock, validation from the base was not considered to be required instead the base would be inspected by a Safe Work NSW Licenced Asbestos Assessor with an asbestos clearance certificate issued as part of the validation process.
- Collection of any observed bonded ACM and submission to a NATA accredited laboratory for quantitation analysis, noting that gravimetric quantitation could be undertaken in the field or laboratory.
- Importation of VENM to reinstate the excavated area and replacement of trees/vegetation as required and application of topsoil/turf/mulch.

Further detail on the remediation and validation works undertaken in Area 1 of the Part A Unregulated Area is provided in **Section 7.0** of this SAR. The proposed Area 1 excavation extent was illustrated on Figure 4a of the Part A Validation Report (ERM, 2018b) and is provided in **Appendix A** of this SAR.

The Asbestos Investigation letter (ERM, 2017b) outlined the following key investigation and remediation tasks for Area 4 of the Part A Unregulated Area:

- Removal of the outside building panelling to allow safe access to the void space.
- Removal and appropriate disposal of the surplus building materials from the void space in order to allow for a clear inspection of the surface soil.
- Visual inspection of the soil surface and manual collection of visible potential ACM fragments.
- A raking exercise comprising the raking of the soil surface to a depth of approximately 0.1 mbgl, utilising a rake where the teeth were <7 mm spaced apart and >10 cm in length. Completion of at least two passes with a 90° directional change between each pass utilising a grid pattern of approximately 2 m x 2 m (noting this was increased to 4 m x 4 m during remediation works).

- Further collection of any observed potential ACM fragments and surface soil samples. Submission of potential ACM fragments samples to a NATA accredited laboratory for presence/absence analysis. If asbestos was reported to be present, analysis of the associated surface soil sample for asbestos quantification purposes.
- Completion of a visual inspection by a suitably qualified and/or competent asbestos assessor.

The Auditor considered that the Unregulated Area RAP (ERM, 2018a) and Asbestos Investigation letter (ERM, 2017b) provided suitable summaries of the proposed remedial approach for Area 1 and Area 4, respectively, and was suitable for use to inform the proposed remediation works on the Part A Unregulated Area.

6.0 Data Quality Objectives

The Part A Validation Report (ERM, 2018b) presented the data quality objectives (DQOs) process that was followed for the remediation and validation works. The DQOs were presented in the seven-step format outlined in the ASC NEPM (2013) and as per the US EPA guidance as follows:

1. Define the Problem
2. Identify the Decision
3. Identify Inputs to the Decision
4. Define the Study Boundaries
5. Specify an Action Level
6. Specify Tolerable Limits on Decision Errors
7. Optimise the Design for Collecting Data

The Part A Validation Report (ERM, 2018b) provided a detailed assessment of the DQOs, the key components of which are presented in **Table 5**.

Table 5 Data Quality Objectives

Item	Description / Inputs
Step 1 – Define the Problem	
Define the problem	Asbestos has been identified within soils within the remediation areas i.e. Area 1, Area 3 and Area 4, which presents a potential risk of exposure to asbestos fibres under a potential future residential land use scenario. Additionally, was remediation of Area 2 required given the petroleum hydrocarbon impacts reported on the adjacent Part B Unregulated Area? Previous investigations and the CSM were summarised in Section 2 and Section 3 of the Part A Validation Report, respectively.
Step 2 - Identify the Decision	
Project objectives	- Remove asbestos impacted soils to the extent that concentrations are below the human health screening criteria for a sensitive land use (i.e. residential). - All visible ACM present within or on the soil surface is removed.
Primary study questions	- Following completion of the remediation works, have the remediation criteria been met and can the Part A Unregulated Area be considered suitable for a potential future residential land use scenario.
Step 3 - Identify the Inputs	
Information needed	- Existing relevant environmental data. - Direct measurements and visual observations of environmental variables. - Laboratory analysis of soil samples for applicable CoPC. - Field and laboratory quality assurance/quality control (QA/QC) data. - The remediation criteria as outlined in Section 4 of the Part A Validation Report. - Assessment of whether CoPC concentrations are greater than, equal to or less than the adopted remediation criteria.
Sampling and analysis methods	Field procedures and data collection were consistent with the ASC NEPM (2013) and the Unregulated Area RAP (ERM, 2018a).
Step 4 - Define the Boundaries of the Study	
Study area	The lateral boundary of the study was within the Part A Unregulated Area, specifically Areas 1 to 4. These areas are illustrated on Figures 2b and 2c of the Part A Validation Report and are presented in **Appendix A** of this SAR. The vertical boundary of the study was the vertical extent of the physical works undertaken in each of the remediation areas.

Item	Description / Inputs
	The surrounding land uses were discussed in Section 2 of the Part A Validation Report.
Temporal limits	The temporal limits of the study included the time of the dates of fieldworks, refer to Table 3 (Annex B) of the Part A Validation Report.
Step 5 – Develop the Decision Rule	
Theoretical decision rule	- The primary basis for a decision on the suitability of the land was visual evidence and field measurements made during the remediation works and an assessment of the analytical data from validation samples in the context of the adopted criteria. - Sampling frequencies were provided in Section 7.2 of the Part A Validation Report.
Specifying the action levels	- The remediation criteria as outlined in Section 4 of the Part A Validation Report. If individual validation concentrations exceeded the remediation criteria, further excavation and validation works were undertaken until all results were below the remediation criteria. - The Waste Classification Guidelines (NSW EPA, 2014) were used to classify waste for off-site disposal purposes.
Step 6 – Specify Tolerable Limits on Decision Errors	
Data quality assessment	- QA/QC samples were not required for samples collected from Area1, Area 3 and Area 4 given the only CoPC is asbestos. However, QA/QC samples were required for samples collected from Area 2. - Annex N of the Part A Validation Report details the QA/QC procedures implemented throughout the works.
Step 7 – Optimise the Design for Obtaining Data	
Unregulated Area RAP and resource effective design	- The Unregulated Area RAP (ERM, 2018a) presented what was considered to be the most resource-effect design to achieve the DQOs. - Where asbestos had been previously identified, the sampling grid density was increased to support a weight of evidence approach and provide further confidence in asbestos validation works. - The validation strategy was revised based on field observations and analytical results as required. - An unexpected fines protocol was implemented.
Minimising decisions errors	- Completed a robust QA/QC assessment of the data. - Assessed the sampling and analytical density for the purposes of identifying the Part A Unregulated Area as suitable for the potential future residential land use scenario. - Ensured the remediation criteria were appropriate for the end land use.

The Auditor considers that the DQOs provided in the Part A Validation Report (ERM, 2018b) were appropriate for the purpose of the remediation and validation works and were generally in accordance with the requirements of the ASC NEPM (2013).

7.0 Remediation and Validation Works

7.1 Remediation Works

7.1.1 Roles and Responsibilities

The Unregulated Area RAP and Part A Validation Report (ERM, 2018a and 2018b) provided the role and responsibilities of the key stakeholders involved with the key components of the remediation works of which are presented in **Table 6**.

Table 6 Remediation Roles and Responsibilities

Organisation	Role	Key Responsibility
Roche	Principal	Overall implementation of the Unregulated Area RAP (ERM, 2018a) and nomination of a representative (Principal Contractor) for the actual implementation of the Unregulated Area RAP on behalf of Roche.
ERM	Principal Contractor	Oversee the implementation of the Unregulated Area RAP and the Health, Safety and Environmental Management Plan (HSEMP).
In-Site Remediation Services (InSite)	Remediation Contractor	Implementation and execution all remediation works and activities in accordance with the Unregulated Area RAP and under the direction of the Principal Contractor.

7.1.2 Summary of Remediation Works

The Part A Validation Report (ERM, 2018b) summarised the remediation works undertaken on the Part A Unregulated Area which was within three areas referred to as Area 1, Area 3 and Area 4. It is noted that remediation works were not required in Area 2 as the petroleum hydrocarbon soil impacts reported within the Part B Unregulated Area did not extend onto the Part A Unregulated Area (refer to **Section 4.3.2**). While the Unregulated Area RAP (2018a) was prepared for Area 1 only, it was understood from the Part A Validation Report (ERM, 2018b) that the works completed in Area 3 and Area 4 were completed in general accordance with the Unregulated Area RAP (2018a), WA DoH (2009) and ASC NEPM (2013). The remediation works completed in each area are summarised in **Table 7**.

Table 7 Overview of Areas of S261 Nominated for Remedial Works

Area	Description	Completed Works
Area 1	**ACM and friable asbestos at ground surface and at depth (up to 1 mbgl)** Removal of asbestos impacted material/soil at ground surface and at depth within Area 1 for off-site disposal and clearance by a Safe Work NSW Licenced Asbestos Assessor. Refer to Figure 4b of the Part A Validation Report as presented in **Appendix A** of this SAR.	• The field works were completed from 23 July to 11 August 2017. • Prepared a HSEMP and received the necessary licences, permits and approvals required for the works (refer to Annex F of the Part A Validation Report for all applicable records). • Six trees were removed from the excavation area prior to the commencement of remediation activities. The vegetation was understood to be segregated for soil and managed for reuse on Part A of the Site (by mulching) with the exception of the tree stumps and roots (6.72 tonnes) which were separated and disposed of as '*Asbestos Demolition Waste (Special Waste)*' in accordance with the Waste Classification Guidelines (NSW EPA, 2014) at the Veolia Horsley Park Waste Management Facility (Veolia Facility). • Excavation of asbestos impacted soils in a south to north direction with temporary stockpiling occurring within the eastern portion of the excavation footprint prior to direct loading into truck and trailers for off-site disposal at the Veolia Facility. A total of 887.40 tonnes of asbestos impacted soil was excavated from Area 1. • Field observations were recorded on a regular basis by ERM to inform the remediation extent. During the works, the asbestos impacts were observed to extend marginally beyond the proposed excavation extent (as defined in the Unregulated Area RAP) on the northern, southern and eastern boundaries as shown on Figure 4b of the Part A Validation Report, presented in Appendix A of this SAR. The lateral remediation boundaries extended 1 m beyond the observed evidence of impact. The vertical extent of the excavation at the deepest depth was 2.1 mbgl, which was stated to be 0.3 m vertically beyond the deepest observed evidence of impact (1.8 mbgl) or to the natural soil surface. On the northern portion of the excavation the total depth ranged from 1.5 to 2.1 mbgl, while on the southern portion the total depth ranged from 1.2 to 2.0 mbgl. • Large quantities on concrete (76.64 tonnes) were observed in the central portion of the excavation. The concrete was segregated, temporarily stockpiled on the hardstand car parking area above the former Building 10 and then transported to the Veolia Facility as '*Asbestos Demolition Waste (Special Waste)*' in accordance with the Waste Classification Guidelines (NSW EPA, 2014). • Following the removal of asbestos impacted soils, the excavation footprint was inspected by a Licenced Asbestos Assessor (Licence No. LAA 001215) who determined the area to be free of

Area	Description	Completed Works
		visible asbestos and therefore suitable for backfilling. A copy of the asbestos clearance certificate was provided in Annex G of the Part A Validation Report (ERM, 2018b). • Validation samples were collected from the excavation footprint as discussed in **Section 7.2.4**. • Survey of the excavation footprint by a suitability qualified surveyor. The survey report was provided as Annex H of the Part A Validation Report (ERM, 2018b). • Backfilling of excavation with imported certified VENM, refer to **Section 7.2.5**.
Area 3	**Two asbestos conduits** Removal of asbestos conduits for off-site disposal and clearance by a Safe Work NSW Licenced Asbestos Assessor. Refer to Figure 7 of the Part A Validation Report as presented in **Appendix A** of this SAR.	• The field works were completed from 30 October to 9 November 2017. • Above the conduits, 9.98 tonnes of bitumen/asphalt material was removed from Area 3 and disposed off-site at the Fairfield City Council Sustainable Resource Centre. • Excavation of the two conduits (5.34 tonnes) with a total excavation area of approximately 8.5 m by 2.4 m. The piping was loaded directly into truck and trailers for off-site disposal at the Veolia Facility as '*Asbestos Demolition Waste (Special Waste)*' in accordance with the Waste Classification Guidelines (NSW EPA, 2014). • Validation samples were collected from the excavation footprint as discussed in **Section 7.2.4**. • Based on the validation sample results (i.e. asbestos fines and fibrous asbestos reported in VAL_A03_301017), further excavation works were required. The excavated asbestos impacted soil (5.36 tonnes) was loaded directly into truck and trailers for off-site disposal at the Veolia Facility as '*General Solid Waste and Asbestos Demolition Waste (Special Waste)*' in accordance with the Waste Classification Guidelines (NSW EPA, 2014). • Following the removal of asbestos impacted soils, the excavation footprint was inspected by a Licenced Asbestos Assessor who determined the area to be free of visible asbestos and therefore suitable for backfilling. A copy of the asbestos clearance certificate was provided in Annex G of the Part A Validation Report (ERM, 2018b). • Backfilling of excavation with imported certified VENM, refer to **Section 7.2.5**.

Area	Description	Completed Works
Area 4	**ACM within the void space of the former Building 10** Removal of ACM at ground surface surrounding and in shallow soil off-site disposal and clearance by a Safe Work NSW Licenced Asbestos Assessor. Refer to Figure 8 of the Part A Validation Report as presented in **Appendix A** of this SAR.	• The field works were completed from 20 and 22 November 2017 (Stage 1) and 1 December 2017 (Stage 2). • Stage 1: InSite, under the supervision of ERM, completed a visual inspection of the soil surface and manual collection of visible potential ACM fragments. The potential ACM was placed in doubled plastic bags and sealed appropriately for off-site disposal at the SUEZ Lucas Heights Resource Recovery Facility (SUEZ Facility). A total of 0.44 tonnes of ACM was collected from the void space area. • Stage 1: InSite, under the supervision of ERM, completed a raking exercise comprising the raking of the soil surface to a depth of approximately 0.1 mbgl and making at least two passes with a 90° directional change between each pass utilising a grid pattern of approximately 4 m x 4 m with a total of 20 grids assessed. • Stage 1: Following completion of the raking exercise, validation soil surface samples were collected as discussed in **Section 7.2.4**. • Stage 2: Based on the validation sample results (i.e. asbestos fines and fibrous asbestos reported in BLDG10_SS_01), further validation works were required. This comprising a targeted raking exercise where at least two passes of raking were made with a 90° directional change between each pass in the area. • Stage 2: Following completion of the raking exercise, the surface soil was collected and passed through a <7 mm sieve. Minor fragments of ACM were collected as a result of the process and bagged for analytical analysis. • Stage 2: Following completion of the sieving process, a representative soil sample was collected in a 1kg bag for validation analysis purposes as discussed in **Section 7.2.4**. • Following the removal of asbestos impacted soils, the excavation footprint was inspected by a Licenced Asbestos Assessor who determined the area to be free of visible asbestos and therefore suitable for backfilling. A copy of the asbestos clearance certificate was provided in Annex G of the Part A Validation Report (ERM, 2018b).

The Part A Validation Report (ERM, 2018b) indicated that appropriate controls were put in place during the asbestos works, including air monitoring, establishment of exclusion zones (with barrier fencing and hay bales), sediment fencing and decontamination areas, notification to SafeWork NSW and use of licenced removalists and assessor for final clearance. Air monitoring results were included within the Asbestos Clearance Certificates issued by the NSW Licenced Asbestos Assessor as presented in Annex G of the Part A Validation Report (ERM, 2018b).

Annex D of the Part A Validation Report (ERM, 2018b) presented several photographs of the remediation works, including ACM samples, soil samples, excavation activities for Area 1 and Area 3, within the void space of former Building 10 and the VENM imported to Site.

The Auditor considers that the remediation works undertaken were generally in accordance with the Unregulated Area RAP (ERM, 2018a) and the requirements of NSW EPA endorsed guidelines.

The Auditor notes that in areas where asbestos contamination presented a risk during removal activities, airborne fibre monitoring was conducted in order to validate the effectiveness of asbestos controls established. With reference to the Asbestos Clearance Certification in Annex G of the Part A Validation Report (ERM, 2018b), air monitoring results confirmed that the airborne asbestos fibre concentrations were below the limit of detection for the method used i.e. <0.01 fibres per millilitre of air sampled.

The Auditor acknowledges that ERM and the remediation contractors (InSite) have undertaken remediation of the void space beneath the former Building 10 to the extent practicable.

Following a review of the waste dockets for the Part A Unregulated Area, provided in Annex J of the Part A Validation Report (ERM, 2018b), the Auditor is satisfied that the waste was handled appropriately during the remediation works.

7.2 Validation Works

7.2.1 Validation Strategy

The Part A Validation Report (ERM, 2018b) described the validation strategies for each of the remediation areas i.e. Area 1, Area 3 and Area 4. A summary of the validation strategies is provided below.

Area 1

- Validation of soils contaminated (or potentially contaminated) with asbestos. This was achieved, in general accordance with the Unregulated Area RAP (ERM, 2018a), by:
    - Validation soil sampling from each wall of the excavation at a frequency of one sample per five linear metres.
    - Validation soil sampling from the base of the excavation at a minimum frequency of one sample per 25 m^2.
    - An inspection of cleared areas by a Safe Work NSW Licenced Asbestos Assessor in order to verity that removal of visible asbestos has been completed effectively.

Area 3

- Validation of soils contaminated (or potentially contaminated) with asbestos. This was achieved by:
    - Validation soil sampling from each wall and the base of the excavation.
    - An inspection of cleared areas by a Safe Work NSW Licenced Asbestos Assessor in order to verity that removal of visible asbestos has been completed effectively.

Area 4

- Validation of soils contaminated (or potentially contaminated) with asbestos. This was achieved by:
  - Collection of representative samples of potential ACM fragments from within the grid from the ground surface or within the top 10 cm.
  - Validation soil sampling from representative locations within the grid.
  - An inspection of cleared areas by a Safe Work NSW Licenced Asbestos Assessor in order to verity that removal of visible asbestos has been completed effectively.

7.2.2 Validation Sampling and Analytical Suites

The Part A Validation Report (ERM, 2018b) indicated that the validation sampling in Area 1 was undertaken by ERM in accordance with the Unregulated Area RAP (ERM, 2018a). Although the validation works pertaining to Area 3 and Area 4 were not specifically referred to the Unregulated Area RAP, it was noted that the general practices outlined were applied to these areas.

Table 8 provided a summary of the samples collected and the analytical suite for the analysis of the samples as reported in the Part A Validation Report (ERM, 2018b). The validation sample locations were illustrated on Figure 5 (Area 1), Figure 7 (Area 3) and Figure 8 (Area 4) of the Part A Validation Report (ERM, 2018b) and are provided in **Appendix A** of this SAR.

Table 8 Validation Sampling and Analytical Suites

Remediation Area	Approximate Area	No. of Samples	Analytical Suite
Area 1	Refer to Annex H of the Part A Validation Report (ERM, 2018b) for survey data.	76 soil samples (48 walls, 28 base)	Asbestos
Area 3	20.4 m^2	13 soil samples (nine walls, four base)	Asbestos
Area 4	158 m^2	4 soil samples 3 samples of potential ACM fragments	Asbestos

The Part A Validation Report (ERM, 2018b) stated that the analysis of samples was undertaken by Australian Laboratory Australian Laboratory Services (ALS). The Part A Validation Report (ERM, 2018b) stated that the laboratory was accredited by the National Association of Testing Authorities (NATA) for the analytical techniques required.

7.2.3 Remediation Criteria

The Unregulated Area RAP (ERM, 2018a) and Validation Report (ERM, 2018b) provided a summary of the remediation criteria for asbestos in soil which were stated to be based on the proposed intended residential land use. The Part A Validation Report stated that the remediation criteria were based on the criteria defined in the WA DoH (2009) and ASC NEPM (2013) as follows:

- Non-friable (bonded) asbestos: <0.01% asbestos by weight of soil (w/w/), with no visible ACM on the ground surface (to a depth of 0.1 mbgl).
- Friable asbestos (FA) and asbestos fines (AF): <0.001% asbestos by weight of soil (w/w) including no visible FA or AF.
- No free asbestos fibres detected in laboratory analysis.

7.2.4 Validation Results

The Part A Validation Report (ERM, 2018b) discussed the validation results for each of the remediation areas i.e. Area 1, Area 3 and Area 4. A summary of the validation results is provided below.

Area 1

- All validation soil samples collected following remediation works were reported below the adopted remediation criteria (refer to **Section 7.2.3**).
- The Safe Work NSW Licenced Asbestos Assessor was satisfied that Area 1 was free of visible asbestos and following receipt of the validation soil sample results, issued an asbestos Clearance Certificate (provided in Annex G of the Part A Validation Report).

Area 3

- All validation soil samples collected following remediation works, excluding sample VAL_A03_301017, were reported below the adopted remediation criteria (refer to **Section 7.2.3**).
- The percentage of asbestos in validation soil sample VAL_A03_301017 (0.003% w/w) exceeded the adopted remediation criteria for AF (<0.001% w/w).
- Additional excavation works were completed that targeted the impacted area (as discussed in **Section 7.1.2**) with an additional four validation soil samples collected from the base and walls of the excavation.
- All validation soil samples collected following additional remediation works were reported below the adopted remediation criteria.
- The Safe Work NSW Licenced Asbestos Assessor was satisfied that Area 3 was free of visible asbestos and following receipt of the validation soil sample results, issued an asbestos Clearance Certificate (provided in Annex G of the Part A Validation Report).

Area 4

- All validation soil samples collected following remediation works, excluding sample BLDG10_SS_01, were reported below the adopted remediation criteria (refer to **Section 7.2.3**).
- The percentage of asbestos in validation soil sample BLDG10_SS_01 (0.003% w/w) exceeded the adopted remediation criteria for AF (<0.001% w/w).
- Additional remediation works (i.e. raking and sieving exercise as discussed in **Section 7.1.2**) were completed that targeted the impacted area and a 1 kg representative soil sample (BLDG10_SS_01A) of the surface soils from this area was collected for analytical analysis of asbestos.
- The validation soil sample collected following additional remediation works were reported below the adopted remediation criteria.
- The Safe Work NSW Licenced Asbestos Assessor was satisfied that Area 4 was free of visible asbestos and following receipt of the validation soil sample results, issued an asbestos Clearance Certificate (provided in Annex G of the Part A Validation Report).

7.2.5 VENM Validation

Certified VENM (shale) was imported to the Part A Unregulated Area for the backfilling of Area 1 (total of 789.85 tonnes) and Area 3 (total of an estimated 10 tonnes).

As discussed in the Part A Validation Report (ERM, 2018b), ERM undertook an inspection of the source site (Epic Mining's Badgerys Creek Quarry) on 8 August 2017. The VENM was inspected and two soil samples were collected for laboratory analysis. An additional seven soil samples of the VENM were collected for laboratory analysis upon arrival at the Site. Therefore, with nine soil samples collected in total, a sampling frequency of 95 m^3 was achieved. All soil samples were submitted for laboratory analysis in general accordance with the Waste Classification Guidelines (NSW EPA, 2014) and based on the analytical results and field observations, the VENM was considered to be suitable for ongoing commercial/industrial use or future residential use. The VENM analytical results were presented in Table 10a to Table 10c of the Part A Validation Report (ERM, 2018b), as provided in **Appendix D** of this SAR.

Photographs of the VENM at the source site and throughout backfilling activities were provided with the VENM certificate in Annex K of the Part A Validation Report (ERM, 2018b).

The Auditor considered that the Part A Validation Report (ERM, 2018b) provided a suitable summary of remediation and validation works, validation criteria and validation results.

7.3 QA/QC Summary

The Part A Validation Report (ERM, 2018b) noted that the QA/QC program (or data assessment) for the validation works was completed in general accordance with the ASC NEPM (2013), with particular reference to the PARCC parameters (i.e. precision, accuracy, representativeness, completeness and comparability) in evaluating the data quality.

The information presented in **Table 9** and **Table 10** below provides a summary of the QA/QC program, as reported in the Part A Validation Report (ERM, 2018b).

Table 9 Field QA/QC

Protocol	Description
Sampling Team	The sampling team was suitably qualified and experienced to conduct the required works.
Chain of Custody Forms	All samples were required to be logged and transferred under appropriately completed Chain of Custody (CoC) documentation. CoC documentation was provided in Annex O of the Part A Validation Report (ERM, 2018b).
Preservation	The QA/QC program required that all samples be received at the laboratory in appropriately preserved containers and samples placed on ice or ice bricks in eskies. The recorded temperatures within the eskies were generally within the acceptable limit of 4-6°C for all samples batches. Laboratory sample receipts were presented with CoCs in Annex O of the Part A Validation Report (ERM, 2018b).
Decontamination	Reusable equipment was cleaned with a stiff brush to remove all loose soil, , rinsing in tap water and decontaminant solution (Decon 90) and then rinsing in deionised water. The equipment was then left to air dry.
Rinsate Blanks	Rinsate blanks were taken during Area 2 soil sampling at a rate of one per day where reusable equipment was used. The rinsate samples were collected off the shovel or mattock. The Part A Validation Report indicated that the potential for cross contamination between samples was considered unlikely given the sampling methodology followed which included use of fresh nitrile gloves for each sample.
Trip Spikes.	Trip spikes were stored and transported with the soil samples for all primary batches of samples from Area 2. All trip spike recoveries were reported within the acceptable limits.
Field & Trip Blanks	Trip blanks were stored and transported with the soil samples for all primary batches of samples. Volatile TRH and BTEX were not detected in any of the trip blank samples submitted.
Duplicate (intra laboratory) and Split (inter laboratory) Samples	ERM did not collect duplicate samples for asbestos analysis from Area 1, Area 3 and Area 4. ERM analysed nine primary soil samples from Area 2 (five located within the Part A Unregulated Area), an intra-laboratory duplicate (a frequency of 1 in 10 samples) and an inter-laboratory duplicate (a frequency of 1 in 20 samples). This frequency meets the requirement of 1 in 10 / 1 in 20 for the Area 2 delineation investigation. The relative percentage differences (RPDs) of soil duplicate sample pairs were within the acceptable limit of 30% in accordance with the ASC NEPM (2013).

Table 10 Laboratory QA/QC

Protocol	Description
Holding Times	The QA/QC program required that all samples be kept in secure, chilled eskies and transported to the primary laboratory directly or via courier under CoC procedures. Sample transfer and receipt details were provided with the laboratory analytical results in Annex O of the Part A Validation Report. The Auditor notes that all samples were received and analysed within specified holding times.
Laboratory Duplicates	Laboratory duplicates were completed at a minimum frequency of 1 in 10 samples or at least 1 duplicate per sampling batch. The RPD criteria were based on 30%; however some laboratories have other acceptance limits. The following acceptance criteria applied: • ALS considers: - if the results are within 10 times the LOR: no limit - if the results are between 10 and 20 times the LOR: 0 and 50% - if results are greater than 20 times the LOR: 0 and 20%. • Eurofins considers: - if the results are <10 times the LOR: no limit - if the results are between 10 and 20 times the LOR: 0 and 50% - if results are greater than 20 times the LOR: 0 and 30%. The Auditor notes that the laboratory duplicate RPDs were within the acceptable ranges.
Laboratory Control Standard	Laboratory Control Samples were completed typically at a minimum frequency of 1 in 20 samples or 1 per sampling batch. ALS has different recovery ranges for each analyte, while Eurofins has an acceptance criterion of 70 - 130%. All laboratory control sample recoveries were reported within the required ranges over the validation program.
Matrix Spikes	Matrix spikes were completed 1 in 20 samples or 1 per sampling batch. ALS has different recovery ranges for each analyte, while Eurofins has an acceptance criterion of 70 - 130%. All matrix spike recoveries were reported within the required ranges over the validation program.
Laboratory Blanks	Laboratory blanks were completed 1 in every 20 samples or 1 per sampling batch. All analytes were reported below the laboratory LORs.

7.3.1 QA/QC Conclusions

The Part A Validation Report (ERM, 2018b) stated that the ERM validation dataset is considered suitable for achieving the remedial objectives of the Site.

The Auditor considers that the QA/QC results were generally reported in accordance with the requirements of NSW EPA guidance. The Auditor has undertaken an independent review of the laboratory data provided by ERM and considers that the results are of an appropriate quality for the purposes of contamination investigation.

8.0 Site Suitability

It was stated in the Part A Validation Report (ERM, 2018b) that '*based on the results from the previous investigations and the validation results, the site is considered suitable for ongoing commercial/industrial use and for redevelopment for residential use'.*

No complete SPR linkages were identified on the Part A Unregulated Area and therefore it was considered that risk to potential human health and ecological receptors under both a commercial/industrial or residential land use scenario was unlikely.

The groundwater impacts reported on the adjacent Regulated Area are currently managed through a VMP. In the event that the Part A Unregulated Area is redeveloped, it is considered that a potentially complete pathway may exist where dewatering of groundwater is required to facilitate construction activities e.g. excavation of a basement carpark.

However, as noted within the Part A Validation Report (ERM, 2018b), the contract of sale between Roche and EG Developments (i.e. new owner of the Part A Unregulated Area) includes a restriction on the potential future development activities to 'slab on grade' construction only therefore limiting the need for excavation below the water table and dewatering activities. The definition as stated within the contract of sale was as follows:

"Part A Site Audit Statement means a site audit statement or statements prepared by the Accredited Site Auditor in accordance with section 53B of the CLM Act that certifies that Part A of the property is suitable for Residential Use with slab on grade style construction either with or without a qualification that Part A of the property is suitable subject to compliance with an environmental management plan."

The Auditor considers that the site suitability summary provided in the Part A Validation Report (ERM, 2018b) was in general accordance with the requirements of NSW EPA guidance. The condition of the Part A Unregulated Area is now considered suitable for the proposed residential land use (slab on grade with no basements as per Contractual conditions between Roche and the Purchaser). The Auditor notes this comment relates to minimising potential dewatering activities on Part A associated with redevelopment, given the ongoing nature of in-situ groundwater remediation works on adjacent portions of the overall Roche Site.

Should basement car parking and/or other excavations potentially requiring dewatering of Part A be considered then reconsideration of the suitability of the Site may be required.

9.0 Conclusions and Recommendations of the Part A Validation Report

9.1 Consultant Conclusions

Based on the validation sample laboratory analysis (i.e. analytical results below the ASC NEPM (2013) HIL A&B for asbestos) and observations at the time of the remedial works described in the Part A Validation Report (ERM, 2018b), the Part A Unregulated Area was considered to be suitable for either ongoing commercial/industrial and/or a more sensitive residential land use.

Further, ERM considered that the objectives of the remediation and validation works were met.

9.2 Consultant Recommendations

Although it was not considered to be significant by ERM, it was noted that residual asbestos contamination may exist in some areas of the Part A Unregulated Area that were unable to be completely inspected e.g. beneath building footprints. Given the conditions encountered, any residual asbestos contamination is likely to be associated with the construction materials used in buildings rather than fill material. Therefore, it was recommended that these uncertainties could be managed via the planning and approval processes associated with the demolition of those structures should this eventuate.

The Auditor considers that the conclusions and recommendations presented in the Part A Validation Report (ERM, 2018b) were in accordance with NSW EPA guidance and the stated remediation and validation objectives.

The Auditor is unable to confirm whether the detected asbestos was either from building materials or fill material. The Auditor understands that there is an existing asbestos register for the property which includes ACM within the walls of the storeroom.

The Auditor has provided a discussion regarding overall conclusions of the Site Audit in **Section 10.0** of this SAR.

10.0 Overall Audit Conclusions

The methods employed in the investigation, remediation and validation work as reported in the Phase 1 ESA, Phase 2 ESA, Supplementary ESA, Part A ESA, Asbestos Investigation, Unregulated Area RAP and Part A Validation Report (ERM 2015a, 2015b, 2015c, 2017a, 2017b, 2018a and 2018b) typically complied with the relevant NSW EPA guidelines. Where deviations occurred, the Auditor is generally satisfied that these did not adversely impact on the outcome of the work conducted, and hence the proposed residential land use of the Part A Unregulated Area.

The Auditor considers the documents generally followed an appropriate analytical methodology and, when taken as a whole, were sufficient for investigation and remediation of soil and investigation of groundwater at the Part A Unregulated Area. The Auditor is satisfied that soil validation works were robust enough to establish that remediation was undertaken to the extent practicable. ACM within existing buildings should be managed in accordance with the Asbestos Register and any future demolition works will need to be undertaken in accordance with work health and safety legislation and SafeWork NSW requirements.

The Auditor is satisfied that ERM provided a suitable assessment of the risks to human health and ecological receptors associated with concentrations of residual contamination. The Auditor is also satisfied that visible ACM identified on the ground surface and in shallow soils in localised areas on Part A Unregulated Area was removed by suitably qualified personnel.

The Auditor is satisfied that the waste materials removed from the Part A Unregulated Area (including, but not limited to soil, asbestos, concrete and conduit) were disposed of at appropriate destinations, including:

- Veolia Horsley Park Waste Management Facility
- Fairfield City Council Sustainable Resource Centre
- Lucas Heights Resource Recovery Park

The Auditor notes that investigations, remediation and validation of other areas of the Site (i.e. Part B Unregulated Area and Regulated Area) are subject to a separate review and do not form part of this SAR.

The adjacent Regulated Area is currently subject to groundwater remediation works which are being managed through a Voluntary Management Proposal (VMP).

Given the nature of ongoing in-situ groundwater remediation works for the Regulated Area, the Contract of Sale for the Part A Unregulated area (between Roche and EG Developments) includes a restriction on the potential future development activities to slab on grade construction only, limiting the need for excavation below the water table and dewatering activities.

Therefore, the Auditor considers that the environmental condition of the Part A Unregulated Area does not present a risk to human health or ecological receptors and the Part A Unregulated Area is suitable for ongoing commercial/industrial and/or the proposed residential (slab on grade) land use.

Should basement car parking and/or other excavations potentially requiring dewatering of Part A be considered then reconsideration of the suitability of the Site may be required.

11.0 References

AECOM (2016a), *Site Auditor Interim Advice - Phase 1 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW.* 22 March 2016 (Ref. 60484586_L002_Phase 1_22 March 2016).

AECOM (2016b), *Site Auditor Interim Advice - Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW.* 23 March 2016 (Ref. 60484586_L003_Phase 2_23 March 2016).

AECOM (2016c), *Site Auditor Interim Advice – Review of ERM Supplementary Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW.* 4 May 2016 (Ref. 60484586_L05_Supp Phase 2_4 May 2016).

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Appendix A

Figures

Appendix A Figures from ERM Reports

The following Figures were sourced from the Part A Validation Report (ERM, 2018b):

- Figure 1 – Site Location Plan
- Figure 2a – Site Features Plan
- Figure 2b – Part A Unregulated Area Features Plan (Area 1 and 4)
- Figure 2c – Part A Unregulated Area Features Plan (Area 2 and 3)
- Figure 3a – Historically Identified Impacts (Area 1)
- Figure 3b – Additional Asbestos Investigation, Identified Impacts (Area 4)
- Figure 4a – Proposed Area 1 Excavation Extent
- Figure 4b – Final Area 1 Excavation Extent
- Figure 5 – Area 1 Validation Sampling Locations
- Figure 6 – Area 2 Delineation Investigation Locations
- Figure 7 – Area 3 Excavation Extent and Validation Sampling Locations
- Figure 8 – Area 4 Remediation Extent and Validation Sampling Locations

The following Figures were sourced from the Part A ESA (ERM, 2017b):

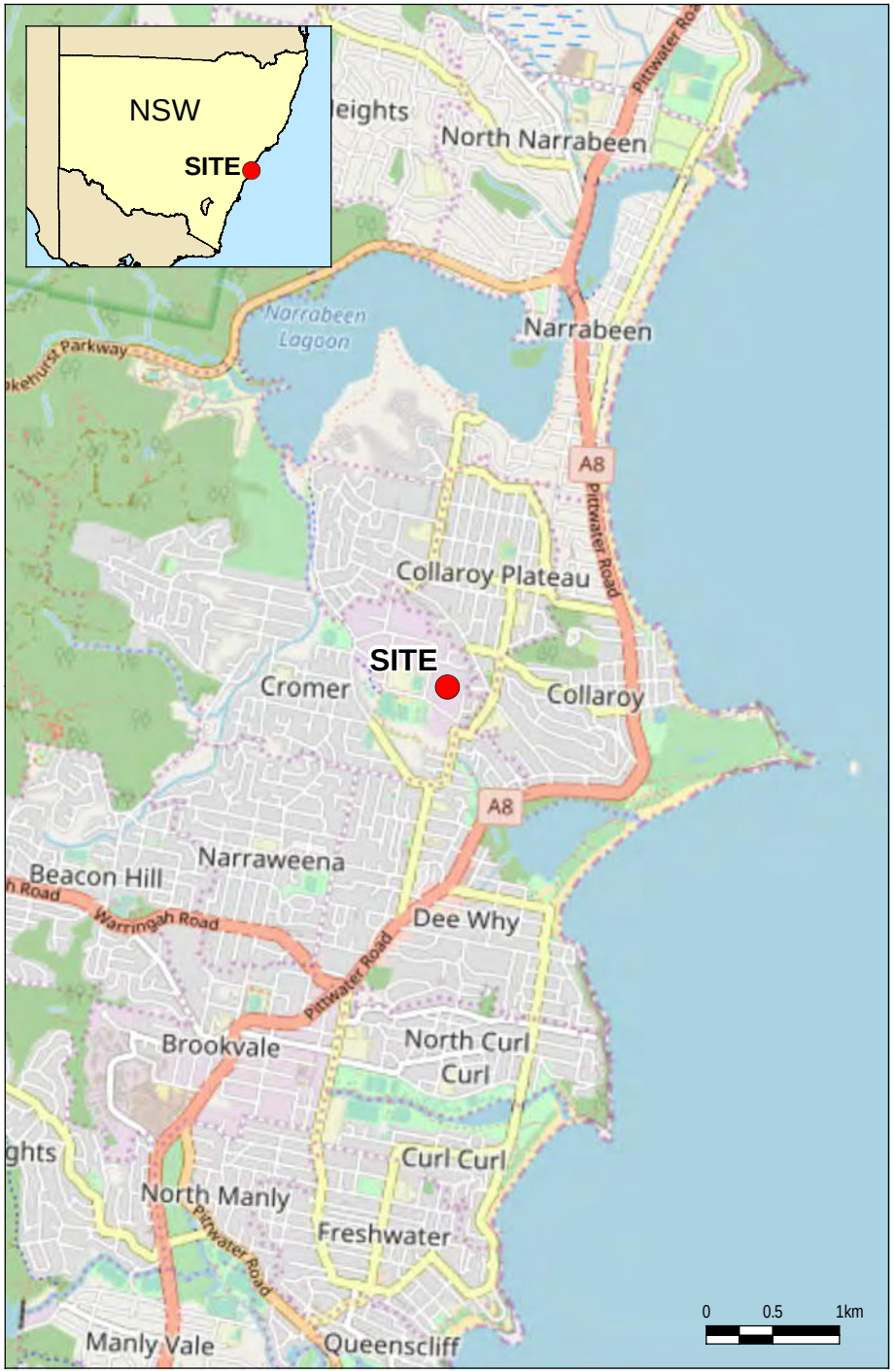
- Figure 3 – Stage 1 Hydrogeological Information (March 2018)
- Figure 4a – Stage 1 Soil Exceedances
- Figure 5 – Stage 1 Groundwater Exceedances

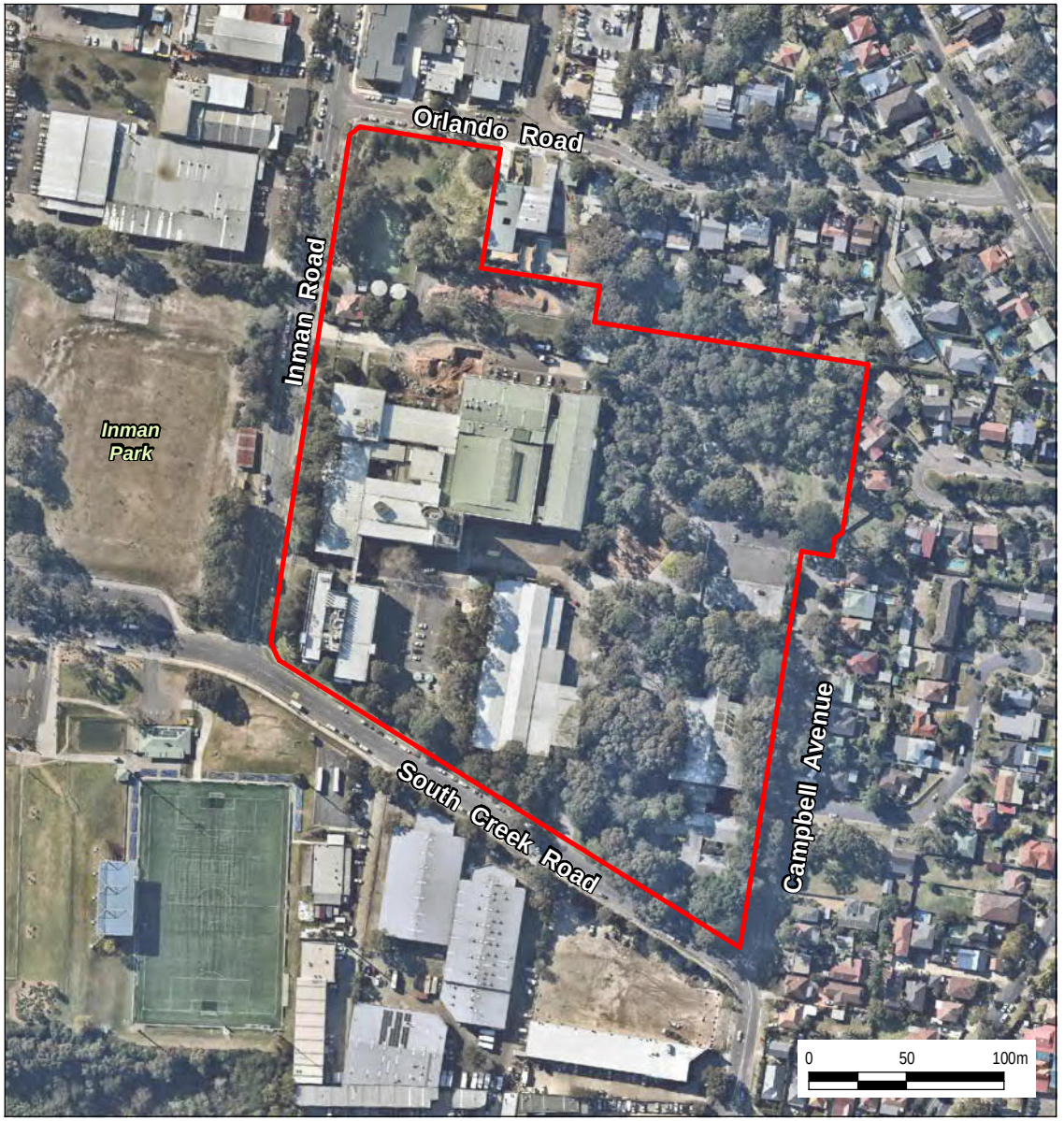
The following Figures were sourced from the Supplementary ESA (ERM, 2015c):

- Figure 4 – Soil Exceedances
- Figure 5 – Groundwater Exceedances

The following Figures were sourced from the Phase 2 ESA (ERM, 2015b):

- Figure 4 – Soil Exceedances
- Figure 5 – Groundwater Exceedances





Legend

Site Boundary

Source:
Imagery Data:
nearmap Aug 2017

N

Confidential and Privileged

Client:	Roche Products Pty Ltd		**Figure 1 - Site Location Plan**
Drawing No:	0410233s_PAVR_G001_R0.mxd		
Date:	19/10/2017	Drawing Size: A4	Part A Unregulated Area Validation Report
Drawn By:	GC	Reviewed By: JE	4-10 Inman Road, Dee Why NSW

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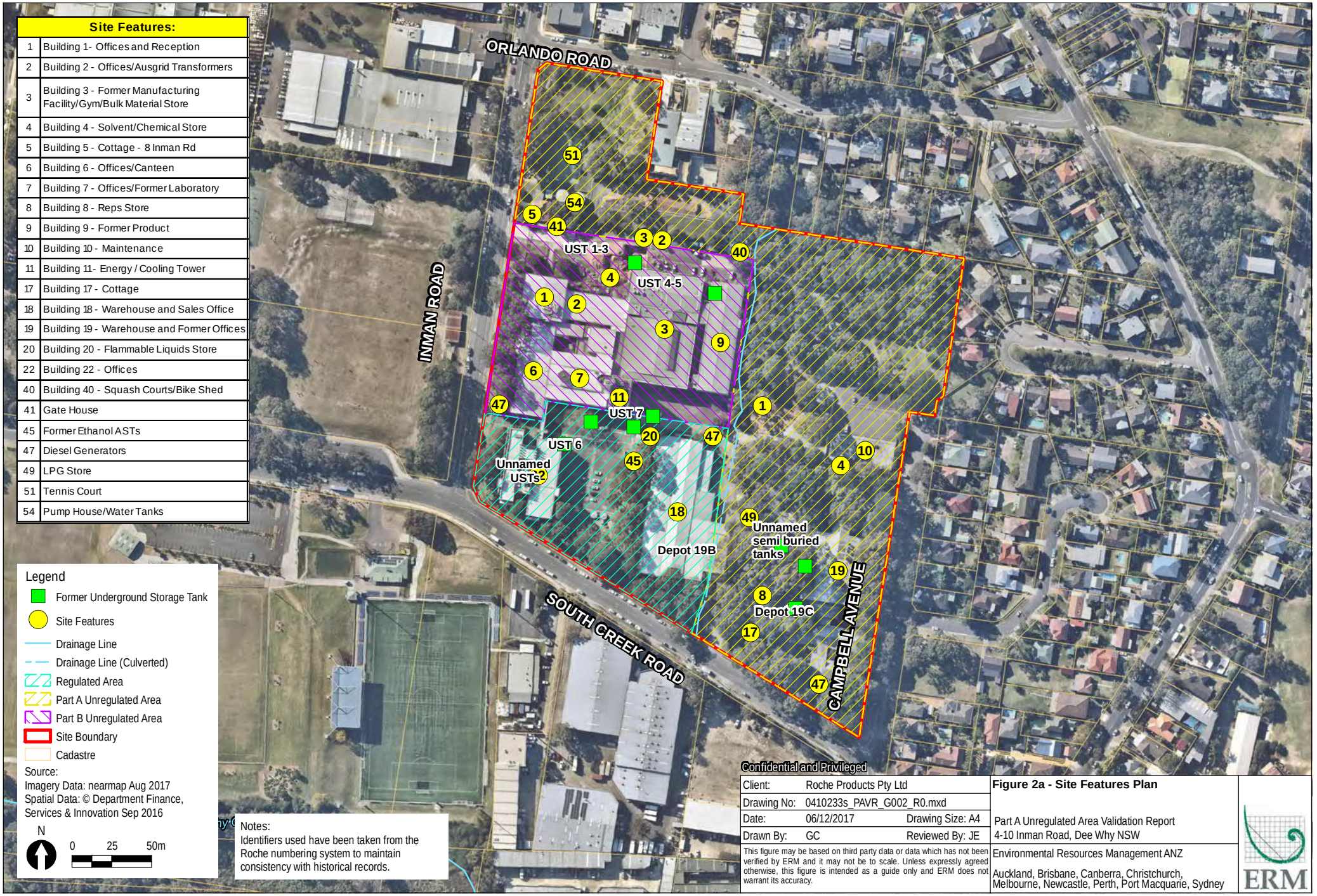
ERM



Confidential and Privileged

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Drawn By:	GC	Reviewed By: JE

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Figure 2a - Site Features Plan

Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW

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Client:	Roche Products Pty Ltd		
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Date:	15/02/2018	Drawing Size: A3	
Drawn By:	GC	Reviewed By: JE	

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Figure 2b - Part A Unregulated Area Features Plan (Area 1 and 4)

Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW

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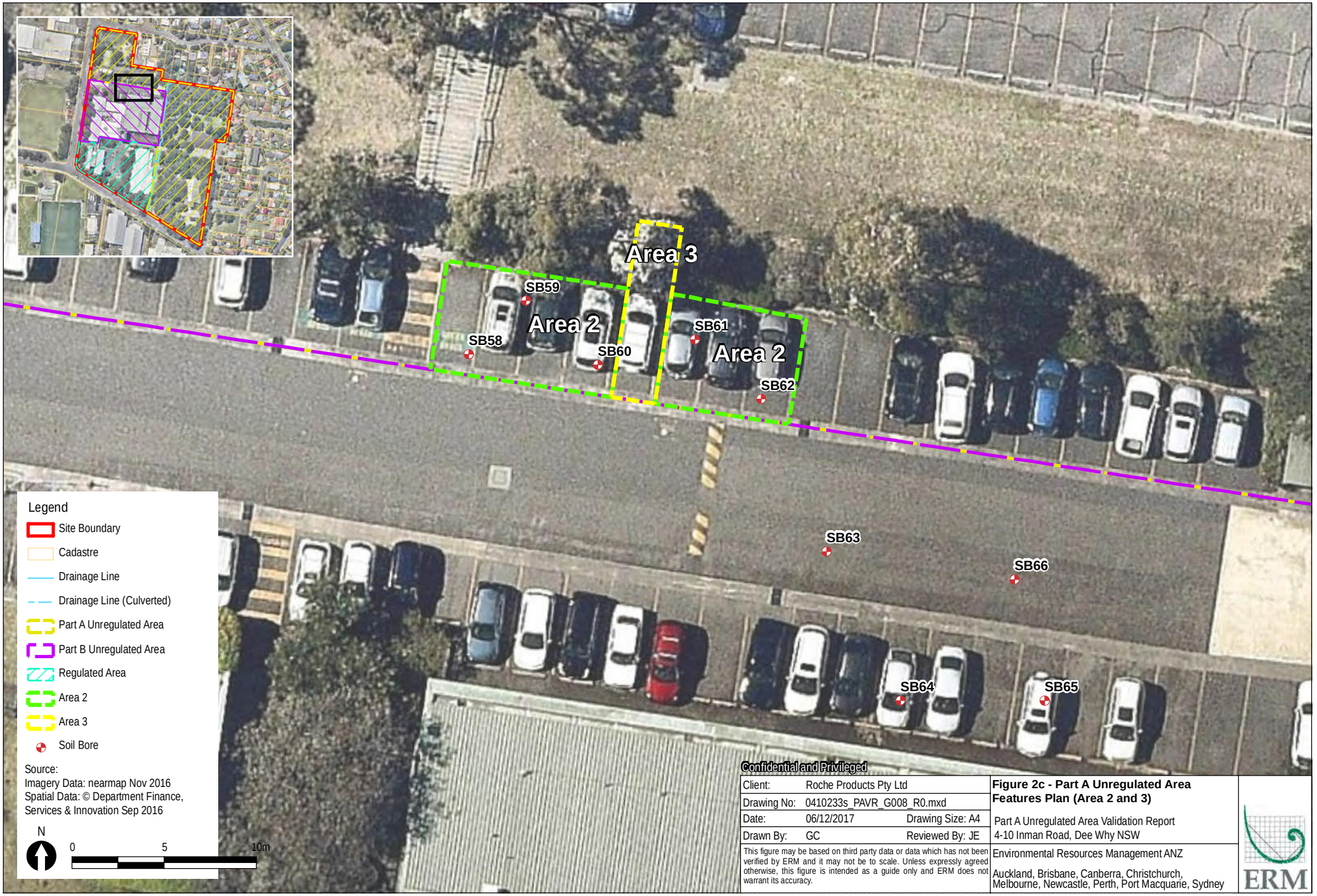

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Drawn By:	GC	Reviewed By: JE

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Figure 2c - Part A Unregulated Area Features Plan (Area 2 and 3)

Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW

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ERM

Legend

- Site Boundary
- Cadastre
- Drainage Line
- Drainage Line (Culverted)
- Area 1
- Area 4 (Approximate)
- Part A Unregulated Area
- Part B Unregulated Area
- Regulated Area

Asbestos Investigation Area:

- Test Pit
- Trench
- Soil Bore

Source:
Imagery Data: nearmap Aug 2017
Spatial Data: © Department Finance, Services & Innovation Sep 2016

N 0 2.5 5m

PRA_G4_ACM_03	Depth	Asbestos	Asbestos Type
	Surface	Yes	Ch + Am
	0.05	Yes	Ch + Cr

PRA_G4_ACM_04	Depth	Asbestos	Asbestos Type
	Surface	Yes	Ch + Am

PRA_G4_ACM_03
PRA_G4_ACM_04

PRA_ACM_03	Depth	Asbestos	Asbestos Type
	Surface	Yes	Ch

PRA_ACM_03

PRA_ACM_01	Depth	Asbestos	Asbestos Type
	Surface	Yes	Ch

PRA_ACM_01

TP14	Depth	Friable Asbestos (as Asbestos in Soil)
	0.1	0.001

PRA_ACM_02	Depth	Asbestos	Asbestos Type
	Surface	Yes	Ch + Am + Cr

PRA_TRENCH	ID	Depth	Asbestos	Asbestos Type
	ACM_01_040816	0.2	Yes	Ch
	ACM_02_040816	0.1	Yes	Ch
	ACM_03_040816	0.1	Yes	Ch

TP18	Depth	Asbestos	Asbestos Type
	0.5	Yes	Ch

TP15	Depth	Asbestos	Asbestos Type
	0.4	Yes	Ch
	0.8	Yes	Ch & Am
	1.0	Yes	Ch & Am

PRA_TRENCH 02	Depth	Asbestos	Asbestos Type
	0.3	Yes	Ch + Am

Analyte	Friable Asbestos (as Asbestos in Soil)
Units	%(w/w)
SL(1)	0.001

SL(1) NEPM (2013) HSL A* & B Residential for Asbestos contamination in soil

0.5 Sample Depth (m)

0.001 Exceeds Screening Level (SL)

* Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.

Client:	Roche Products Pty Ltd		
Drawing No:	0410233s_PAVR_G004_R0.mxd		
Date:	15/02/2018	Drawing Size: A3	
Drawn By:	GC	Reviewed By: JE	

Figure 3a - Historically Identified Impacts (Area 1)

Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW

Environmental Resources Management ANZ
Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM

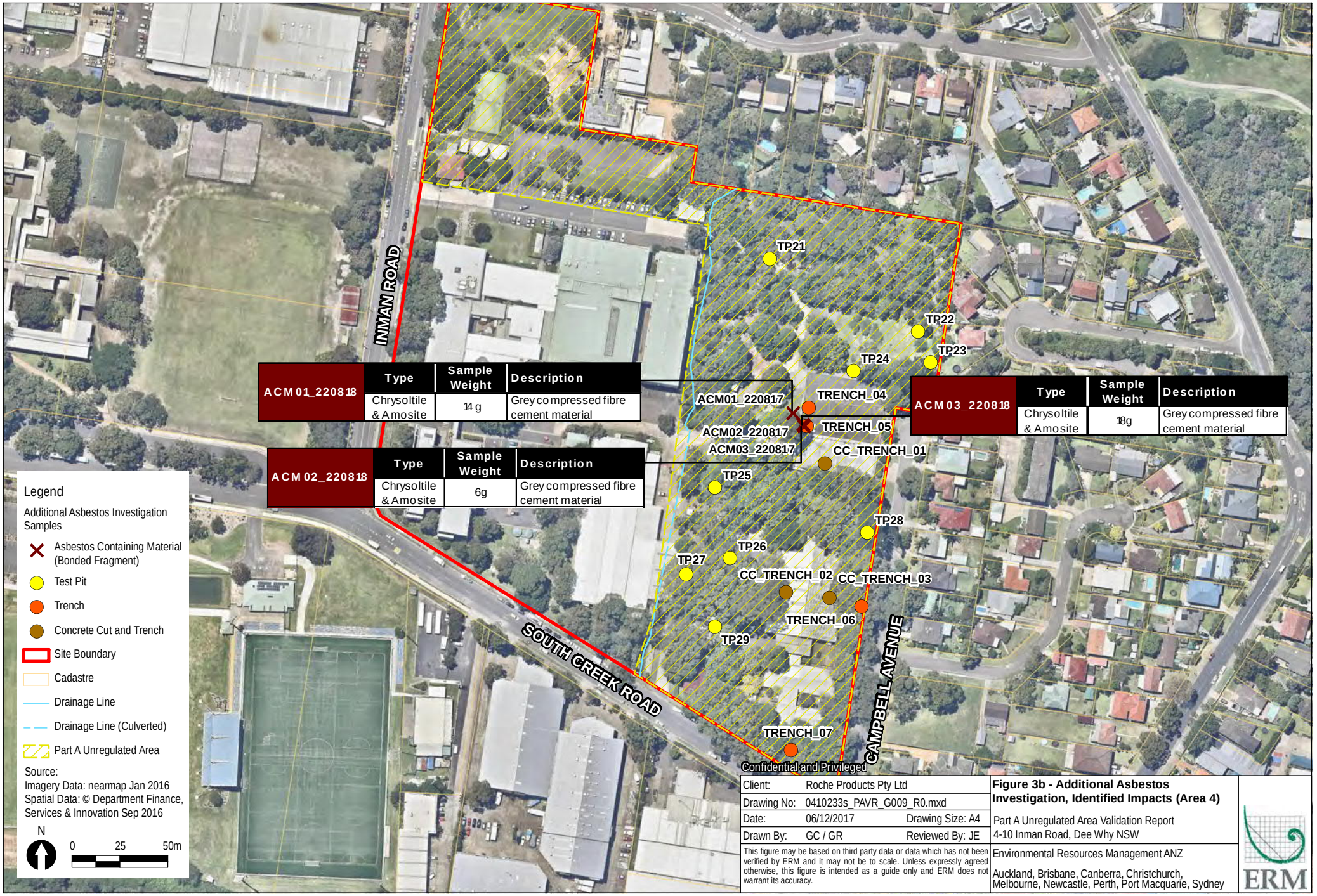
INMAN ROAD
SOUTH CREEK ROAD
CAMPBELL AVENUE
TP21
TP22
TP23
TP24
TP25
TP26
TP27
TP28
TP29
TRENCH_04
TRENCH_05
TRENCH_06
TRENCH_07
CC_TRENCH_01
CC_TRENCH_02
CC_TRENCH_03
ACM01_220817
ACM02_220817
ACM03_220817
ACM01_220818
Type: Chrysoltile & Amosite
Sample Weight: 14 g
Description: Grey compressed fibre cement material
ACM02_220818
Type: Chrysoltile & Amosite
Sample Weight: 6g
Description: Grey compressed fibre cement material
ACM03_220818
Type: Chrysoltile & Amosite
Sample Weight: 18g
Description: Grey compressed fibre cement material
Legend
Additional Asbestos Investigation Samples
Asbestos Containing Material (Bonded Fragment)
Test Pit
Trench
Concrete Cut and Trench
Site Boundary
Cadastre
Drainage Line
Drainage Line (Culverted)
Part A Unregulated Area
Source:
Imagery Data: nearmap Jan 2016
Spatial Data: © Department Finance, Services & Innovation Sep 2016
N
0
25
50m
Confidential and Privileged
Client: Roche Products Pty Ltd
Drawing No: 0410233s_PAVR_G009_R0.mxd
Date: 06/12/2017
Drawing Size: A4
Drawn By: GC / GR
Reviewed By: JE
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Figure 3b - Additional Asbestos Investigation, Identified Impacts (Area 4)
Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW
Environmental Resources Management ANZ
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ERM

Legend

- Site Boundary
- Cadastre
- Drainage Line
- Drainage Line (Culverted)
- Part A Unregulated Area
- Part B Unregulated Area
- Regulated Area
- Proposed Excavation Extent
- Soil Bore

Asbestos Investigation Area:

- Test Pit
- Trench

N

0 2.5 5m

Source:
Imagery Data: nearmap Aug 2017
Spatial Data: © Department Finance, Services & Innovation Sep 2016

SB39
TP11
SB40
Indicative Stockpile Location
TP13
TP12
Former Site Shed
TP14
TP17
TP16
PRA_TRENCH
TP18
SB41
TP15
SB22
PRA_TRENCH_03
PRA_TRENCH_02

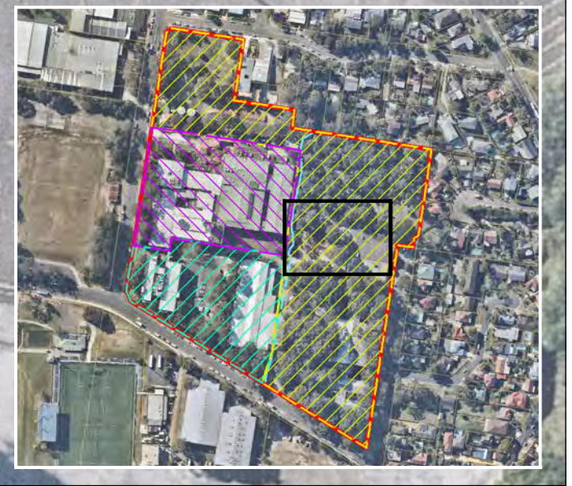

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Figure 4a - Proposed Area 1 Excavation Extent

Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW

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ERM

Legend

- Site Boundary
- Cadastre
- Drainage Line
- Drainage Line (Culverted)
- Part A Unregulated Area
- Part B Unregulated Area
- Regulated Area
- Area 1
- Area 4 (Approximate)
- Final Excavation Area

Source:
Imagery Data: nearmap Aug 2017
Spatial Data: © Department Finance, Services & Innovation Sep 2016

N

0 2.5 5m

Former Site Shed

EXCAVATION PIT

Area 1

STORMWATER LINE

Area 4

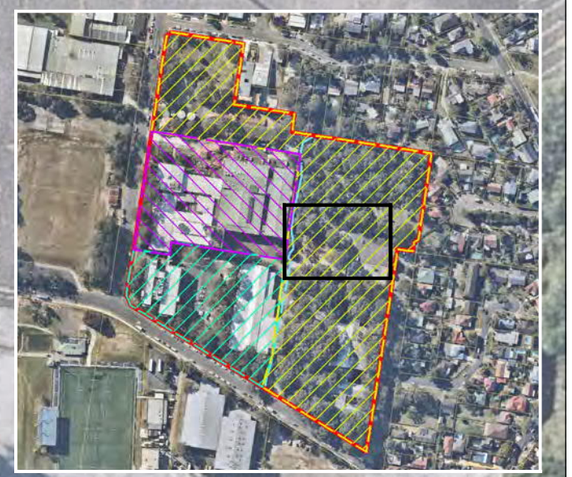

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Figure 4b - Final Area 1 Excavation Extent

Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW

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ERM

Legend

- Site Boundary
- Cadastre
- Part A Unregulated Area
- Regulated Area
- Area 1
- Final Excavation Extent
- Proposed Excavation Extent
- Validation Sample

Source:
Imagery Data: nearmap Aug 2017
Spatial Data: © Department Finance, Services & Innovation Sep 2016

N 0 1 2m

VAL_A_NW29
VAL_A_WW28
VAL_A_NW25
VAL_A_NW30
VAL_A_WW21
VAL_A_NW2
VAL_A_B42
VAL_A_B1
VAL_A_WW24
VAL_A_NW26
VAL_A_WW27
VAL_A_B47
VAL_A_B36
VAL_A_EW3
VAL_A_B51
VAL_A_B33
VAL_A_EW4
VAL_A_WW22
VAL_A_B52
VAL_A_B49
VAL_A_B43
VAL_A_B37
VAL_A_B48
VAL_A_B34
VAL_A_B50
Area 1
EXCAVATION PIT
VAL_A_EW5
VAL_A_WW21
VAL_A_B54
VAL_A_B44
VAL_A_B38
VAL_A_B46
VAL_A_B53
VAL_A_B35
VAL_A_B55
STORMWATER LINE
VAL_A_EW6
VAL_A_WW23
VAL_A_B45
VAL_A_B39
VAL_A_B56
VAL_A_B41
VAL_A_EW8
VAL_A_SW7
VAL_A_NW15
VAL_A_WW20
VAL_A_B19
VAL_A_NW14
VAL_A_SW17
VAL_A_B18
VAL_A_B40
VAL_A_SW17
VAL_A_EW9
VAL_A_SW16
VAL_A_EW13
VAL_A_B12
VAL_A_EW10
VAL_A_SW11

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Client:	Roche Products Pty Ltd		
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Figure 5 - Area 1 Validation Sampling Locations

Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW

Environmental Resources Management ANZ

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ERM

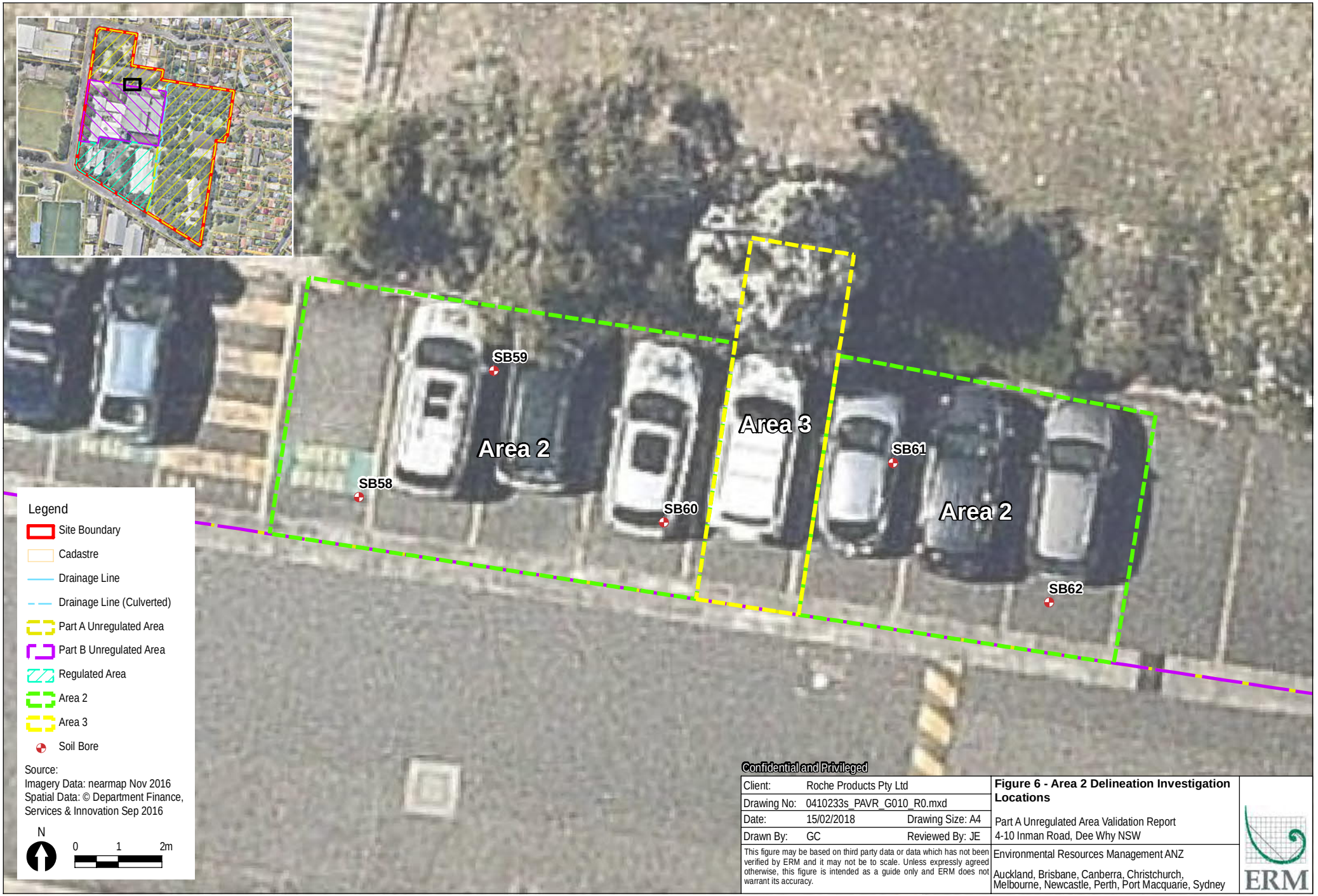

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Figure 6 - Area 2 Delineation Investigation Locations

Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW

Environmental Resources Management ANZ

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ERM

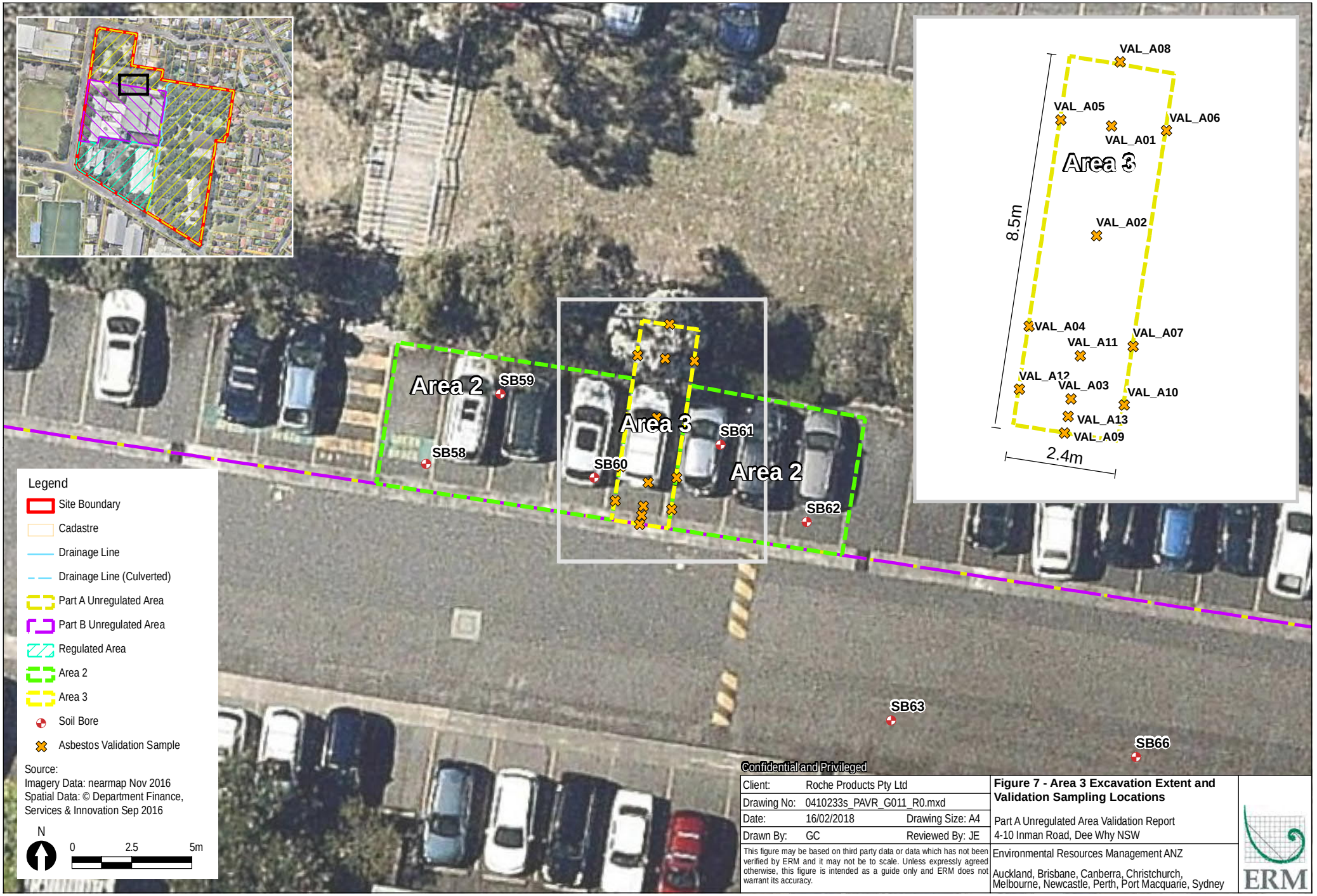

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Figure 7 - Area 3 Excavation Extent and Validation Sampling Locations

Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM

Legend

- Site Boundary
- Cadastre
- Drainage Line
- Part A Unregulated Area
- Area 1
- Area 4 (Approximate)
- Final Excavation Area
- Grid / Grid #
- Overhead Services
- Inaccessible Area
- Hardstand Area
- Soil Sample Collected

Source:
Imagery Data: nearmap Aug 2017
Spatial Data: © Department Finance, Services & Innovation Sep 2016

N

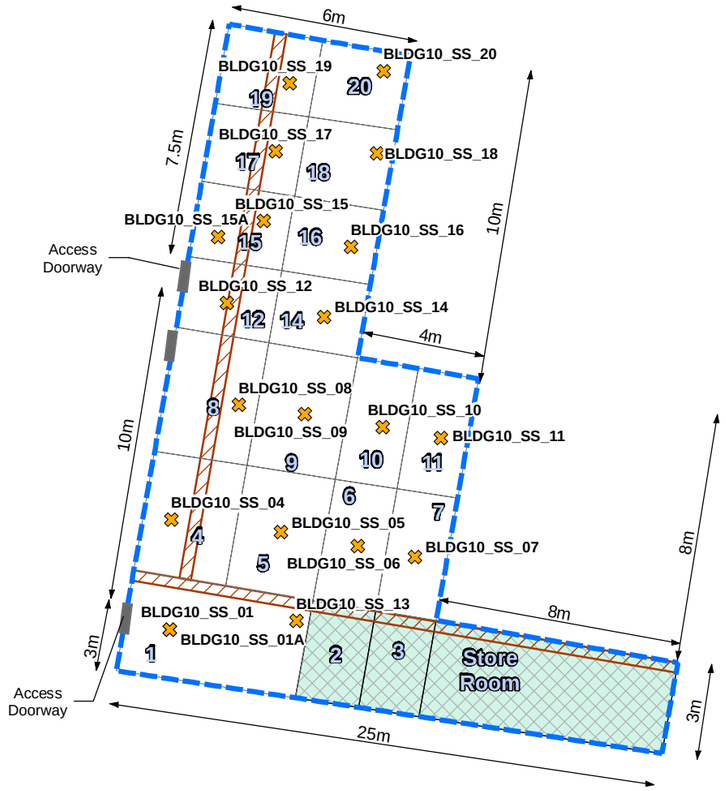
0 2.5 5m

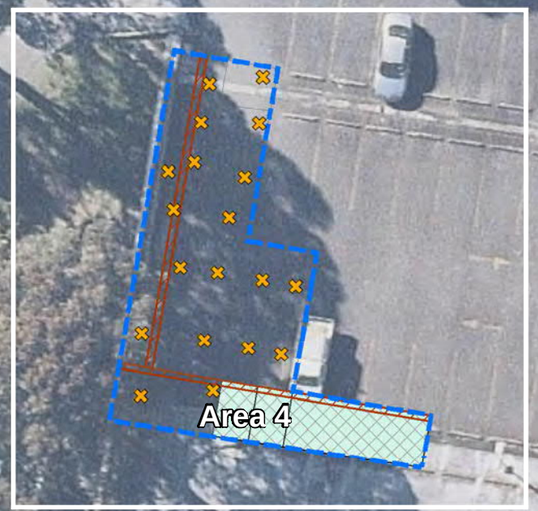
Former Site Shed

EXCAVATION PIT

Area 1

Area 4





Confidential and Privileged

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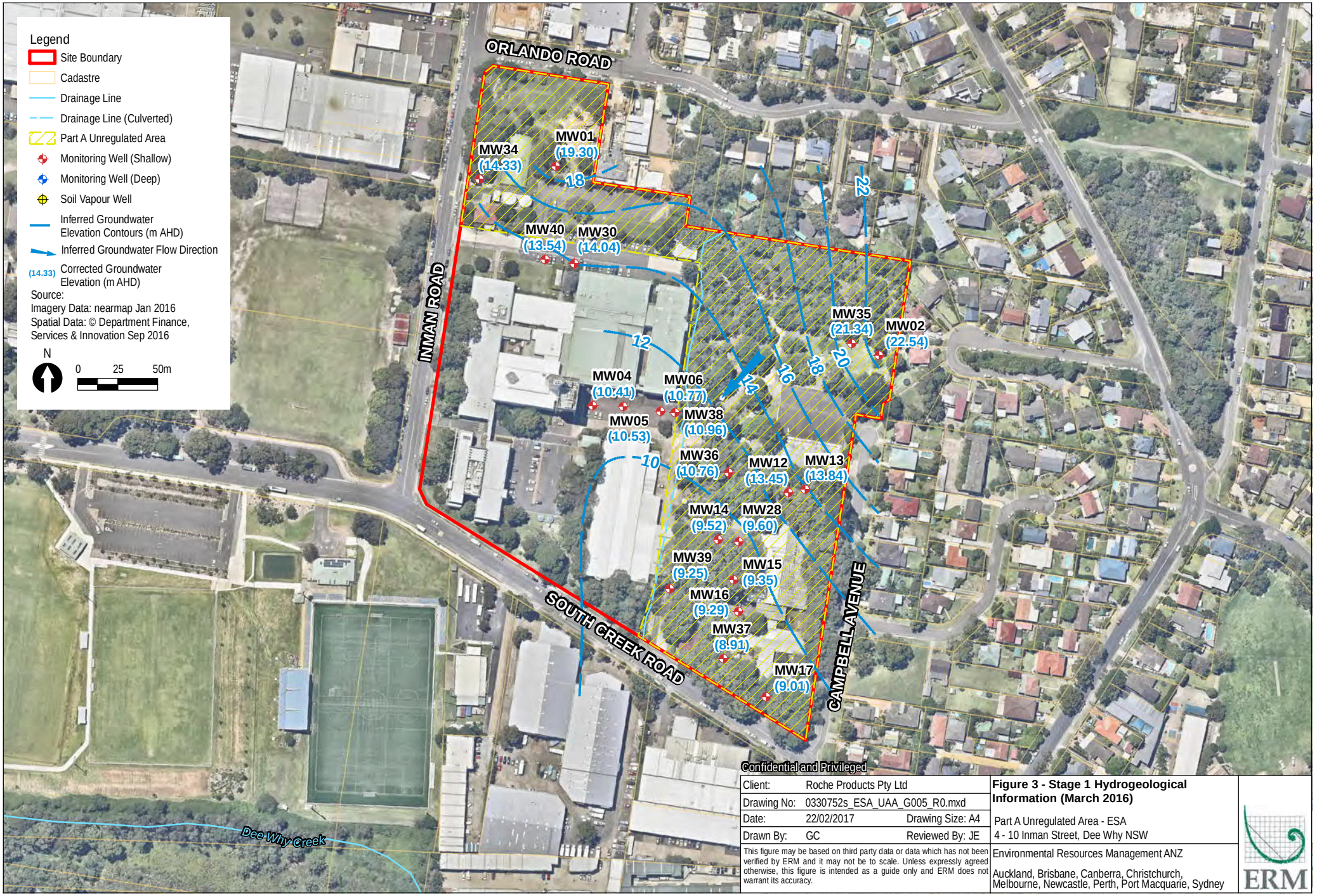
Figure 8 - Area 4 Remediation Extent and Validation Sampling Locations

Part A Unregulated Area Validation Report
4-10 Inman Road, Dee Why NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM



Confidential and Privileged

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This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

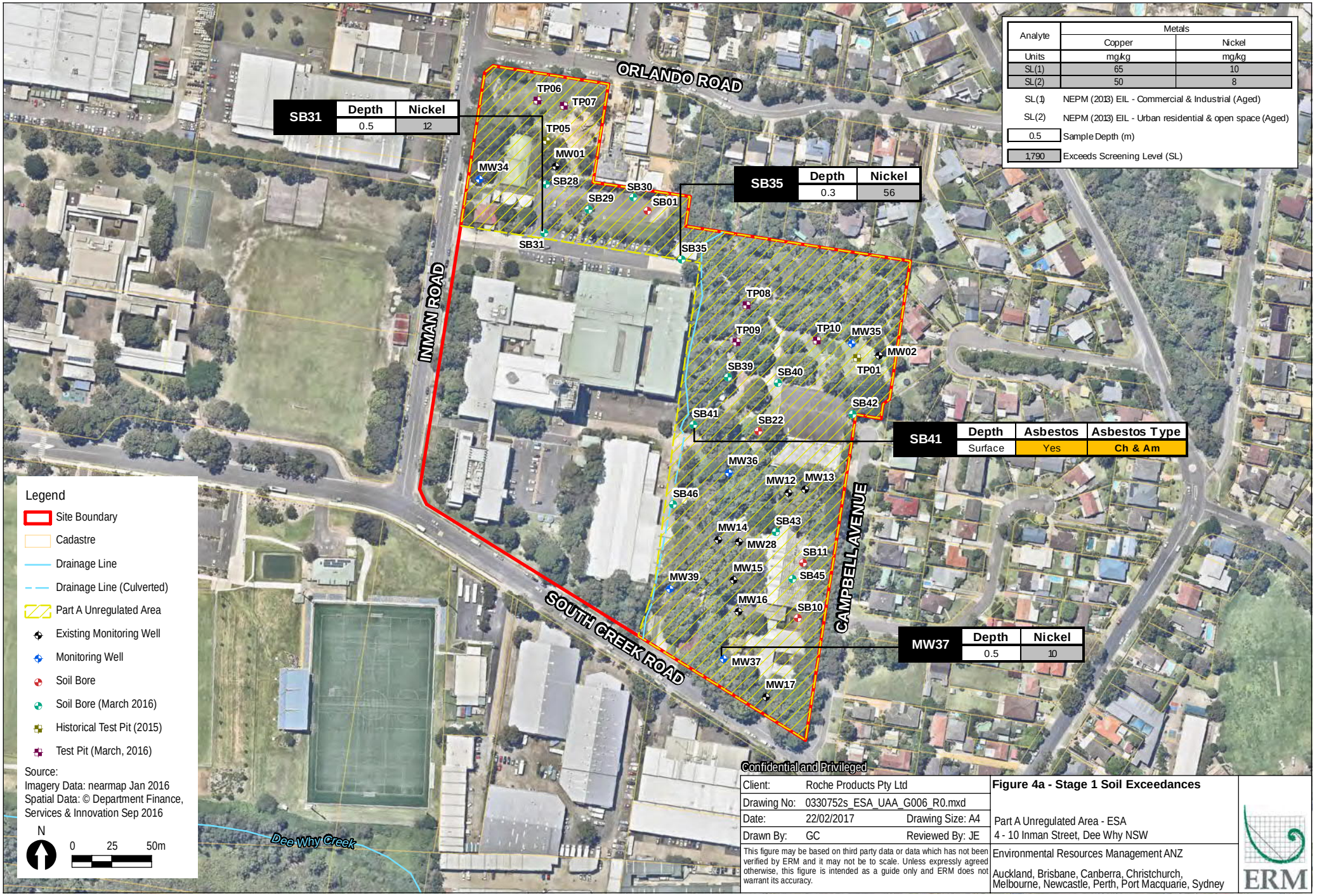
Figure 3 - Stage 1 Hydrogeological Information (March 2016)

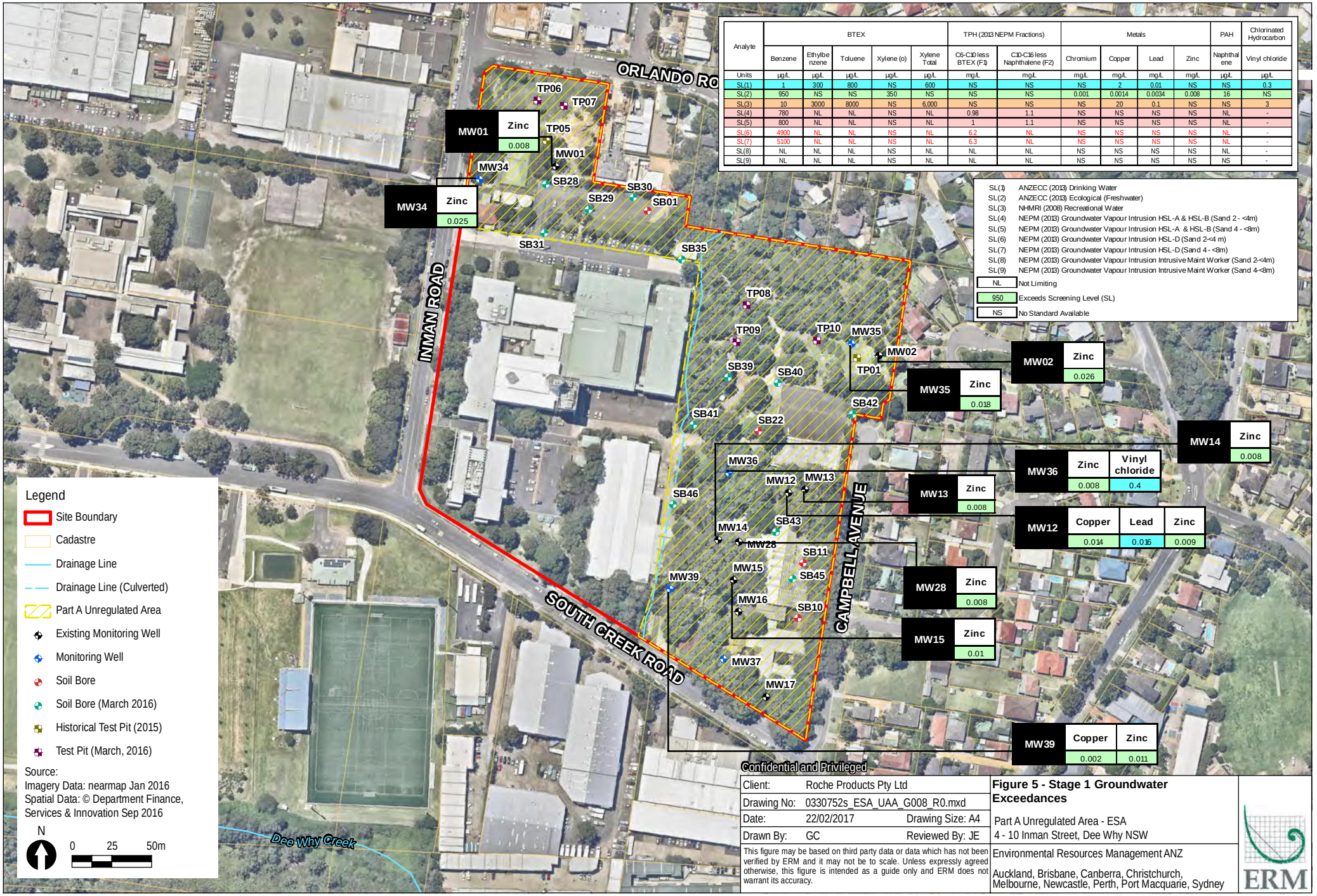
Part A Unregulated Area - ESA
4 - 10 Inman Street, Dee Why NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM


ORLANDO ROAD
INMAN ROAD
SOUTH CREEK ROAD
CAMPBELL AVENUE
Dee Why Creek
SB31 | Depth | Nickel
0.5 | 12
SB35 | Depth | Nickel
0.3 | 56
SB41 | Depth | Asbestos | Asbestos Type
Surface | Yes | Ch & Am
MW37 | Depth | Nickel
0.5 | 10
Analyte | Metals | Copper | Nickel
Units | mg/kg | mg/kg
SL(1) | 65 | 10
SL(2) | 50 | 8
SL(1) NEPM (2013) EIL - Commercial & Industrial (Aged)
SL(2) NEPM (2013) EIL - Urban residential & open space (Aged)
0.5 Sample Depth (m)
1,790 Exceeds Screening Level (SL)
Legend
Site Boundary
Cadastre
Drainage Line
Drainage Line (Culverted)
Part A Unregulated Area
Existing Monitoring Well
Monitoring Well
Soil Bore
Soil Bore (March 2016)
Historical Test Pit (2015)
Test Pit (March, 2016)
Source:
Imagery Data: nearmap Jan 2016
Spatial Data: © Department Finance, Services & Innovation Sep 2016
N
0 25 50m
Confidential and Privileged
Client: Roche Products Pty Ltd
Drawing No: 0330752s_ESA_UAA_G006_R0.mxd
Date: 22/02/2017 Drawing Size: A4
Drawn By: GC Reviewed By: JE
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
Figure 4a - Stage 1 Soil Exceedances
Part A Unregulated Area - ESA
4 - 10 Inman Street, Dee Why NSW
Environmental Resources Management ANZ
Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney
ERM



Analyte	BTEX					TPH (2013 NEPM Fractions)		Metals				PAH	Chlorinated Hydrocarbon
	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene Total	C6-C10 less BTEX (F1)	C10-C16 less Naphthalene (F2)	Chromium	Copper	Lead	Zinc	Naphthalene	Vinyl chloride
Units	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L
SL(1)	1	300	800	NS	600	NS	NS	NS	2	0.01	NS	NS	0.3
SL(2)	950	NS	NS	350	NS	NS	NS	0.001	0.0014	0.0034	0.008	16	NS
SL(3)	10	3000	8000	NS	6,000	NS	NS	NS	20	0.1	NS	NS	3
SL(4)	780	NL	NL	NS	NL	0.98	1.1	NS	NS	NS	NS	NL	-
SL(5)	800	NL	NL	NS	NL	1	1.1	NS	NS	NS	NS	NL	-
SL(6)	4900	NL	NL	NS	NL	6.2	NL	NS	NS	NS	NS	NL	-
SL(7)	5100	NL	NL	NS	NL	6.3	NL	NS	NS	NS	NS	NL	-
SL(8)	NL	NL	NL	NS	NL	NL	NL	NS	NS	NS	NS	NL	-
SL(9)	NL	NL	NL	NS	NL	NL	NL	NS	NS	NS	NS	NS	-

SL(1) ANZECC (2013) Drinking Water
SL(2) ANZECC (2013) Ecological (Freshwater)
SL(3) NHMRI (2008) Recreational Water
SL(4) NEPM (2013) Groundwater Vapour Intrusion HSL-A & HSL-B (Sand 2- <4m)
SL(5) NEPM (2013) Groundwater Vapour Intrusion HSL-A & HSL-B (Sand 4 - <8m)
SL(6) NEPM (2013) Groundwater Vapour Intrusion HSL-D (Sand 2-<4 m)
SL(7) NEPM (2013) Groundwater Vapour Intrusion HSL-D (Sand 4- <8m)
SL(8) NEPM (2013) Groundwater Vapour Intrusion Intrusive Maint Worker (Sand 2-<4m)
SL(9) NEPM (2013) Groundwater Vapour Intrusion Intrusive Maint Worker (Sand 4-<8m)

NL Not Limiting
950 Exceeds Screening Level (SL)
NS No Standard Available

Confidential and Privileged

Client:	Roche Products Pty Ltd		
Drawing No:	0330752s_ESA_UAA_G008_R0.mxd		
Date:	22/02/2017	Drawing Size: A4	
Drawn By:	GC	Reviewed By: JE	

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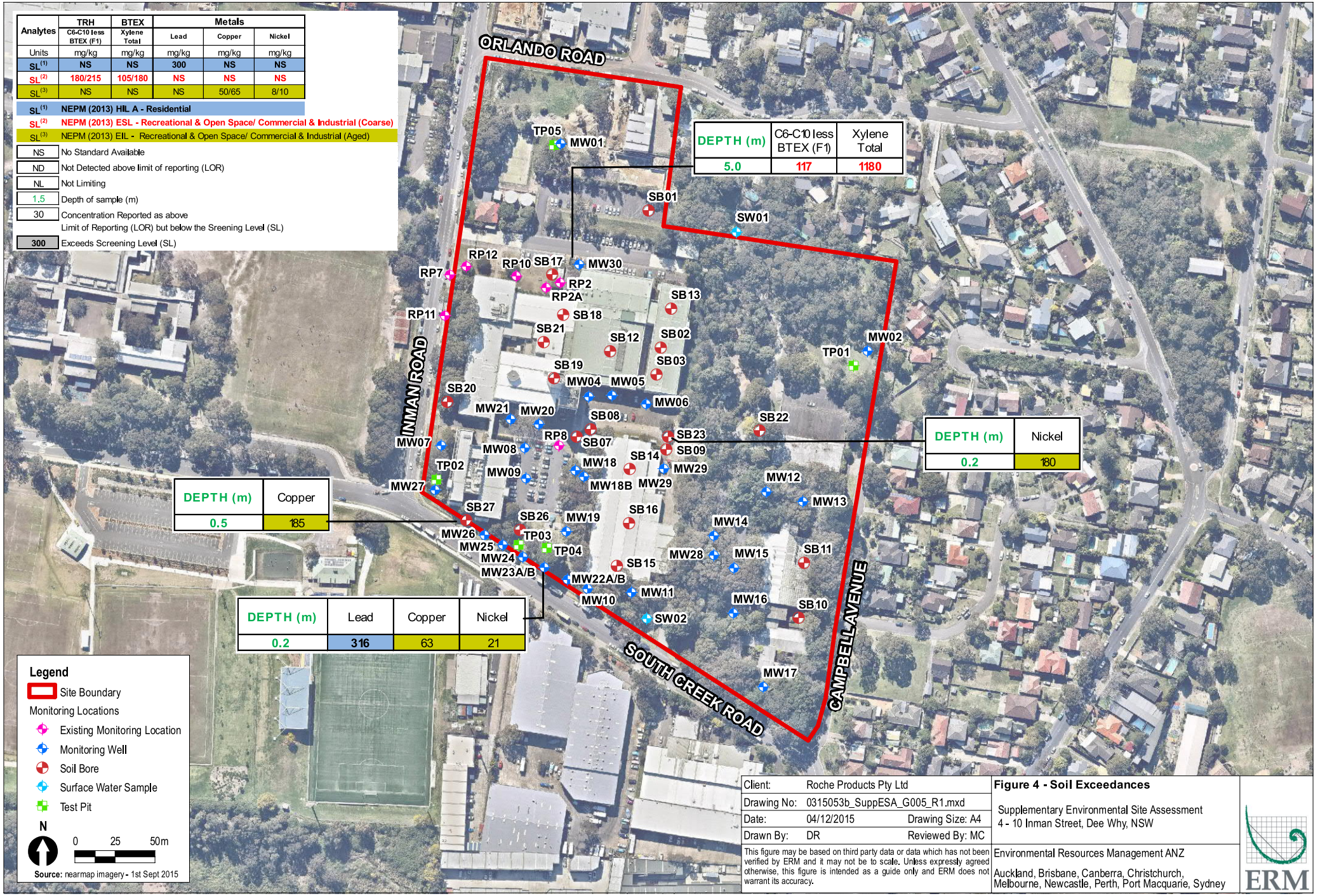
Figure 5 - Stage 1 Groundwater Exceedances

Part A Unregulated Area - ESA
4 - 10 Inman Street, Dee Why NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM



Analytes	TRH C6-C10 less BTEX (F1)	BTEX Xylene Total	Metals Lead	Copper	Nickel
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SL(1)	NS	NS	300	NS	NS
SL(2)	180/215	105/180	NS	NS	NS
SL(3)	NS	NS	NS	50/65	8/10

SL(1) NEPM (2013) HIL A - Residential
SL(2) NEPM (2013) ESL - Recreational & Open Space/ Commercial & Industrial (Coarse)
SL(3) NEPM (2013) EIL - Recreational & Open Space/ Commercial & Industrial (Aged)

NS No Standard Available
ND Not Detected above limit of reporting (LOR)
NL Not Limiting
1.5 Depth of sample (m)
30 Concentration Reported as above Limit of Reporting (LOR) but below the Sreening Level (SL)
300 Exceeds Screening Level (SL)

Client:	Roche Products Pty Ltd
Drawing No:	0315053b_SuppESA_G005_R1.mxd
Date:	04/12/2015 Drawing Size: A4
Drawn By:	DR Reviewed By: MC

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

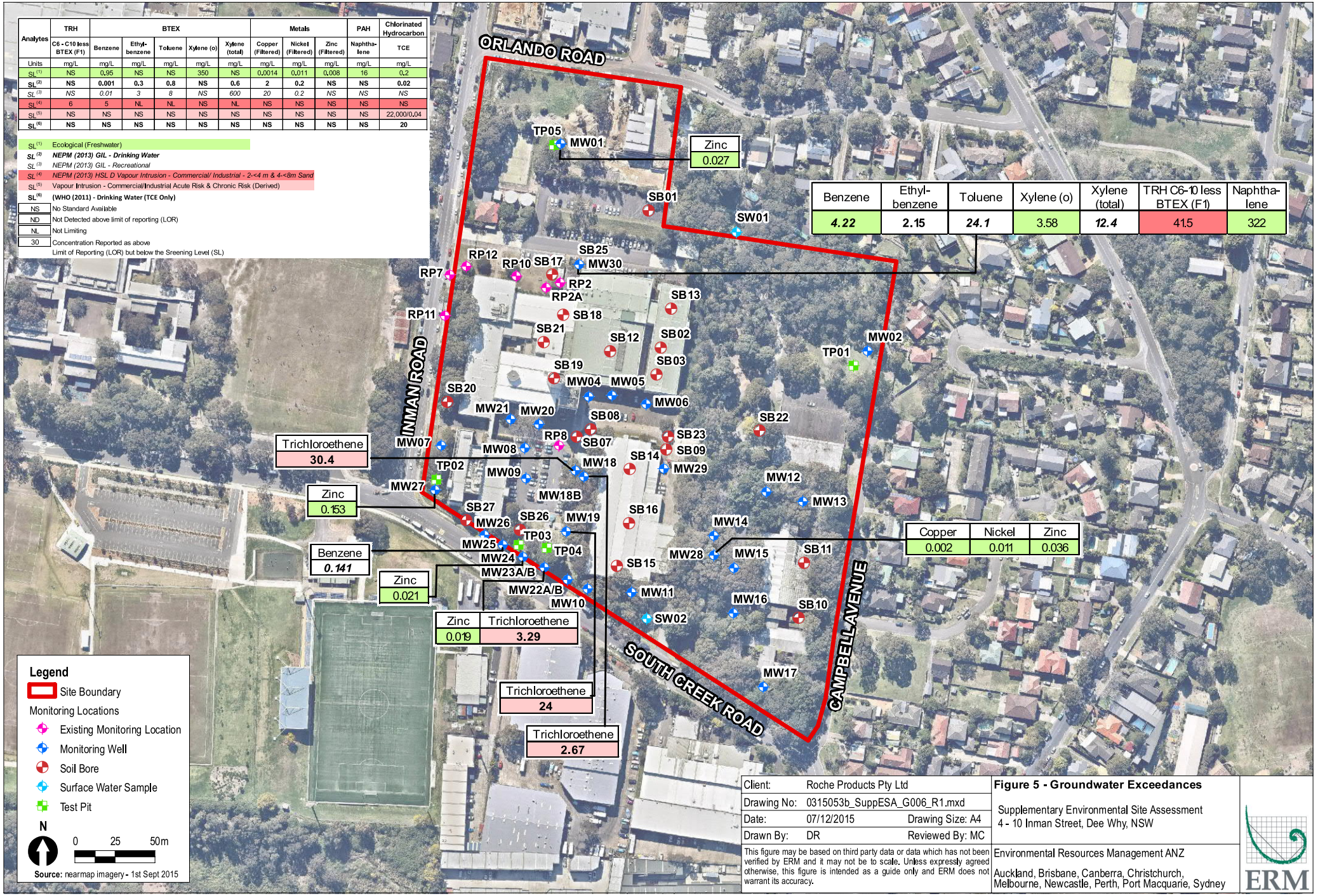
Figure 4 - Soil Exceedances

Supplementary Environmental Site Assessment
4 - 10 Inman Street, Dee Why, NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM



Analytes	TRH	BTEX					Metals			PAH	Chlorinated Hydrocarbon
	C6 - C10 less BTEX (F1)	Benzene	Ethyl-benzene	Toluene	Xylene (o)	Xylene (total)	Copper (Filtered)	Nickel (Filtered)	Zinc (Filtered)	Naphtha-lene	TCE
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SL(1)	NS	0.95	NS	NS	350	NS	0.0014	0.011	0.008	16	0.2
SL(2)	NS	0.001	0.3	0.8	NS	0.6	2	0.2	NS	NS	0.02
SL(3)	NS	0.01	3	8	NS	600	20	0.2	NS	NS	NS
SL(4)	6	5	NL	NL	NS	NL	NS	NS	NS	NS	NS
SL(5)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	22,000/0.04
SL(6)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	20

SL(1) Ecological (Freshwater)
SL(2) **NEPM (2013) GIL - Drinking Water**
SL(3) NEPM (2013) GIL - Recreational
SL(4) NEPM (2013) HSL D Vapour Intrusion - Commercial/ Industrial - 2-<4 m & 4-<8m Sand
SL(5) Vapour Intrusion - Commercial/Industrial Acute Risk & Chronic Risk (Derived)
SL(6) **(WHO (2011) - Drinking Water (TCE Only)**

NS No Standard Available
ND Not Detected above limit of reporting (LOR)
NL Not Limiting
30 Concentration Reported as above
Limit of Reporting (LOR) but below the Sreening Level (SL)

Client:	Roche Products Pty Ltd		
Drawing No:	0315053b_SuppESA_G006_R1.mxd		
Date:	07/12/2015	Drawing Size: A4	
Drawn By:	DR	Reviewed By: MC	

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

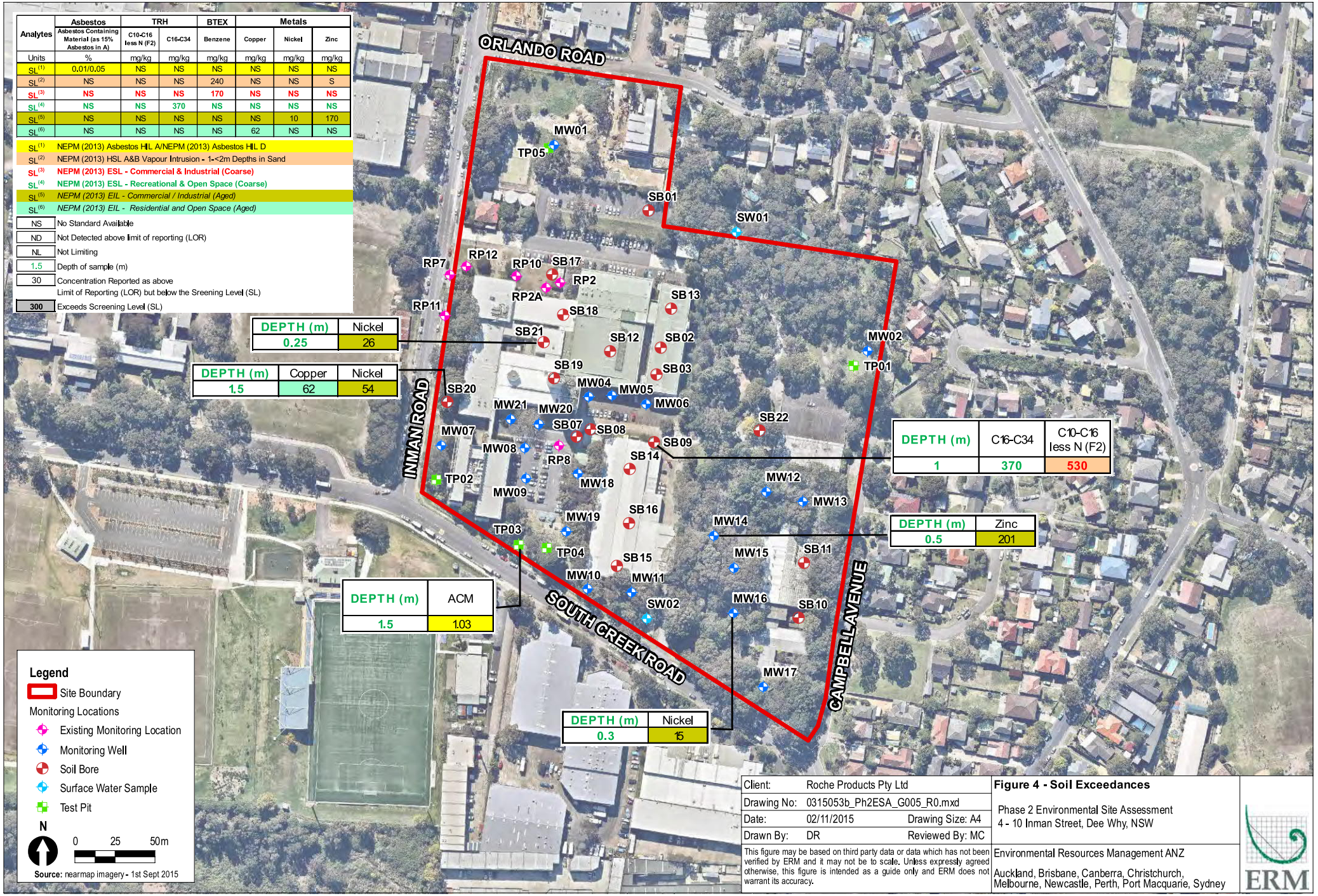
Figure 5 - Groundwater Exceedances

Supplementary Environmental Site Assessment
4 - 10 Inman Street, Dee Why, NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM



Analytes	Asbestos	TRH		BTEX	Metals		
	Asbestos Containing Material (as 15% Asbestos in A)	C10-C16 less N (F2)	C16-C34	Benzene	Copper	Nickel	Zinc
Units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SL(1)	0.01/0.05	NS	NS	NS	NS	NS	NS
SL(2)	NS	NS	NS	240	NS	NS	S
SL(3)	NS	NS	NS	170	NS	NS	NS
SL(4)	NS	NS	370	NS	NS	NS	NS
SL(5)	NS	NS	NS	NS	NS	10	170
SL(6)	NS	NS	NS	NS	62	NS	NS

SL(1) NEPM (2013) Asbestos HIL A/NEPM (2013) Asbestos HIL D
SL(2) NEPM (2013) HSL A&B Vapour Intrusion - 1-<2m Depths in Sand
SL(3) NEPM (2013) ESL - Commercial & Industrial (Coarse)
SL(4) NEPM (2013) ESL - Recreational & Open Space (Coarse)
SL(5) NEPM (2013) EIL - Commercial / Industrial (Aged)
SL(6) NEPM (2013) EIL - Residential and Open Space (Aged)

NS No Standard Available
ND Not Detected above limit of reporting (LOR)
NL Not Limiting
1.5 Depth of sample (m)
30 Concentration Reported as above Limit of Reporting (LOR) but below the Sreening Level (SL)
300 Exceeds Screening Level (SL)

Client:	Roche Products Pty Ltd		
Drawing No:	0315053b_Ph2ESA_G005_R0.mxd		
Date:	02/11/2015	Drawing Size: A4	
Drawn By:	DR	Reviewed By: MC	

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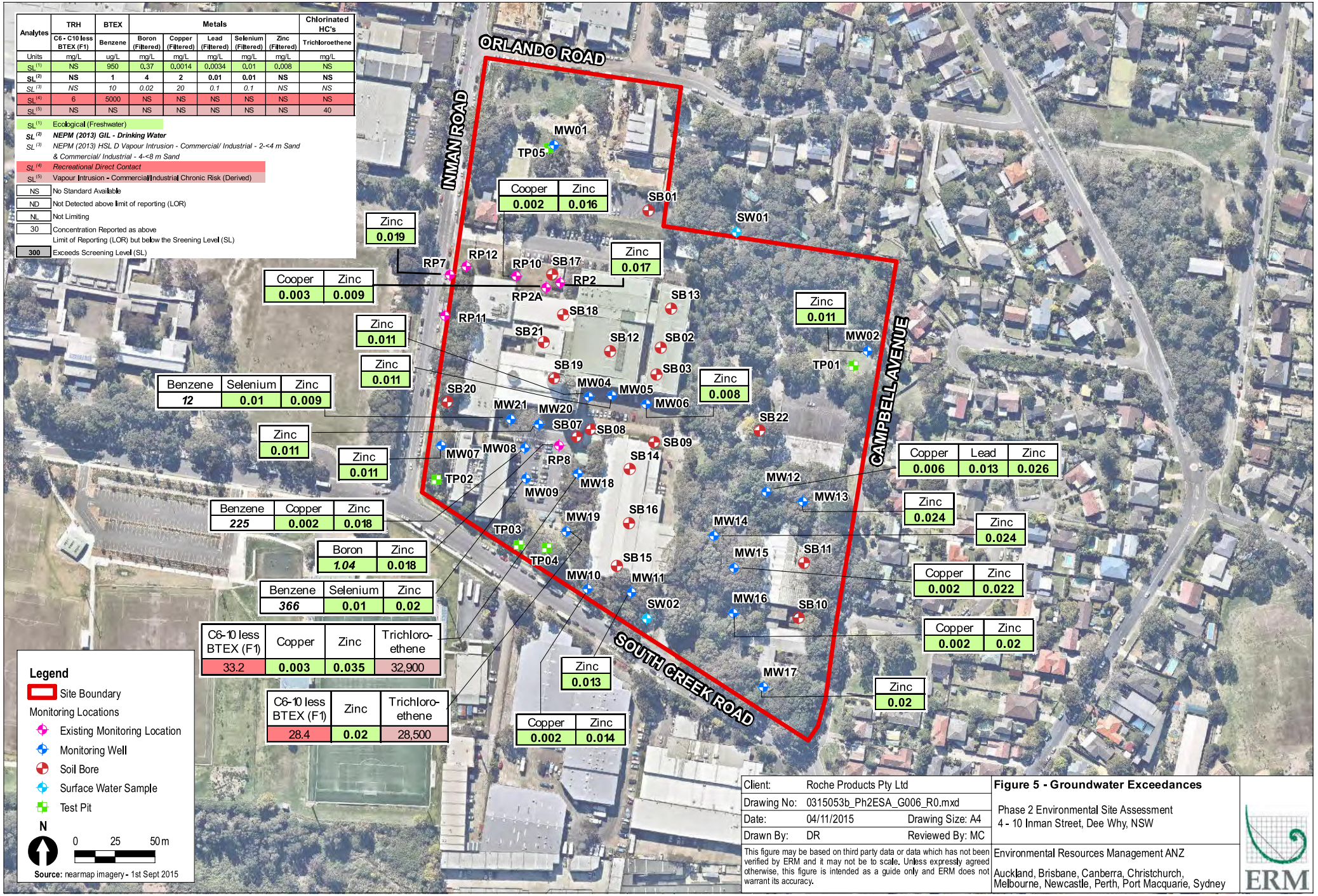
Figure 4 - Soil Exceedances

Phase 2 Environmental Site Assessment
4 - 10 Inman Street, Dee Why, NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM



Analytes	TRH	BTEX	Metals					Chlorinated HC's
	C6 - C10 less BTEX (F1)	Benzene	Boron (Filtered)	Copper (Filtered)	Lead (Filtered)	Selenium (Filtered)	Zinc (Filtered)	Trichloroethene
Units	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SL(1)	NS	950	0.37	0.0014	0.0034	0.01	0.008	NS
SL(2)	NS	1	4	2	0.01	0.01	NS	NS
SL(3)	NS	10	0.02	20	0.1	0.1	NS	NS
SL(4)	6	5000	NS	NS	NS	NS	NS	NS
SL(5)	NS	NS	NS	NS	NS	NS	NS	40

SL(1) Ecological (Freshwater)
SL(2) *NEPM (2013) GIL - Drinking Water*
SL(3) *NEPM (2013) HSL D Vapour Intrusion - Commercial/ Industrial - 2-<4 m Sand & Commercial/ Industrial - 4-<8 m Sand*
SL(4) *Recreational Direct Contact*
SL(5) Vapour Intrusion - Commercial/Industrial Chronic Risk (Derived)

NS No Standard Available
ND Not Detected above limit of reporting (LOR)
NL Not Limiting
30 Concentration Reported as above Limit of Reporting (LOR) but below the Sreening Level (SL)
300 Exceeds Screening Level (SL)

Client:	Roche Products Pty Ltd		
Drawing No:	0315053b_Ph2ESA_G006_R0.mxd		
Date:	04/11/2015	Drawing Size: A4	
Drawn By:	DR	Reviewed By: MC	

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

Figure 5 - Groundwater Exceedances

Phase 2 Environmental Site Assessment
4 - 10 Inman Street, Dee Why, NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM

Appendix B

Relevant Correspondence and Documents

Appendix B Relevant Correspondence and Documents

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Sydney NSW 2000
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QVB Post Office NSW 1230
Australia
www.aecom.com

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+61 2 8934 0001 fax
ABN 20 093 846 925

22 March 2016

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim

Site Auditor Interim Advice - Phase 1 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Sites Auditor for the property located at 4-10 Inman Road, Dee Why NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Australia Pty Ltd (ERM). It is understood that this Auditor role is likely to become a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act). The Auditor is currently awaiting confirmation from the NSW EPA of the regulatory status of the Site Audit.

This letter provides the Auditor's review of the document listed in **Section 2.0**, which relates to the Phase 1 Environmental Site Assessment (ESA) undertaken at the Site.

This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2015. *Phase 1 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 21 July 2015 (Ref. 0297050_Phase 1). This report will be referred to as the Phase 1 ESA herein.

3.0 Technical Review

The Auditor has conducted a technical review of the Phase 1 ESA (ERM, 2015) with reference to the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011) and *Guidelines for the NSW Site Auditor Scheme (2nd Edition)* (DEC, 2006). For ease of review the Site Auditor's comments are provided in grey shaded text below.

3.1 Executive Summary

The Executive Summary provided a summary of background information, key findings with regard to potential sources of soil and groundwater, hazardous buildings and heritage considerations and recommendations following on from the Phase 1 ESA.

The Auditor considers that the Executive Summary provided a succinct overview of the Phase 1 ESA objectives, key findings and recommendations.

3.2 Introduction

The Introduction (Section 1) of the Phase 1 ESA provided some background information relating to the Site, the objectives and a brief scope of works (i.e. site visit, interviews with Roche staff and review of relevant environmental documents and available data collected during the site visit). The objectives of the Phase 1 ESA were to:

- provide an assessment of potential environmental impacts associated with past and current operations at the Site which may affect future Ste use operations; and
- to determine if any potential contamination issues identified warrant further investigation of soil and groundwater conditions.

It is understood that information collected during the site visit was validated by conducting cross-checks with documentation provided by Roche.

The Auditor considers that the Introduction provided an appropriate background summary for the Phase 1 ESA. The Auditor notes the following with regard to Section 1:

- A clear statement of the scope of works should be provided Section 1.1.

3.3 Site Description

The Site Description (Section 2) of the Phase 1 ESA provided details of the site location and layout, current site operations, site history including information on title deeds, aerial photographs and historical manufacturing processes, environmental setting and vulnerability and a regulatory site search. The Site is located within the Warringah Local Government Area and is zoned IN1 (General Industrial) under the Warringah Local Environmental Plan 2011.

The Auditor considers that the Site Description provided sufficient site identification details, a description of surrounding land uses and a comprehensive discussion of current and historical land uses. The Auditor notes the following with regard to Section 2:

- In accordance with OEH (2011), please include geographic co-ordinates for the Site in Section 2.
- Section 2.3: It is understood that various commercial / industrial activities were historically undertaken at the Site. It would be useful to see a site plan illustrating the locations of these activities e.g. manufacture of wire cable by Fibrecell Products in Building 18. Did the site layout (i.e. building locations) change significantly throughout the acquisition process?
- Section 2.4: The site topography and flood potential should be provided as part of the environmental sensitivity and vulnerability discussion. Additionally, please clarify conditions at the site boundary (e.g. erosion potential), if any signs of contamination or plant stress were visible within the landscaped areas (or adjacent to the Site).

3.4 Environmental Management

The Environmental Management (Section 3) of the Phase 1 ESA discussed the management structures and operating policies for the Site and provided a summary of applicable operational and environmental permits. The Site was formally regulated under the Protection of the Environment Operations Act 1997 and Roche formally held an Environment Protection Licence (EPL) with the NSW EPA and Trade Waste Agreement with Warringah Council.

The Auditor notes the following with regard to Section 3:

- Any known/reported product surface spill and loss history should be discussed in Section 3.

3.5 Environmental Topics

The Environmental Topics (Section 4) of the Phase 1 ESA provided details of storage of hazardous substances at the Site, the status of underground storage tanks (UST) (one UST thought to remain in-situ), waste management strategies and identification of potential on-site hazardous materials.

The Auditor has no comments with regard to Section 4.

3.6 Soil and Groundwater Conditions

Section 5 provided a summary of soil and groundwater conditions at the Site based on previous investigations undertaken between 1997 and 2014. Three on-site USTs located north of Building 3 and Building 4 were identified to have leaked and impacted soil and groundwater. Light non-aqueous phase liquid (LNAPL) was reported in groundwater monitoring wells located south and southwest of the UST footprints, while dissolved phase hydrocarbon impacts were identified to the west and southwest. It was noted by ERM that in 2014, LNAPL was not detected at the Site and dissolved phase concentrations had decreased although it was possible that the plume had migrated beyond the site boundary. The following areas of potential concern were considered to require further characterisation:

- former USTs;
- informal landfill/incinerator;
- use of fill material;
- historical use of potentially contamination building materials;
- potential historical use of polychlorinated biphenyls (PCB) containing oils;
- diesel generators;

- storage of hazardous materials;
- use of pesticides and herbicides;
- historic drainage of wastewater from the extraction filter wash bay;
- historical wire cable manufacturing operation; and
- potential historical storage of radioactive materials.

The Auditor notes the following with regard to Section 5:

- If available, a copy of the investigation reports discussed in Section 5 should be provided to the Auditor.
- A preliminary Conceptual Site Model (CSM) should be prepared based on the information presented in the Phase 1 ESA. It is noted that potential areas of concern (and sources of contamination) were presented in Section 5.2; however no potential exposure pathways or human health / ecological receptors were identified.

3.7 Conclusions and Recommendations

Section 6 provided the conclusions and recommendations for the Phase 1 ESA. The report concluded that the potential existed for a range of current and historical site activities to have impacted soil and groundwater at the Site. A Phase 2 soil and groundwater investigation and hazardous materials survey were recommended.

The Auditor notes the following with regard to Section 6:

- The SAQP presented as Annex F is considered to be very limited and not in accordance with OEH (2011). The Auditor notes that Phase 2 ESA works, on which the SAQP is based, has already been completed by ERM (i.e. in September to October 2015). Therefore, revision of the SAQP presented in the Phase 1 ESA is not required, however, please refer to current Australian guidance for the preparation of any future SAQPs.

4.0 Auditor Summary and Conclusions

The Auditor considers that the Phase 1 ESA generally followed the requirements of OEH (2011) and DEC (2006).

Notwithstanding the specific comments made, clarifications and amendments sought in this letter, the Site Auditor considers that the objectives of the Phase 1 ESA have been met.

Should you have any further queries relating to this review, please do not hesitate to contact Paul Steinwede directly.

Yours sincerely

Paul Steinwede
NSW EPA Accredited Contaminated Site Auditor
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Direct Dial: +61 2 8934 0772
Direct Fax: +61 2 8934 0001

cc: Joanna Graham, NSW EPA
Peter Lavelle, ERM Australia Pty Ltd

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23 March 2016

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim

Site Auditor Interim Advice - Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Site Auditor for the property located at 4-10 Inman Road, Dee Why NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Australia Pty Ltd (ERM). It is understood that this Auditor role is likely to become a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act). The Auditor is currently awaiting confirmation of this audit status from the NSW EPA.

This letter provides the Auditor's review of the document listed in **Section 2.0**, which relates to the Phase 2 Environmental Site Assessment (ESA) undertaken at the Site.

This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2015. *Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 3 December 2015 (Ref. 0315053_Ph2ESA_Final V2). This report will be referred to as the Phase 2 ESA herein.

3.0 Technical Review

The Auditor has conducted a technical review of the Phase 2 ESA (ERM, 2015) with reference to the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011) and *Guidelines for the NSW Site Auditor Scheme (2nd Edition)* (DEC, 2006). For ease of review the Site Auditor's comments are provided in grey shaded text below.

3.1 Executive Summary

The Executive Summary provided an introduction to the Site, detailed the specific objectives and scope of works and summarised the findings of the Phase 2 ESA.

The Auditor considers that the Executive Summary provided a succinct overview of the Phase 2 ESA, including the development of a Conceptual Site Model (CSM).

3.2 Introduction

The Introduction (Section 1) of the Phase 2 ESA provided some general information regarding the Site, the project objectives and a scope of works. The objectives of the Phase 2 ESA were to:

- establish a suitable baseline of soil and groundwater conditions for the Site in the context of potential future divestment; and
- assess whether unacceptable risks to human health or the environment exist in relation to potential contamination of the Site.

The scope of works comprised the preparation of a Health and Safety Plan (HSP), subsurface clearance (for intrusive works and to identify any in-situ underground storage tanks (USTs)), excavation of five test pits (3 m depth), drilling of 42 boreholes (1.5 to 12 metres below ground level (mbgl)), installation of 20 groundwater monitoring wells, survey and gauging of monitoring wells and submission of soil and groundwater samples to a NATA accredited laboratory for analysis.

The Introduction of the Phase 2 ESA was prepared in general accordance with OEH (2001). The Auditor notes the following with regard to Section 1:

- Given surface water and sediment sampling was undertaken as part of the Phase 2 ESA, it is unclear why these items were not included in the scope of works provided in Section 1.3. Please clarify or revise accordingly.

3.3 Background

The Background (Section 2) of the Phase 2 ESA provided a description of the Site and details of its history, identification of adjacent land uses (including any sensitive uses), the local and regional environmental setting of the Site (i.e. geology, hydrogeology and hydrology), a discussion of potentially contaminating on-site activities and a summary of previous investigations undertaken at the Site.

It is understood that the Site occupies an area of 8 hectares and currently comprises 20 buildings, bitumen car parks, roadways and landscaped gardens. A tributary of Dee Why Creek flows through the centre of the Site from the north to the south. The Site currently operates as a Roche distribution facility of imported packages goods and administration offices, however from the 1960s to 2007 it was used for pharmaceutical manufacturing.

A total of 15 groundwater wells were identified within 1 km of the Site, registered for water supply, irrigation, commercial / industrial, monitoring and other purposes.

The following potential on-site sources of contamination were identified:

- former USTs;
- informal landfill/incinerator;
- use of fill material;
- historical use of potentially contamination building materials;
- potential historical use of PCB containing oils;
- diesel generators;
- storage of hazardous materials;
- use of pesticides and herbicides;
- historic drainage of wastewater from the extraction filter wash bay;
- historical wire cable manufacturing operation; and
- potential historical storage of radioactive materials.

The Auditor considers that the Background was suitable for the purposes of the Phase 2 ESA.

3.4 Fieldworks

The Fieldworks undertaken as part of the Phase 2 ESA are discussed in Section 3. Specifically, soil and groundwater investigation methodologies and fieldwork observations (i.e. soil screening data, geology, hydrogeology, waste disposal and GPR survey) were presented.

The seven-step Data Quality Objectives (DQOs) process for the Phase 2 ESA were provided as Annex C. Field sheets and calibrations records were provided as Annex D, while photographs obtained during fieldworks were provided in Annex E. Photo-ionisation detector (PID) measurements recorded during intrusive works were provided as Annex F.

The Auditor notes the following with regard to Section 3:

- The DQOs presented as Annex C were appropriate for the purposes of the Phase 2 ESA.
- Section 3.3.1: It is unclear from the borelogs whether samples were collected from soil removed via a solid flight auger. Please clarify and if so, the limitations of sampling disturbed soil when volatile chemicals of potential concern (CoPC) are present should be discussed. In addition, the methodology used to backfill each borehole should be discussed.
- The number of existing monitoring wells sampled during the groundwater monitoring event (GME) should be noted in Section 3.3.2.
- Section 3.3.2: Please confirm if groundwater and surface water samples were field filtered or filtered by the laboratory and the size of filters used. The Auditor notes from Table 14 that metals were 'filtered'.
- Section 3.4.1: Justification for the use of a 10.6 eV PID should be provided given the ionisation potentials of the contaminants of concern.
- There appears to be some inconsistencies between the geology (Section 3.4.2) and hydrogeology (Section 3.4.3) discussions e.g. groundwater was observed within weathered sandstone, however weathered sandstone was not identified in the geological discussion. Section 3.4.2 and Section 3.4.3 should be revised to ensure discussions are consistent and a description of the degree of weathering, if appropriate, should be provided. In addition, the bore logs should be reviewed to confirm descriptions are correct. For example SB14 describes sand as medium stiff and of low plasticity and TP02 describes asphalt pieces at 1.8 m but does indicate that this is fill material.
- Given the unconfined nature of the aquifer, general groundwater strike depth and inferred groundwater flow direction, it is unclear why groundwater was not intercepted during the installation of monitoring well MW01. Further discussion on the environmental conditions at this location should be provided or identification that further investigation may be required to address this anomalous finding on the north-western portion of the Site.
- Please provide the surface water and sediment sampling methodology in Section 3. These activities should also be prescribed in Table 4 (summary of fieldworks).
- Section 3.4.4: It is understood that material for off-site disposal was classified in accordance with the NSW EPA *Waste Classification Guidelines* (2014). This reference should be updated in Annex H, mostly notably Attachment A.

3.5 Laboratory Analytical Results

The Laboratory Analytical Results (Section 4) identified those contaminants that were analysed by the primary and secondary laboratories in soil and groundwater samples, including:

- All samples: Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAH), phenols and metals (As, Cd, Cr, Cu, Pb, Ni, Zn and Hg).
- Selected samples: PCB, OCP, OPP, VOCs, SVOCs, ethanol, N.N dimethyl formamide, gross alpha/beta isotope testing (US EPA 900) and asbestos (fill material only).

Selected human health and ecological soil and groundwater assessment criteria, a summary of analytical results and field and laboratory quality control results were provided.

The Auditor notes the following with regard to Section 4:

- Please make clear in Section 4.1 the number of samples analysed for all CoPC and the number of samples analysed for selected CoPC. Additionally, please specify the number of soil samples analysed for physical parameters (i.e. CEC, pH and clay %) used to calculate site-specific EILs. A summary of the physical parameter results and selected values should be clearly presented in Annex L.
- Reference should be made to Table 8 (summary of laboratory analysis - soil) and Table 9 (summary of laboratory analysis - water). A summary of laboratory analysis should also be provided for sediment.
- Section 4.2: It is understood that the lowest observed metal concentrations were adopted as the background concentration for calculations of the EILs. Please clarify the location where this background samples was collected and provide justification on why it was considered to be representative of background conditions.
- Section 4.3: The Auditor notes that the summary of soil exceedances presented in Table 4.1 was consistent with those illustrated on Figure 4 (soil exceedances).
- Section 4.4: Reference was made to the both the WHO (2011) guidelines for drinking water and WHO (2005) drinking water criteria. Please clarify the guidelines adopted to screen the groundwater results and amend the reference accordingly.
- Section 4.4.1: It is stated that '*a default attenuation factor of 0.0005 is considered to be appropriate to account for attenuation between the soil vapour near the groundwater table and air'.* The Auditor notes that a different attenuation factor of 0.001 is listed below the US EPA equation presented. Confirmation and justification for the attenuation factor used should be provided.
- Section 4.5: The units between Table 4.3 and Figure 5 (groundwater exceedances) should be consistent. For example, the concentration of TCE at MW18 on Table 4.3 was 32.9 mg/L, while on Figure 5 the TCE concentration was 32,900 mg/L. Please amend.
- The Auditor does not agree that the holding time exceedances were minor in nature and therefore unlikely to affect the reliability of the results. Given the nature of the contaminants of concern, a holding time of breach of up to 5 days (e.g. MW20_1.8 in laboratory report ES1532263) may impact the reliability of the results. Further discussion and consideration of holding time breaches is required.
- A summary of the surface water (i.e. SW1 and SW2) and sediment (i.e. SW2) analytical results should be provided in Section 4. This should include a comparison of sediment results to applicable sediment assessment criteria.

3.6 Discussion of Results

Exceedances of the selected screening criteria were discussed in Section 5, including TCE and benzene concentrations in groundwater. Other issues, such as historical contamination relating to underground storage tanks 1 to 3, historical landfilling beneath Building 9, radiation at Building 10 and potential impacts to the on-site tributary of Dee Why Creek, were also assessed.

The Auditor notes the following with regard to Section 5:

- Section 5: Reference is made to '*Tier 1.5 criteria'*. The Auditor is unsure what criteria are being referred to, please clarify.
- Please discuss the identification of asbestos in soil bore MW20. A comment should be made regarding the nature and extent of asbestos contamination at the Site and whether it is considered to be widespread or limited to the fill material and/or south-western portion of the Site.
- The detection of heavy metals and aromatic hydrocarbons in surface water and sediment samples should be noted in Section 5.2.

3.7 Conceptual Site Model

Section 6 provided a CSM for the Site. Sources of contamination were confirmed based on analytical data, the nature and extent of soil and groundwater impacts were discussed, potential current and future human health and ecological receptors were identified and exposure pathways (or source-pathway-receptor linkages) were assessed.

The Auditor notes the following with regard to Section 6:

- The CSM illustrated as Figure 6 requires some additional work. All significant Site features should be illustrated e.g. unnamed tributary to Dee Why Creek, the figure should be labelled and requires a key, and a lateral scale should be provided. Additionally, potential on-site and off-site human health and ecological receptors and potential exposure pathways should be identified.
- The CSM presented as Section 6 is appropriate for the purposes of the Phase 2 ESA.

3.8 Conclusions

The conclusions of the Phase 2 ESA were presented in Section 7 and are summarised below:

- A suitable baseline of soil and groundwater conditions were established.
- A number of soil and groundwater exceedances were reported.
- Potentially significant issues were identified requiring further investigation or management e.g. TCE and benzene groundwater plume and asbestos in fill material.
- A chronic vapour risk associated with TCE may exist for commercial workers within Building 18 and this requires further assessment.
- A direct contact risk may exist to current downgradient groundwater bore users if contamination is migrating from the Site and this requires further assessment.
- Intrusive activities undertaken on the southwest portion of the Site and north of Building 2 should be managed to mitigate risks associated with shallow soil impacts.

The Auditor agrees with the conclusions of the Phase 2 ESA.

4.0 Auditor Summary and Conclusions

The Auditor considers that the Phase 2 ESA generally followed the requirements of OEH (2011) and DEC (2006).

Notwithstanding the specific comments made, clarifications and amendments sought in this letter, the Site Auditor considers that the objectives of the Phase 2 ESA have been met.

Should you have any further queries relating to this review, please do not hesitate to contact Paul Steinwede directly.

Yours sincerely

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4 May 2016

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim

Site Auditor Interim Advice: Review of ERM Supplementary Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW for Roche Products Pty Ltd

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Site Auditor for 4-10 Inman Road, Dee Why NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Pty Ltd (ERM). It is understood that this Auditor role will be considered a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act). The Auditor is currently awaiting formal correspondence from EPA confirming this as a Statutory Audit.

This letter provides the Auditor's review of the document listed in **Section 2.0**, which relates to the Supplementary Phase 2 Environmental Site Assessment (ESA) undertaken at the Site.

This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2015b. *Supplementary Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 11 December 2015 (Ref. 0315053_Ph2ESA_Final V2). This report will be referred to as the Supplementary Phase 2 ESA herein.

It is understood that the Supplementary Phase 2 ESA report has been prepared as an addendum to the *Phase 2 Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 3 December 2015 (Ref. 0315053_Ph2ESA_Final V2) (ERM, 2015a).

3.0 Technical Review

The Auditor has conducted a technical review of the Supplementary Phase 2 ESA (ERM, 2015b) with reference to the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011) and *Guidelines for the NSW Site Auditor Scheme (2nd Edition)* (DEC, 2006). For ease of review the Site Auditor's comments are provided in grey shaded text below.

3.1 Executive Summary

The Executive Summary provided an introduction to the Site, detailed the specific objectives and scope of works and summarised the findings of the Supplementary Phase 2 ESA.

The Auditor considers that the Executive Summary provided a succinct overview of the Supplementary Phase 2 ESA. The Conceptual Site Model (CSM) has been updated to be more reflective of environmental conditions reported at the Site and the current understanding of potentially complete exposure pathways.

3.2 Introduction

The Introduction (Section 1) of the Supplementary Phase 2 ESA provided some general information regarding the Site and previous investigations, the project objectives and a scope of works. The objectives of the Supplementary Phase 2 ESA were to:

- supplement the existing data set for the Site in order to provide a more robust baseline of soil and groundwater conditions at the Site;
- assess potential for previously identified benzene and trichloroethene (TCE) impacts at the Site to be migrating beyond the southern Site boundary; and
- assess the likely extent of vertical migration of previously identified TCE impacts within the shallow water bearing zone.

The scope of works comprised the preparation of a Health and Safety Plan (HSP), subsurface clearance (for intrusive works), drilling of 15 boreholes (1.5 to 26 metres below ground level (mbgl)), installation of 12 groundwater monitoring wells, survey and gauging of monitoring wells and submission of soil and groundwater samples to a NATA accredited laboratory for analysis.

The Auditor considers that the Introduction was suitable for the purposes of the Supplementary Phase 2 ESA.

3.3 Site Background

The Site Background (Section 2) directed the reader to ERM (2015a) for a description of site features, environmental setting, surrounding land uses and previous investigations undertaken at the Site.

The Auditor considers that the Site Background presented in ERM (2015a), with appropriate reference to another report which provided further details, was suitable for the purposes of the Supplementary Phase 2 ESA.

3.4 Fieldworks

The fieldworks undertaken as part of the Supplementary Phase 2 ESA were discussed in Section 3. Specifically, soil and groundwater investigation methodologies and fieldwork observations (i.e. soil screening data, geology, hydrogeology, waste disposal and GPR survey) were presented.

The seven-step Data Quality Objectives (DQOs) process for the Supplementary Phase 2 ESA was provided as Annex C. Field sheets and calibrations records were provided as Annex D, while photographs taken during fieldworks were provided in Annex E. Photo-ionisation detector (PID) measurements recorded during intrusive works and borelogs were provided as Annex F.

The Auditor notes the following with regard to Section 3:

- The DQOs presented as Annex C were appropriate for the purposes of the Supplementary Phase 2 ESA.
- There is some confusion with regard to MW22 and MW23. There were soil results (Table 7 to Table 9) presented for MW22A, MW22C, MW23A and MW23C and groundwater results (Table 10 to Table 12) presented for MW22A, MW22C, MW23A and MW23C. However, only borelogs for monitoring wells MW22A, MW22B, MW23A and MW23B are provided in Annex F and only these locations were discussed in the Sampling Analysis and Quality Plan (SAQP) presented as Annex I. Additionally, monitoring wells MW22C and MW23C did not appear to be illustrated on the Figures. Please clarify and ensure references to each sample location are consistent throughout the report.
- Section 3.4.1: Justification for the use of a 10.6 eV PID should be provided given the ionisation potentials of the contaminants of concern.
- Annex F: Define the sample types presented on the borelogs i.e. DS and US.
- Please ensure that all Annexes are referenced within the body of the report e.g. Annex B (Groundwater Bore Search) and Annex G (Survey Data).

3.5 Laboratory Analytical Results

The Laboratory Analytical Results (Section 4) identified those contaminants that were analysed by the primary and secondary laboratories in selected soil and groundwater samples, including:

- TRH, BTEX, PAH, phenols and metals (i.e. As, Cd, Cr, Cu, Pb, Ni, Zn and Hg), VOCs and asbestos (fill material only).

Selected human health and ecological soil and groundwater assessment criteria, a summary of analytical results and field and laboratory quality control results are provided.

The Auditor notes the following with regard to Section 4:

- The analytes listed in Section 4.1 should be consistent with those presented in the SAQP (Annex I) (e.g. ethanol identified as a CoPC in Annex I (for monitoring well MW28), while asbestos was not identified in Annex I). If the analytes tested were changed from those proposed in the SAQP this should be discussed in the report.
- Section 4.4: The summary of groundwater exceedances presented as Table 4.2 should be consistent with those illustrated on Figure 5 (e.g. TRH C_6-C_{10} less BTEX concentration at monitoring well MW30). Additionally, the units presented should be consistent to ensure presented concentrations are accurate (e.g. naphthalene concentration at monitoring well MW30). Please amend accordingly.
- The Auditor considers that the groundwater concentrations in monitoring well MW18B should be monitored over time to confirm that the ingress of fine material has not impacted the reliability of the results.
- The relative percentage difference (RPD) percentages presented in Table K4 and Table K5 should be consistent with those in Schedule B3, ASC NEPM (2013) i.e. if results show greater than 30% difference, a review should be conducted of the cause. Therefore, further consideration should be to the RPD exceedances reported in soil (MW27_5.0/D01_121115_SC reported an RPD of 40% and MW27_5.0/T01_121115_SC reported an RPD of 79% for chromium III + VI) and groundwater (MW22A/T01_18115 reported an RPD of 44% for zinc).

3.6 Discussion of Results

Exceedances of the selected screening criteria are discussed in Section 5, including TCE and benzene concentrations in groundwater. Additionally, asbestos in fill material, hydrocarbon impacts relating to historical Underground Storage Tanks (USTs) UT1 to UT3 and a diesel generator location north of Building 18 and metal impacts in soil and groundwater were addressed.

The Auditor notes the following with regard to Section 5:

- Section 5.1: It is understood that TCE was detected in the deeper screened interval near Building 8 (i.e. MW18B) and along the southern boundary of the Site (i.e. MW22B and MW23B). Although the lateral extent of the TCE plume has not been assessed (as the plume appears to be migrating beyond the Site boundary), a comment should be made with regard to the vertical extent of contamination.
- Section 5.3: It was stated that "*asbestos is likely to be sporadically present within the buried building rubble within small defined areas (pockets) across the southern portion of the Site, rather than evenly distributed throughout the fill material*". The Auditor considers that a figure should be prepared illustrating areas where the asbestos impacted building rubble is likely to occur based on soil results to date.

3.7 Updated Conceptual Site Model

Section 6 provided an updated CSM for the Site. Sources of contamination were confirmed based on analytical data, the nature and extent of soil and groundwater impacts were discussed, potential current and future human health and ecological receptors were identified and exposure pathways (or source-pathway-receptor linkages) were assessed.

Mostly notably, the following additional potential human receptors were identified based results of the Supplementary Phase 2 ESA:

- Current employees of neighbouring commercial / industrial sites across South Creek Road.

Future recreational users who frequent the off-site Dee Why Creek were no longer considered to be potential receptors.

The Auditor notes the following with regard to Section 6:

- The CSM presented as Section 6 is appropriate for the purposes of the Supplementary Phase 2 ESA.

3.8 Conclusions

The conclusions of the Supplementary Phase 2 ESA were presented in Section 7 and are summarised below:

- a number of soil and groundwater exceedances were reported;
- previously identified TCE and benzene impacts in groundwater were confirmed to extend across the southern boundary of the Site;

- the TCE plume appears to be migrating vertically (downward) as it moves away from the source area;
- a chronic vapour risk associated with TCE may exist for commercial workers within Building 18;
- a direct contact risk may exist to current downgradient groundwater bore users through extraction if TCE and benzene impacted groundwater is reaching off-site bores; and
- intrusive activities undertaken on the southwest portion of the Site and north of Building 2 should be managed to mitigate risks associated with shallow soil impacts.

The Auditor agrees with the conclusions of the Supplementary Phase 2 ESA.

4.0 Auditor Summary and Conclusions

The Auditor considers that the Supplementary Phase 2 ESA generally followed the requirements of OEH (2011) and DEC (2006).

Notwithstanding the specific comments made, clarifications and amendments sought in this letter, the Site Auditor considers that the objectives of the Supplementary Phase 2 ESA have been met.

Should you have any further queries relating to this review, please do not hesitate to contact Paul Steinwede directly.

Yours sincerely

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11 May 2017

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim

Site Auditor Interim Advice: Review of ERM Proposed Residential Area Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW for Roche Products Pty Ltd

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Site Auditor for 4-10 Inman Road, Dee Why NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Pty Ltd (ERM). It is understood that this Auditor role will be considered a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act). The Auditor is currently awaiting formal correspondence from EPA confirming this as a Statutory Audit.

This letter provides the Auditor's review of the document listed in **Section 2.0**, which relates to the Environmental Site Assessment (ESA) undertaken for Part A of the Unregulated Area of the Site.

This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2017. *Part A Unregulated Area Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 6 April 2017 (Ref. 0330752 Draft D05). This report will be referred to as the 'Part A ESA Report' herein.

3.0 Technical Review

The Auditor has conducted a technical review of the Proposed Residential Area ESA (ERM, 2016) with reference to the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011) and *Guidelines for the NSW Site Auditor Scheme (2nd Edition)* (DEC, 2006). For ease of review the Site Auditor's comments are provided in grey shaded text below.

3.1 Executive Summary

The Executive Summary provided an introduction to the Site and a portion of the Site identified as the 'Part A Unregulated Area' for which this ESA relates. The specific objectives, scope of work, findings and conclusions of the assessment were summarised.

The Auditor considers that the Executive Summary provided a succinct overview of the Part A ESA Report with the following comment:

- It is stated that "*the ESA was focused on an area of the Site identified as the 'Part A Unregulated Area' which falls outside the adjoining Part B, of which a portion (Part B Regulated Area) is currently regulated under the Contaminated Land Management Act (1997)".* With reference to Figure 2a (Annex A), the land adjoining the Part A Unregulated Area is identified as the 'Part B Unregulated Area' and the 'Regulated Area'. Please ensure the terminology used in the Executive Summary is consistent with the remainder of the Part A ESA report.

3.2 Introduction

The Introduction (Section 1) of the Part A ESA Report provided some general and background information regarding the Site and defined terms used throughout regarding areas of the Site. The specific objectives of the Part A ESA were:

- to achieve an appropriate level of assessment (including increasing soil and groundwater sampling density) in order to make an assessment of the Part A Unregulated Area for unrestricted land use (Stage One); and
- to further assess and address data gaps identified as part of the Stage One works including the collection of sufficient data to facilitate the preparation of a comprehensive RAP to address identified contamination issues within the Part A Unregulated Area (Stage Two).

The scope of works for Stage One comprised the preparation of health and safety documentation, subsurface clearance (for intrusive works), drilling of 16 vertical boreholes (1.5 to 10 metres below ground level (mbgl)), excavation of five test pits (0.55 to 3 mbgl), installation and development of five groundwater monitoring wells (converted from soil bores), survey and gauging of 14 new and existing monitoring wells and submission of soil and groundwater samples to a NATA accredited laboratory for analysis.

The scope of works for Stage Two comprised a grid based survey for asbestos in soils utilising raking techniques, excavation of three targeted test trenches (maximum depth of 0.5 bgl) and eight test pits (1.5 to 3 bgl) and submission of soil samples to a NATA accredited laboratory for analysis.

The Auditor considers that the Introduction was suitable for the purposes of the Part A ESA Report with the following comments:

- Section 1.2: The definition of the 'Part B Unregulated Area is *"a portion of the Site which adjoins Part A and Part B Regulated Area, which is currently proposed for commercial/industrial use".* The Auditor notes from Figure 2a (Annex A) there is no 'Part A and Part B Regulated Area' only a 'Regulated Area'. Please amend definitions provided in Section 1.2 as appropriate.
- Section 1.4: The Auditor notes that one of the specific objectives is to undertake investigations to allow for an assessment of the Part A Unregulated Area to be made suitable for 'unrestricted' land use. As land uses are restricted by the zoning of the land it is suggested that this objective be reworded/rephrased.

3.3 Background

The Background (Section 2) provided a description of site features, history, surrounding land uses, environmental setting (including regional and local geology, hydrogeology and hydrology) and a summary of previous investigations specific to the Part A Unregulated Area.

The Auditor considers that the Background was suitable for the purposes of the Part A ESA Report.

The Auditor notes that the Phase 1 ESA indicated that fill material imported to Site from an unknown source was potentially a source of the bonded asbestos identified on-site.

3.4 Fieldworks

The fieldworks undertaken as part of the Part A ESA were discussed in Section 3. Specifically, Stage One and Stage Two investigation methodologies, fieldwork observations (i.e. soil field screening data, asbestos investigation, geology and hydrogeology) and the waste disposal approach were presented.

Field records and calibration certificates related to the field works are presented Annex E. Photographs taken during the field works were presented in Annex F, while borehole and test pit logs and photoionisation detector (PID) measurements were provided in Annex G. Waste classification and disposal certificates for Stage One were provided in Annex H.

The seven-step Data Quality Objectives (DQOs) process for the Part A ESA was provided as Annex D (within the Sampling Analysis and Quality Plan (SAQP)).

The Auditor notes the following with regard to Section 3:

- Section 3.1: Please ensure the investigation dates presented in Section 3.1 are consistent with those presented in Table 4, Annex B.
- Section 3.3: It was stated that *"Given that the investigation objective was to assess suitability of the Part A Unregulated Area for residential use..."*. With reference to Section 1.4, this does not appear to be a specific objective of the investigation. Please amend Section 1.4 and/or Section 3.3 so the objectives of the investigation are clear throughout the Part A ESA Report.
- Section 3.3 (Annex E): PID calibration certifications were provided for 6 and 7 October 2016. There do not appear to be analytical results presented in Annex B for these dates and it is understood from Table 4 (Annex B) that test pits were only advanced on 5 October 2016. Please confirm works associated with the calibration certifications for 6 and 7 October 2016.
- Section 3.3 (Annex E): An excavation sampling field sheet was provided for PRA_TRENCH_01 dated 18 October 2016. The location of this trench is not clear from Figure 4b (Annex A) as it appears this trench is different to that of TRENCH_01 (field sheet dated 4 August 2016). Please amend the Part A ESA Report to ensure the naming and location of each trench is clear.
- Section 3.3 (Annex G): The Auditor notes that borelogs for soil bores SB28 and SB29 installed as part of the Stage One works were included with the historical borelogs and not the Stage One borelogs within Annex G.
- Section 3.3 (Annex G): Trench logs for TRENCH_01 to TRENCH_03 do not appear to be provided in Annex G. Please include all trench logs within Annex G. It is noted that material descriptions for TRENCH01 and TRENCH_02 were provided in Annex E.
- Section 3.3.1: It is unclear why soil bores located outside the Part A Unregulated Area are discussed in Section 3.3.1 e.g. MW38. Additionally, with reference to Table 8a (Annex B), it appears that 16 soil bores were drilled during the Stage One works. Please revise the discussion in Section 3.3.1 to identify those soil bore locations installed outside the Part A Unregulated Area (or remove reference) and confirm/amend the number of soil bores installed as part of the Stage One works.
- Section 3.3.3: The sample depths presented in Table 8a (Annex B) do not appear to be consistent with those depths presented in Table 13a (Annex B). For example, soil bore SB41 appears to have samples collected from 0.5 and 4.5 mbgl (Table 8a), however an asbestos result was reported for a sample collected at 0.3 mbgl (Table 13a). Please ensure that all samples collected during the Stage One investigation are presented on Table 8a.
- Table 8a and Table 8b, Annex B: Please ensure Table 8a and Table 8b are referenced within the Part A ESA Report. The Auditor notes that only a 'Table 8' was included on the table of contents. Additionally, the first two rows of each table appear to be missing some letters.

3.5 Laboratory Analytical Results

The Laboratory Analytical Results (Section 4) identified those contaminants that were analysed by the primary and secondary laboratories in selected soil and groundwater samples, including:

- All samples: total recoverable hydrocarbons (TRH) and benzene, toluene, ethylbenzene and xylenes (BTEX).
- Selected samples: polycyclic aromatic hydrocarbons (PAHs), phenols and metals (i.e. As, Ba, Be, Bo, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, V, Zn and Hg), volatile organic compounds (VOCs), organochlorine and organophosphorus pesticides (OCPs and OPPs), polychlorinated biphenyls (PCBs) and asbestos (soil only).

Selected human health and ecological soil and groundwater assessment criteria, a summary of current and historical analytical results and field and laboratory quality control results are provided.

The Auditor notes the following with regard to Section 4:

- Section 4.1 (Annex H): Please ensure that all laboratory certificates are provided in Annex H e.g. laboratory reports for ES1622668, ES1623656 and ES1623500.
- Section 4.3: In addition to the nickel exceedances reported in soil samples MW37_0.5 and SB31_0.5, the Auditor notes from Figure 4a (Annex A) that the concentration of nickel was reported above the adopted ecological criteria in soil sample SB35_0.3. The analytical results from SB35_0.3 also appears to be omitted from Table 9 (Annex B). Please ensure that all exceedances of the criteria are reported in Section 4.3 and that all analytical results are presented in the tables presented in Annex B.
- Section 4.3 (Annex A): Reference is made to 'Figure 4b - Stage 2 Asbestos Detection Locations'. As this section relates to the Stage One soil analytical results, it is unclear why reference is made to a Stage Two figure. For clarity, please remove reference to Figure 4b in Section 4.3.
- Section 4.3 (Table 9 to Table 11a, Annex B): The soil analytical results for soil bore SB35 do not appear to be presented on Table 9, Table 10, Table 11a and Table 13a, Annex B. Is this location considered to be within the Part A Unregulated Area? Please ensure that all analytical results are presented on the applicable tables in Annex B.
- Section 4.3 (Table 12, Annex B): It is unclear from the title of Table 12 'Soil Results Summary - OPs and OCs' if this table presents results from Stage One or Stage Two, as each of the other soil tables in Annex B make this distinction. Please specify if Table 12 presents soil results from Stage One or Stage Two and relabel accordingly.
- Section 4.4: Please ensure that all 39 primary soil samples are included in Table 8a (Annex B).
- Section 4.4: The Auditor notes from Table 11b (Annex B), that two soil samples (TRENCH_01_040816 and TRENCH_02_040816) were submitted for VOC analysis in August 2016. All Stage Two soil analytical results should be noted/discussed in Section 4.4.
- Section 4.4: It is stated that "*Six potential ACM fragments were collected during the grid based hand picking sampling activities, three from cell A7 and three from cell G4..".* It appears from Figure 4b (Annex A) that only two fragments were collected from cell A7 (referencing Figure 2c for cell locations). Please confirm the locations where ACM fragments were collected and amend the Part A ESA Report accordingly. Additionally, for clarify, it would be useful to include sample IDs in Section 4.4.
- Section 4.4 (Table 11b and Table 13b, Annex B): It is unclear from the figures presented in Annex A where PRA_TRENCH_01 is located. Is this trench location identified as PRA_TRENCH is Figure 4b, Annex A? Please ensure sample location labelling is consistent throughout the Part A ESA Report.
- Section 4.5: A note regarding the results where the laboratory limit of reporting (LOR) is greater than the adopted screening criteria (e.g. metals, pentachlorophenol, benzo(a)pyrene and pesticides) should be added to Section 4.5.
- Section 4.8 (Annex I): The total number of primary soil samples collected as part of the Stage One and Stage Two investigations was stated to be 78 in Annex I. However, Section 4.3 and Section 4.4 of the Part A ESA Report refers to 81 primary samples (42 in the Stage One and 39 in the Stage Two investigations). Please confirm the number of soil samples collected and amend the Part A ESA Report accordingly.
- Section 4.8 (Annex I): The Auditor notes that rinsate samples were collected in accordance with the SAQP i.e. when soil and groundwater sampling works were being undertaken. However, please confirm if a rinsate sample was collected from the interface probe during groundwater gauging on 16 March 2016.
- Section 4.8 (Annex I): Please ensure that all RPD exceedances (i.e. RPDs greater than 30%) are highlighted in Table 11a and Table 13 and discussed in Annex I e.g. barium in MW40_1.0 and T01_090316_SC (62%) and .

3.6 Discussion of Results

Exceedances of the selected screening criteria and detections above the laboratory limit of reporting (LOR) were discussed in Section 5, including:

- Solvent impacts (namely vinyl chloride) in groundwater southwest of Building 10.
- Asbestos impacts in soil between Building 9 and Building 10.
- Metal impacts in soil and groundwater across the Part A Unregulated Area.

The previous identified TCE and benzene plume on the Regulated Area was also discussed, however it was noted that "*these plumes have been delineated along the adjoining northern and eastern boundaries of the Part A Unregulated Area"* and *"are considered unlikely to extend onto the Part A Unregulated Area based on the groundwater flow direction and known plume geometry*".

Similarly, the impacts associated with the former underground storage tanks (USTs) on the Part B Unregulated Area *"are unlikely to extend onto the Part A Unregulated Area based on the flow direction and known plume geometry*".

The Auditor notes the following with regard to Section 5:

- Section 5 (Asbestos in Soil): The Auditor notes from Table 13a (Annex B) that soil samples collected within fill material at depths ranging from 0 to 0.5 mbgl were analysed for asbestos. From the borelogs presented in Annex G, fill material was reported to be at depths near or greater than 1.0 mbgl (i.e. soil bores SB40, SB41, SB45 and SB46). The potential for asbestos to be present at depth (i.e. greater than 1 mbgl) across the Part A Unregulated Area should be discussed, noting the test pitting and sampling undertaken adjacent to soil bore SB41 as part of the Stage Two works.
- Section 5 (Asbestos in Soil): Although there were access constraints within the Part A Unregulated Area that prohibited sampling e.g. beneath buildings and within heavily vegetated areas, an assessment regarding the potential for fill material and ACM to within these areas should be provided based on the understood source of asbestos impacts and historical land uses.

3.7 Conceptual Site Model

Section 6 provided a CSM for the Part A Unregulated Area. Sources of contamination were confirmed based on analytical data, the nature and extent of soil and groundwater impacts were discussed, potential on-site and off-site current and future human health and ecological receptors were identified and exposure pathways (or source-pathway-receptor linkages) were assessed.

The Auditor notes the following with regard to Section 6:

- Section 6.2/Section 6.3: Confirmed sources of contamination were listed in Section 6.2, including potential spills/leaks at un-bunded diesel generator south of Building 19 and potential storage and use of pesticides/herbicides during Site maintenance. The soil and groundwater analytical results from the Part A ESA (as discussed in Section 6.3) do not appear to support that these areas/activities have resulted in contamination of the Part A Unregulated Area. The impacts associated with all confirmed sources of contamination should be discussed in Section 6.3 as appropriate.
- Section 6.2: It is stated in Section 2.5 of the Part A ESA Report that "*Fill material has been used at various locations across the Site with no details available on the source".* Historical and current investigations identified bonded asbestos within the fill material indicating that the on-site fill material is contaminated in areas. Therefore, it should be made clear in Section 6.2 whether fill material is a confirmed source of contamination.
- Section 6.5: Given that exposed impacted soils are/could be present within the Part A Unregulated Area, the potential for dust inhalation should be considered as a potential exposure pathway.

3.8 Conclusions

The conclusions of the Part A ESA were presented in Section 7 and are summarised below:

- based on the impacts reported on adjoining Regulated Area it is considered appropriate that restrictions on the abstraction or use of groundwater be put in place under any future redevelopment scenario.
- asbestos was observed in surface and sub-surface soils near Buildings 9 and 10 which were believed to be related to historical infrastructure located at the Site. The asbestos impacts were considered to be adequately characterised and are not considered evidence of a more widespread burial across the Site. However, it was noted that additional work should be undertaken in order to render the Part A Unregulated Area suitable for potential residential land use.
- identified issues in the Part A Unregulated Area were considered to be managed under current commercial/industrial or future residential land use through administrative controls.

The Auditor agrees with the conclusions of the Part A ESA Report, however notes that some recommendations are also presented e.g. restriction for the abstraction of groundwater.

In accordance with OEH (2011), the conclusions should also comprise a brief summary of all findings and any uncertainties/assumptions associated with the results.

4.0 Auditor Summary and Conclusions

The Auditor considers that the Part A ESA Report generally followed the requirements of OEH (2011) and DEC (2006).

Notwithstanding the specific comments made, clarifications and amendments sought in this letter, the Site Auditor considers that the objectives of the Part A ESA Report have been met. Please ensure that the above Auditor comments are addressed during the finalisation of the Part A ESA Report.

Should you have any further queries relating to this review, please do not hesitate to contact Paul Steinwede and/or Lesley Limage directly.

Yours sincerely

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1 August 2017

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim,

Site Auditor Interim Advice: Review of ERM Draft Remediation Action Plan, Unregulated Area, 4-10 Inman Road, Dee Why NSW

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Site Auditor for 4-10 Inman Road, Dee Why NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Pty Ltd (ERM). This Auditor role is considered a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act).

This letter provides the Auditor's review of the Remediation Action Plan (**Section 2.0)**, which relates to the remediation planning proposed for the area of the Site known as the "Unregulated Area". The Unregulated Area comprises two areas called Part A and Part B.

This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2017c. *4-10 Inman Road, Dee Why NSW, Unregulated Area, Remediation Action Plan,* May 2017 (Ref. 0349667_RAP Draft D03). This report will be referred to as the RAP herein.

In addition to the RAP, the Auditor has referred to the following documentation:

- AECOM (2017a), *Site Auditor Interim Advice: Review of ERM Proposed Residential Area Environmental Site, Assessment, 4-10 Inman Road, Dee Why NSW for Roche Products Pty Ltd*, 11 May 2017 (Ref. 60484586_L016_Part A Unreg ESA 11 May 2017).
- AECOM (2017b), *Site Auditor Interim Advice: Review of ERM Part B Unregulated Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW for Roche Products Pty Ltd*, 2 June 2017 (Ref. 60484586_L017_Part B Unreg ESA 2 June 2017).
- ERM, (2017a), *Part A Unregulated Area Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW*, 6 April 2017 (Ref. 0330752 Draft D05). This report will be referred to as the 'Part A ESA Report' herein.
- ERM, (2017b), *Part B Unregulated Area, 4-10 Inman Road, Dee Why NSW, Environmental Site Assessment*, 3 May 2017 (Ref. 0330752 Draft D05). This report will hereafter be referred to as the 'Part B ESA Report'

3.0 Technical Review

The Auditor has conducted a technical review of the RAP (ERM, 2017c) with reference to the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011) and *Guidelines for the NSW Site Auditor Scheme (2nd Edition)* (DEC, 2006). For ease of review, the Site Auditor's comments are provided in grey shaded text below.

The Auditor considers that the RAP should take into account the Auditor's comments on the Part A and Part B ESAs including, but not limited to, comments regarding groundwater levels in Part B.

3.1 Executive Summary

The Executive Summary provided an overview of the contamination status of the Part A and B areas, the objectives for the Site, remediation goals for Part A and Part B and an overview of the approach for selecting the proposed remediation approach for each area.

The Auditor considers that the Executive Summary was prepared in accordance with OEH (2011) and is suitable for the purposes of the RAP.

The Auditor notes that there was one additional objective of Part B listed in Section 1.3 of the RAP that was not included in the Executive Summary.

3.2 Introduction

The Introduction (Section 1) of the RAP provided background information including a summary of the history of the Site, previous investigations undertaken at the Site and the Section 60 notification submitted to the NSW EPA and subsequent regulation of the south-western portion of the Site (the 'Regulated Area'). The background section stated that the RAP relates only to the Unregulated Areas of the Site (Part A and B) and not the Regulated Area.

The objectives were described in relation to Roche's overall objectives for the Site and the specific objectives for Part A and Part B.

The scope of works of the RAP were presented in Section 1.4 and included identifying remediation strategies and assessing the appropriateness for each of the options and providing an outline of the activities associated with the preferred remedial strategies.

The Auditor considers that the Introduction was suitable for the purposes of the RAP with the following comment:

- One of the objectives for Part A referred to removal of all visible asbestos containing material (ACM) within or on the soil surface. The RAP should define what is considered "surface" soil (e.g. the top 10 cm).

3.3 Background

The Background (Section 2) provided a summary of the site description, including description of Part A and B, history, surrounding land uses and environmental setting (geology, hydrogeology and hydrology).

The Auditor considers that the Background information presented was prepared in accordance with OEH (2011) and is suitable for the purposes of the RAP with the following comments:

- Section 2.2.1 indicated that the maximum depth of asbestos impacts was 1 m bgs. As stated in the Auditor's review of the Part A ESA Report (AECOM, 2017a), the potential for asbestos to be present at depth (i.e. greater than 1 m bgs) across the Part A Unregulated Area should be discussed. However, it is noted that Section 7.4.1 of the RAP did state that the precise lateral and vertical extent of the remediation excavation would be informed by field observations, with the vertical extent of the excavation to be extended to a depth 0.3 m below the deepest observed impact or the natural soil interface.
- Section 2.4 referred to three underground storage tanks (USTs) and Tables 2.1 and C3 referred to seven USTs. The text should be updated as appropriate to discuss the other four tanks.
- Table 2.1 referred to stockpiles of soil in the north-west portion of Part A. The Auditor understands that these stockpiles are no longer present on the Site. The removal and fate of the stockpiles should be confirmed, and the RAP updated as appropriate.
- Section 2.5 referred to the tributary that runs through the Site. For completeness the RAP should include a description of the tributary such as if it is concrete lined.
- Section 2.6: The first sentence of the second paragraph in relation to the geology of Part B appeared to be missing some words, or requires re-wording. However, it is noted that the intent of this sentence could be understood and therefore does not affect the overall outcome of the review.

- Section 2.5 included a description of depth of fill and the depth that bedrock was encountered. For completeness this section should also refer to the natural soil that was encountered (i.e. between fill and bedrock).
- Section 2.7.2 referred to groundwater in RP10 at 8.03 m bgs. As per the Auditor's comments on the Part B ESA (AECOM, 2017b), some of the groundwater depths appeared to be incorrectly calculated in the Part B ESA. The RAP should be updated as appropriate with the correct groundwater depths.

3.4 Site Characterisation

The Site Characterisation (Section 3) identified the contaminants of potential concern (CoPC) as:

- Part A - asbestos in the form of bonded ACM and asbestos fines (AF) in soils
- Part B - benzene, toluene, ethylbenzene and xylenes (BTEX) and total recoverable hydrocarbons (TRH)

A summary of previous environmental investigations and an assessment of the nature and extent of soil, groundwater and soil vapour impacts was also provided.

The Auditor considers that the Site Characterisation discussion was suitable for the purposes of the RAP with the following comments:

- Section 3.1 and 5.1.1 referred to asbestos fines (AF) whereas other sections of the RAP, including figures, indicated the asbestos was in the form of friable asbestos (FA). This should be clarified in the RAP. The Auditor notes that FA was detected and reported in the Part A ESA. This inconsistency does not affect the overall review of the RAP, particularly considering that the assessment criteria for FA and AF are the same.
- Section 3.2: The summary of the Phase 2 ESA included reference to TCE and benzene in groundwater. For the purposes of the RAP, this section should make it clear that this refers to the Regulated Area and not the Unregulated Area. The Auditor notes that this does not affect the overall review of the RAP.
- Section 3.4.2 discussed the delineation of the hydrocarbon plume with reference to various soil bores (e.g. delineated to the east by SB36 and SB50). As previously stated (AECOM, 2017b) it is not clear on what basis ERM considers the groundwater plume has been delineated, particularly when some of the soil bores were terminated at depths above the groundwater.

3.5 Conceptual Site Model

The Conceptual Site Model (CSM) (Section 4) presented sources of contamination based on the site history, a discussion on potential exposure pathways and potential receptors, including human and ecological. This section discussed the potentially complete source-pathway-receptor linkages for Part A and B.

The Auditor considers that the CSM was suitable for the purposes of the RAP with the following comments:

- Section 4.4.1 referred to the Part B Regulated Area. The Auditor assumes that this should reference the Regulated Area and not Part B.
- The CSM should be updated in accordance with Auditor comments on the Part B ESA (ERM, 2017b), particularly in relation to the depth to groundwater.

3.6 Remediation/Management Rationale

The Remediation/Management Rationale (Section 5) provided justification and references for assessing remediation goals and remediation assessment criteria, including primary, secondary and optional assessment criteria. The assessment criteria were presented in the tables in Annex C.

The Auditor considers that the Remediation/Management Rationale was suitable for the purposes of the RAP with the following comments:

- As previously stated, the RAP should be updated with the correct information regarding groundwater levels in Part B. The discussion in Section 5 should be updated accordingly, particularly in relation to the evaluation of vapour intrusion and potential risk to intrusive workers.
- The Auditor concurs with the statement in Section 5.1.1 that further assessment (e.g. soil vapour sampling beneath Building 3) may be warranted.

- For completeness, the assessment criteria tables should include references to the source documents for the adopted criteria.
- Table D2 referred to the matrix only as soil. Based on the Part B ESA and Section 5.4.2 of the RAP, it is understood that, where relevant, the assessment criteria were based on sand as the soil type. This should be clearly presented in the tables.

3.7 Remediation Options Assessment

The Remediation Options Assessment (ROA) (Section 6 and Annex E) was developed to address the asbestos and hydrocarbon impacts separately. Technical feasibility, logistical feasibility, relative cost, and overall sustainability were used as primary evaluation criteria based on NSW DEC (2007) guidance and Roche internal policy.

Potentially feasible treatment options for the asbestos impacted soil were management in-situ, treatment on site, excavation and onsite burial and excavation and removal off site. The preferred option was excavation and offsite disposal.

Potentially feasible groundwater treatment options for the hydrocarbon impacts comprised ex-situ technologies (pump and treat, excavation and ex-situ bioremediation, multi-phase vapour extraction) and in-situ technologies (monitored natural attenuation, in-situ chemical oxidation, enhanced bioremediation). ERM's preferred technology was a hybrid option combining excavation to approximate depth of groundwater and then application of a chemical oxidant (engineered calcium peroxide) to the aquifer via the excavations. Un-impacted overburden material would be reused as backfill and impacted soil treated at the Caltex Soil Remediation Facility, Kurnell. To remediate less impacted parts of the aquifer, the RAP proposed the application of oxidant via an elongated trench described as at the leading edge of the plume and parallel to groundwater flow.

The Auditor considers that the ROA was suitable for the purposes of the RAP with the following comments:

- The ROA provided explanation for the different considerations (e.g. technical feasibility) but it was not clear if there was any specific ranking for the different criteria.
- Section 6.3.5 and Annex E: The ROA (Annex E) indicated that for Part B, three remediation options were retained for consideration, namely ISCO, excavation and enhanced bioremediation and institutional controls. The summary table in Annex E1 indicated that excavation and enhanced bioremediation was recommended out of these three options and this option was discussed in Section 6.3.5. However, it was not clear on what basis this option was chosen over the other two options.
- The Auditor notes that the preferred technology comprises excavation of soil across an area larger than the footprints of the previous USTs and/or larger than previously identified soil impacts. It is not clear from the RAP if the large area is proposed in order to facilitate the application of the oxidant or if there is another reason for excavation of the soil.
- Section 6.3.5 indicated that the proposed trench would be parallel to groundwater flow. The Auditor assumes that this should state perpendicular to groundwater flow as is shown on Figure 7. The Auditor considers that the location of the trench may require review given the known extent of the plume, the groundwater flow direction and that the highest concentrations were reported in MW62. The trench currently appears to be cross hydraulic gradient to MW62.

3.8 Remediation Methodology

The Remediation Methodology (Section 7) provided a description of the selected technologies, proposed, outline scope of work, planning for a more detailed pre-design investigation, discussion on applicable licensing, permitting and approvals, and validation works.

Table 7.1 provided a summary of the consideration of the remediation woks in relation to SEPP55, and assessment if the works constituted Category 1 remediation works. On the basis of the assessment, ERM concluded that the proposed works would be defined as Category 2 works.

The Auditor considers that the Remediation Methodology was suitable for the purposes of the RAP with the following comments:

- Table 7.1 stated that the remediation works are limited to soil excavation works. Given that the works will include demolition of a building and removal of trees to allow the soil excavation works and then the application of an oxidant to the aquifer, the table should be updated accordingly.
- Section 7.3.3: The last paragraph referred to the Regulated Area. The Auditor assumes that this is a typographical error and should refer to the Unregulated Area being Category 2 remediation. If this is the case, no further clarification is required.
- The RAP referred to pending Council approvals for the demolition Building 4 and removal of tress. The Auditor understands that these approvals have now been obtained. The RAP should comment on the presence/absence of asbestos or other hazardous building materials in Building 4, including but not limited to asbestos. If hazardous building materials have been identified or are potentially present, the RAP should include information on how these will be managed during demolition works and any validation requirements post demolition.
- Section 7.5.2: Bullet 3 indicated that if necessary a track out area would be established for collection of impacted soil residues from equipment/trucks. The Auditor considers that the RAP and/or Environmental Management Plan for the works should provide clear procedures for how equipment and people will be decontaminated between the remediation areas, particularly between asbestos impacted and “clean” areas of the Site.
- Section 7.5.3 indicated that the application of the oxidant would not generate mounding of groundwater within the excavation. However, the RAP indicated that potable water may be used to irrigate the excavation and induce a head, which indicates that localised mounding may occur. Can ERM confirm how they propose to prevent lateral flow of the potable water through the walls of the excavations (e.g. will sheet piles be installed along the walls) and maintain the stability of the walls during excavation, application of oxidant and water. The Auditor also notes that the use of potable water will dilute the concentration of the oxidant in the slurry and this should be taken into account in the calculations for the dosage of the oxidant.
- It is not clear in the RAP how the infiltration rates of the oxidant will be monitored during application. Section 10.2.3 indicated that if infiltration rates of oxidant and water were insufficient, the need for additional trenches should be considered. However, it was not clear how this would be assessed. It is noted that the RAP provided information on pre and post remediation groundwater monitoring but no information was provided on monitoring during the remediation.
- Section 7.5.3 referred to an acceptable radius of influence (ROI) but did not provide details of what the acceptable ROI would be. Please confirm the acceptable ROI.
- The RAP would benefit from a discussion on the expected chemical reaction that the application of the oxidant is expected to provide in order to assist in the remediation of the plume.
- The RAP referred to an appropriate standard for backfill and compaction of excavations. Whilst outside the scope of the Auditor, the appropriate standard and methodology for compaction of the backfill in the excavations should be confirmed prior to undertaking the backfilling.

3.9 Remediation Phase Monitoring

Remediation phase monitoring (Section 8) was described to comprise the following components:

- Part A - an airborne asbestos monitoring program during bulk earthworks
- Part B – groundwater monitoring prior to and following completion of remediation activities.

The Auditor considers that the Remediation Phase Monitoring was suitable for the purposes of the RAP with the following comments:

- As stated above, it was not clear what groundwater monitoring was proposed during the remediation in Part B, particularly to monitor the infiltration of the oxidant.

3.10 Evaluation of Remediation Success

The approach to assessing the success of planned remediation activities was provided in Section 9. The approach outlined waste classification and characterisation, soil validation sampling and groundwater monitoring (baseline and post remediation). Section 9.1 referred to a Sampling and Analysis Plan (SAP) in Annex I for groundwater monitoring during remediation.

The Auditor considers that the Evaluation of Remediation Success was suitable for the purposes of the RAP with the following comments:

- Section 9.1 indicated that the SAP as presented in Annex I was for groundwater monitoring during remediation. However, the information provided in Annex I only comprised two tables showing the wells to be sampled, the analysis (TRH and BTEX) to be undertaken and QA/QC requirements. This is not considered to be a full SAP and did not provide details of how and when the sampling would be undertaken. As stated above the RAP (Section 9.4 and 9.5) indicated that pre and post remediation groundwater monitoring would be undertaken, but not during the remediation. In addition, Section 9.4.2 indicated that the SAP included additional analytes such as oxidant chemical, ground quality parameters and attenuation indicators but these were not included in Annex I.
- Section 9.3.1 indicated that in the event that the excavation extends to bedrock then validation from the base of the excavation would not be required. The Auditor concurs with this as long as the surface of the bedrock does not contain pockets of fill and/or weathered bedrock which may require further assessment. In addition, the Auditor notes that visual validation will still be required.
- Section 9.3.1: It was not clear if samples will be collected from the base of excavations that are not extended to bedrock.
- Section 9.3.2 indicated that one sample would be collected per 25 m² of total base but later stated that samples would not be required from the base of excavations. This should be clarified.
- Section 9.3.3: The review of the VENM source sites should also include a review of available historical information and surrounding land use to assist in determining the appropriate analytical suite.
- The RAP should specify the proposed analytical suite for VENM samples and additional requirements should the site history indicate other potential sources that require assessment to confirm the material is VENM.
- Table 9.1 indicated that one trip blank and one trip spike would be collected per laboratory batch. The Auditor notes that if a laboratory batch comprises samples for asbestos testing only then these QA/QC samples will not be required.

3.11 Remediation Contingency Planning

Contingency measures relating to constraints on the excavation and the oxidant and unexpected finds were discussed in Section 10.

The Auditor considers that the contingency discussion was suitable for the purposes of the RAP with the following comments:

- Section 10.2.3 and 10.3 referred to infiltration and migration of the oxidant solution. As previously stated, the RAP should clarify how this will be monitored.
- It is understood that the application for tree removal was granted by Council and hence no contingency approach is required in relation to works in the vicinity of the trees.

3.12 Site Management and Stakeholder Engagement

The requirement and contents of the Health, Safety and Environmental Management Plan (HSEMP) for the works was discussed in Section 11 and Section 12. This included discussion on the requirement for various environmental management components such as noise, airborne fibres and waste management.

The components of stakeholder engagement were discussed in Section 13, including regulatory and community stakeholders.

The Auditor considers that the Site Management and Stakeholder Engagement approach was suitable for the purposes of the RAP with the following comments:

- Section 12.1.5 indicated that only specific wastes (i.e. listed in Schedule 1 of the POEO (Waste) Regulation 2005) would be tracked. The Auditor considers that the remediation contractor/consultant should set up an appropriate procedure for tracking of all waste generated and imported material and this information should be provided in the remediation and validation report.

- Environmental controls should include consideration management of water in the excavations, particularly during backfilling.
- Section 13.1.3: The first sentence appears incomplete.

4.0 Auditor Summary and Conclusions

A section outlining conclusions were omitted from the RAP. Please provide a new section including conclusions (and recommendations if appropriate) as required by OEH (2011).

As provided under separate cover, the RAP should be updated in accordance with Auditor comments on the Part A and Part B ESAs (ERM, 2017a and 2017b).

Should you have any further queries relating to this review, please do not hesitate to contact either Lesley Limage and/or Paul Steinwede directly.

Yours sincerely

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15 October 2017

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim

Site Auditor Interim Advice: Review of ERM Part A Unregulated Area Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW for Roche Products Pty Ltd

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Site Auditor for 4-10 Inman Road, Dee Why NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Pty Ltd (ERM). It is understood that this Auditor role will be a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act).

This letter provides the Auditor's review of the document listed in **Section 2.0**, which relates to the Environmental Site Assessment (ESA) undertaken for Part A of the Unregulated Area of the Site.

This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2017b. *Part A Unregulated Area Environmental Site Assessment, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 27 September 2017 (Ref. 0330752 Part A Final Draft). This report will be referred to as the 'Part A ESA Report' herein.

The Auditor had reviewed and provided comment on a previous draft version of the abovementioned report (dated 11 May 2017) in an Interim Advice letter (ref: 60484586_L016_Part A Unreg ESA_11 May 2017) (AECOM, 2017). ERM prepared a Part A Unregulated Area ESA comments register dated 22 September 2017 (ERM, 2017a) and a revised version of the report which is the subject of this Interim Advice.

3.0 Technical Review

The Auditor has conducted a technical review of the Part A ESA Report (ERM, 2017b) with reference to the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011) and *Guidelines for the NSW Site Auditor Scheme (2nd Edition)* (DEC, 2006).

The Auditor has reviewed the final draft Part A ESA Report (ERM, 2017b) and the comments register (ERM, 2017a). A copy of this register, together with the Auditor's assessment of how the previous Auditor's comments have been addressed is attached to this letter (refer to **Table 1** below).

4.0 Auditor Summary and Conclusions

The Auditor considers that the Part A ESA Report generally followed the requirements of OEH (2011) and DEC (2006).

The Site Auditor considers that the objectives of the Part A ESA Report have been met and the report can be issued as final. However, please ensure that the outstanding Auditor comments identified below are addressed during the finalisation of the report.

It is noted that remediation works have been completed on the Part A Unregulated Area in accordance with a Remedial Action Plan (RAP) prepared by ERM (May 2017) and reviewed by the Site Auditor (August 2017). Following the remedial works, ERM will be issuing a Part A Unregulated Area Validation Report (or similar document) which will be reviewed by the Site Auditor.

Should you have any further queries relating to this review, please do not hesitate to contact Paul Steinwede and/or Lesley Limage directly.

Yours sincerely

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cc: Peter Lavelle, ERM
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Table 1 Comments Register

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (11/05/2017)	ERM Response (22/09/2017)	Auditor Response
1	3.1	Exec Sum	It is stated that “the ESA was focused on an area of the Site identified as the ‘Part A Unregulated Area’ which falls outside the adjoining Part B, of which a portion (Part B Regulated Area) is currently regulated under the Contaminated Land Management Act (1997)”. With reference to Figure 2a (Annex A), the land adjoining the Part A Unregulated Area is identified as the ‘Part B Unregulated Area’ and the ‘Regulated Area’. Please ensure the terminology used in the Executive Summary is consistent with the remainder of the Part A ESA report.	Figure 2a has been changed to reflect the text. The body of the text has been reviewed and all references to "Regulated Area" have been changed to "Part B Regulated Area" for consistency.	Noted, however the terminology should be consistent with previous ERM reports i.e. ‘Part A Unregulated Area’, ‘Part B Unregulated Area’ and the ‘Regulated Area’.
2	3.2	1.2	The definition of the ‘Part B Unregulated Area is “a portion of the Site which adjoins Part A and Part B Regulated Area, which is currently proposed for commercial/industrial use”. The Auditor notes from Figure 2a (Annex A) there is no ‘Part A and Part B Regulated Area’ only a Regulated Area’. Please amend definitions provided in Section 1.2 as appropriate.	See above response.	See response to Item 1.
3	3.2	1.4	The Auditor notes that one of the specific objectives is to undertake investigations to allow for an assessment of the Part A Unregulated Area to be made suitable for ‘unrestricted’ land use. As land uses are restricted by the zoning of the land it is	Noted. Objective has been updated to reflect the assessment of land suitability for residential use rather than unrestricted.	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (11/05/2017)	ERM Response (22/09/2017)	Auditor Response
			suggested that this objective be reworded/rephrased.		
4	3.3	2.1	The Auditor notes that the Phase 1 ESA indicated that fill material imported to Site from an unknown source was potentially a source of the bonded asbestos identified on-site.	Agreed. Alternatively the asbestos may be related to historical demolition of structures onsite. The precise origin of asbestos in fill material will likely remain unconfirmed.	Addressed.
5	3.4	3.1	Please ensure the investigation dates presented in Section 3.1 are consistent with those presented in Table 4, Annex B.	Table 4 (Annex B) has been updated to ensure consistency with the main body of the report.	Addressed.
6	3.4	3.3	It was stated that “Given that the investigation objective was to assess suitability of the Part A Unregulated Area for residential use...”. With reference to Section 1.4, this does not appear to be a specific objective of the investigation. Please amend Section 1.4 and/or Section 3.3 so the objectives of the investigation are clear throughout the Part A ESA Report.	Objectives have been updated as per Auditor response item 1. This is now consistent throughout.	See response to Item 1.
7	3.4	3.3	(Annex E): PID calibration certifications were provided for 6 and 7 October 2016. There do not appear to be analytical results presented in Annex B for these dates and it is understood from Table 4 (Annex B) that test pits were only advanced on 5 October 2016. Please confirm works associated with the calibration certifications for 6 and 7 October 2016.	These calibration certificates were related to the parallel scope of works which was being undertaken as part of the Part B ESA on the Part B Unregulated Area and are therefore not related to this work. They have been removed from Annex E.	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (11/05/2017)	ERM Response (22/09/2017)	Auditor Response
8	3.4	3.3	(Annex E): An excavation sampling field sheet was provided for PRA_TRENCH_01 dated 18 October 2016. The location of this trench is not clear from Figure 4b (Annex A) as it appears this trench is different to that of TRENCH_01 (field sheet dated 4 August 2016). Please amend the Part A ESA Report to ensure the naming and location of each trench is clear.	Field sheets associated with investigation locations PRA_Trench, PRA_Trench_02 and PRA_Trench_03 have been updated for consistency between the main body of the report (text), figures and tables.	Addressed.
9	3.4	3.3	(Annex G): The Auditor notes that borelogs for soil bores SB28 and SB29 installed as part of the Stage One works were included with the historical borelogs and not the Stage One borelogs within Annex G.	Borelogs SB28 and SB29 have been moved to the Stage One section within Annex G.	Not addressed. Borelogs for SB28 and SB29 appear to still be included with the historical logs.
10	3.4	3.3	(Annex G): Trench logs for TRENCH_01 to TRENCH_03 do not appear to be provided in Annex G. Please include all trench logs within Annex G. It is noted that material descriptions for TRENCH01 and TRENCH_02 were provided in Annex E.	Lithological logs have been included in Annex G for Trench locations (PRA_TRENCH, PRA_TRENCH_02 and PRA_TRENCH_03).	Addressed.
11	3.4	3.3.1	It is unclear why soil bores located outside the Part A Unregulated Area are discussed in Section 3.3.1 e.g. MW38. Additionally, with reference to Table 8a (Annex B), it appears that 16 soil bores were drilled during the Stage One works. Please revise the discussion in Section 3.3.1 to identify those soil bore locations installed outside the Part A Unregulated Area (or remove reference) and	Report has been updated to include investigation locations relevant to the Part A Unregulated Area only. Total soil bores advanced as part of the Stage One works is 16.	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (11/05/2017)	ERM Response (22/09/2017)	Auditor Response
			confirm/amend the number of soil bores installed as part of the Stage One works.		
12	3.4	3.3.3	The sample depths presented in Table 8a (Annex B) do not appear to be consistent with those depths presented in Table 13a (Annex B). For example, soil bore SB41 appears to have samples collected from 0.5 and 4.5 mbgl (Table 8a), however an asbestos result was reported for a sample collected at 0.3 mbgl (Table 13a). Please ensure that all samples collected during the Stage One investigation are presented on Table 8a.	Table 8a has been updated for consistency with the analytical results and borelogs. Samples were collected from SB41 at depths of 0.3, 1.0 and 4.5m bgl, borelogs (Annex G) has been updated to include sample collected at 0.3m bgl. "	Addressed.
13	3.4	Table 8a and 8b	Annex B: Please ensure Table 8a and Table 8b are referenced within the Part A ESA Report. The Auditor notes that only a 'Table 8' was included on the table of contents. Additionally, the first two rows of each table appear to be missing some letters.	Table of Contents amended to reference Tables 8a and 8b and subsequently referenced in Section 4.1 of the text. Formatting issues associated with these tables have been rectified.	Addressed.
14	3.5	4.1	(Annex H): Please ensure that all laboratory certificates are provided in Annex H e.g. laboratory reports for ES1622668, ES1623656 and ES1623500.	A cross-reference between analytical results and laboratory reports has been undertaken with all reports included. Laboratory reports ES1622668, ES1623656 and ES1623500 are associated with works undertaken outside the scope and boundaries of the Part A Unregulated Area.	Noted. If these laboratory reports and results are not relevant to the scope and boundaries of the Part A Unregulated Area ESA, should they still be presented? The Auditor notes that results from these laboratory reports are still discussed/presented in Annex I (QA/QC Assessment) and Annex L. Additionally, the COA for ES1623656 appears to still be presented in Annex B.
15	3.5	4.3	In addition to the nickel exceedances reported in soil samples MW37_0.5 and	Table 9 (Annex B) Soil Results has been updated to include	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (11/05/2017)	ERM Response (22/09/2017)	Auditor Response
			SB31_0.5, the Auditor notes from Figure 4a (Annex A) that the concentration of nickel was reported above the adopted ecological criteria in soil sample SB35_0.3. The analytical results from SB35_0.3 also appear to be omitted from Table 9 (Annex B). Please ensure that all exceedances of the criteria are reported in Section 4.3 and that all analytical results are presented in the tables presented in Annex B.	analytical results reported from soil bore location SB35. Additionally Section 4.3 has been updated to include the nickel exceedance reported at location SB35.	
16	3.5	4.3	(Annex A): Reference is made to 'Figure 4b - Stage 2 Asbestos Detection locations'. As this section relates to the Stage One soil analytical results, it is unclear why reference is made to a Stage Two figure. For clarity, please remove reference to Figure 4b in Section 4.3.	Noted. Reference removed.	Addressed.
17	3.5	4.3	(Table 9 to Table 11a, Annex B): The soil analytical results for soil bore SB35 do not appear to be presented on Table 9, Table 10, Table 11a and Table 13a, Annex B. Is this location considered to be within the Part A Unregulated Area? Please ensure that all analytical results are presented on the applicable tables in Annex B.	Confirmation that soil bore location SB35 is located within the Part A Unregulated Area of the Site, therefore analytical results have been included in Tables 9, 10, 11a and Table 13a.	Addressed.
18	3.5	4.3	(Table 12, Annex B): It is unclear from the title of Table 12 'Soil Results Summary - OPs and OCs' if this table presents results from Stage One or Stage Two, as each of the other soil tables in Annex B make this distinction. Please specify if	OPPs and OCPs analysis was carried out during the Stage One works only. Table 12 (Annex B) has been updated to reflect this.	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (11/05/2017)	ERM Response (22/09/2017)	Auditor Response
			Table 12 presents soil results from Stage One or Stage Two and relabel accordingly.		
19	3.5	4.4	Please ensure that all 39 primary soil samples are included in Table 8a (Annex B).	Noted. Table 8a updated to ensure consistency with the analytical tables (inclusion of all primary samples).	Addressed.
20	3.5	4.4	The Auditor notes from Table 11b (Annex B), that two soil samples (TRENCH_01_040816 and TRENCH_02_040816) were submitted for VOC analysis in August 2016. All Stage Two soil analytical results should be noted/discussed in Section 4.4.	Noted. Section 4.4 updated.	Addressed.
21	3.5	4.4	It is stated that “Six potential ACM fragments were collected during the grid based hand picking sampling activities, three from cell A7 and three from cell G4..”. It appears from Figure 4b (Annex A) that only two fragments were collected from cell A7 (referencing Figure 2c for cell locations). Please confirm the locations where ACM fragments were collected and amend the Part A ESA Report accordingly. Additionally, for clarify, it would be useful to include sample IDs in Section 4.4.	As stated in the text a total of six potential fragments were collected during the grid survey. Figure 4b however has been amended to illustrate the reported exceedances from the samples collected from cell G4 and to show the locations of samples collected from cell A7 for laboratory analysis. Additionally Section 4.4 has been updated to include the sample IDs for clarity.	Addressed.
22	3.5	4.4	(Table 11b and Table 13b, Annex B): It is unclear from the figures presented in Annex A where PRA_TRENCH_01 is located. Is this trench location identified as PRA_TRENCH is Figure 4b, Annex A?	Investigation location PRA_TRENCH is PRA_TRENCH_01. All corresponding references to this investigation location have been	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (11/05/2017)	ERM Response (22/09/2017)	Auditor Response
			Please ensure sample location labelling is consistent throughout the Part A ESA Report.	updated including Section 3.3.2 and 4.4 and Figure 4b.	
23	3.5	4.5	A note regarding the results where the laboratory limit of reporting (LOR) is greater than the adopted screening criteria (e.g. metals, pentachlorophenol, benzo(a)pyrene and pesticides) should be added to Section 4.5.	Notes. Section 4.6 Groundwater Analytical Results has been updated to reference the higher LOR against the adopted screening criteria.	Addressed.
24	3.5	4.8	(Annex I): The total number of primary soil samples collected as part of the Stage One and Stage Two investigations was stated to be 78 in Annex I. However, Section 4.3 and Section 4.4 of the Part A ESA Report refers to 81 primary samples (42 in the Stage One and 39 in the Stage Two investigations). Please confirm the number of soil samples collected and amend the Part A ESA Report accordingly.	A review of all primary samples (Tables 11b, 13b and 13c) collected confirmed that a total of 83 primary samples collected during both Stages, with a total of 42 primary samples collected during the Stage One works and 41 during the Stage Two works. Amendments have been made to the ESA Report and the QAQC Report (Annex I) to reflect this review.	Addressed.
25	3.5	4.8	(Annex I): The Auditor notes that rinsate samples were collected in accordance with the SAQP i.e. when soil and groundwater sampling works were being undertaken. However, please confirm if a rinsate sample was collected from the interface probe during groundwater gauging on 16 March 2016.	A rinsate sample was not collected from the interface probe on 16 March 2016. It is confirmed that work were carried out in accordance with the applicable ERM Standard Operating Procedures (SOP) and therefore this is not considered to have a material impact on the overall results.	Noted. Additional discussion should be included in Annex I identifying the absence of a rinsate sample on 16 March 2016 and the decontamination procedures in place during the gauging event. Without a rinsate sample to demonstrate the efficacy of the decontamination procedures, other lines of evidence should be used to demonstrate that cross-contamination did not occur. In accordance with the ASC NEPM (2013) and ERM's 2016 Offsite ESA SAQP (dated

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (11/05/2017)	ERM Response (22/09/2017)	Auditor Response
					13 January 2016), please ensure that rinsate samples are collected on each day of sampling (where applicable) in the future.
26	3.5	4.8	(Annex I): Please ensure that all RPD exceedances (i.e. RPDs greater than 30%) are highlighted in Table 11a and Table 13 and discussed in Annex I e.g. barium in MW40_1.0 and T01_090316_SC (62%) and .	All RPD exceedances have been highlighted in the relevant tables and referred to within Table I1 of the QAQC report.	Not addressed. A number of RPD exceedances are still not highlighted in Table I1 of Annex I.
27	3.6	5	(Asbestos in Soil): The Auditor notes from Table 13a (Annex B) that soil samples collected within fill material at depths ranging from 0 to 0.5 mbgl were analysed for asbestos. From the borelogs presented in Annex G, fill material was reported to be at depths near or greater than 1.0 mbgl (i.e. soil bores SB40, SB41, SB45 and SB46). The potential for asbestos to be present at depth (i.e. greater than 1 mbgl) across the Part A Unregulated Area should be discussed, noting the test pitting and sampling undertaken adjacent to soil bore SB41 as part of the Stage Two works.	ERM considers that adequate delineation has been achieved in regards to asbestos in soil across the Part A Unregulated Area of the Site. Additional test pitting activities undertaken in October 2016 (Stage Two) identified asbestos impacts at depths of 1m bgl within the fill material, which is in close proximity to SB41. Further characterisation work has been carried out (21-23 August 2017) in order to facilitate and assist a potential buyer with the due diligence process. The collection of this additional data has help to provide greater clarity around the potential for asbestos to be more widespread across the Part A Unregulated Area. Results of this additional investigation have been included as Annex M.	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (11/05/2017)	ERM Response (22/09/2017)	Auditor Response
28	3.6	5	(Asbestos in Soil): Although there were access constraints within the Part A Unregulated Area that prohibited sampling e.g. beneath buildings and within heavily vegetated areas, an assessment regarding the potential for fill material and ACM to within these areas should be provided based on the understood source of asbestos impacts and historical land uses.	As noted above additional characterisation work has been undertaken in the Part A Unregulated Area targeting asbestos in fill. This work was completed in order to assist a potential buyer of the site with the due diligence process. The results of this additional investigation have been included as Annex M. The results of all investigation completed to date support the basis that fill material potentially impacted with ACM has not been used across the entirety of the Part A Unregulated Area of the Site.	Addressed.
29	3.7	6.2/6.3	Confirmed sources of contamination were listed in Section 6.2, including potential spills/leaks at un-bunded diesel generator south of Building 19 and potential storage and use of pesticides/herbicides during Site maintenance. The soil and groundwater analytical results from the Part A ESA (as discussed in Section 6.3) do not appear to support that these areas/activities have resulted in contamination of the Part A Unregulated Area. The impacts associated with all confirmed sources of contamination should be discussed in Section 6.3 as appropriate.	Section 6.2 title has been amended to "Sources of Contamination". The purpose of this section is to identify potential sources of contamination in which the investigation focused on rather than identifying sources following investigation results (analytical results).	Addressed.
30	3.7	6.2	It is stated in Section 2.5 of the Part A ESA Report that “Fill material has been	Agreed. Fill material is considered a confirmed source of	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (11/05/2017)	ERM Response (22/09/2017)	Auditor Response
			used at various locations across the Site with no details available on the source". Historical and current investigations identified bonded asbestos within the fill material indicating that the on-site fill material is contaminated in areas. Therefore, it should be made clear in Section 6.2 whether fill material is a confirmed source of contamination.	contamination. Investigations to date conclude that this source is adequately delineated and defined as presented in the Unregulated Areas Remedial Action Plan.	
31	3.7	6.5	Given that exposed impacted soils are/could be present within the Part A Unregulated Area, the potential for dust inhalation should be considered as a potential exposure pathway.	Agreed. Dust has been included as a potential exposure pathway.	Addressed.
32	3.8	7	The Auditor agrees with the conclusions of the Part A ESA Report, however notes that some recommendations are also presented e.g. restriction for the abstraction of groundwater. In accordance with OEH (2011), the conclusions should also comprise a brief summary of all findings and any uncertainties/assumptions associated with the results.	A brief summary of all investigation findings has been included in Section 7 (conclusions).	Addressed.

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8 November 2017

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim

Site Auditor Interim Advice: Review of ERM Asbestos Investigation (Building 10) Part A Unregulated Area, Roche Products, 4-10 Inman Road, Dee Why, NSW

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Site Auditor for 4-10 Inman Road, Dee Why NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Pty Ltd (ERM). It is understood that this Auditor role will be a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act).

This letter provides the Auditor's review of the document listed in **Section 2.0**, which relates to the proposed methodology for the asbestos investigation to be undertaken beneath Building 10 located on Part A of the Unregulated Area of the Site.

This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2017. *Asbestos Investigation (Building 10) Part A Unregulated Area, Roche Products, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 6 November 2017 (Ref. 0410233_L05). This letter will be referred to as the 'asbestos letter' herein.

3.0 Technical Review

The Auditor has conducted a high-level review of the asbestos letter with reference to the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013) (ASC NEPM 2013), *Guidelines for the assessment, remediation and management of asbestos contaminated sites in Western Australia* (WA DoH, 2009) and Work Health and Safety legislation and guidelines.

The Auditor considers that the asbestos letter generally followed the requirements of ASC NEPM (2013), WA DoH (2009) and Work Health and Safety legislation and guidelines with the following comments:

- It is understood that the asbestos investigation will be limited to the accessible void spaces beneath the former Building 10. The Auditor considers it would be advantageous to understand the proportion of accessible areas and whether the area would be appropriate characterised by the investigation proposed. Please provide an approximate percentage of accessible areas and how the any non-accessible areas will be assessed (e.g. video footage).
- The soil surface will be visually inspected and any identified potential ACM will be manually collected. It is not clear from the proposed methodology whether the potential ACM fragments will be submitted to a laboratory for analysis (yes/no), please confirm. Additionally, where sufficient surface soil is available, will sieving of the material be undertaken to confirm if the asbestos (if any) is bonded or if there is a potential for fibre release.

- Further details regarding the '*appropriate bagging, storage and disposal as the asbestos material'* should be provided, including but not limited to, the bagging approach, disposal facility and any requirements regarding notification to WorkCover.
- Based on the information provided, the raking will be performed in a grid based pattern. The size of the grid should be specified.
- Please confirm what area the clearance certificate will cover i.e. all void spaces, or any limitations of the certificate.
- Please ensure that photographs are taken throughout the inspection works.

4.0 Auditor Summary and Conclusions

The Auditor considers that the methodology for the asbestos investigation beneath Building 10 is generally considered appropriate and in accordance with Australian legislation and guidelines.

Should you have any further queries relating to this review, please do not hesitate to contact Paul Steinwede and/or Lesley Limage directly.

Yours sincerely

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cc: Peter Lavelle, ERM
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17 November 2017

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim

Site Auditor Interim Advice: Review of ERM Asbestos Investigation (Building 10) Part A Unregulated Area, 4-10 Inman Road, Dee Why NSW for Roche Products Pty Ltd

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Site Auditor for 4-10 Inman Road, Dee Why NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Pty Ltd (ERM). It is understood that this Auditor role will be a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act).

This letter provides the Auditor's review of the document listed in **Section 2.0**, which relates to the proposed methodology for the asbestos investigation to be undertaken beneath Building 10 located on Part A of the Unregulated Area of the Site.

This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2017a. *Asbestos Investigation (Building 10) Part A Unregulated Area, Roche Products, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 10 November 2017 (Ref. 0410233_L05_V2). This letter will be referred to as the 'asbestos letter' herein.

The Auditor had reviewed and provided comment on a previous draft version of the abovementioned letter (dated 6 November 2017) in an Interim Advice letter (ref: 60484586_L023_Asbestos Inv_8 Nov 2017) (AECOM, 2017). ERM prepared an asbestos letter comments register dated 10 November 2017 (ERM, 2017b) and a revised version of the letter which is the subject of this Interim Advice.

3.0 Technical Review

The Auditor has conducted a technical review of the asbestos letter (ERM, 2017a) with reference to the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013) (ASC NEPM 2013), *Guidelines for the assessment, remediation and management of asbestos contaminated sites in Western Australia* (WA DoH, 2009) and Work Health and Safety legislation and guidelines.

The Auditor has reviewed version 2 of the asbestos letter (ERM, 2017a) and the comments register (ERM, 2017b). A copy of this register, together with the Auditor's assessment of how the previous Auditor's comments have been addressed is attached to this letter (refer to **Table 1** below).

4.0 Auditor Summary and Conclusions

The Auditor considers that the asbestos letter generally followed the requirements of ASC NEPM (2013), WA DoH (2009) and Work Health and Safety legislation and guidelines.

The Site Auditor considers that the objectives of the asbestos letter have been met and no further revisions are required. The asbestos investigation works can be commenced in accordance with the proposed methodology.

Should you have any further queries relating to this review, please do not hesitate to contact Paul Steinwede and/or Lesley Limage directly.

Yours sincerely

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cc: Peter Lavelle, Matthew Crow and Jane Ehsman, ERM
Olivia Patterson, NSW EPA

Table 1 Comments Register

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (8/11/2017)	ERM Response (10/11/2017)	Auditor Response
1	NA	NA	It is understood that the asbestos investigation will be limited to the accessible void spaces beneath the former Building 10. The Auditor considers it would be advantageous to understand the proportion of accessible areas and whether the area would be appropriate characterised by the investigation proposed. Please provide an approximate percentage of accessible areas and how the any non-accessible areas will be assessed (e.g. video footage).	ERM considers that the accessible area is approximately 75-80%. A sketch plan of these void spaces including the estimated inaccessible areas has been provided in Attachment A. If an adequate representation via video footage can be obtained of these inaccessible areas then this will be collected, noting safety limitation may prevent a comprehensive survey of this area.	Addressed
2	NA	NA	The soil surface will be visually inspected and any identified potential ACM will be manually collected. It is not clear from the proposed methodology whether the potential ACM fragments will be submitted to a laboratory for analysis (yes/no), please confirm. Additionally, where sufficient surface soil is available, will sieving of the material be undertaken to confirm if the asbestos (if any) is bonded or if there is a potential for fibre release.	Potential ACM fragments will be collected and analysed for the presence/absence of asbestos, however if through field observations the potential asbestos fragments appear uniform in appearance then only a select number of samples will be collected for analysis with the remaining appropriately bagged for disposal. Soil samples will be collected (where possible) for presence/absence with an instruction to the laboratory to analysis for quantification should the result confirm the presence of asbestos. It is not proposed to undertake sieving during the onsite investigation activities. The letter has been update to reflect this proposed sampling methodology.	Addressed
3	NA	NA	Further details regarding the 'appropriate bagging, storage and disposal as the asbestos material' should be provided, including but not limited to, the bagging approach, disposal facility and any	Potential asbestos fragments will be placed in asbestos bags which are the sealed by a turkey necking the bag and taping it closed. The bag will then be placed in a second bag with the used personal protective equipment (PPE) and sealed	Addressed

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (8/11/2017)	ERM Response (10/11/2017)	Auditor Response
			requirements regarding notification to WorkCover.	in the same manner as the first. A asbestos removal notification has been submitted and subsequently approved by SafeWork NSW. It is proposed that all asbestos impacted material will be sent to Veolia, Horsley Park, NSW for disposal. The letter has been updated to outline these processes.	
4	NA	NA	Based on the information provided, the raking will be performed in a grid based pattern. The size of the grid should be specified.	Noted. The grid pattern will be 2 m x 2 m.	Addressed
5	NA	NA	Please confirm what area the clearance certificate will cover i.e. all void spaces, or any limitations of the certificate.	It is expected that the asbestos clearance certificate will cover the areas of investigation and not those areas that were inaccessible as estimated above.	Addressed
6	NA	NA	Please ensure that photographs are taken throughout the inspection works.	Noted. A detailed photographic log will be provided as part of the validation report for the Part A Unregulated Area.	Addressed

AECOM Imagine it. Delivered.

5 February 2018

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim

Site Auditor Interim Advice: Review of ERM Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW for Roche Products Pty Ltd

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Site Auditor for 4-10 Inman Road, Dee Why NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Pty Ltd (ERM). It is understood that this Auditor role will be a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act).

This letter provides the Auditor's review of the document listed in **Section 2.0**, which relates to the remediation and validation works undertaken on Part A of the Unregulated Area of the Site.

This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement (SAS) and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2017. *Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 8 December 2017 (Ref. 0410233). This report will be referred to as the 'Part A Validation Report' herein.

3.0 Technical Review

The Auditor has conducted a technical review of the Part A Validation Report (ERM, 2017) with reference to the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011) and *Guidelines for the NSW Site Auditor Scheme (2rd Edition)* (NSW EPA, 2017). For ease of review the Site Auditor's comments are provided in grey shaded text below.

3.1 Executive Summary

The Executive Summary provided an introduction to the Site and a portion of the Site identified as the 'Part A Unregulated Area' for which this Part A Validation Report relates. The remediation objectives with regard to asbestos were listed and it was concluded that these objectives were achieved.

The Auditor considers that the Executive Summary provided a succinct overview of the Part A Validation Report with the following comment:

- In accordance with OEH (2011), a summary of the remediation/validation scope of works should be provided in the executive summary. The Auditor notes that reference was made to the adopted remediation strategy.

3.2 Introduction

The Introduction (Section 1) of the Part A Validation Report provided some background information regarding the Site and defined terms used throughout regarding areas of the Site. A summary of the investigation works used to inform the RAP (Area 1) and subsequent petroleum hydrocarbon (Area 2) and asbestos (Area 3 and Area 4) investigations was provided. The specific remedial objectives of the Part A Validation Report were to:

- Remove identified asbestos impacted soils to the extent practicable and such that concentrations are below the human health assessment criteria for sensitive land use (residential); and
- Remove visible asbestos containing material (ACM) present within or on the soil surface (upper 10 cm).

The scope of works for each of the four defined areas was provided in Section 1.5.

The Auditor considers that the Introduction was suitable for the purposes of the Part A Validation Report with the following comments:

- Section 1.1: It was stated that '*The works described in this validation report were undertaken in accordance with the RAP (ERM, 2017b) and included some areas of additional asbestos impact that were identified subsequent to the RAP as shown in Figures 2a and 2b of Annex A'.* With reference to the information presented on Figures 2a and 2b (Annex A), it is unclear what areas were identified within the RAP (i.e. Area 1) and what areas were identified subsequent to the RAP (i.e. Area 2, Area 3 and Area 4). Please identify the existing/additional areas addressed in the Part A Validation Report either within the text or on a figure.

3.3 Site Setting

The Site Setting (Section 2) provided a description of Site features, surrounding land uses, environmental setting (including regional and local geology, hydrogeology and hydrology), history, and a summary of previous investigations specific to the Part A Unregulated Area.

The Auditor considers that the Site Setting was suitable for the purposes of the Part A Validation Report with the following comments:

- Section 2.1 (Table 2.1): It is understood that limited information was available regarding the underground storage tank (UST) located in the car park to the west of Building 19. No documentation was available to confirm the removal (or in-situ decommissioning) of the UST, however the UST could not be located during the ground penetrating radar (GPR) survey in 2015. Any additional lines of evidence to suggest that the UST was decommissioned and therefore not presenting a potential risk to human health or the environment should be discussed within the Part A Validation Report e.g. analytical results from the surrounding area.
- Section 2.1 (Table 2.1): The former stockpile on the north western portion of the Part A Unregulated Area was reported to be related to '*construction activities on an adjacent property'.* It was stated that '*The material is not anticipated to be contaminated as no known contaminating activities have taken place at the source of the material'.* Further information is required regarding the 'source site' (e.g. historical or existing land uses) to further support the statement that no known contaminating activities had taken place.
- Section 2.2 (Table 2.2): As per previous Auditor comments and based on a review of the surrounding land uses, it is understood that a child care centre was also located north (up gradient) of the Part A Unregulated Area. Please ensure that all surrounding land uses are identified on Table 2.2.
- Section 2.3 (Table 2.3): The Auditor notes that the Part A Unregulated Area hydrogeology details (i.e. standing water level and groundwater flow directions) presented in Table 2.3 were not consistent with that presented in Section 2.4.2. The hydrogeology details should be reviewed and the Part A Validation Report amended as appropriate.
- Section 2.5.2: With reference to the summary of the Environmental Site Screening (EIS, 2004), minor PAH and dichlorodiphenyl-trichloroethane (DDT) impacts were reported in soil east of Building 9. Please confirm if these reported soil impacts are located within the Part A Unregulated Area. If so, a discussion regarding the suitability of the land for residential use should be provided within the Part A Validation Report as it was noted that it may be potentially suitable if the sampling density was increased.

- Section 2.5.2: With reference to the summary of the Phase 1 Environmental Site Assessment (ERM, 2015a), it was reported that bonded asbestos was identified during an 'historical investigation' in the south western portion of the Site and a potential exists that this detection is indicative of contaminated fill material being historically used at some areas of the Site. The historical investigation ERM are referring to (potentially Douglas Partners (2005)) should be identified in Section 2.5.2.
- Section 2.5.2: With regard to the summary of the Phase 2 Environmental Site Assessment (ERM, 2015b), the lead and petroleum hydrocarbon impacts were considered to be defined and unlikely to extend beneath occupied structures. Therefore it was concluded that '*the issue did not represent a significant risk to human health or the environment under the existing commercial/industrial land use scenario'*. Further discussion regarding the extent of the impacts (e.g. beneath unoccupied structures, if relevant) and the risk to human health or the environment under a potential future residential scenario.

3.4 Conceptual Site Model

Section 3 provided a CSM for the Part A Unregulated Area. Potential sources of contamination (i.e. un-bunded diesel generator, storage and use of pesticides/herbicides and hazardous building materials), the nature and extent of soil and groundwater impacts were discussed, potential on-site and off-site current and future human health and ecological receptors were identified and exposure pathways (or source-pathway-receptor linkages) were assessed.

The Auditor considers that the CSM was suitable for the purposes of the Part A Validation Report with the following comments:

- Section 3.2: It is stated that *'Potential source areas identified within the Part A Unregulated Area as part of the Phase 1 ESA (ERM, 2015a) are listed below'.* The Auditor could not clearly identify the list of potential source areas as it appears that a number of potential source areas identified within Section 5.2 of the Phase 1 ESA were precluded from Section 3.2 e.g. former USTs, fill material and storage of radioactive materials. Are these sources those considered to have been assessed to not likely be causing contamination? The Auditor considers that all potential sources relevant to the Part A Unregulated Area identified in the Phase 1 ESA should be discussed as part of the CSM so it is clear what potential sources of contamination and associated chemical of potential concern (CoPC) may or may not present a risk to human health and/or the environment.
- Section 3.3.1 (Area 4): With reference to the aerial photographs provided in the Phase 1 ESA, it appears that the footprint of former Building 10 extended to cover the existing carpark north of the current Building 10. Given the identification of asbestos and recent remediation works undertaken in the void space beneath the former Building 10 (i.e. within Area 4), a discussion regarding the potential for asbestos to be present beneath the remainder of the former Building 10 footprint should be provided (noting that limited sampling has been undertaken beneath the carpark itself). Overall, further supporting information is required to support the statement '*Laterally the asbestos impacts are considered to be defined and limited to this void space area…'.*
- Section 3.3.1 (Area 4): Following a review of figures presented in Annex A, it appears that the extent of Area 4 differs between Figure 2b/Figure 3a (includes only part of the store room) and Figure 8 (includes the whole store room). Please review the extent of Area 4 and revise the figure(s) accordingly to ensure consistency.
- Section 3.4.1: The section heading suggests that Section 3.4.1 would present 'current human receptors', however the Auditor notes that future human receptors are also identified within this section.
- Section 3.4.2: As indicated by Section 3.4.2, asbestos was considered to be the only CoPC on the Part A Unregulated Area. The Auditor notes from previous investigations other CoPC (e.g. metals) were reported in soil and groundwater above ecological screening criteria, and although they may not present a risk to the environment (e.g. associated with background conditions), they should still be discussed within the CSM for clarity.
- Section 3.6: Have the NSW Office of Water and Northern Beaches Council been made aware/formally notified of potential restrictions to groundwater use on the Part A Unregulated Area?

3.5 Remediation Strategy

The Remediation Strategy (Section 4) presented a summary of the RAP, remediation goals, remedial methodology for each of the four areas and remediation acceptance criteria. The waste classification process for asbestos impacted material was also discussed.

The Auditor notes the following with regard to Section 4:

- Section 4.3: The Auditor agrees that the remediation methodology outlined in the RAP (ERM, 2017b) for Area 1 generally applies to Area 3 and Area 4 i.e. asbestos impacted areas. However, as the investigation works completed within Area 2 were associated with potential petroleum hydrocarbon contamination, additional detail regarding the methodology applied within this area is required.
- Section 4.4: It is understood that under the WHS Regulation 2017, analysis for asbestos should be completed by a NATA accredited laboratory. The Auditor notes that this is applicable for current and future on-site workers as the WHS Regulation 2017 applies to a 'workplace'. It is stated that '*As the lowest commercially-available laboratory limit of reporting (LOR) for asbestos fibres under NATA accreditation was 0.01% (w/w) at the time of the remedial works, this level has been adopted as the screening level for FA and AF'.* With reference to Table 4 and the results tables presented in Annex B, it appears that a screening level of 0.001% (w/w) was adopted as the RAC for friable asbestos. Please confirm the RAC adopted for friable asbestos and amend Section 4.4/tables within Annex B as appropriate. The Auditor also notes that a non-NATA accredited method was used to achieve a laboratory LOR of 0.001% (w/w) and exceedances of this limit (consistent with the ASC NEPM (2013) screening level) should be discussed within the Part A Validation Report.
- Section 4.5: It is understood from Section 4.5 that waste classification letters were prepared for Area 1 and Area 3. With reference to Annex I (Waste Classification Letters), a waste classification letter also appears to be presented for the investigation works undertaken within Area 4 (reference 0410233_L04_BLG 10 WASTE CLASSIFICATION_JE, dated 25 October 2017). If this is the case, please ensure reference is made to this letter in Section 4.5.
- Section 4.5: The waste classification and off-site spoil removal process adopted for the Area 2 hydrocarbon investigation should also be discussed in Section 4.5.

3.6 Data Quality Objectives

The Data Quality Objectives (DQO) for the remediation and validation works were presented in Section 5.

The Auditor notes the following with regard to Section 5:

- Section 5 (Table 5.1): The Auditor considers that additional work is required to ensure the DQO meet the requirements of the Schedule B2 (Appendix B) of the ASC NEPM (2013). This may include, but not be limited too, Step 1 (e.g. a summary of available resources and relevant deadlines and reference to the CSM), Step 4 (e.g. a discussion on boundaries beyond the lateral extent specified), Step 5 (e.g. acceptable laboratory recovery limits and relative percentage differences (RPDs)) and Step 6 (e.g. specification of any tolerable limits).

3.7 Remediation Works

The Remediation Works undertaken on the Part A Unregulated Area were discussed in Section 6.0, including an overview of field activities, planning, preparation and procurement, details of the works completed and any field observations and conditions encountered.

The Auditor notes the following with regard to Section 6:

- Section 6.1: The Auditor notes from Table 3 (Annex B) that service locating works for Area 2 were completed on 23 July 2017.
- Section 6.2.3: The Licence Number held by InSite as noted in Section 6.2.3 (i.e. AD211404) appears to be inconsistent with the Licence Number provided in Annex F (i.e. AD211041). Please confirm and amend the InSite Licence Number as appropriate.
- Section 6.3.2: It was stated that '*A sample was collected on 4 September 2017 from the conduits confirming the presence of asbestos'.* With reference to Table 9c (Annex B), it appears the sample was collected on 5 September 2017. The Auditor notes that this does not affect the outcome of the assessment.
- Section 6.3.2. The scale illustrated on Figure 6 and Figure 7 (Annex A) suggested that the total trench excavation area was greater than 8.5 x 2.4 m as indicated in Section 6.3.2 (this is particularly the case for the length of the trench). Please confirm the dimensions of the trench in Area 3 and amend the Part A Validation Report as appropriate.
- Section 6.3.2: With reference to Table 5 (Annex B), it appears that an additional 9.98 tonnes of General Sold Waste and Special (Asbestos) Waste were exported from Area 3 which was not discussed in Section 6.3.2. All material exported from the Part A Unregulated Area should be discussed in Section 6.

3.8 Validation Works

The Validation Works undertaken on the Part A Unregulated Area were discussed in Section 7.0, including an overview of sampling, analytical results and outcomes. The Auditor notes that a discussion on the validation of imported soil was also provided.

The Auditor notes the following with regard to Section 7:

- Section 7.1: It is stated that '*Validation sampling of Areas 1, 3 and 4 within the Part A Unregulated Area was undertaken by ERM in accordance with the RAP (ERM, 2017b)'*. As the RAP was understood to only apply to Area 1, it is unclear how validation sampling of Areas 3 and 4 was captured within this document. Please reword or rephrase sentence for clarity.
- Section 7.2.2: It is understood from the first bullet point that four samples were collected from the base of the excavated trench within Area 3. With reference to Table 9c (Annex B), it appears that three samples were collected from the base of the trench. Additionally, it appears that ten samples were collected from the walls of the trench (reported to be nine samples in the second bullet point). Although the total number of validation samples collected (i.e. 13 samples) remains unchanged, the total samples collected from the base and walls of the excavation should be confirmed and the Part A Validation Report should be amended.
- Section 7.2.3: The Auditor understands from Figure 8 (Annex A) and Section 6.3.3 that validation samples were collected from each of the 20 grids, however from Section 7.2.3 only a selected number of samples were analysed (a total of four validation samples). It is unclear from the information presented within the Part A Validation Report the justification for the selection of these four samples and why they are considered to be representative of the void space beneath the former Building 10. Further discussion/justification is required regarding the sampling rationale within Area A.
- Section 7.3.2: With reference to Table 9c (Annex B), the date within the field ID (30/10/17) and the sampled date (9/11/2017) appear to be inconsistent. Therefore, it is unclear which samples were the '*additional four validation samples collected from the base and walls*'. Are these additional four samples captured in Section 7.2.2? Please amend the field IDs or sample dates for clarify.
- Section 7.3.3: Please specify the field ID for the '*one kilogram representative soil sample'* that was collected for analytical analysis of asbestos (presence/absence). It appears from Table 9c (Annex B) that asbestos quantification was undertaken on validation sample BLDG_SS_01A.

- Section 7.4 (Table 5.1): With reference to Table 5.1, it appears that a total of 2.06 tonnes of Virgin Excavated Natural Material (VENM) was imported to Area 3. Please confirm if this volume of material was sufficient to backfill the excavation as it was understood that 5.34 tonnes of piping/concrete and 5.36 tonnes of impacted soil was removed from Area 3.

3.9 Delineation Investigation

Delineation Investigation works completed on Area 2 was summarised in Section 8, including a scope of works, field observations, soil sampling, analytical results and a discussion of the results.

The Auditor notes the following with regard to Section 8:

- Section 8.2: It was stated that '*drilling of nine vertical boreholes (SB58 to SB66), five of which (SB58 to SB62) were advanced within the Part A Unregulated Area boundary to depths of between 1.5 and 5.95 mbgs…'*. Following a review of the borelogs presented in Annex M, it appears that the total drilled depth ranged from 4.9 to 5.95 mbgs within the Part A Unregulated Area. Please confirm the drilled depth of the bores and amend Section 8.2/borelogs as appropriate.
- Section 8.4: It was stated in Section 8.4 that '*Borehole soil samples <1.5 mbgs were taken as disturbed samples from the hand auger…'*. With reference to Annex M and Table 9b (Annex B), it appears that no disturbed samples were collected as part of the investigation. Please provide details of the disturbed samples collected from within Area 2. Additionally, excluding sample SB62, it appears that the undisturbed samples were not collected from where the highest PID readings were recorded. However, it is noted by the Auditor that PID readings were relatively low within SB58 to SB61. Notwithstanding that noted by the Auditor, further justification for the intervals samples should be provided (e.g. driven by a change in soil profile or other visual/olfactory evidence).
- Section 8.5: The screening criteria presented in Table 9b (Annex B) identify the intrusive maintenance worker vapour intrusion guidelines as being published by ASC NEPM (2013) not CRC CARE (2011). This reference should be amended in Section 8.5 and Table 9b (Annex B).

3.10 Site Suitability

Section 9 provided an assessment of Site Suitably for the Part A Unregulated Area based on investigation, remediation and validation works completed by to date.

The Auditor notes the following with regard to Section 9:

- Section 9: A discussion regarding site suitability based on human health risks has been provided in Section 9. However, additional discussion regarding the site suitability based on ecological risks should also be provided in accordance with the ASC NEPM (2013) and NSW EPA (2017).
- Section 9: The Site Suitability discussed should be updated based, where relevant, based on the above Auditor comments.
- Section 9: The Auditor understands that the contract between Roche and EG Developments certifies that '*Part A of the property is suitable for Residential Use with slab on grade style construction either with or without a qualification that Part A of the property is suitable subject to compliance with an environmental management plan'.* This information from the contract will be included within the SAS/SAR.

3.11 Compliance with Environmental Management and Health and Safety Requirements

An assessment of Compliance with Environmental Management and Health and Safety Requirements during remediation and validation works was provided in Section 10.

The Auditor has no comments on Section 10 as this information/documentation was not provided to the Auditor for review.

3.12 Quality Assurance / Quality Control

An assessment of compliance with Quality Assurance / Quality Control (QA/QC) procedures during remediation and validation works was provided in Section 11.

The Auditor agrees that the ERM validation dataset is considered suitable for achieving the remedial objectives of the Part A Unregulated Area.

3.13 Conclusions

The conclusions of the Part A Validation Report were presented in Section 12 and are summarised below:

- The remediation strategy included manual and mechanical excavation of asbestos impacted soils and backfilling of excavations with imported VENM.
- The soil validation sampling results were below the ASC NEPM (2013) HIL A&B Residential for Asbestos Contamination in Soil and all visible ACM has been removed.
- The Part A Unregulated Area is considered to be suitable for ongoing commercial/industrial or a more sensitive residential land use.

The Auditor notes the following with regard to Section 12:

- Section 12: The Auditor does not consider that the conclusions have been prepared in accordance with OEH (2011) and additional information is required prior to the Auditor reviewing this section e.g. summary of all the results and any assumptions/uncertainties.

4.0 Auditor Summary and Conclusions

The Auditor considers that the Part A Validation Report generally followed the requirements of OEH (2011) and NSW EPA (2017), excluding Section 12 (Conclusions).

Notwithstanding the specific comments made, clarifications and amendments sought in this letter, the Site Auditor considers that the objectives of the Part A Validation Report have been met. Please ensure that the above Auditor comments are addressed during the finalisation of the Part A Validation Report.

Should you have any further queries relating to this review, please do not hesitate to contact Paul Steinwede and/or Lesley Limage directly.

Yours sincerely

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cc: Peter Lavelle, ERM
Olivia Patterson, NSW EPA

AECOM Imagine it Delivered

6 April 2018

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim

Site Auditor Interim Advice: Review of ERM Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW for Roche Products Pty Ltd

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Site Auditor for 4-10 Inman Road, Dee Why, NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Pty Ltd (ERM). It is understood that this Auditor role will be a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act).

This letter provides the Auditor's review of the document listed in **Section 2.0**, which relates to the remediation and validation works undertaken on Part A of the Unregulated Area of the Site.

This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement (SAS) and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2018a. *Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 16 February 2018 (Ref. 0410233 Draft D02). This report will be referred to as the 'Part A Validation Report' herein.

The Auditor had reviewed and provided comment on a previous draft version of the abovementioned report (dated 8 December 2017) in an Interim Advice letter (Ref. 60484586_L031_Part A Unreg Val_5 Feb 2018) (AECOM, 2018). ERM prepared a Part A Validation Report comments register dated 16 February 2018 (ERM, 2018b) and a revised version of the report which is the subject of this Interim Advice.Technical Review.

The Auditor has conducted a technical review of the Part A Validation Report (ERM, 2018a) and the comments register (ERM, 2018b) with reference to the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011) and *Guidelines for the NSW Site Auditor Scheme (3rd Edition)* (NSW EPA, 2017). A copy of this register, together with the Auditor's assessment of how the previous Auditor's comments have been addressed is attached to this letter (refer to **Table 1** below).

3.0 Auditor Summary and Conclusions

The Auditor considers that the Part A Validation Report generally followed the requirements of OEH (2011) and NSW EPA (2017).

The Site Auditor considers that the objectives of the Part A Validation Report have been met and the report can be issued as final. However, please ensure that the minor outstanding Auditor comments (as identified in **Table 1**) are addressed during the finalisation of the Part A Validation Report.

Should you have any further queries relating to this review, please do not hesitate to contact Paul Steinwede and/or Lesley Limage directly.

Yours sincerely

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cc: Peter Lavelle, ERM
Olivia Patterson, NSW EPA

Table 1 Comments Register

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
1	1.1	Exec Summary	The Auditor considers that the Executive Summary provided a succinct overview of the Part A Validation Report with the following comment: • In accordance with OEH (2011), a summary of the remediation/validation scope of works should be provided in the executive summary. The Auditor notes that reference was made to the adopted remediation strategy.	Executive summary updated to include a general summary of the scope of works completed.	Addressed.
2	1.2	1.1	The Auditor considers that the Introduction was suitable for the purposes of the Part A Validation Report with the following comments: • Section 1.1: It was stated that 'The works described in this validation report were undertaken in accordance with the RAP (ERM, 2017b) and included some areas of additional asbestos impact that were identified subsequent to the RAP as shown in Figures 2a and 2b of Annex A'. With reference to the information presented on Figures 2a and 2b (Annex A), it is unclear what areas were identified within the RAP (i.e. Area 1) and what areas were identified subsequent to the RAP (i.e. Area 2, Area 3 and Area 4). Please identify the existing/additional areas addressed in the Part A Validation Report either within the text or on a figure.	The introduction has been updated to more clearly indicate what Areas were identified in the RAP and what areas were not identified in the RAP.	Addressed.
3	1.3	2.1	Section 2.1 (Table 2.1): It is understood that limited information was available regarding the underground storage tank (UST) located in the car park to the west of Building 19. No documentation was available to confirm the removal (or in-situ decommissioning) of the UST, however the UST could not be located during the ground penetrating radar (GPR) survey in 2015. Any additional lines of evidence to suggest that	Section 3.2 has been updated to provide discussion on this UST area.	Addressed. Note that the discussion on the UST area is now Section 3.3.1.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
			the UST was decommissioned and therefore not presenting a potential risk to human health or the environment should be discussed within the Part A Validation Report e.g. analytical results from the surrounding area.		
4	1.3	2.1	Section 2.1 (Table 2.1): The former stockpile on the north western portion of the Part A Unregulated Area was reported to be related to *œonstruction activities on an adjacent property'.* It was stated that *The material is not anticipated to be contaminated as no known contaminating activities have taken place at the source of the material'.* Further information is required regarding the 'source site' (e.g. historical or existing land uses) to further support the statement that no known contaminating activities had taken place.	The 'source site' at 38 Orlando Rd formerly formed part of the larger Roche Site and was divested by Roche in the late 2000s. At that time the source had been used for equipment storage and included a small structure which was removed in 2005. Following divestment the Site was developed and utilised for commercial purposes (distribution centre for Exhibit Systems). The stockpile in question was generated during a recent development at the Site during which a child care centre was constructed. During the Phase 1 and 2 inspections of the Stockpile were undertaken by ERM staff. Indications of contamination were not observed other than pipe material which was suspected to be potential ACM. Laboratory analysis confirmed that this wasn't the case. The stockpile was removed in full by the generator and based on the knowledge of the material it was determined that validation	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
				sampling was not warranted. Table 2.1 has been updated with additional information accordingly.	
5	1.3	2.2	Section 2.2 (Table 2.2): As per previous Auditor comments and based on a review of the surrounding land uses, it is understood that a child care centre was also located north (up gradient) of the Part A Unregulated Area. Please ensure that all surrounding land uses are identified on Table 2.2.	Item 5 addressed. Table 2.2 updated.	Addressed.
6	1.3	2.3	Section 2.3 (Table 2.3): The Auditor notes that the Part A Unregulated Area hydrogeology details (i.e. standing water level and groundwater flow directions) presented in Table 2.3 were not consistent with that presented in Section 2.4.2. The hydrogeology details should be reviewed and the Part A Validation Report amended a	Item 6 addressed. Table 2.3 updated.	Addressed.
7	1.3	2.5.2	Section 2.5.2: With reference to the summary of the Environmental Site Screening (EIS, 2004), minor PAH and dichlorodiphenyl-trichloroethane (DDT) impacts were reported in soil east of Building 9. Please confirm if these reported soil impacts are located within the Part A Unregulated Area. If so, a discussion regarding the suitability of the land for residential use should be provided within the Part A Validation Report as it was noted that it may be potentially suitable if the sampling density was increased.	ERM understands that this detection was within the Part A Unregulated Area to the north of Area 1. The detection was 0.5mg/kg DDT+DDD+DDE, which is significantly lower than the most sensitive residential SL (240 mg/kg). This detection was attributed to possible historical pesticides use, however given that this is the only ever detection of DDT+DDD+DDE at the Site amongst the substantial subsequent investigation (including in a similar area as the initial 2004 detection) the result is considered negligible.	Addressed. The Auditor notes that additional discussion on the historical use of pesticides was included as Section 3.3.5.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
				Additional discussion of the historical DDT detection has been included in Section	
8	1.3	2.5.2	Section 2.5.2: With reference to the summary of the Phase 1 Environmental Site Assessment (ERM, 2015a), it was reported that bonded asbestos was identified during an 'historical investigation' in the south western portion of the Site and a potential exists that this detection is indicative of contaminated fill material being historically used at some areas of the Site. The historical investigation ERM are referring to (potentially Douglas Partners (2005)) should be identified in Section 2.5.2.	Section 2.5.2 updated.	Addressed.
9	1.3	2.5.2	Section 2.5.2: With regard to the summary of the Phase 2 Environmental Site Assessment (ERM, 2015b), the lead and petroleum hydrocarbon impacts were considered to be defined and unlikely to extend beneath occupied structures. Therefore it was concluded that *the issue did not represent a significant risk to human health or the environment under the existing commercial/industrial land use scenario'*. Further discussion regarding the extent of the impacts (e.g. beneath unoccupied structures, if relevant) and the risk to human health or the environment under a potential future residential scenario.	Section 2.5.2 updated. The petroleum hydrocarbon impacts associated with USTs 1- 3 do not laterally extend into the Part A area therefore it is not necessary to assess these impacts under a potential future residential scenario. The metal concentrations (namely nickel) are considered to be representative of background concentrations given the widespread nature of the concentrations and are unlikely to be associated with a contamination source. The lead detected in soils may be due to use of lead based paint, however the lack of significant concentrations indicates that this is not a significant contaminant of	Addressed. The Auditor notes that additional discussion on the use of lead based paints was included as Section 3.3.2.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
				concern. Lead based paint as a source has been further	
10	1.4	3.2	Section 3.2: It is stated that 'Potential source areas identified within the Part A Unregulated Area as part of the Phase 1 ESA (ERM, 2015a) are listed below'. The Auditor could not clearly identify the list of potential source areas as it appears that a number of potential source areas identified within Section 5.2 of the Phase 1 ESA were precluded from Section 3.2 e.g. former USTs, fill material and storage of radioactive materials. Are these sources those considered to have been assessed to not likely be causing contamination? The Auditor considers that all potential sources relevant to the Part A Unregulated Area identified in the Phase 1 ESA should be discussed as part of the CSM so it is clear what potential sources of contamination and associated chemical of potential concern (CoPC) may or may not present a risk to human health and/or the environment.	Section 3.2 updated and new Section 3.3 added which specifically discusses each of the items raised in the Phase 1 which were relevant to Part A Unregulated Area.	Addressed.
11	1.4	3.3.1	Section 3.3.1 (Area 4): With reference to the aerial photographs provided in the Phase 1 ESA, it appears that the footprint of former Building 10 extended to cover the existing carpark north of the current Building 10. Given the identification of asbestos and recent remediation works undertaken in the void space beneath the former Building 10 (i.e. within Area 4), a discussion regarding the potential for asbestos to be present beneath the remainder of the former Building 10 footprint should be provided (noting that limited sampling has been undertaken beneath the carpark itself). Overall, further supporting information is required to support the statement '*Laterally the asbestos*	Soil bores (SB40 & SB42) were advanced on the perimeter of the carpark area during the Stage 1 ESA works (0330752, 2017). Additionally a trench was advanced during the EG investigation within the maintenance building with no asbestos detected. The asbestos detected within this space was predominately sheeting materials from the construction of the small storage room located within this area as anecdotal informed by site personnel. Based on the	Addressed. The Auditor notes that additional discussion was included in Section 3.4.1.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
			impacts are considered to be defined and limited to this void space area…'.	asbestos detected within the void space beneath Building 10 it is considered that the impacts are a results of poor storage and handling practices rather than a indication of wide-spread fill material. Additional commentary has been added to section 3.3.1	
12	1.4	3.3.1	Section 3.3.1 (Area 4): Following a review of figures presented in Annex A, it appears that the extent of Area 4 differs between Figure 2b/Figure 3a (includes only part of the store room) and Figure 8 (includes the whole store room). Please review the extent of Area 4 and revise the figure(s) accordingly to ensure consistency.	Figure 2b/3a updated accordingly.	Addressed.
13	1.4	3.4.1	Section 3.4.1: The section heading suggests that Section 3.4.1 would present 'current human receptors', however the Auditor notes that future human receptors are also identified within this section.	Section heading updated.	Addressed. The heading for Section 3.5.1 has been amended.
14	1.4	3.4.2	Section 3.4.2: As indicated by Section 3.4.2, asbestos was considered to be the only CoPC on the Part A Unregulated Area. The Auditor notes from previous investigations other CoPC (e.g. metals) were reported in soil and groundwater above ecological screening criteria, and although they may not present a risk to the environment (e.g. associated with background conditions), they should still be discussed within the CSM for clarity.	Updated to include text from the Part A ESA CSM section 3.2-Sources of contamination. The reference to asbestos in section 3.4.2 has been removed as the purpose of this section is to identify receptors, not assess exposure pathways. All contaminants were considered when assessing potentially complete SPR Linkages	Not addressed. While the potential risk to aquatic ecological receptors has been discussed, the potential risk to terrestrial ecological receptors (if any) remains outstanding in Section 3.5.2.
15	1.4	3.6	Section 3.6: Have the NSW Office of Water and	ERM is not aware of any reason	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
			Northern Beaches Council been made aware/formally notified of potential restrictions to groundwater use on the Part A Unregulated Area?	to place formal restrictions on groundwater use in the Part A Unregulated Area. Potential therefore the Water NSW and Northern Beaches Council have not been made aware or formally notified of potential restrictions to groundwater use on the Part A Unregulated Area.	
16	1.5	4.3	Section 4.3: The Auditor agrees that the remediation methodology outlined in the RAP (ERM, 2017b) for Area 1 generally applies to Area 3 and Area 4 i.e. asbestos impacted areas. However, as the investigation works completed within Area 2 were associated with potential petroleum hydrocarbon contamination, additional data regarding the methodology applied within this area is required	ERM does not consider Section 4.3 an appropriate section for additional details on the methodology associated with Area 2 works and the reference to Area to that the Auditor refers to has been removed, with a note added referring the read to Section 8 for detailed description of the Area 2 methodology.	Addressed.
17	1.5	4.4	Section 4.4: It is understood that under the WHS Regulation 2017, analysis for asbestos should be completed by a NATA accredited laboratory. The Auditor notes that this is applicable for current and future on-site workers as the WHS Regulation 2017 applies to a 'workplace'. It is stated that *'As the lowest commercially- available laboratory limit of reporting (LOR) for asbestos fibres under NATA accreditation was 0.01% (w/w) at the time of the remedial works, this level has been adopted as the screening level for FA and AF'.* With reference to Table 4 and the results tables presented in Annex B, it appears that a screening level of 0.001% (w/w) was adopted as the RAC for friable asbestos. Please confirm the RAC adopted for friable asbestos and amend Section 4.4/tables within Annex B as appropriate. The	Section 4.4 and analytical tables in Annex C have been adjusted to the following screening levels: 0.001%. The validation tables in Annex B have been rearranged to distinguish between the samples which were used for validation, which were excavated and which were used for initial investigation purposes.	Not addressed. The screening levels for asbestos appear to be unchanged in Section 4.4.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
			Auditor also notes that a non-NATA accredited method was used to achieve a laboratory LOR of 0.001% (w/w) and exceedances of this limit (consistent with the ASC NEPM (2013) screening level) should be discussed within the Part A Validation Report		
18	1.5	4.5	Section 4.5: It is understood from Section 4.5 that waste classification letters were prepared for Area 1 and Area 3. With reference to Annex I (Waste Classification Letters), a waste classification letter also appears to be presented for the investigation works undertaken within Area 4 (reference 0410233_L04_BLG 10 WASTE CLASSIFICATION_JE, dated 25 October 2017). If this is the case, please ensure reference is made to this letter in Section 4.5.	Section 4.5 updated to reference Area 4.	Addressed.
19	1.5	4.5	Section 4.5: The waste classification and off-site spoil removal process adopted for the Area 2 hydrocarbon investigation should also be discussed in Section 4.5.	Section 4.5 updated to include details on off-site disposal of drilling spoil from Area 2 works. Annex I also updated to include appropriate Waste Classification Letter pertaining to offsite disposal of the drilling spoil.	Addressed.
20	1.6	5.1	Section 5 (Table 5.1): The Auditor considers that additional work is required to ensure the DQO meet the requirements of the Schedule B2 (Appendix B) of the ASC NEPM (2013). This may include, but not be limited too, Step 1 (e.g. a summary of available resources and relevant deadlines and reference to the CSM), Step 4 (e.g. a discussion on boundaries beyond the lateral extent specified), Step 5 (e.g. acceptable laboratory recovery limits and relative percentage differences (RPDs)) and Step 6 (e.g. specification of any tolerable	Section 5 updated according to the Auditors comment	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
			limits)		
21	1.7	6.1	Section 6.1: The Auditor notes from Table 3 (Annex B) that service locating works for Area 2 were completed on 23 July 2017.	Underground locating was undertaken on 23 July. Section 6.1 updated accordingly.	Addressed.
22	1.7	6.2.3	Section 6.2.3: The Licence Number held by InSite as noted in Section 6.2.3 (i.e. AD211404) appears to be inconsistent with the Licence Number provided in Annex F (i.e. AD211041). Please confirm and amend the InSite Licence Number as appropriate.	Section 6.2.3 updated.	Addressed.
23	1.7	6.3.2	Section 6.3.2: It was stated that *A sample was collected on 4 September 2017 from the conduits confirming the presence of asbestos'.* With reference to Table 9c (Annex B), it appears the sample was collected on 5 September 2017. The Auditor notes that this does not affect the outcome of the assessment.	The sample was collected on 5 September 2017. Section 6.3.2 updated.	Addressed.
24	1.7	6.3.2	Section 6.3.2. The scale illustrated on Figure 6 and Figure 7 (Annex A) suggested that the total trench excavation area was greater than 8.5 x 2.4 m as indicated in Section 6.3.2 (this is particularly the case for the length of the trench). Please confirm the dimensions of the trench in Area 3 and amend the Part A Validation Report as appropriate	The trench was 8.5m in length and 2.4m in width. The trench dimensions were measured using onsite using a trundle wheel. The scale on Figure 7 has been adjusted to be more accurate.	Addressed.
25	1.7	6.3.2	Section 6.3.2: With reference to Table 5 (Annex B), it appears that an additional 9.98 tonnes of General Sold Waste and Special (Asbestos) Waste were exported from Area 3 which was not discussed in Section 6.3.2. All material exported from the Part A Unregulated Area should be discussed in Section 6.	The additional 9.98 tonnes was bitumen/asphalt hardstand removed prior to excavations commencing in Area 3. A note has been added to the docket in Annex J to clarify.	Addressed.
26	1.8	7.1	Section 7.1: It is stated that Validation sampling of Areas 1, 3 and 4 within the Part A Unregulated	Sentence amended.	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
			Area was undertaken by ERM in accordance with the RAP (ERM, 2017b)'. As the RAP was understood to only apply to Area 1, it is unclear how validation sampling of Areas 3 and 4 was captured within this document. Please reword or rephrase sentence for clarity.		
27	1.8	7.2.2	Section 7.2.2: It is understood from the first bullet point that four samples were collected from the base of the excavated trench within Area 3. With reference to Table 9c (Annex B), it appears that three samples were collected from the base of the trench. Additionally, it appears that ten samples were collected from the walls of the trench (reported to be nine samples in the second bullet point). Although the total number of validation samples collected (i.e. 13 samples) remains unchanged, the total samples collected from the base and walls of the excavation should be confirmed and the Part A Validation Report should be amended.	Table 9c updated - Four samples in total were collected from the base of the excavated trench and nine were collected from the walls of the excavated trench.	Addressed.
28	1.8	7.2.3	Section 7.2.3: The Auditor understands from Figure 8 (Annex A) and Section 6.3.3 that validation samples were collected from each of the 20 grids, however from Section 7.2.3 only a selected number of samples were analysed (a total of four validation samples). It is unclear from the information presented within the Part A Validation Report the justification for the selection of these four samples and why they are considered to be representative of the void space beneath the former Building 10. Further discussion/justification is required regarding the sampling rationale within Area A.	The samples selected for analysis were from a combination of grids where asbestos was visually observed and also where no evidence of asbestos was noted. ERM considered this to be representative of the void space of Building 10. ERM did not consider it necessary to analyse all samples collected and instead opted to have four samples of from the 20 grids analysed.	Addressed. The Auditor notes that additional discussion was included in Section 7.2.3.
29	1.8	7.3.2	Section 7.3.2: With reference to Table 9c (Annex B), the date within the field ID (30/10/17) and the	The additional four samples are captured in Section 7.2.2. The	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
			sampled date (9/11/2017) appear to be inconsistent. Therefore, it is unclear which samples were the *additional four validation samples collected from the base and walls* '. Are these additional four samples captured in Section 7.2.2? Please amend the field IDs or sample dates for clarify	sample dates in Table 9c have also been updated to now display the correct dates.	
30	1.8	7.3.3	Section 7.3.3: Please specify the field ID for the *one kilogram representative soil sample'* that was collected for analytical analysis of asbestos (presence/absence). It appears from Table 9c (Annex B) that asbestos quantification was undertaken on validation sample BLDG_SS_01A.	Correct sample ID for this sample is BLDG_SS_01A, which was analysed for quantification purposes. Table 9c has been updated.	Addressed. The Auditor notes that Table 9d had been amended.
31	1.8	7.4	Section 7.4 (Table 5.1): With reference to Table 5.1, it appears that a total of 2.06 tonnes of Virgin Excavated Natural Material (VENM) was imported to Area 3. Please confirm if this volume of material was sufficient to backfill the excavation as it was understood that 5.34 tonnes of piping/concrete and 5.36 tonnes of impacted soil was removed from Area 3.	Table 7.1 (formerly Table 5.1) updated to be more accurate. It is noted a specific tonnage from the import source facility is not available for Area 3 as backfilling activities in the Part B area were being undertaken concurrently to the backfilling in Area 3 and as such, stockpiled VENM was already onsite and only the total volume of imported material is available (as shown in Table 7.1). The VENM material was obtained from the larger stockpile and used to backfill the Area 3 excavation area.	Addressed. Please include a footnote to Table 7.1 identifying why the 10t of material is an estimate (i.e. for the reasons stated in ERM's response).
32	1.9	8.2	Section 8.2: It was stated that drilling of nine vertical boreholes (SB58 to SB66), five of which (SB58 to SB62) were advanced within the Part A Unregulated Area boundary to depths of between 1.5 and 5.95 mbgs…'. Following a review of the borelogs presented in Annex M, it appears that	Section 8.2 has been updated to reflect the accurate drilling depths.	Addressed. However, please ensure the drilling depths are also corrected throughout the remainder of the

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
			the total drilled depth ranged from 4.9 to 5.95 mbgs within the Part A Unregulated Area. Please confirm the drilled depth of the bores and amend Section 8.2/borelogs as appropriate.		report e.g. in Section 1.5, the drill depth still ranges from 1.5 to 5.95 mbgs.
33	1.9	8.4	Section 8.4: It was stated in Section 8.4 that *Borehole soil samples <1.5 mbgs were taken as disturbed samples from the hand auger…'*. With reference to Annex M and Table 9b (Annex B), it appears that no disturbed samples were collected as part of the investigation. Please provide details of the disturbed samples collected from within Area 2. Additionally, excluding sample SB62, it appears that the undisturbed samples were not collected from where the highest PID readings were recorded. However, it is noted by the Auditor the PID readings were relatively low within SB58 to SB61. Notwithstanding that noted by the Auditor, further justification for the intervals samples should be provided (e.g. driven by a change in soil profile or other visual/olfactory evidence).	Section 8.4 updated as no disturbed soil samples were collected as part of the Area 2 investigation. Furthermore, at soil bores SB58-SB61, samples were collected based on the known depths of impact being in the 3.5-4.5m bgs range. PIDs were negligible at SB58-SB61 and ERM did not consider any of the PIDs recorded at SB58-SB61 indicative of contamination although some PID values were higher than others and these areas were preferentially targeted for analysis.	Addressed.
34	1.9	8.5	Section 8.5: The screening criteria presented in Table 9b (Annex B) identify the intrusive maintenance worker vapour intrusion guidelines as being published by ASC NEPM (2013) not CRC CARE (2011). This reference should be amended in Section 8.5 and Table 9b (Annex B)	Section 8.5 and Table 9b updated accordingly.	Addressed. However, the Auditor notes that the spelling of 'maintenance' should be amended in Table 9b for clarity.
35	1.10	9	Section 9: A discussion regarding site suitability based on human health risks has been provided in Section 9. However, additional discussion regarding the site suitability based on ecological risks should also be provided in accordance with the ASC NEPM (2013) and NSW EPA (2017).	Section 9 updated to include Site suitability for ecological receptors.	Addressed.
36	1.10	9	Section 9: The Site Suitability discussed should be updated, where relevant, based on the above	Section 9 updated with the only change required being the	Addressed.

Item	Auditor Advice Section	ERM Report Section	Auditor Comments (05/02/18)	ERM Response (16/02/2018)	Auditor Response
			Auditor comments.	addition of the comment of ecological receptors. ERM considered that all other information in Section 9 remains appropriate.	
37	1.10	9	Section 9: The Auditor understands that the contract between Roche and EG Developments certifies that '*Part A of the property is suitable for Residential Use with slab on grade style construction either with or without a qualification that Part A of the property is suitable subject to compliance with an environmental management plan*'. This information from the contract will be included within the SAS/SAR	Comment acknowledged.	Noted.
38	1.11	10	The Auditor has no comments on Section 10 as this information/documentation was not provided to the Auditor for review	Comment acknowledged.	Noted.
39	1.12	12	Section 12: The Auditor does not consider that the conclusions have been prepared in accordance with OEH (2011) and additional information is required prior to the Auditor reviewing this section e.g. summary of all the results and any assumptions/uncertainties	The conclusions have been updated in accordance with OEH (2011).	Addressed.

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20 April 2018

Tim Woodhouse
Roche Products Pty Limited
4-10 Inman Road
Dee Why NSW 2099

Dear Tim

Site Auditor Interim Advice: Review of ERM Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW for Roche Products Pty Ltd

1.0 Introduction

Paul Steinwede of AECOM Australia Pty Ltd (AECOM) was engaged by Roche Products Pty Ltd (Roche) to act as a NSW Environment Protection Authority (EPA) Accredited Contaminated Site Auditor for 4-10 Inman Road, Dee Why, NSW (the Site).

The Environmental Consultant for the project is Environmental Resources Management Pty Ltd (ERM). It is understood that this Auditor role will be a Statutory Audit under the *Contaminated Land Management Act, 1997* (CLM Act).

This letter provides the Auditor's review of the document listed in **Section 2.0**, which relates to the remediation and validation works undertaken on Part A of the Unregulated Area of the Site. This Interim Advice letter should not be considered as a Site Audit Report (SAR) under the meaning of the CLM Act. However, this Interim Advice will be included as an attachment to the Site Audit Statement (SAS) and supporting SAR, when prepared.

2.0 Documents Reviewed

For preparation of this letter, the Site Auditor has reviewed the following document:

- ERM, 2018a. *Part A Unregulated Area Validation Report, 4-10 Inman Road, Dee Why NSW.* Environmental Resources Management Pty Ltd, 13 April 2018 (Ref. 0410233 Final). This report will be referred to as the 'Part A Validation Report' herein.

The Auditor had reviewed and provided comment on previous versions of the abovementioned report (dated 8 December 2017 and 16 February 2018) in Interim Advice letters (dated 5 February and 6 April 2018). ERM prepared a Part A Validation Report comments register dated 13 April 2018 (ERM, 2018b) and a revised version of the report (final version) which is the subject of this Interim Advice.

3.0 Technical Review

The Auditor has conducted a technical review of the Part A Validation Report (ERM, 2018a) and the comments register (ERM, 2018b) with reference to the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011) and *Guidelines for the NSW Site Auditor Scheme (3rd Edition)* (NSW EPA, 2017).

4.0 Auditor Summary and Conclusions

The Auditor considers that the Part A Validation Report generally followed the requirements of OEH (2011) and NSW EPA (2017).

The Auditor considers that ERM has addressed the previous Auditor comments on the draft versions of the report.

Should you have any further queries relating to this review, please do not hesitate to contact Paul Steinwede and/or Debbie Midwinter directly.

Yours sincerely

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cc: Peter Lavelle, ERM
Olivia Patterson, NSW EPA

Appendix C

Certificate of Title

Appendix C Certificate of Title

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 100/611332

SEARCH DATE	TIME	EDITION NO	DATE
1/5/2015	12:01 PM	7	24/5/2007

LAND

LOT 100 IN DEPOSITED PLAN 611332
AT DEE WHY WEST
LOCAL GOVERNMENT AREA WARRINGAH
PARISH OF MANLY COVE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP611332

FIRST SCHEDULE

ROCHE PRODUCTS PTY LIMITED

SECOND SCHEDULE (8 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)
2 T899153 LEASE TO THE SYDNEY COUNTY COUNCIL OF SUBSTATION PREMISES NO 15783 AS SHOWN IN PLAN WITH T899153 WITH RIGHT OF WAY AND EASEMENT FOR ELECTRICITY PURPOSES. EXPIRES 31-12-2032
3 V91891 LEASE TO THE SYDNEY COUNTY COUNCIL OF THAT PART SHOWN AS "SUBSTATION PREMISES NOS 15279 & 157333" WITH A RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES OVER ANOTHER PART OF THE LAND W/IN DESCRIBED. EXPIRES 31-12-2033
4 7624294 POSITIVE COVENANT
5 7624295 RESTRICTION(S) ON THE USE OF LAND
6 AC816838 POSITIVE COVENANT
7 AC816839 RESTRICTION AS TO USER (S.88E(3) CONVEYANCING ACT, 1919)
8 AD65557 EASEMENT TO DRAIN WATER 1.2 WIDE AFFECTING THE SITE SHOWN IN PLAN WITH AD65557

NOTATIONS

UNREGISTERED DEALINGS: PP DP1203512.

*** END OF SEARCH ***

LEGALINK PRINTED ON 1/5/2015

Disclaimer for Register of Security Interests in Goods:
1. The information returned relates to Security Interests in Goods, Bills of Sale, Stock Mortgages, Crop Liens and Wool Liens registered by LPI between November 1992 and 20 January 2012.
2. LPI ceased registering security interests in goods on 20 January 2012. These interests are now recorded in the Commonwealth Personal Property Securities Register (PPSR), which commenced on 30 January 2012.
3. All current records relating to security interests in goods registered by LPI from 1 January 2000 to 20 January 2012, as well as Bills of Sale renewed after 1 January 2000, have been supplied to the Commonwealth and are available for access via the PPSR at www.ppsr.gov.au.
4. All security interests in goods registered by LPI up to 20 January 2012 remain available for search via the SIGA search.
5. For security interests in goods registered before November 1992 it is recommended that a manual search be undertaken at LPI, 1 Prince Albert Road, Queens Square, Sydney or a Deed Name Search made where it is considered that an interest may have been registered in the General Register of Deeds.

A3

Magnetic North (PLAN)

Approx.True North

SHORT LINE TABLE FOR EASEMENTS		
No.	BEARING	DISTANCE
1	28° 30'	18.6
2	208° 30'	21.05
3	180° 00'	6.05
4	0° 00'	6.05
5	269° 47' 20"	7.47
6	359° 47' 20"	4
7	89° 47' 20"	8

EASEMENTS

- EASEMENT FOR ELECTRICITY PURPOSES 2 WIDE (VIDE DEALING No. T899953)
- RIGHT OF WAY 1.9, 3 & 6 WIDE (VIDE DEALING No. T899953)
- EASEMENT FOR ELECTRICITY PURPOSES 2 WIDE (VIDE DEALING No. Y98090)
- RIGHT OF WAY ½, 7.3 & 10.05 WIDE (VIDE DEALING No. Y98090)
- RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES L26 & 4 WIDE (VIDE DEALING No. Y98090)

CAMPBELL AVENUE

PART A
AREA 43,589m²

PART B
UNREGULATED
AREA 16,587m²

PART B
REGULATED
AREA 14,494m²

BUILDING No. 9

BLOCK & METAL CLAD BUILDING No. 18

BUILDING No. 11

BUILDING No. 7

BUILDING No. 22

BUILDING No. 1

BUILDING No. 6

4-10 INMAN ROAD "ROCHE"

CARPARKING PAINT LINE

FACE OF BUILDING

FACE OF KERB

DRIVE

ABOUT 3.5 TO CENTRELINE STORMWATER ROAD

CREEK

SOUTH

ORLANDO ROAD (20.115 WIDE)

INMAN ROAD (20.115 WIDE)

NOT SURVEYED

NOTE:
LOT DIMENSIONS AND AREAS SUBJECT TO FINAL SURVEY AND APPROVAL BY RELEVANT AUTHORITIES. AREAS ARE APPROXIMATE ONLY.

1	FIRST ISSUE	31/01/17

PLAN SHOWING PART A AND PART B OVER LOT 100 IN D.P.611332 4-10 INMAN ROAD, DEE WHY NSW 2099

C.M.S. Surveyors Pty. Ltd.
A.C.N 096 240 201
PO Box 463 Dee Why NSW 2099
1/32 Campbell Avenue, Dee Why NSW 2099
Telephone: (02) 9971 4802 Facsimile: (02) 9971 4822
E-mail: info@cmssurveyors.com.au

SURVEYED	DRAWN	CHECKED	APPROVED
SM	GP	SM	SM
SURVEY INSTRUCTION	SCALE	DATE OF SURVEY	
823H	1:1250 @ A3	4/02/16	
DRAWING NAME: 823H regulated 1		ISSUE: 1	
CAD FILE: 823Hregulated 1.dwg			

Appendix D

Analytical Results Tables

Appendix D Analytical Results Tables

The following analytical results tables were sourced from the Part A Validation Report (ERM, 2018b):

- Table 9a: Area 1 Soil Validation Results Summary – Asbestos
- Table 9b: Area 2 Soil Summary – TRH and BTEXN
- Table 9c: Area 3 Soil Summary – Asbestos
- Table 9d: Area 4 Soil Validation Results Summary – Asbestos
- Table 10a: VENM Soil Summary – TRH, BTEX and Metals
- Table 10b: VENM Soil Summary – PAH, Phenols, PCBs and Halogenated
- Table 10c: VENM Soil Summary – OPs and OCs

The following additional analytical results tables were sourced from the Part A ESA (ERM, 2017b):

- Table 9: Stage 1 Soil Results Summary – TRH, BTEX and Metals
- Table 10: Stage 1 Soil Results Summary – PAHs, Phenols and PCBs
- Table 11a: Stage 1 Soil Results Summary – VOCs and Chlorinated Hydrocarbons
- Table 11b: Stage 2 Soil Results Summary – VOCs
- Table 12: Stage 1 Soil Results Summary – OPs and OCs
- Table 13a: Stage 1 Soil Results Summary – Asbestos
- Table 13b: Stage 2 Soil Results Summary – Asbestos
- Table 13c: Stage 2 Soil Results Summary – Asbestos
- Table 14: Stage 1 Groundwater Results Summary – TRH, BTEX and Metals
- Table 15: Groundwater Results Summary – PAHs, Phenols and PCBs
- Table 16: Groundwater Results Summary – VOCs and Chlorinated Hydrocarbons
- Table 17: Groundwater Results Summary – OPs and OCs
- Table 18: Groundwater Results Summary – Miscellaneous Analytes

The following additional analytical results tables were sourced from the Supplementary ESA (ERM, 2015c):

- Table 7: Soil Summary – TRH, BTEX, Metals and Asbestos
- Table 8: Soil Summary – PAH and Phenols
- Table 9: Soil Summary – VOCs and SVOCs
- Table 10: Groundwater Summary – TRH, BTEX, Metals and Asbestos
- Table 11: Groundwater Summary – PAH and Phenols
- Table 12: Groundwater Summary – VOCs and SVOCs

The following additional analytical results tables were sourced from the Phase 2 ESA (ERM, 2015b):

- Table 10: Soil Summary – TRH, BTEX, Metals, Asbestos and Inorganics
- Table 11: Soil Summary – PAH and Phenols

							Identification of Asbestos			Friable Asbestos in Soil				ACM Asbestos in Soil	
							Asbestos Detected (Yes/No)	Asbestos Type	Sample Weight (dry)	Free Fibres	Friable Asbestos	Friable Asbestos (as Asbestos in Soil)	Weight Used for % Calculation	Asbestos Containing Material	Asbestos Containing Material (as 15% Asbestos in ACM >7mm)
							g/kg	-	g	Fibres	g	%(w/w)	kg	g	%(w/w)
EQL							0.1	-	0.001	5	0.0004	0.001	0.0001	0.1	0.001
NEPM (2013) HSL A[1] Residential for Asbestos Contamination in Soil												0.001			0.01
NEPM (2013) HSL B[2] Residential for Asbestos Contamination in Soil												0.001			0.04
LocCode	**Field_ID**	**Monitoring_Zone**	**Sample_Depth_Range**	**Sampled_Date**	**Lab_Report_Number**	**Area of Exacation**									
VAL_A_B1	VAL_A_B1_1.6	Part A Unregulated Area	1.5-1.6	3/08/2017	557201	Base	No	-	525	-	<0.0004	<0.001	0.525	<0.1	<0.01
VAL_A_B12	VAL_A_B12_0.3	Part A Unregulated Area	0.2-0.3	3/08/2017	557201	Base	No	-	582	-	<0.0004	<0.001	0.582	<0.1	<0.01
VAL_A_B18	VAL_A_B18_1.6	Part A Unregulated Area	1.5-1.6	3/08/2017	557201	Base	No	-	681	-	<0.0004	<0.001	0.681	<0.1	<0.01
VAL_A_B19	VAL_A_B19_1.6	Part A Unregulated Area	1.5-1.6	3/08/2017	557201	Base	No	-	538	-	<0.0004	<0.001	0.538	<0.1	<0.01
VAL_A_B33	VAL_A_B33_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Base	No	-	527	-	<0.0004	<0.001	0.527	<0.1	<0.01
VAL_A_B34	VAL_A_B34_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Base	No	-	580	-	<0.0004	<0.001	0.580	<0.1	<0.01
VAL_A_B35	VAL_A_B35_1.2	Part A Unregulated Area	1.1-1.2	3/08/2017	557201	Base	No	-	595	-	<0.0004	<0.001	0.595	<0.1	<0.01
VAL_A_B36	VAL_A_B36_2.1	Part A Unregulated Area	2-2.1	3/08/2017	557201	Base	No	-	679	-	<0.0004	<0.001	0.679	<0.1	<0.01
VAL_A_B37	VAL_A_B37_2.0	Part A Unregulated Area	1.9-2	3/08/2017	557201	Base	No	-	621	-	<0.0004	<0.001	0.621	<0.1	<0.01
VAL_A_B38	VAL_A_B38_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Base	No	-	583	-	<0.0004	<0.001	0.583	<0.1	<0.01
VAL_A_B39	VAL_A_B39_1.2	Part A Unregulated Area	1.1-1.2	3/08/2017	557201	Base	No	-	568	-	<0.0004	<0.001	0.568	<0.1	<0.01
VAL_A_B40	VAL_A_B40_1.3	Part A Unregulated Area	1.2-1.3	3/08/2017	557201	Base	No	-	615	-	<0.0004	<0.001	0.615	<0.1	<0.01
VAL_A_B41	VAL_A_B41_1.9	Part A Unregulated Area	1.8-1.9	3/08/2017	557201	Base	No	-	625	-	<0.0004	<0.001	0.625	<0.1	<0.01
VAL_A_B42	VAL_A_B42_2.1	Part A Unregulated Area	2-2.1	3/08/2017	557201	Base	No	-	666	-	<0.0004	<0.001	0.666	<0.1	<0.01
VAL_A_B43	VAL_A_B43_2.0	Part A Unregulated Area	1.9-2	3/08/2017	557201	Base	No	-	577	-	<0.0004	<0.001	0.577	<0.1	<0.01
VAL_A_B44	VAL_A_B44_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Base	No	-	562	-	<0.0004	<0.001	0.562	<0.1	<0.01
VAL_A_B45	VAL_A_B45_2.0	Part A Unregulated Area	1.9-2	3/08/2017	557201	Base	No	-	582	-	<0.0004	<0.001	0.582	<0.1	<0.01
VAL_A_B46	VAL_A_B46_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Base	No	-	536	-	<0.0004	<0.001	0.536	<0.1	<0.01
VAL_A_B47	VAL_A_B47_2.1	Part A Unregulated Area	2-2.1	3/08/2017	557201	Base	No	-	616	-	<0.0004	<0.001	0.616	<0.1	<0.01
VAL_A_B48	VAL_A_B48_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Base	No	-	664	-	<0.0004	<0.001	0.664	<0.1	<0.01
VAL_A_B49	VAL_A_B49_2.0	Part A Unregulated Area	1.9-2	3/08/2017	557201	Base	No	-	620	-	<0.0004	<0.001	0.620	<0.1	<0.01
VAL_A_B50	VAL_A_B50_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Base	No	-	559	-	<0.0004	<0.001	0.559	<0.1	<0.01
VAL_A_B51	VAL_A_B51_1.7	Part A Unregulated Area	1.6-1.7	3/08/2017	557201	Base	No	-	512	-	<0.0004	<0.001	0.512	<0.1	<0.01
VAL_A_B52	VAL_A_B52_1.7	Part A Unregulated Area	1.6-1.7	3/08/2017	557201	Base	No	-	835	-	<0.0004	<0.001	0.835	<0.1	<0.01
VAL_A_B53	VAL_A_B53_2.0	Part A Unregulated Area	1.9-2	3/08/2017	557201	Base	No	-	513	-	<0.0004	<0.001	0.513	<0.1	<0.01
VAL_A_B54	VAL_A_B54_2.0	Part A Unregulated Area	1.9-2	3/08/2017	557201	Base	No	-	747	-	<0.0004	<0.001	0.747	<0.1	<0.01
VAL_A_B55	VAL_A_B55_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Base	No	-	670	-	<0.0004	<0.001	0.670	<0.1	<0.01
VAL_A_B56	VAL_A_B56_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Base	No	-	566	-	<0.0004	<0.001	0.566	<0.1	<0.01
VAL_A_EW10	VAL_A_EW10_0.3	Part A Unregulated Area	0.2-0.3	3/08/2017	557201	Eastern Wall	No	-	658	-	<0.0004	<0.001	0.658	<0.1	<0.01
VAL_A_EW13	VAL_A_EW13_0.7	Part A Unregulated Area	0.6-0.7	3/08/2017	557201	Eastern Wall	No	-	660	-	<0.0004	<0.001	0.660	<0.1	<0.01
VAL_A_EW3	VAL_A_EW3_0.3	Part A Unregulated Area	0.2-0.3	3/08/2017	557201	Eastern Wall	No	-	534	-	<0.0004	<0.001	0.534	<0.1	<0.01
VAL_A_EW3	VAL_A_EW3_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Eastern Wall	No	-	476	-	<0.0004	<0.001	0.476	<0.1	<0.01
VAL_A_EW4	VAL_A_EW4_0.5	Part A Unregulated Area	0.4-0.5	3/08/2017	557201	Eastern Wall	No	-	603	-	<0.0004	<0.001	0.603	<0.1	<0.01
VAL_A_EW4	VAL_A_EW4_1.2	Part A Unregulated Area	1.1-1.2	3/08/2017	557201	Eastern Wall	No	-	632	-	<0.0004	<0.001	0.632	<0.1	<0.01
VAL_A_EW5	VAL_A_EW5_0.4	Part A Unregulated Area	0.3-0.4	3/08/2017	557201	Eastern Wall	No	-	526	-	<0.0004	<0.001	0.526	<0.1	<0.01
VAL_A_EW5	VAL_A_EW5_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Eastern Wall	No	-	648	-	<0.0004	<0.001	0.648	<0.1	<0.01
VAL_A_EW6	VAL_A_EW6_0.1	Part A Unregulated Area	0-0.1	3/08/2017	557201	Eastern Wall	No	-	591	-	<0.0004	<0.001	0.591	<0.1	<0.01
VAL_A_EW6	VAL_A_EW6_0.4	Part A Unregulated Area	0.3-0.4	3/08/2017	557201	Eastern Wall	No	-	541	-	<0.0004	<0.001	0.541	<0.1	<0.01
VAL_A_EW8	VAL_A_EW8_0.3	Part A Unregulated Area	0.2-0.3	3/08/2017	557201	Eastern Wall	No	-	627	-	<0.0004	<0.001	0.627	<0.1	<0.01
VAL_A_EW8	VAL_A_EW8_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Eastern Wall	No	-	602	-	<0.0004	<0.001	0.602	<0.1	<0.01
VAL_A_EW9	VAL_A_EW9_0.1	Part A Unregulated Area	0-0.1	3/08/2017	557201	Eastern Wall	No	-	540	-	<0.0004	<0.001	0.540	<0.1	<0.01
VAL_A_EW9	VAL_A_EW9_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Eastern Wall	No	-	717	-	<0.0004	<0.001	0.717	<0.1	<0.01
VAL_A_NW14	VAL_A_NW14_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Northern Wall	No	-	466	-	<0.0004	<0.001	0.466	<0.1	<0.01
VAL_A_NW15	VAL_A_NW15_0.3	Part A Unregulated Area	0.2-0.3	3/08/2017	557201	Northern Wall	No	-	587	-	<0.0004	<0.001	0.587	<0.1	<0.01
VAL_A_NW2	VAL_A_NW2_0.5	Part A Unregulated Area	0.4-0.5	3/08/2017	557201	Northern Wall	No	-	594	-	<0.0004	<0.001	0.594	<0.1	<0.01
VAL_A_NW2	VAL_A_NW2_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Northern Wall	No	-	587	-	<0.0004	<0.001	0.587	<0.1	<0.01
VAL_A_NW25	VAL_A_NW25_0.1	Part A Unregulated Area	0-0.1	3/08/2017	557201	Northern Wall	No	-	583	-	<0.0004	<0.001	0.583	<0.1	<0.01
VAL_A_NW25	VAL_A_NW25_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Northern Wall	No	-	549	-	<0.0004	<0.001	0.549	<0.1	<0.01
VAL_A_NW26	VAL_A_NW26_0.5	Part A Unregulated Area	0.4-0.5	3/08/2017	557201	Northern Wall	No	-	669	-	<0.0004	<0.001	0.669	<0.1	<0.01
VAL_A_NW26	VAL_A_NW26_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Northern Wall	No	-	596	-	<0.0004	<0.001	0.596	<0.1	<0.01

							Identification of Asbestos			Friable Asbestos in Soil				ACM Asbestos in Soil	
							Asbestos Detected (Yes/No)	Asbestos Type	Sample Weight (dry)	Free Fibres	Friable Asbestos	Friable Asbestos (as Asbestos in Soil)	Weight Used for % Calculation	Asbestos Containing Material	Asbestos Containing Material (as 15% Asbestos in ACM >7mm)
							g/kg	-	g	Fibres	g	%(w/w)	kg	g	%(w/w)
EQL							0.1	-	0.001	5	0.0004	0.001	0.0001	0.1	0.001
NEPM (2013) HSL A[1] Residential for Asbestos Contamination in Soil												0.001			0.01
NEPM (2013) HSL B[2] Residential for Asbestos Contamination in Soil												0.001			0.04
LocCode	**Field_ID**	**Monitoring_Zone**	**Sample_Depth_Range**	**Sampled_Date**	**Lab_Report_Number**	**Area of Exacation**									
VAL_A_NW29	VAL_A_NW29_0.3	Part A Unregulated Area	0.2-0.3	3/08/2017	557201	Northern Wall	No	-	645	-	<0.0004	<0.001	0.645	<0.1	<0.01
VAL_A_NW29	VAL_A_NW29_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Northern Wall	No	-	574	-	<0.0004	<0.001	0.574	<0.1	<0.01
VAL_A_NW30	VAL_A_NW30_0.5	Part A Unregulated Area	0.4-0.5	3/08/2017	557201	Northern Wall	No	-	450	-	<0.0004	<0.001	0.450	<0.1	<0.01
VAL_A_NW30	VAL_A_NW30_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Northern Wall	No	-	597	-	<0.0004	<0.001	0.597	<0.1	<0.01
VAL_A_SW11	VAL_A_SW11_0.1	Part A Unregulated Area	0-0.1	3/08/2017	557201	Southern Wall	No	-	536	-	<0.0004	<0.001	0.536	<0.1	<0.01
VAL_A_SW16	VAL_A_SW16_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Southern Wall	No	-	636	-	<0.0004	<0.001	0.636	<0.1	<0.01
VAL_A_SW17	VAL_A_SW17_0.5	Part A Unregulated Area	0.4-0.5	3/08/2017	557201	Southern Wall	No	-	570	-	<0.0004	<0.001	0.570	<0.1	<0.01
VAL_A_SW17	VAL_A_SW17_1.2	Part A Unregulated Area	1.1-1.2	3/08/2017	557201	Southern Wall	No	-	693	-	<0.0004	<0.001	0.693	<0.1	<0.01
VAL_A_SW32	VAL_A_SW32_0.1	Part A Unregulated Area	0-0.1	3/08/2017	557201	Southern Wall	No	-	665	-	<0.0004	<0.001	0.665	<0.1	<0.01
VAL_A_SW7	VAL_A_SW7_0.2	Part A Unregulated Area	0.1-0.2	3/08/2017	557201	Southern Wall	No	-	590	-	<0.0004	<0.001	0.590	<0.1	<0.01
VAL_A_SW7	VAL_A_SW7_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Southern Wall	No	-	610	-	<0.0004	<0.001	0.610	<0.1	<0.01
VAL_A_WW20	VAL_A_WW20_0.1	Part A Unregulated Area	0-0.1	3/08/2017	557201	Western Wall	No	-	610	-	<0.0004	<0.001	0.610	<0.1	<0.01
VAL_A_WW20	VAL_A_WW20_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Western Wall	No	-	569	-	<0.0004	<0.001	0.569	<0.1	<0.01
VAL_A_WW21	VAL_A_WW21_0.5	Part A Unregulated Area	0.4-0.5	3/08/2017	557201	Western Wall	No	-	536	-	<0.0004	<0.001	0.536	<0.1	<0.01
VAL_A_WW21	VAL_A_WW21_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Western Wall	No	-	659	-	<0.0004	<0.001	0.659	<0.1	<0.01
VAL_A_WW22	VAL_A_WW22_0.1	Part A Unregulated Area	0-0.1	3/08/2017	557201	Western Wall	No	-	520	-	<0.0004	<0.001	0.520	<0.1	<0.01
VAL_A_WW22	VAL_A_WW22_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Western Wall	No	-	549	-	<0.0004	<0.001	0.549	<0.1	<0.01
VAL_A_WW23	VAL_A_WW23_0.3	Part A Unregulated Area	0.2-0.3	3/08/2017	557201	Western Wall	No	-	450	-	<0.0004	<0.001	0.450	<0.1	<0.01
VAL_A_WW24	VAL_A_WW24_0.5	Part A Unregulated Area	0.4-0.5	3/08/2017	557201	Western Wall	No	-	500	-	<0.0004	<0.001	0.500	<0.1	<0.01
VAL_A_WW24	VAL_A_WW24_1.2	Part A Unregulated Area	1.1-1.2	3/08/2017	557201	Western Wall	No	-	590	-	<0.0004	<0.001	0.590	<0.1	<0.01
VAL_A_WW27	VAL_A_WW27_0.2	Part A Unregulated Area	0.1-0.2	3/08/2017	557201	Western Wall	No	-	535	-	<0.0004	<0.001	0.535	<0.1	<0.01
VAL_A_WW27	VAL_A_WW27_1.0	Part A Unregulated Area	0.9-1	3/08/2017	557201	Western Wall	No	-	554	-	<0.0004	<0.001	0.554	<0.1	<0.01
VAL_A_WW28	VAL_A_WW28_0.5	Part A Unregulated Area	0.4-0.5	3/08/2017	557201	Western Wall	No	-	568	-	<0.0004	<0.001	0.568	<0.1	<0.01
VAL_A_WW28	VAL_A_WW28_1.5	Part A Unregulated Area	1.4-1.5	3/08/2017	557201	Western Wall	No	-	514	-	<0.0004	<0.001	0.514	<0.1	<0.01
VAL_A_WW31	VAL_A_WW31_0.3	Part A Unregulated Area	0.2-0.3	3/08/2017	557201	Western Wall	No	-	528	-	<0.0004	<0.001	0.528	<0.1	<0.01
VAL_A_WW31	VAL_A_WW31_1.1	Part A Unregulated Area	1-1.1	3/08/2017	557201	Western Wall	No	-	579	-	<0.0004	<0.001	0.579	<0.1	<0.01

Env Stds Comments
1. Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
2. Residential B within minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments

								BTEX							PAH/Phenols	TPH									
								Benzene	Ethylbenzene	Toluene	Total BTEX	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 less BTEX (F1)	Naphthalene	C10-C16	C16-C34	C34-C40	C10-C16 less NAPHTHALENE (F2)	C10 - C14	C6 - C9	C15 - C28	+C10 - C36 (Sum of total)	C29-C36	C10 - C40 (Sum of total)	C6-C10
								mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL								0.1	0.1	0.1	0.2	0.2	0.1	0.3	10	0.5	50	100	100	50	20	10	50	50	50	50	10
CRC CARE (2011) Human Health Intrusive - Direct Contact								1100[#1]	85000[#1]	120000[#1]				130000[#1]	82000[#1]	29000[#1]		85000[#1]	120000[#1]	62000[#1]							
CRC CARE (2011) Intrusive Maitenance Worker (0-<2m)								77[#3]	NL#3	NL#3				NL#3	NL#3	NL#3				NL#3							
CRC CARE (2011) Intrusive Maitenance Worker (2-<4m)								160[#4]	NL#4	NL#4				NL#4	NL#4	NL#4				NL#4							
CRC CARE (2011) Intrusive Maitenance Worker (>4m)								NL#2	NL#2	NL#2				NL#2	NL#2	NL#2				NL#2							
NEPM (2013) Human Health Vapour Intrusion, Residential A & B (Sand, 0-<1m)								0.5[#6]	55[#6]	160[#6]				40[#6]	45[#6]	3[#6]				110[#6]							
NEPM (2013) Human Health Vapour Intrusion, Residential A & B (Sand, 1-<2m)								0.5[#7]	NL[#7]	220[#7]				60[#7]	70[#7]	NL[#7]				240[#7]							
NEPM (2013) Human Health Vapour Intrusion, Residential A & B (Sand, 2-<4m)								0.5[#8]	NL[#8]	310[#8]				95[#8]	110[#8]	NL[#8]				440[#8]							
NEPM (2013) Human Health Vapour Intrusion, Residential A & B (Sand, + 4m)								0.5[#5]	NL[#5]	540[#5]				170[#5]	200[#5]	NL[#5]				NL[#5]							
LocCode	**Field_ID**	**Sampled_Date-Time**	**Sample_Depth_Range**	**Lab_Report_Number**	**Monitoring_Zone**	**Validation Area**																					
SB58	SB58_3.5	2/09/2017	3.4-3.6	ES1721996	Part A Unregulated Area	Area 2		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<1	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10
SB58	D01_020917	2/09/2017	3.4-3.6	ES1721996	Part A Unregulated Area	Area 2		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<1	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10
SB58	T01_020917	2/09/2017	3.4-3.6	561686	Part A Unregulated Area	Area 2		<0.1	<0.1	<0.1	-	<0.2	<0.1	<0.3	<20	<0.5	<50	<100	<100	<50	<20	<20	<50	<50	<50	-	<20
SB59	SB59_4.5	4/09/2017	4.4-4.6	ES1721996	Part A Unregulated Area	Area 2		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<1	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10
SB60	SB60_4.0	4/09/2017	3.9-4.1	ES1721996	Part A Unregulated Area	Area 2		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<1	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10
SB61	SB61_4.2	4/09/2017	4.1-4.3	ES1722057	Part A Unregulated Area	Area 2		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<1	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10
SB62	SB62_4.0	2/09/2017	3.9-4.1	ES1721996	Part A Unregulated Area	Area 2		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<1	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10
Statistical Summary																											
Number of Results								7	7	7	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	6	7
Number of Detects								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration								<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.3	<10	<0.5	<50	<100	<100	<50	<20	<10	<50	<50	<50	<50	<10
Minimum Detect								ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration								<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<20	<1	<50	<100	<100	<50	<50	<20	<100	<50	<100	<50	<20
Maximum Detect								ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration								0.093	0.22	0.22	0.1	0.23	0.22	0.24	5.7	0.46	25	50	50	25	23	5.7	46	25	46	25	5.7
Median Concentration								0.1	0.25	0.25	0.1	0.25	0.25	0.25	5	0.5	25	50	50	25	25	5	50	25	50	25	5
Standard Deviation								0.019	0.076	0.076	0	0.057	0.076	0.038	1.9	0.094	0	0	0	0	5.7	1.9	9.4	0	9.4	0	1.9
Number of Guideline Exceedances								0	0	0	0	0	0	0	7	6	0	0	0	7	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments
#1:CRC Care (2011) Intrusive Maintenance Workers for Direct Contact
#2:CRC Care 2011 Intrusive Maintenance Workers, +4 m, Sand Soils for Vapour Intrusion
#3:CRC Care 2011 Intrusive Maintenance Workers, 0 to <2m, Sand Soils for Vapour Intrusion
#4:CRC Care 2011 Intrusive Maintenance Workers, 2 to <4m, Sand Soils for Vapour Intrusion
#5:ASC NEPM (2013) HSL A & B (Commercial/Industrial) +4 m, Sand Soils for Vapour Intrusion
#6:ASC NEPM (2013) HSL A & B (Commercial/Industrial) 0 to <1m, Sand Soils for Vapour Intrusion
#7:ASC NEPM (2013) HSL A & B (Commercial/Industrial) 1 to <2m, Sand Soils for Vapour Intrusion
#8:ASC NEPM (2013) HSL A & B (Commercial/Industrial) 2 to <4m, Sand Soils for Vapour Intrusion

								Identification of Asbestos			Asbestos Quantification					
								Asbestos Detected (Yes/No)	Asbestos Type	Sample Weight (dry)	Free Fibres	Asbestos (Fines and Fibrous <7mm)	Asbestos (Fines and Fibrous FA+AF)	Asbestos Containing Material	Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	Weight Used for % Calculation
								g/kg	-	g	Fibres	g	%(w/w)	g	%(w/w)	kg
EQL								0.1	-	0.001	5	0.0004	0.001	0.1	0.001	0.0001
NEPM (2013) HSL A[1] Residential for Asbestos Contamination in Soil													0.001		0.01	
NEPM (2013) HSL B[2] Residential for Asbestos Contamination in Soil													0.001		0.04	
Initial Pipe Characterisation Sample - Excavated and Removed																
LocCode	**Field_ID**	**Monitoring_Zone**	**Sample_Depth**	**Sample Area**	**Sampled_Date**	**Lab_Report_Number**	**Area**									
PIPE_050917	PIPE_050917	Part A Unregulated Area	-	-	5/09/2017	ES1722195	Initial Pipe Sample	Yes	Ch + Cr	16.8	-	-	-	-	-	-
Validation Sample Exceedance - Excavated and Removed																
VAL_A03_301017	VAL_A03_301017	Part A Unregulated Area	0.8	Base	30/10/2017	ES1727131	ACM Pipe Validation	No*	Ch + Cr	540	-	<0.0004	0.003	<0.1	<0.01	0.54
Final Validation Samples																
VAL_A01_301017	VAL_A01_301017	Part A Unregulated Area	0.8	Base	30/10/2017	ES1727131	ACM Pipe Validation	No	-	487	-	<0.0004	<0.001	<0.1	<0.01	0.487
VAL_A02_301017	VAL_A02_301017	Part A Unregulated Area	0.8	Base	30/10/2017	ES1727131	ACM Pipe Validation	No	-	474	-	<0.0004	<0.001	<0.1	<0.01	0.474
VAL_A04_301017	VAL_A04_301017	Part A Unregulated Area	0.6	West Wall	30/10/2017	ES1727131	ACM Pipe Validation	No	-	424	-	<0.0004	<0.001	<0.1	<0.01	0.424
VAL_A05_301017	VAL_A05_301017	Part A Unregulated Area	0.6	West Wall	30/10/2017	ES1727131	ACM Pipe Validation	No	-	399	-	<0.0004	<0.001	<0.1	<0.01	0.399
VAL_A06_301017	VAL_A06_301017	Part A Unregulated Area	0.6	East Wall	30/10/2017	ES1727131	ACM Pipe Validation	No	-	469	-	<0.0004	<0.001	<0.1	<0.01	0.469
VAL_A07_301017	VAL_A07_301017	Part A Unregulated Area	0.6	East Wall	30/10/2017	ES1727131	ACM Pipe Validation	No	-	371	-	<0.0004	<0.001	<0.1	<0.01	0.371
VAL_A08_301017	VAL_A08_301017	Part A Unregulated Area	0.6	North Wall	30/10/2017	ES1727131	ACM Pipe Validation	No	-	542	-	<0.0004	<0.001	<0.1	<0.01	0.542
VAL_A09_301017	VAL_A09_301017	Part A Unregulated Area	0.6	South Wall	30/10/2017	ES1727131	ACM Pipe Validation	No	-	651	-	<0.0004	<0.001	<0.1	<0.01	0.651
VAL_A10_091117	VAL_A10_091117	Part A Unregulated Area	1.1	West Wall	9/11/2017	179512	ACM Pipe Validation	No	-	543.38	-	<0.0004	<0.001	<0.1	<0.01	0.543
VAL_A11_091117	VAL_A11_091117	Part A Unregulated Area	1.1	Base	9/11/2017	179512	ACM Pipe Validation	No	-	606.43	-	<0.0004	<0.001	<0.1	<0.01	0.606
VAL_A12_091117	VAL_A12_091117	Part A Unregulated Area	0.9	East Wall	9/11/2017	179512	ACM Pipe Validation	No	-	528.217	-	<0.0004	<0.001	<0.1	<0.01	0.528
VAL_A13_091117	VAL_A13_091117	Part A Unregulated Area	1.1	South Wall	9/11/2017	179512	ACM Pipe Validation	No	-	589.98	-	<0.0004	<0.001	<0.1	<0.01	0.590

Env Stds Comments
1. Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
2. Residential B within minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments

Ch - Chrysotile (White Asbestos)
Cr - Crocidolite (Blue Asbestos)

							Identification of Asbestos			Asbestos Quantification							Descriptive Results
							Asbestos Detected (Yes/No)	Asbestos Type	Sample Weight (dry)	Free Fibres	Asbestos (Fines and Fibrous <7mm)	Asbestos (Fines and Fibrous FA+AF)	Asbestos Containing Material	Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	Weight Used for % Calculation	Description (Anatyical Results)
							g/kg	-	g	Fibres	g	%(w/w)	g	%(w/w)	kg	
EQL							0.1	-	0.001	5	0.0004	0.001	0.1	0.001	0.0001	
NEPM (2013) HSL A[1] Residential for Asbestos Contamination in Soil												0.001		0.01		
NEPM (2013) HSL B[2] Residential for Asbestos Contamination in Soil												0.001		0.04		
Initial Asbestos Characterisation Samples - Removed																
BLDG10_ACM_06_FRAGMENT	BLDG10_ACM_06_FRAGMENT	Part A Unregulated Area	Surface	20/11/2017	ES1729288	Area 4	Yes	Ch	127	-	NA	NA	NA	NA	NA	One piece of asbestos sheeting approx 130 x 80 x 5mm
BLDG10_ACM_14_FRAGMENT	BLDG10_ACM_14_FRAGMENT	Part A Unregulated Area	Surface	20/11/2017	ES1729288	Area 4	Yes	Ch + Am	57.7	-	NA	NA	NA	NA	NA	One piece of asbestos sheeting approx 150 x 60 x 5mm
BLDG10_ACM_15A_FRAGMENT	BLDG10_ACM_15A_FRAGMENT	Part A Unregulated Area	Surface	20/11/2017	ES1729288	Area 4	Yes	Ch + Am	351	-	NA	NA	NA	NA	NA	One piece of asbestos sheeting approx 210 x 190 x 5mm
BLDG10_ACM_01A_FRAGMENT	BLDG10_ACM_01A_FRAGMENT	Part A Unregulated Area	Surface	1/12/2017	ES1730489	Area 4	Yes	Ch + Am	194	-	NA	NA	NA	NA	NA	One piece of asbestos sheeting approx 90 x 60 x 4mm plus one piece of cement sheeting approx. 110 x 90 x 4mm
Validation Sample Exceedance																
BLDG10_SS_01	BLDG10_SS_01	Part A Unregulated Area	Surface	21/11/2017	ES1729288	Area 4	No*	Ch + Am	560	No	0.0162	0.003	<0.1	<0.01	0.56	Mid grey sandy soil plus one piece of asbestos cement sheeting fines approx 15 x 5 x 3mm.
Final Validation Samples																
BLDG10_SS_06	BLDG10_SS_06	Part A Unregulated Area	Surface	20/11/2017	ES1729288	Area 4	No	-	643	No	<0.0004	<0.001	<0.1	<0.01	0.643	
BLDG10_SS_14	BLDG10_SS_14	Part A Unregulated Area	Surface	21/11/2017	ES1729288	Area 4	No	-	597	No	<0.0004	<0.001	<0.1	<0.01	0.597	
BLDG10_SS_19	BLDG10_SS_19	Part A Unregulated Area	Surface	21/11/2017	ES1729288	Area 4	No	-	545	No	<0.0004	<0.001	<0.1	<0.01	0.545	
BLDG10_SS_01A	BLDG10_SS_01A	Part A Unregulated Area	Surface	1/12/2017	ES1730489	Area 4	No	-	1540	No	<0.0004	<0.001	<0.1	<0.01	1.540	

Env Stds Comments
1. Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
2. Residential B within minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments

Ch - Chrysotile (White Asbestos)
Cr - Crocidolite (Blue Asbestos)
Am - Amosite (Brown Asbestos)

								BTEX								TPH										Metals							
								Benzene	Ethylbenzene	Toluene	Total BTEX	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 less BTEX (F1)	C10-C16	C16-C34	C34-C40	C10-C16 less NAPHTHALENE (F2)	C10 - C14	C6 - C9	C15 - C28	+C10 - C36 (Sum of total)	C29-C36	C10 - C40 (Sum of total)	C6-C10	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc
								mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL								0.2	0.5	0.5	0.2	0.5	0.5	0.5	10	50	100	100	50	50	10	100	50	100	50	10	5	1	2	5	5	0.1	2	5
NSW (2014) - CT1 General Solid Waste								10[#1]	600[#1]	288[#1]				1000[#1]							650[#1]						100[#1]	20[#1]			100[#1]	4[#1]	40[#1]	
NSW (2014) - CT2 Restricted Solid Waste								40[#1]	2400[#1]	1152[#1]				4000[#1]							2600[#1]						400[#1]	80[#1]			400[#1]	16[#1]	160[#1]	
NSW (2014) - SSC1 General Solid Waste								18[#1]	1080[#1]	518[#1]				1800[#1]							650[#1]						500[#1]	100[#1]			1500[#1]	50[#1]	1050[#1]	
NSW (2014) - SSC2 Restricted Solid Waste								72[#1]	4320[#1]	2073[#1]				7200[#1]							2600[#1]						2000[#1]	400[#1]			6000[#1]	200[#1]	4200[#1]	
LocCode	**Field_ID**	**Sampled_Date-Time**	**Lab_Report_Number**	**Monitoring_Zone**	**Monitoring_Round**																												
VENM_A	VENM_A_01	8/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling			<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10	32	<1	7	39	18	<0.1	18	60
VENM_A	VENM_A_02	8/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling			<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10	12	<1	7	42	14	<0.1	15	67
VENM_A	VENM_A_03	9/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling			<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10	11	<1	5	39	14	<0.1	17	65
VENM_A	VENM_A_05	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling			<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10	8	<1	6	40	16	<0.1	23	71
VENM_A	VENM_A_06	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling			<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10	8	<1	6	40	16	<0.1	33	64
VENM_A	VENM_A_08	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling			<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10	9	<1	6	38	13	<0.1	24	80
VENM_A	VENM_A_D01	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling			<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10	5	<1	6	34	13	<0.1	18	64
Statistical Summary																																	
Number of Results								7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Number of Detects								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	7	7	0	7	7
Minimum Concentration								<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10	5	<1	5	34	13	<0.1	15	60
Minimum Detect								ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	ND	5	34	13	ND	15	60
Maximum Concentration								<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<50	<10	<100	<50	<100	<50	<10	32	<1	7	42	18	<0.1	33	80
Maximum Detect								ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	32	ND	7	42	18	ND	33	80
Average Concentration								0.1	0.25	0.25	0.1	0.25	0.25	0.25	5	25	50	50	25	25	5	50	25	50	25	5	12	0.5	6.1	39	15	0.05	21	67
Median Concentration								0.1	0.25	0.25	0.1	0.25	0.25	0.25	5	25	50	50	25	25	5	50	25	50	25	5	9	0.5	6	39	14	0.05	18	65
Standard Deviation								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0.69	2.5	1.9	0	6.1	6.5
Number of Guideline Exceedances								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Halogenated Benzenes	Halogenated Phenols						PAH	PAH/Phenols																						PCBs
		Hexachlorobenzene	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	Benzo[b+j]fluoranthene	2,4-dimethylphenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4-chloro-3-methylphenol	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene	Polychlorinated Biphenyls (Sum of total)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.05	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1
NSW (2014) - CT1 General Solid Waste			8000[#1]	40[#1]							4000[#1]									0.8[#1]									200[#1]		288[#1]		50[#1]
NSW (2014) - CT2 Restricted Solid Waste			32000[#1]	160[#1]							16000[#1]									3.2[#1]									800[#1]		1152[#1]		50[#1]
NSW (2014) - SSC1 General Solid Waste			14400[#1]	72[#1]							7200[#1]									10[#1]									200[#1]		518[#1]		50[#1]
NSW (2014) - SSC2 Restricted Solid Waste			57600[#1]	288[#1]							28800[#1]									23[#1]									800[#1]		2073[#1]		50[#1]
LocCode	**Field_ID**	**Sampled_Date-Time**	**Lab_Report_Number**	**Monitoring_Zone**	**Monitoring_Round**																												
VENM_A	VENM_A_01	8/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
VENM_A	VENM_A_02	8/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
VENM_A	VENM_A_03	9/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
VENM_A	VENM_A_05	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
VENM_A	VENM_A_06	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
VENM_A	VENM_A_08	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
VENM_A	VENM_A_D01	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
Statistical Summary																																	
Number of Results		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Number of Detects		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration		<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
Minimum Detect		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration		<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
Maximum Detect		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration		0.025	0.25	0.25	0.25	0.25	0.25	1	0.25	0.25	0.25	0.25	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.05
Median Concentration		0.025	0.25	0.25	0.25	0.25	0.25	1	0.25	0.25	0.25	0.25	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.05
Standard Deviation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

						Organochlorine Pesticides																							
						4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2
NSW (2014) - CT1 General Solid Waste																			60[#1]										
NSW (2014) - CT2 Restricted Solid Waste																			240[#1]										
NSW (2014) - SSC1 General Solid Waste																			108[#1]										
NSW (2014) - SSC2 Restricted Solid Waste																			432[#1]										
LocCode	**Field ID**	**Sampled Date-Time**	**Lab Report Number**	**Monitoring Zone**	**Monitoring Round**																								
VENM A	VENM A 01	8/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
VENM A	VENM A 02	8/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
VENM A	VENM A 03	9/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
VENM A	VENM A 05	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
VENM A	VENM A 06	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
VENM A	VENM A 08	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
VENM A	VENM A D01	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
Statistical Summary																													
Number of Results						7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Number of Detects						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
Minimum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
Maximum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration						0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1
Median Concentration						0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1
Standard Deviation						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Organophosphorous Pesticides										
	Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
NSW (2014) - CT1 General Solid Waste					4[#1]						
NSW (2014) - CT2 Restricted Solid Waste					16[#1]						
NSW (2014) - SSC1 General Solid Waste					7.5[#1]						
NSW (2014) - SSC2 Restricted Solid Waste					30[#1]						
VENM A 01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VENM A 02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VENM A 03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VENM A 05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VENM A 06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VENM A 08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VENM A D01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Number of Results	7	7	7	7	7	7	7	7	7	7	7
Number of Detects	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Median Concentration	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Standard Deviation	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0

							Pesticides							
							Malathion	Methyl parathion	Monocrotophos	Prothiofos	Demeton-S-methyl	Fenamiphos	Parathion	Pirimphos-ethyl
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.05	0.2	0.2	0.05	0.05	0.05	0.2	0.05
NSW (2014) - CT1 General Solid Waste														
NSW (2014) - CT2 Restricted Solid Waste														
NSW (2014) - SSC1 General Solid Waste														
NSW (2014) - SSC2 Restricted Solid Waste														
LocCode	**Field_ID**	**Sampled_Date-Time**	**Lab_Report_Number**	**Monitoring_Zone**	**Monitoring_Round**									
VENM_A	VENM_A_01	8/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling		<0.05	<0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05
VENM_A	VENM_A_02	8/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling		<0.05	<0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05
VENM_A	VENM_A_03	9/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling		<0.05	<0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05
VENM_A	VENM_A_05	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling		<0.05	<0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05
VENM_A	VENM_A_06	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling		<0.05	<0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05
VENM_A	VENM_A_08	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling		<0.05	<0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05
VENM_A	VENM_A_D01	10/08/2017	ES1720007	PART A Unregulated Area	VENM Sampling		<0.05	<0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05
Statistical Summary														
Number of Results							7	7	7	7	7	7	7	7
Number of Detects							0	0	0	0	0	0	0	0
Minimum Concentration							<0.05	<0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05
Minimum Detect							ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration							<0.05	<0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05
Maximum Detect							ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration							0.025	0.1	0.1	0.025	0.025	0.025	0.1	0.025
Median Concentration							0.025	0.1	0.1	0.025	0.025	0.025	0.1	0.025
Standard Deviation							0	0	0	0	0	0	0	0
Number of Guideline Exceedances							0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)							0	0	0	0	0	0	0	0

				BTEX						TPH (NEPM 2013 Fractions)							TPH (NEPM 1999 Fractions)					Metals																				
				Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 less BTEX (F1)	C10-C16	C10-C16 less Naphathalene	C16-C34	C34-C40	C10 - C40 (Sum of total)	C6 - C9	C10 - C14	C15 - C28	C29-C36	>C10 - C36 (Sum of total)	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Chromium (Trivalent)	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1	0.1	0.1	0.2	0.1	0.3	0.2	10	10	50	50	100	100	50	10	20	50	50	50	2	10	1	10	0.4		2		2	5	5	5	0.1	2	5	5	5
NEPM (2013) Human Health - Direct Contact - HIL & HSL A&B				100[#1]	4500[#1]	14000[#1]			12000[#1]		4400[#1]		3300[#1]		4500[#1]	6300[#1]							100[#2]		60[#2]	4500[#2]	20[#2]	100	100[#2]		100[#2]	6000[#2]	300[#2]	3800[#2]	40[#2]	400[#2]	200[#2]		7400[#2]
NEPM (2013) Human Health - Direct Contact - HIL & HSL C				120[#3]	5300[#3]	18000[#3]			15000[#3]		5100[#3]		3800[#3]		5300[#3]	7400[#3]							300[#4]		90[#4]	20000[#4]	90[#4]	300	300[#4]		300[#4]	17000[#4]	600[#4]	19000[#4]	80[#4]	1200[#4]	700[#4]		30000[#4]
NEPM (2013) Human Health - Direct Contact - HIL & HSL D				430[#6]	27000[#6]	99000[#6]			81000[#6]		26000[#6]		20000[#6]		27000[#6]	38000[#6]							3000[#5]		500[#5]	300000[#5]	900[#5]	3600[#5]			4000[#5]	240000[#5]	1500[#5]	60,000	730[#5]	6000[#5]	10000[#5]		400000[#5]
NEPM (2013) Human Health - Intrusive Mait Worker Direct Contact				1100[#11]	850000[#11]	120000[#11]			130000[#11]		82000[#11]		62000[#11]		85000[#11]	120000[#11]																							
NEPM (2013) Human Health - HSL-A&B Vapour Intrusion (Sand 0-<1m)				**0.5[#15]**	**55**	**160**			**40**			**45**		**110**																									
NEPM (2013) Human Health - HSL-A&B Vapour Intrusion (Sand 1-<2m)				**0.5[#16]**	**NL**	**220**			**60**			**70**		**240**																									
NEPM (2013) Human Health - HSL-A&B Vapour Intrusion (Sand 2-<4m)				**0.5[#17]**	**NL**	**310**			**95**			**110**		**440**																									
NEPM(2013) Human Health - HSL-A&B Vapour Intrusion (Sand + 4m)				**0.5[#18]**	**NL**	**540**			**170**			**200**		**NL**																									
NEPM (2013) Human Health - HSL-D - Vapour Intrusion (Sand 0-<1m)				*3*	*NL*	*NL*			*230*			*260*		*NL*																									
NEPM (2013) Human Health - HSL-D - Vapour Intrusion (Sand 1-<2m)				*3*	*NL*	*NL*			*NL*			*370*		*NL*																									
NEPM (2013) Human Health - HSL-D - Vapour Intrusion (Sand 2-<4m)				*3*	*NL*	*NL*			*NL*			*630*		*NL*																									
NEPM(2013) Human Health - HSL-D - Vapour Intrusion (Sand + 4m)				*3*	*NL*	*NL*			*NL*			*NL*		*NL*																									
NEPM (2013) Human Health - Intrusive Mait Worker Vapour Intrusion (Sand 0-<2m)				760	NL	NL			NL		180,000		NL	NL																									
NEPM (2013) Human Health - Intrusive Mait Worker Vapour Intrusion (Sand 2-<4m)				5100	NL	NL			NL		NL		NL	NL																									
NEPM (2013) Human Health - Intrusive Mait Worker Vapour Intrusion (Sand + 4m)				15,000	NL	NL			NL		NL		NL	NL																									
NEPM (2013) ESL - Commercial & Industrial (Coarse)				75	165	135			180					170	1700	3300																							
NEPM (2013) ESL - Urban residential & open space (Coarse)				50	70	85			105			180		170	300	2800																							
NEPM (2013) EIL - Commercial & Industrial (Aged)																							160						690		65	1800			10			170
NEPM (2013) EIL - Urban residential & open space (Aged)																							100						420		50	1100			8			140
LocCode	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Lab_Report_Number**																																			
MW34	MW34_1.0	0.9-1.1	9/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	10	<1	<50	<1	-	13	-	<2	<5	7	<5	<0.1	<2	<5	26	<5
MW34	MW34_3.0	2.9-3.1	9/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	20	<1	<50	<1	-	3	-	<2	<5	10	<5	<0.1	<2	<5	<5	<5
MW35	MW35_0.5	0.4-0.6	9/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	70	<1	<50	<1	-	2	-	<2	<5	12	<5	<0.1	<2	<5	<5	<5
MW35	MW35_6.0	5.9-6.1	9/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	30	<1	<50	<1	-	88	-	10	7	15	212	<0.1	7	<5	17	31
MW36	MW36_1.0	0.9-1.1	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	3	-	<2	<5	<5	<5	<0.1	<2	<5	9	6
MW36	D01_080316_SC	0.9-1.1	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	2	-	<2	<5	<5	<5	<0.1	<2	<5	8	6
MW36	T01_080316_SC	0.9-1.1	8/03/2016	492903	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<20	<20	<50	<50	<100	<100	-	<20	<20	<50	<50	<50	3.4	<10	<2	<10	<0.4	<1	<5	<5	<5	<5	<5	<0.1	<5	-	<10	6.4
MW36	MW36_4.4	4.3-4.5	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	10	<1	<50	<1	-	11	-	<2	<5	7	6	<0.1	<2	<5	<5	9
MW37	MW37_0.5	0.4-0.6	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	<2	-	3	6	<5	91	<0.1	10	<5	<5	7
MW37	MW37_3.0	2.9-3.1	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	20	<1	<50	<1	-	10	-	<2	<5	7	<5	<0.1	<2	<5	7	<5
MW37	MW37_5.0	4.9-5.1	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	20	<1	<50	<1	-	7	-	<2	<5	8	<5	<0.1	<2	<5	7	<5
MW39	MW39_0.5	0.4-0.6	9/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	<2	-	5	<5	<5	13	<0.1	<2	<5	<5	<5
MW39	MW39_4.5	4.4-4.6	9/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	10	<1	<50	<1	-	7	-	<2	<5	6	<5	<0.1	<2	<5	<5	<5
SB28	SB28_0.5	0.4-0.6	10/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	40	<1	<50	<1	-	23	-	2	12	31	130	<0.1	5	<5	58	30
SB28	D02_100316_SC	0.4-0.6	10/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	40	<1	<50	<1	-	19	-	<2	9	30	133	<0.1	3	<5	53	30
SB28	T01_100316_SC	0.4-0.6	8/03/2016	492903	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<20	<20	<50	<50	<100	<100	-	<20	<20	<50	<50	<50	11	38	<2	<10	<0.4	<1	18	18	<5	15	24	67	<0.1	<5	-	38	22
SB28	SB28_3.5	3.4-3.6	10/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	20	<1	<50	<1	-	12	-	<2	<5	13	<5	<0.1	<2	<5	13	<5
SB29	SB29_0.5	0.4-0.6	10/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	30	<1	<50	<1	-	21	-	<2	<5	31	34	<0.1	<2	<5	47	16
SB29	SB29_2.0	1.9-2.1	10/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	14	20	<1	<50	<1	-	37	-	<2	<5	13	<5	<0.1	<2	<5	154	<5
SB30	SB30_0.5	0.4-0.6	10/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	50	<1	<50	<1	-	17	-	2	14	48	116	<0.1	4	<5	47	34
SB30	SB30_A_1.8	1.7-1.9	10/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	20	<1	<50	<1	-	16	-	<2	<5	12	<5	<0.1	<2	<5	27	<5
SB31	SB31_0.5	0.4-0.6	9/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	8	40	<1	<50	<1	-	43	-	4	<5	11	88	<0.1	12	<5	78	<5
SB31	SB31_2.8	2.7-2.9	9/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	10	<1	<50	<1	-	3	-	<2	<5	10	<5	<0.1	<2	<5	<5	<5
SB35	SB35_0.3	0.2-0.4	10/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	60	<1	<50	<1	-	11	-	91	29	5	450	<0.1	54	<5	18	26
SB35	SB35_4.0	3.9-4.1	10/03/2016	ES1605555	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	2	-	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
SB39	SB39_1.0	0.9-1.1	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	20	<1	<50	<1	-	9	-	<2	<5	9	6	<0.1	<2	<5	29	<5
SB39	SB39_4.0	3.9-4.1	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	6	-	<2	<5	6	<5	<0.1	<2	<5	7	<5
SB40	SB40_0.5	0.4-0.6	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	30	<1	<50	<1	-	4	-	2	<5	14	<5	<0.1	<2	<5	16	5
SB40	SB40_3.5	3.4-3.6	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	10	<1	<50	<1	-	7	-	<2	<5	5	<5	<0.1	<2	<5	13	<5
SB41	SB41_1.0	0.9-1.1	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	3	-	<2	<5	<5	<5	<0.1	<2	<5	8	<5
SB41	SB41_4.5	4.4-4.6	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	7	<10	<1	<50	<1	-	28	-	<2	<5	7	<5	<0.1	<2	<5	68	<5
SB42	SB42_0.5	0.4-0.6	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	10	<1	<50	<1	-	30	-	<2	<5	7	<5	<0.1	<2	<5	54	<5
SB42	SB42_2.0	0.9-1.1	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	10	<1	<50	<1	-	30	-	<2	<5	10	<5	<0.1	<2	<5	52	<5
SB43	D02_080316_SC	3.6-3.7	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	10	<1	<50	<1	-	7	-	<2	<5	8	<5	<0.1	<2	<5	22	<5
SB43	SB43_0.5	0.4-0.6	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	7	-	2	<5	<5	<5	<0.1	3	<5	15	<5
SB43	SB43_3.5	3.4-3.6	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	10	<1	<50	<1	-	6	-	<2	<5	8	<5	<0.1	<2	<5	17	<5
SB45	SB45_0.5	0.4-0.6	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	4	-	7	<5	7	37	<0.1	4	<5	<5	17
SB45	SB45_1.8	1.7-1.9	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	<2	-	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
SB46	SB46_0.5	0.4-0.6	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	20	<1	<50	<1	-	5	-	<2	9	9	10	<0.1	2	<5	10	14
SB46	SB46_4.0	3.9-4.1	8/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	13	-	<2	<5	<5	<5	<0.1	<2	<5	22	<5
TP06	TP06_0.5	0.4-0.6	9/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	30	<1	<50	<1	-	<2	-	<2	<5	27	9	0.2	<2	<5	<5	94
TP06	TP06_1.5	1.4-1.6	9/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	40	<1	<50	<1	-	3	-	<2	10	14	<5	<0.1	<2	<5	10	56
TP07	TP07_0.5	0.4-0.6	9/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	30	<1	<50	<1	-	12	-	<2	19	40	36	0.2	<2	<5	23	32
TP07	TP07_1.5	1.4-1.6	9/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	40	<1	<50	<1	-	5	-	<2	7	25	25	0.2	2	<5	11	33
TP08	TP08_0.7	0.6-0.8	9/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	<2	-	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
TP08	TP08_2.7	2.6-2.8	9/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	20	<1	<50	<1	-	10	-	<2	<5	9	19	<0.1	3	<5	15	<5
TP09	TP09_1.0	0.9-1.1	9/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	<2	-	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
TP09	D02_090316_JE	0.9-1.1	9/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	<10	<1	<50	<1	-	<2	-	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
TP09	T01_090316_JE	0.9-1.1	8/03/2016	492903	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<20	<20	<50	<50	<100	<100	-	<20	<20	<50	<50	<50	<2	<10	<2	<10	<0.4	<1	<5	<5	<5	<5	<5	<0.1	<5	-	<10	<5
TP09	TP09_3.0	2.9-3.1	9/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	10	<1	<50	<1	-	9	-	<2	<5	6	<5	<0.1	<2	<5	16	<5
TP10	TP10_0.2	0.1-0.3	9/03/2016	ES1605516	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	<5	20	<1	<50	<1	-	2	-	<2	6	19	<5	<0.1	<2	<5	<5	5
Statistical Summary																																								
Number of Results				51	51	51	51	51	51	48	51	51	51	51	51	51	48	51	51	51	51	51	51	51	51	51	51	3	51	3	51	51	51	51	51	51	48	51	51
Number of Detects				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	34	0	0	0	0	42	1	10	12	37	18	3	12	0	34	20
Minimum Concentration				<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<20	<50	<50	<50	<2	<10	<1	<10	<0.4	<1	<2	<5	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
Minimum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.4	10	ND	ND	ND	ND	2	18	2	6	5	6	0.2	2	ND	7	5
Maximum Concentration				<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<20	<20	<50	<50	<100	<100	<50	<20	<50	<100	<100	<50	14	70	<2	<50	<1	<1	88	18	91	29	48	450	0.2	54	<5	154	94
Maximum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	70	ND	ND	ND	ND	88	18	91	29	48	450	0.2	54	ND	154	94
Average Concentration				0.097	0.24	0.24	0.24	0.24	0.24	0.1	5.3	5.3	25	25	50	50	25	5.3	24	49	49	25	3.1	19	0.53	24	0.48	0.5	11	7.7	3.4	4.7	11	31	0.059	3	2.5	21	11
Median Concentration				0.1	0.25	0.25	0.25	0.25	0.25	0.1	5	5	25	25	50	50	25	5	25	50	50	25	2.5	10	0.5	25	0.5	0.5	7	2.5	1	2.5	8	2.5	0.05	1	2.5	11	2.5
Standard Deviation				0.012	0.048	0.048	0.036	0.048	0.024	0	1.2	1.2	0	0	0	0	0	1.2	3.6	5.9	5.9	0	2.2	16	0.12	4.8	0.071	0	15	8.9	13	5.1	10	74	0.036	7.6	0	27	17
Number of Guideline Exceedances				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
Number of Guideline Exceedances(Detects Only)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0

					Halogenated Phenols							PAH	PAH/Phenols																									Polychlorinated Biphenyls							
					2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	tetrachlorophenols	Benzo[b+j]fluoranthene	2,4-dimethylphenol	2,4-dinitrophenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4,6-Dinitro-2-methylphenol	4-chloro-3-methylphenol	4-nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.5	0.5	0.5	0.5	0.5	1		0.5	0.5		0.2	0.5	0.4		0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5								0.1
NEPM (2013) Human Health - Direct Contact - HIL & HSL A										100																							1400	300		3000									1
NEPM (2013) Human Health - Direct Contact - HIL & HSL B										130																							2200	400		45,000									1
NEPM (2013) Human Health - Direct Contact - HIL & HSL C										120																							1900	300		40000									1
NEPM (2013) Human Health - Direct Contact - HIL & HSL D										660																							11,000	4000		240000									7
NEPM (2013) Human Health - Intrusive Mait Worker Direct Contact																																	29,000												
NEPM (2013) Human Health - HSL-A&B Vapour Intrusion (Sand 0-<1m)																																	**3**												
NEPM (2013) Human Health - HSL-A&B Vapour Intrusion (Sand 1-<2m)																																	**9**												
NEPM (2013) Human Health - HSL-A&B Vapour Intrusion (Sand 2-<4m)																																	**NL**												
NEPM(2013) Human Health - HSL-A&B Vapour Intrusion (Sand + 4m)																																	**NL**												
NEPM (2013) Human Health - HSL-D - Vapour Intrusion (Sand 0-<1m)																																	NL												
NEPM (2013) Human Health - HSL-D - Vapour Intrusion (Sand 1-<2m)																																	NL												
NEPM (2013) Human Health - HSL-D - Vapour Intrusion (Sand 2-<4m)																																	NL												
NEPM(2013) Human Health - HSL-D - Vapour Intrusion (Sand + 4m)																																	NL												
NEPM (2013) Human Health - Intrusive Mait Worker Vapour Intrusion (Sand 0-<2m)																																	NL												
NEPM (2013) Human Health - Intrusive Mait Worker Vapour Intrusion (Sand 2-<4m)																																	NL												
NEPM (2013) Human Health - Intrusive Mait Worker Vapour Intrusion (Sand + 4m)																																	NL												
NEPM (2013) ESL - Commercial & Industrial (Coarse)																																													
NEPM (2013) ESL - Urban residential & open space (Coarse)																																													
NEPM (2013) EIL - Commercial & Industrial (Aged)																																	370												
NEPM (2013) EIL - Urban residential & open space (Aged)																																	170												
LocCode	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Lab_Report_Number**																																									
MW34	MW34_1.0	0.9-1.1	9/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
MW34	MW34_3.0	2.9-3.1	9/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
MW35	MW35_0.5	0.4-0.6	9/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
MW35	MW35_6.0	5.9-6.1	9/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
MW36	MW36_1.0	0.9-1.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
MW36	D01_080316_SC	0.9-1.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
MW36	T01_080316_SC	0.9-1.1	8/03/2016	492903	<1	<1	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MW36	MW36_4.4	4.3-4.5	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	3.5	1.5	<0.5	1	-	-	-	-	-	-	-	-
MW37	MW37_0.5	0.4-0.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
MW37	MW37_3.0	2.9-3.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	4.1	1.7	<0.5	1.2	-	-	-	-	-	-	-	-
MW37	MW37_5.0	4.9-5.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
MW39	MW39_0.5	0.4-0.6	9/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
MW39	MW39_4.5	4.4-4.6	9/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB28	SB28_0.5	0.4-0.6	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB28	D02_100316_SC	0.4-0.6	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB28	T01_100316_SC	0.4-0.6	10/03/2016	492903	<1	<1	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB28	SB28_3.5	3.4-3.6	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB29	SB29_0.5	0.4-0.6	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB29	SB29_2.0	1.9-2.1	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
SB30	SB30_0.5	0.4-0.6	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB30	SB30_A_1.8	1.7-1.9	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB31	SB31_0.5	0.4-0.6	9/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB31	SB31_2.8	2.7-2.9	9/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB35	SB35_0.3	0.2-0.4	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
SB35	SB35_4.0	3.9-4.1	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
SB39	SB39_1.0	0.9-1.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB39	SB39_4.0	3.9-4.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB40	SB40_0.5	0.4-0.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB40	SB40_3.5	3.4-3.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB41	SB41_1.0	0.9-1.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB41	SB41_4.5	4.4-4.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB42	SB42_0.5	0.4-0.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
SB42	SB42_2.0	0.9-1.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	0.8	<0.5	<0.5	-	-	-	-	-	-	-	-
SB43	SB43_0.5	0.4-0.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
SB43	SB43_3.5	3.4-3.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB43	D02_080316_SC	3.4-3.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB45	SB45_0.5	0.4-0.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
SB45	SB45_1.8	1.7-1.9	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
SB46	SB46_0.5	0.4-0.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
SB46	SB46_4.0	3.9-4.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	1.8	0.8	<0.5	0.5	-	-	-	-	-	-	-	-
TP06	TP06_0.5	0.4-0.6	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
TP06	TP06_1.5	1.4-1.6	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
TP07	TP07_0.5	0.4-0.6	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
TP07	TP07_1.5	1.4-1.6	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
TP08	TP08_0.7	0.6-0.8	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
TP08	TP08_2.7	2.6-2.8	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
TP09	TP09_1.0	0.9-1.1	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1
TP09	D02_090316_JE	0.9-1.1	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
TP09	T01_090316_JE	0.9-1.1	8/03/2016	492903	<1	<1	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
TP09	TP09_3.0	2.9-3.1	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
TP10	TP10_0.2	0.1-0.3	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.1

Statistical Summary

Statistic	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	tetrachlorophenols	Benzo[b+j]fluoranthene	2,4-dimethylphenol	2,4-dinitrophenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4,6-Dinitro-2-methylphenol	4-chloro-3-methylphenol	4-nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)
Number of Results	51	51	51	51	51	51	3	51	51	3	51	51	51	3	51	3	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	1	1	1	1	1	1	1	16
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	4	0	3	0	0	0	0	0	0	0	0
Minimum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<5	<0.2	<0.5	<0.4	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	0.8	0.8	ND	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<1	<1	<0.5	<0.5	<0.5	<2	<1	<0.5	<0.5	<5	<0.5	<1	<1	<5	<1	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	4.1	1.7	<0.5	1.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	4.1	1.7	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.26	0.26	0.25	0.25	0.25	0.97	0.5	0.25	0.25	2.5	0.24	0.26	0.48	2.5	0.26	2.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.29	0.25	0.25	0.25	0.43	0.32	0.25	0.29								0.05
Median Concentration	0.25	0.25	0.25	0.25	0.25	1	0.5	0.25	0.25	2.5	0.25	0.25	0.5	2.5	0.25	2.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Standard Deviation	0.059	0.059	0	0	0	0.12	0	0	0	0	0.036	0.059	0.071	0	0.059	0	0	0	0	0	0	0	0	0	0	0.17	0	0	0	0.73	0.28	0	0.17								0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

						Chlorinated Hydrocarbons																														
						1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.5	0.05	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05
NEPM (2013) Human Health - Direct Contact - HIL A																																				
NEPM (2013) Human Health - Direct Contact - HIL B																																				
NEPM (2013) Human Health - Direct Contact - HIL-C																																				
NEPM (2013) Human Health - Direct Contact - HIL-D																																				
US EPA (May 2016) RSLs - Residential (THQ=1.0)						20	8100	6	1.5	36	230		0.051	0.053	4.6	10	1600			2.9	190	6.5	83	140,000	3.2	110	160		24		12	4.1	81	1600		0.59
LocCode	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Lab_Report_Number**																																
MW35	MW35_0.5	0.4-0.6	9/03/2016	ES1605555		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW36	MW36_1.0	0.9-1.1	8/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW36	D01_080316_SC	0.9-1.1	8/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW36	T01_080316_SC	0.9-1.1	8/03/2016	492903		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MW37	MW37_0.5	0.4-0.6	8/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW37	MW37_3.0	2.9-3.1	8/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW37	MW37_5.0	4.9-5.1	8/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW39	MW39_0.5	0.4-0.6	9/03/2016	ES1605555		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW39	MW39_4.5	4.4-4.6	9/03/2016	ES1605555		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
SB29	SB29_2.0	1.9-2.1	10/03/2016	ES1605555		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
SB35	SB35_0.3	0.2-0.4	10/03/2016	ES1605555		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
SB42	SB42_0.5	0.4-0.6	8/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
SB43	SB43_0.5	0.4-0.6	8/03/2016	ES1605516		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB43	SB43_3.5	3.4-3.6	8/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
SB45	SB45_0.5	0.4-0.6	8/03/2016	ES1605516		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB45	SB45_1.8	1.7-1.9	8/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
SB46	SB46_0.5	0.4-0.6	8/03/2016	ES1605516		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB46	SB46_4.0	3.9-4.1	8/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
TP06	TP06_0.5	0.4-0.6	9/03/2016	ES1605516		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06	TP06_1.5	1.4-1.6	9/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
TP09	TP09_1.0	0.9-1.1	9/03/2016	ES1605516		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	TP09_3.0	2.9-3.1	9/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
TP10	TP10_0.2	0.1-0.3	9/03/2016	ES1605516		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5
Statistical Summary																																				
Number of Results						17	17	17	17	17	17	16	17	16	17	17	17	16	2	17	17	17	17	17	17	17	17	17	17	2	16	17	17	17	17	17
Number of Detects						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.5	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Minimum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
Maximum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration						0.24	0.24	0.24	0.24	0.24	0.24	0.25	0.24	0.25	0.24	0.24	0.24	0.25		0.24	0.24	0.24	0.24	2.4	0.24	2.4	0.24	0.24	0.24		0.25	0.24	0.24	0.24	0.24	2.4
Median Concentration						0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.138	0.25	0.25	0.25	0.25	2.5	0.25	2.5	0.25	0.25	0.25	0.138	0.25	0.25	0.25	0.25	0.25	2.5
Standard Deviation						0.055	0.055	0.055	0.055	0.055	0.055	0	0.055	0	0.055	0.055	0.055	0		0.055	0.055	0.055	0.055	0.6	0.055	0.6	0.055	0.055	0.055		0	0.055	0.055	0.055	0.055	0.6
Number of Guideline Exceedances						0	0	0	0	0	0	0	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Number of Guideline Exceedances(Detects Only)						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Halogenated Benzenes										Halogenated Hydrocarbons					Solvents							VOCs		
	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Acetone	Allyl chloride	Carbon disulfide	Vinyl acetate	cis-1,4-Dichloro-2-butene	Pentachloroethane	trans-1,4-Dichloro-2-butene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.05	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	5	0.05	<0.05	<0.05	0.05	5	0.5	0.5	0.5
NEPM (2013) Human Health - Direct Contact - HIL A										10															
NEPM (2013) Human Health - Direct Contact - HIL B										15															
NEPM (2013) Human Health - Direct Contact - HIL-C										10															
NEPM (2013) Human Health - Direct Contact - HIL-D																									
US EPA (May 2016) RSLs - Residential (THQ=1.0)	63	58	1800		26	1600	1600	290	280	2.1	0.36	6.8	87		23,000								0.074	77	0.074
LocCode	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Lab_Report_Number**																					
MW35	MW35_0.5	0.4-0.6	9/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
MW36	MW36_1.0	0.9-1.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
MW36	D01_080316_SC	0.9-1.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
MW36	T01_080316_SC	0.9-1.1	8/03/2016	492903	-	-	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	-	-	-
MW37	MW37_0.5	0.4-0.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
MW37	MW37_3.0	2.9-3.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
MW37	MW37_5.0	4.9-5.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
MW39	MW39_0.5	0.4-0.6	9/03/2016	ES1605555	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
MW39	MW39_4.5	4.4-4.6	9/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
SB29	SB29_2.0	1.9-2.1	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
SB35	SB35_0.3	0.2-0.4	10/03/2016	ES1605555	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
SB42	SB42_0.5	0.4-0.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
SB43	SB43_0.5	0.4-0.6	8/03/2016	ES1605516	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
SB43	SB43_3.5	3.4-3.6	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
SB45	SB45_0.5	0.4-0.6	8/03/2016	ES1605516	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
SB45	SB45_1.8	1.7-1.9	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
SB46	SB46_0.5	0.4-0.6	8/03/2016	ES1605516	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
SB46	SB46_4.0	3.9-4.1	8/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
TP06	TP06_0.5	0.4-0.6	9/03/2016	ES1605516	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06	TP06_1.5	1.4-1.6	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
TP09	TP09_1.0	0.9-1.1	9/03/2016	ES1605516	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	TP09_3.0	2.9-3.1	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
TP10	TP10_0.2	0.1-0.3	9/03/2016	ES1605516	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<5	<5	<0.5	<5	<5	<5	<5	-	-	<0.5	<0.5	<0.5
Statistical Summary																									
Number of Results	16	16	17	17	17	16	17	17	17	15	17	17	17	17	17	17	16	17	1	1	17	16	16	16	16
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.5	<0.5	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<5	<0.05	<0.05	<0.05	<0.05	<5	<0.5	<0.5	<0.5
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<5	<5	<0.5	<5	<5	<5	<5	<0.05	<0.05	<0.5	<5	<0.5	<0.5	<0.5
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.25	0.25	0.24	0.24	0.24	0.25	0.24	0.24	0.24	0.025	0.24	2.4	2.4	0.24	2.4	2.4	2.5	2.4			0.24	2.5	0.25	0.25	0.25
Median Concentration	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.025	0.25	2.5	2.5	0.25	2.5	2.5	2.5	2.5	0.025	0.025	0.25	2.5	0.25	0.25	0.25
Standard Deviation	0	0	0.055	0.055	0.055	0	0.055	0.055	0.055	0	0.055	0.6	0.6	0.055	0.6	0.6	0	0.6			0.055	0	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	16	0	16
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

										Chlorinated Hydrocarbons																							
										1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride
										mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL										0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	0.5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5
Human Health - Direct Contact - HIL-A																																							
Human Health - Direct Contact - HIL-B																																							
Human Health - Direct Contact - HIL-D																																							
US EPA (May 2016) RSLs - Residential (THQ=1.0)										20[#3]	8100	6[#3]	1.5	36[#3]	230		0.051[#3]	0.053[#3]	4.6[#3]	10[#3]	1600		2.9[#3]	190[#3]	6.5[#3]	83[#3]	14000	3.2[#3]	110	160		24	12[#3]	4.1	81	1600		0.59[#3]
Field_ID	**LocCode**	**Sample_Depth_Range**	**Monitoring_Zone**	**Sampled_Date-Time**	**Monitoring_Round**	**Lab_Report_Number**																																	
PRA_TRENCH	TRENCH_01_040816	0-0.2	Proposed Residential Area	4/08/2016	PRA ACM INVEST	ES1617280				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
PRA_TRENCH	TRENCH_02_040816	0.1-0.3	Proposed Residential Area	4/08/2016	PRA ACM INVEST	ES1617280				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
Statistical Summary																																							
Number of Results										0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detects										0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Detect										ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration										0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Detect										ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Number of Guideline Exceedances										0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)										0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

#1:ASC NEPM (2013) Health Investigation Level (HIL-A) Residential (Gardens)

#2:ASC NEPM (2013) Health Investigation Level (HIL-B) Residential (minimal opportunities for soil access)

#3:Based on a cancer risk of 10-5

												Halogenated Benzenes										Halogenated Hydrocarbons					VOCs			Solvents				
												1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	cis-1,4-Dichloro-2-butene	Pentachloroethane	trans-1,4-Dichloro-2-butene	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Carbon disulfide	Vinyl acetate
												mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL												0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.5	5	5	0.5	5	0.5	0.5	0.5	5	5	5	0.5	5
Human Health - Direct Contact - HIL-A																					10[#1]													
Human Health - Direct Contact - HIL-B																					15[#2]													
Human Health - Direct Contact - HIL-D																																		
US EPA (May 2016) RSLs - Residential (THQ=1.0)												63	58	1800		26[#3]	1600	1600	290	280	2.1[#3]	0.36[#3]	6.8	87		23000	0.074[#3]	77[#3]	0.074[#3]					
Field_ID	**LocCode**	**Sample_Depth_Range**	**Monitoring_Zone**	**Sampled_Date-Time**	**Monitoring_Round**	**Lab_Report_Number**																												
PRA_TRENCH	TRENCH_01_040816	0-0.2	Proposed Residential Area	4/08/2016	PRA ACM INVEST	ES1617280	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5
PRA_TRENCH	TRENCH_02_040816	0.1-0.3	Proposed Residential Area	4/08/2016	PRA ACM INVEST	ES1617280	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5
Statistical Summary																																		
Number of Results							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2
Number of Detects							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Detect							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<5	<5	<5	<0.5	<5
Maximum Detect							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Number of Guideline Exceedances							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

#1:ASC NEPM (2013) Health Investigation Level (HIL-A) Residential (Gardens)

#2:ASC NEPM (2013) Health Investigation Level (HIL-B) Residential (minimal opportunities for soil access)

#3:Based on a cancer risk of 10-5

						Organochlorine Pesticides																							
						4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
NEPM (2013) Human Health - Direct Contact - HIL-A									6		50						240		270				10				6		300	20
NEPM (2013) Human Health - Direct Contact - HIL B									10		90						600		400				20				10		500	30
NEPM (2013) Human Health - Direct Contact - HIL-C									10		70						400		340				20				10		400	30
NEPM (2013) Human Health - Direct Contact - HIL-D									45		530						3600		2000				100				50		2500	160
LocCode	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Lab_Report_Number**																										
MW35	MW35_0.5	0.4-0.6	9/03/2016	ES1605555		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
MW36	MW36_1.0	0.9-1.1	8/03/2016	ES1605516		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
MW36	D01_080316_SC	0.9-1.1	8/03/2016	ES1605516		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
MW36	T01_080316_SC	0.9-1.1	8/03/2016	492903		<0.05	<0.05	<0.05	<0.1	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.15	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
MW37	MW37_0.5	0.4-0.6	8/03/2016	ES1605516		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
MW39	MW39_0.5	0.4-0.6	9/03/2016	ES1605555		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
SB29	SB29_2.0	1.9-2.1	10/03/2016	ES1605555		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
SB42	SB42_0.5	0.4-0.6	8/03/2016	ES1605516		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
SB43	SB43_0.5	0.4-0.6	8/03/2016	ES1605516		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
SB45	SB45_0.5	0.4-0.6	8/03/2016	ES1605516		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
SB46	SB46_0.5	0.4-0.6	8/03/2016	ES1605516		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
TP06	TP06_0.5	0.4-0.6	9/03/2016	ES1605516		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
TP09	TP09_1.0	0.9-1.1	9/03/2016	ES1605516		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
TP10	TP10_0.2	0.1-0.3	9/03/2016	ES1605516		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
Statistical Summary																														
Number of Results						14	14	14	14	14	14	13	13	14	14	14	14	14	13	14	14	14	14	14	14	14	14	14	14	1
Number of Detects						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
Minimum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration						<0.05	<0.05	<0.05	<0.1	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
Maximum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration						0.025	0.025	0.025	0.027	0.025	0.027	0.025	0.025	0.025	0.025	0.095	0.029	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.095	
Median Concentration						0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.5
Standard Deviation						0	0	0	0.0067	0	0.0067	0	0	0	0	0.02	0.013	0	0	0	0	0	0	0	0	0	0	0	0.02	
Number of Guideline Exceedances						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

					Organophosphorous Pesticides																									Pesticides			
					Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Demeton-O	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Phorate	Prothiofos	Ronnel	Trichloronate	Demeton-S-methyl	Fenamiphos	Parathion	Pirimphos-ethyl
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.05		0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05		0.05				0.05	0.05		0.2		0.2			0.05			0.05	0.05	0.2	0.05
NEPM (2013) Human Health - Direct Contact - HIL-A										160																							
NEPM (2013) Human Health - Direct Contact - HIL B										340																							
NEPM (2013) Human Health - Direct Contact - HIL-C										250																							
NEPM (2013) Human Health - Direct Contact - HIL-D										2000																							
LocCode	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Lab_Report_Number**																													
MW35	MW35_0.5	0.4-0.6	9/03/2016	ES1605555	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
MW36	MW36_1.0	0.9-1.1	8/03/2016	ES1605516	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
MW36	D01_080316_SC	0.9-1.1	8/03/2016	ES1605516	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
MW36	T01_080316_SC	0.9-1.1	8/03/2016	492903	<0.2	<0.2	-	-	-	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.5	<0.2	-	<0.2	<0.2	-	-	-	-
MW37	MW37_0.5	0.4-0.6	8/03/2016	ES1605516	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
MW39	MW39_0.5	0.4-0.6	9/03/2016	ES1605555	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
SB29	SB29_2.0	1.9-2.1	10/03/2016	ES1605555	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
SB42	SB42_0.5	0.4-0.6	8/03/2016	ES1605516	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
SB43	SB43_0.5	0.4-0.6	8/03/2016	ES1605516	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
SB45	SB45_0.5	0.4-0.6	8/03/2016	ES1605516	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
SB46	SB46_0.5	0.4-0.6	8/03/2016	ES1605516	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
TP06	TP06_0.5	0.4-0.6	9/03/2016	ES1605516	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
TP09	TP09_1.0	0.9-1.1	9/03/2016	ES1605516	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
TP10	TP10_0.2	0.1-0.3	9/03/2016	ES1605516	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.05	-	-	<0.05	<0.05	<0.2	<0.05
Statistical Summary																																	
Number of Results					14	1	13	13	13	14	13	1	14	14	13	1	14	1	1	1	14	13	1	14	1	13	1	1	13	1	1	13	13	13	13
Number of Detects					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration					<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.05	<0.2	<0.2	<0.05	<0.05	<0.2	<0.05
Minimum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration					<0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.05	<0.2	<0.2	<0.05	<0.05	<0.2	<0.05
Maximum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration					0.03		0.025	0.025	0.025	0.03	0.025		0.03	0.03	0.025		0.03				0.03	0.025		0.1		0.1			0.025			0.025	0.025	0.1	0.025
Median Concentration					0.025	0.1	0.025	0.025	0.025	0.025	0.025	0.1	0.025	0.025	0.025	0.1	0.025	0.1	0.1	0.1	0.025	0.025	0.1	0.1	0.1	0.1	0.25	0.1	0.025	0.1	0.1	0.025	0.025	0.1	0.025
Standard Deviation					0.02		0	0	0	0.02	0		0.02	0.02	0		0.02				0.02	0		0		0			0			0	0	0	0
Number of Guideline Exceedances					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

					Asbestos		
					Asbestos Detected Y/N	Asbestos Type	Sample Weight
					Yes/No	Description	g/kg
LocCode	Field_ID	Sample_Depth_Range	Sampled_Date-Time	Lab_Report_Number			
MW34	MW34_0.2	0.1-0.3	9/03/2016	ES1605555	N	NA	560
MW37	MW37_0.2	0.1-0.3	8/03/2016	ES1605516	N	NA	937
SB29	SB29_0.5	0.4-0.5	10/03/2016	ES1605555	N	NA	518
SB35	SB35_0.3_ACM	0.2-0.3	10/03/2016	ES1605555	N	NA	439
SB41	SB41_0.3	0.2-0.4	8/03/2016	ES1605516	N	NA	504
SB41	SB41_ACM	Surface	8/03/2016	ES1605516	Y	Ch & Am	25.5
SB42	SB42_0.2	0.1-0.3	8/03/2016	ES1605516	N	NA	620
SB43	SB43_0.3	0.2-0.4	8/03/2016	ES1605516	N	NA	478
SB45	SB45_0.4	0.3-0.5	8/03/2016	ES1605516	N	NA	580
SB46	SB46_0.3	0.2-0.4	8/03/2016	ES1605516	N	NA	572
TP06	TP06_0.2_ACM	0.1-0.2	9/03/2016	ES1605516	N	NA	223
TP07	TP07_0.2_ACM	0.1-0.2	9/03/2016	ES1605516	N	NA	276
TP08	TP08_0.2_ACM	0.1-0.2	9/03/2016	ES1605516	N	NA	259
TP09	TP09_0.2_ACM	0.1-0.2	9/03/2016	ES1605516	N	NA	343
TP10	TP10_0.1_ACM	0-0.1	9/03/2016	ES1605516	N	NA	310

Notes
Ch = Chrysoltile
Am = Amosite

								Identification of Asbestos			
								Asbestos Detected (Yes/No)	Asbestos Type	Sample Weight (dry)	Description
								g/kg	-	g	
EQL								0.1	-	0.001	
LocCode	Field_ID	Maxtrix	Monitoring_Zone	Sample_Depth_Range	Sampled_Date-Time	Lab_Report_Number	Monitoring_Round				
PRA_ACM_SURFACE	PRA_ACM_01	SOLID	Part A Area	Surface	20/05/2016	EN1602001	PRA ACM INVEST	Y	Ch	2.79	One piece of friable asbestos fibre board approx 50 x 30 x 5mm
PRA_ACM_SURFACE	PRA_ACM_02	SOLID	Part A Area	Surface	20/05/2016	EN1602001	PRA ACM INVEST	Y	Ch + Am + Cr	3.44	One piece of bonded asbestos cement sheeting approx 35 x 30 x 5mm
PRA_ACM_SURFACE	PRA_ACM_03	SOLID	Part A Area	Surface	20/05/2016	EN1602001	PRA ACM INVEST	Y	Ch	12.5	One piece of bonded asbestos fibre board approx 70 x 50 x 5mm
PRA_ACM_SURFACE	PRA_ACM_04	SOLID	Part A Area	Surface	20/05/2016	EN1602001	PRA ACM INVEST	N	-	17	-
PRA_A7_ACM_01	A7_ACM_01	SOIL	Part A Area	Surface	13/07/2016	ES1615285	PRA ACM INVEST	N	-	68.2	-
PRA_A7_ACM_02	A7_ACM_02	SOIL	Part A Area	Surface	13/07/2016	ES1615285	PRA ACM INVEST	N	-	78.1	-
PRA_A7_ACM_02	A7_ACM_02_0.05	SOIL	Part A Area	Surface	13/07/2016	ES1615285	PRA ACM INVEST	N	-	322	-
PRA_G4_ACM_03	ACM_03	SOLID	Part A Area	Surface	13/07/2016	ES1615920	PRA ACM INVEST	Y	Ch + Am	16.4	Several pieces of friable asbestos cement sheeting approx 85 x 45 x 4mm
PRA_G4_ACM_03	ACM03_0.05	SOIL	Part A Area	0.04-0.06	13/07/2016	ES1615920	PRA ACM INVEST	Y	Ch + Cr	223	Mid grey sandy soil with one fragment of friable asbestos cement sheet approx 3 x 2 x 1mm
PRA_G4_ACM_04	ACM_04	SOLID	Part A Area	Surface	13/07/2016	ES1615920	PRA ACM INVEST	Y	Ch + Am	94.4	One piece of bonded asbestos cement sheeting approx 90 x 50 x 4mm
PRA_TRENCH	ACM_01_040816	SOLID	Part A Area	0.2-0.2	4/08/2016	ES1617280	PRA ACM INVEST	Y	Ch	2.06	Two pieces of bonded asbestos cement sheeting 20 x 15 x 5mm and 10 x 7 x 5mm
PRA_TRENCH	ACM_02_040816	SOLID	Part A Area	0.1-0.1	4/08/2016	ES1617280	PRA ACM INVEST	Y	Ch	10.5	Four fragments of bonded asbestos cement sheeting approx 32 x 15 x 5mm
PRA_TRENCH	ACM_03_040816	SOLID	Part A Area	0.1-0.1	4/08/2016	ES1617280	PRA ACM INVEST	Y	Ch	25.5	Several pieces of bonded asbestos cement sheeting ranging from approx 60 x 45 x 5mm to 30 x 20 x 5mm
PRA_TRENCH	TRENCH_01_040816	SOIL	Part A Area	-	4/08/2016	ES1617280	PRA ACM INVEST	N	-	436	-
PRA_TRENCH	TRENCH_02_040816	SOIL	Part A Area	-	4/08/2016	ES1617280	PRA ACM INVEST	N	-	285	-
PRA_TRENCH_02	PRA_TRENCH_02_ACM	SOLID	Part A Area	0.3	18/10/2016	EN1603852	PRA ACM INVEST	Y	Ch + Am	4.77	One piece of asbestos cement sheeting approximately 45 x 35 x 4mm
PRA_TRENCH_02	PRA_TRENCH_02_0.1	SOIL	Part A Area	0.05-0.1	18/10/2016	EN1603852	PRA ACM INVEST	N	-	427	-
PRA_TRENCH_02	PRA_TRENCH_02_0.3	SOIL	Part A Area	0.3-0.3	18/10/2016	EN1603852	PRA ACM INVEST	N	-	419	-
PRA_TRENCH_02	PRA_TRENCH_02_0.5	SOIL	Part A Area	0.5-0.5	18/10/2016	EN1603852	PRA ACM INVEST	N	-	274	-
PRA_TRENCH_03	PRA_TRENCH_03_0.3	SOIL	Part A Area	0.3-0.3	18/10/2016	EN1603852	PRA ACM INVEST	N	-	420	-

Notes:
Am = Amosite (brown asbestos)
Ch = Chrysotile (white asbestos)
Cr = Crocidolite (blue asbestos)

							Identification of Asbestos			Friable Asbestos in Soil			
							Asbestos Detected (Yes/No)	Asbestos Type	Sample Weight (dry)	Free Fibres	Friable Asbestos	Friable Asbestos (as Asbestos in Soil)	Weight Used for % Calculation
							g/kg	-	g	Fibres	g	%(w/w)	kg
EQL							0.1	-	0.001	5	0.0004	0.001	0.0001
NEPM (2013) HSL A[1] Residential for Asbestos Contamination in Soil												0.001	
NEPM (2013) HSL B[2] Residential for Asbestos Contamination in Soil												0.001	
LocCode	**Field_ID**	**Monitoring_Zone**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Lab_Report_Number**	**Monitoring_Round**							
TP11	TP11_0.3	Part A Area	0.3-0.3	5/10/2016	EN1603626	PRA RAP ESA	No	-	384	-	<0.0004	<0.001	0.384
TP11	TP11_1.0	Part A Area	1-1	5/10/2016	EN1603626	PRA RAP ESA	No	-	438	-	<0.0004	<0.001	0.438
TP12	TP12_0.1	Part A Area	0.1-0.1	5/10/2016	EN1603626	PRA RAP ESA	No	-	438	-	<0.0004	<0.001	0.438
TP12	TP12_0.6	Part A Area	0.6-0.6	5/10/2016	EN1603626	PRA RAP ESA	No	-	387	-	<0.0004	<0.001	0.387
TP13	TP13_0.3	Part A Area	0.3-0.3	5/10/2016	EN1603626	PRA RAP ESA	No	-	550	-	<0.0004	<0.001	0.55
TP13	TP13_1.7	Part A Area	1.7-1.7	5/10/2016	EN1603626	PRA RAP ESA	No	-	544	-	<0.0004	<0.001	0.544
TP14	TP14_0.1	Part A Area	0.1-0.1	5/10/2016	EN1603626	PRA RAP ESA	No	-	531	-	**0.0055**	**0.001**	0.531
TP14	TP14_0.5	Part A Area	0.5-0.5	5/10/2016	EN1603626	PRA RAP ESA	No	-	385	-	<0.0004	<0.001	0.385
TP15	TP15_0.4_ACM	Part A Area	0.4-0.4	5/10/2016	EN1603626	PRA RAP ESA	Yes	Ch	1.49	-	-	-	-
TP15	TP15_0.8_ACM	Part A Area	0.8-0.8	5/10/2016	EN1603626	PRA RAP ESA	Yes	Ch+Am	97.9	-	-	-	-
TP15	TP15_1.0_ACM	Part A Area	1-1	5/10/2016	EN1603626	PRA RAP ESA	Yes	Ch+Am	48.7	-	-	-	-
TP15	TP15_1.5	Part A Area	1.5-1.5	5/10/2016	EN1603626	PRA RAP ESA	No	-	581	-	<0.0004	<0.001	0.581
TP16	TP16_0.1	Part A Area	0.1-0.1	5/10/2016	EN1603626	PRA RAP ESA	No	-	251	-	<0.0004	<0.001	0.251
TP16	TP16_1.4	Part A Area	1.4-1.4	5/10/2016	EN1603626	PRA RAP ESA	No	-	317	-	<0.0004	<0.001	0.317
TP17	TP17_0.1	Part A Area	0.1-0.1	5/10/2016	EN1603626	PRA RAP ESA	No	-	387	-	<0.0004	<0.001	0.387
TP17	TP17_1.5	Part A Area	1.5-1.5	5/10/2016	EN1603626	PRA RAP ESA	No	-	442	-	<0.0004	<0.001	0.442
TP18	TP18_0.2	Part A Area	0.2-0.2	5/10/2016	EN1603626	PRA RAP ESA	No	-	550	-	<0.0004	<0.001	0.55
TP18	TP18_0.5_ACM	Part A Area	0.5-0.5	5/10/2016	EN1603626	PRA RAP ESA	Yes	Ch	39.3	-	-	-	-
TP18	TP18_1.4	Part A Area	1.4-1.4	5/10/2016	EN1603626	PRA RAP ESA	No	-	292	-	-	-	-

Env Stds Comments

1. Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
2. Residential B within minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments

							ACM Asbestos in Soil	
							Asbestos Containing Material	Asbestos Containing Material (as 15% Asbestos in ACM >7mm)
							g	%(w/w)
EQL							0.1	0.001
NEPM (2013) HSL A[1] Residential for Asbestos Contamination in Soil								0.01
NEPM (2013) HSL B[2] Residential for Asbestos Contamination in Soil								0.04
LocCode	**Field_ID**	**Monitoring_Zone**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Lab_Report_Number**	**Monitoring_Round**		
TP11	TP11_0.3	Part A Area	0.3-0.3	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP11	TP11_1.0	Part A Area	1-1	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP12	TP12_0.1	Part A Area	0.1-0.1	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.001
TP12	TP12_0.6	Part A Area	0.6-0.6	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP13	TP13_0.3	Part A Area	0.3-0.3	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.001
TP13	TP13_1.7	Part A Area	1.7-1.7	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP14	TP14_0.1	Part A Area	0.1-0.1	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP14	TP14_0.5	Part A Area	0.5-0.5	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP15	TP15_0.4_ACM	Part A Area	0.4-0.4	5/10/2016	EN1603626	PRA RAP ESA	-	-
TP15	TP15_0.8_ACM	Part A Area	0.8-0.8	5/10/2016	EN1603626	PRA RAP ESA	-	-
TP15	TP15_1.0_ACM	Part A Area	1-1	5/10/2016	EN1603626	PRA RAP ESA	-	-
TP15	TP15_1.5	Part A Area	1.5-1.5	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP16	TP16_0.1	Part A Area	0.1-0.1	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP16	TP16_1.4	Part A Area	1.4-1.4	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP17	TP17_0.1	Part A Area	0.1-0.1	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP17	TP17_1.5	Part A Area	1.5-1.5	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.01
TP18	TP18_0.2	Part A Area	0.2-0.2	5/10/2016	EN1603626	PRA RAP ESA	<0.1	<0.001
TP18	TP18_0.5_ACM	Part A Area	0.5-0.5	5/10/2016	EN1603626	PRA RAP ESA	-	-
TP18	TP18_1.4	Part A Area	1.4-1.4	5/10/2016	EN1603626	PRA RAP ESA	-	-

Env Stds Comments

1. Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
2. Residential B within minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apar

	BTEX							TPH (2013 NEPM Fractions)					TPH (1999 NEPM Fractions)								Metals															
	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10 less BTEX (F1)	C6-C10	C10-C16 less NAPHTHALENE (F2)	C10-C16	C10 - C40 (Sum of total)	C16-C34	C34-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36	>C10 - C36 (Sum of total)	Arsenic (Filtered)	Barium (Filtered)	Beryllium (Filtered)	Boron (Filtered)	Cadmium (Filtered)	Chromium (hexavalent)	Chromium (III+VI) (Filtered)	Chromium (Trivalent)	Cobalt (Filtered)	Copper (Filtered)	Lead (Filtered)	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Selenium (Filtered)	Vanadium (Filtered)	Zinc (Filtered)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	1	1	1	2	1	2	0.001	0.02	0.02	0.05	0.05	100	0.1	0.1	20	50	100	50	50	0.001	0.001	0.001	0.01	0.0001		0.001		0.001	0.001	0.001	0.001	0.0001	0.001	0.01	0.005	0.005
NEPM (2013) Drinking Water GIL	1	300	800			600														0.01	2	0.06		0.002		0.05			2	0.01	0.5	0.001	0.02	0.01		
NEPM (2013) Ecological (Freshwater) GIL	950				350																		0.37	0.0002	0.001				0.0014	0.0034	1.9	0.00006	0.011	0.005		0.008
NHMRI (2008) Recreational Water	10	3000	8000			6000														0.1	20	0.6		0.02		0.5			20	0.1	5	0.01	0.2	0.1		
NEPM (2013) Groundwater Vapour Intrusion HSL-A & HSL-B (Sand 2 - <4m)	800	NL	NL			NL		1		1																										
NEPM (2013) Groundwater Vapour Intrusion HSL-A & HSL-B (Sand 4 - <8m)	800	NL	NL			NL		1		1																										
NEPM (2013) Groundwater Vapour Intrusion HSL-C (Sand 2 - <4m)	**NL**	**NL**	**NL**			**NL**		**NL**		**NL**																										
NEPM (2013) Groundwater Vapour Intrusion HSL-C (Sand 4 - <8m)	**NL**	**NL**	**NL**			**NL**		**NL**		**NL**																										
NEPM (2013) Groundwater Vapour Intrusion HSL-D (Sand 2-<4 m)	5000	NL	NL			NL		6		NL																										
NEPM (2013) Groundwater Vapour Intrusion HSL-D (Sand 4 - <8m)	5000	NL	NL			NL		6		NL																										
NEPM (2013) Groundwater Vapour Intrusion Intrusive Maint Worker (Sand 2-<4m)	*NL*	*NL*	*NL*			*NL*		*NL*		*NL*																										
NEPM (2013) Groundwater Vapour Intrusion Intrusive Maint Worker (Sand 4-<8m)	*NL*	*NL*	*NL*			*NL*		*NL*		*NL*																										
Field_ID	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																																	
MW01	MW01	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	0.009	0.089	<0.001	<0.05	<0.0001	-	<0.001	-	0.013	<0.001	<0.001	0.919	<0.0001	0.004	<0.01	<0.01	0.008
MW02	MW02	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	<0.001	0.061	<0.001	<0.05	<0.0001	-	<0.001	-	<0.001	<0.001	<0.001	0.404	<0.0001	0.002	<0.01	<0.01	0.01
D01_170316_SC	MW02	17/03/2016	ES1606124	<1	<2	3	<2	<2	<2	0.003	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	<0.001	0.063	<0.001	<0.05	<0.0001	-	<0.001	-	0.014	<0.001	<0.001	0.172	<0.0001	0.006	<0.01	<0.01	0.026
T01_170316_SC	MW02	17/03/2016	493672	<1	<1	<1	<2	<1	<3	-	<0.02	<0.02	0.39	0.39	-	1.1	<0.1	<20	390	900	100	1400	<0.001	0.065	<0.001	0.02	<0.0001	<0.005	0.001	<0.005	0.001	<0.001	<0.001	0.46	<0.0001	0.002	-	<0.005	<0.005
MW12	MW12	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	<0.001	0.037	<0.001	<0.05	<0.0001	-	<0.001	-	<0.001	0.014	0.016	0.061	<0.0001	0.002	<0.01	0.01	0.009
MW13	MW13	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	0.002	0.083	<0.001	<0.05	<0.0001	-	<0.001	-	0.001	<0.001	<0.001	0.147	<0.0001	0.003	<0.01	<0.01	0.008
MW14	MW14	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	0.03	0.03	<0.1	<0.1	<100	<0.1	<0.1	30	<50	<100	<50	<50	<0.001	0.045	<0.001	<0.05	<0.0001	-	<0.001	-	<0.001	<0.001	0.001	0.035	<0.0001	0.001	<0.01	<0.01	0.008
MW15	MW15	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	<0.001	0.108	<0.001	<0.05	<0.0001	-	<0.001	-	0.001	<0.001	<0.001	0.03	<0.0001	0.002	<0.01	<0.01	0.01
MW16	MW16	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	<0.001	0.016	<0.001	<0.05	<0.0001	-	<0.001	-	<0.001	<0.001	<0.001	0.012	<0.0001	<0.001	<0.01	<0.01	<0.005
MW17	MW17	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	<0.001	0.008	<0.001	<0.05	<0.0001	-	<0.001	-	<0.001	<0.001	<0.001	0.001	<0.0001	<0.001	<0.01	<0.01	<0.005
MW28	MW28	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	<0.001	0.042	<0.001	<0.05	<0.0001	-	<0.001	-	<0.001	<0.001	<0.001	0.046	<0.0001	0.002	<0.01	<0.01	0.008
MW34	MW34	17/03/2016	ES1606124	<1	<2	2	<2	<2	<2	0.002	<0.02	<0.02	0.11	0.11	110	<0.1	<0.1	<20	110	<100	<50	110	<0.001	0.066	<0.001	0.05	<0.0001	-	<0.001	-	0.013	<0.001	<0.001	0.168	<0.0001	0.006	<0.01	<0.01	0.025
D01_170316_AW	MW34	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	<0.001	0.061	<0.001	<0.05	<0.0001	-	<0.001	-	0.001	<0.001	<0.001	0.417	<0.0001	0.003	<0.01	<0.01	<0.005
T01_170316_AW	MW34	17/03/2016	493672	<1	<1	2	<2	<1	<3	-	<0.02	<0.02	0.37	0.37	-	1	<0.1	<20	380	900	<100	1300	<0.001	0.066	<0.001	0.06	<0.0001	<0.005	0.0012	<0.005	0.013	<0.001	<0.001	0.19	<0.0001	0.006	-	<0.005	0.021
MW35	MW35	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	0.03	0.03	<0.1	<0.1	<100	<0.1	<0.1	30	<50	<100	<50	<50	<0.001	0.04	<0.001	<0.05	<0.0001	-	<0.001	-	0.017	<0.001	<0.001	0.275	<0.0001	0.005	<0.01	<0.01	0.018
MW36	MW36	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	0.03	0.03	0.45	0.45	450	<0.1	<0.1	30	440	<100	<50	440	<0.001	0.01	<0.001	<0.05	<0.0001	-	<0.001	-	<0.001	<0.001	<0.001	0.022	<0.0001	<0.001	<0.01	<0.01	0.008
MW37	MW37	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	50	<100	<50	50	<0.001	0.006	<0.001	<0.05	<0.0001	-	<0.001	-	<0.001	<0.001	<0.001	0.015	<0.0001	0.002	<0.01	<0.01	0.007
MW39	MW39	17/03/2016	ES1606124	<1	<2	<2	<2	<2	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	110	<100	<50	110	<0.001	0.05	<0.001	<0.05	<0.0001	-	<0.001	-	0.003	0.002	<0.001	0.027	<0.0001	0.002	<0.01	<0.01	0.011
Statistical Summary																																						
Number of Results	18	18	18	18	18	18	16	18	18	18	18	16	18	18	18	18	18	18	18	18	18	18	18	18	2	18	2	18	18	18	18	18	18	16	18	18
Number of Detects	0	0	3	0	0	0	2	3	3	4	4	2	2	0	3	6	2	1	6	2	18	0	3	0	0	2	0	10	2	2	18	0	15	0	1	14
Minimum Concentration	<1	<1	<1	<2	<1	<2	<0.001	<0.02	<0.02	<0.1	<0.1	<100	<0.1	<0.1	<20	<50	<100	<50	<50	<0.001	0.006	<0.001	0.02	<0.0001	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	0.001	<0.0001	<0.001	<0.01	<0.005	<0.005
Minimum Detect	ND	ND	2	ND	ND	ND	0.002	0.03	0.03	0.11	0.11	110	1	ND	30	50	900	100	50	0.002	0.006	ND	0.02	ND	ND	0.001	ND	0.001	0.002	0.001	0.001	ND	0.001	ND	0.01	0.007
Maximum Concentration	<1	<2	3	<2	<2	<3	0.003	0.03	0.03	0.45	0.45	450	1.1	<0.1	30	440	900	100	1400	0.009	0.108	<0.001	0.06	<0.0001	<0.005	0.0012	<0.005	0.017	0.014	0.016	0.919	<0.0001	0.006	<0.01	0.01	0.026
Maximum Detect	ND	ND	3	ND	ND	ND	0.003	0.03	0.03	0.45	0.45	450	1.1	ND	30	440	900	100	1400	0.009	0.108	ND	0.06	ND	ND	0.0012	ND	0.017	0.014	0.016	0.919	ND	0.006	ND	0.01	0.026
Average Concentration	0.5	0.94	1.2	1	0.94	1.1	0.0008	0.013	0.013	0.11	0.11	79	0.16	0.05	13	99	144	31	206	0.0011	0.051	0.0005	0.028	0.00005		0.00057		0.0045	0.0013	0.0014	0.19	0.00005	0.0028	0.005	0.005	0.01
Median Concentration	0.5	1	1	1	1	1	0.0005	0.01	0.01	0.05	0.05	50	0.05	0.05	10	25	50	25	25	0.0005	0.056	0.0005	0.025	0.00005	0.0025	0.0005	0.0025	0.001	0.0005	0.0005	0.104	0.00005	0.002	0.005	0.005	0.008
Standard Deviation	0	0.16	0.57	0	0.16	0.16	0.0007	0.0077	0.0077	0.14	0.14	100	0.32	0	7.7	143	275	18	428	0.002	0.029	0	0.01	0		0.0002		0.0061	0.0032	0.0036	0.24	0	0.0019	0	0.0015	0.0074
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	18	0	16	0	13
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	13

	Halogenated Phenols						PAH																										PCBs
	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	Benzo[b+j]fluoranthene	7,12-dimethylbenz(a)anthracene	2,4-dimethylphenol	2-chloronaphthalene	2-methylnaphthalene	2-methylphenol	2-nitrophenol	3-&4-methylphenol	3-methylcholanthrene	4-chloro-3-methylphenol	Acenaphthene	Acenaphthylene	Acetophenone	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene	Polychlorinated Biphenyls (Sum of total)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	1	1	1	1	1	2	0.001	2	1	2	2	1	1	2	2	1	1	1	2	1	1	0.5	1	1	1	1	1	1	1	1	0.5	1	1	1
ANZECC (2013) Drinking Water																						0.01												
ANZECC (2013) Ecological (Freshwater)		3	120		340	3.6																								16			320	
NHMRI (2008) Recreational Water		200	2000		3000	100																0.1												
NEPM (2013) Groundwater Vapour Intrusion HSL-A & HSL-B (Sand 2 - <4m)																														NL				
NEPM (2013) Groundwater Vapour Intrusion HSL-A & HSL-B (Sand 4 - <8m)																														NL				
NEPM (2013) Groundwater Vapour Intrusion HSL-C (Sand 2 - <4m)																														**NL**				
NEPM (2013) Groundwater Vapour Intrusion HSL-C (Sand 4 - <8m)																														**NL**				
NEPM (2013) Groundwater Vapour Intrusion HSL-D (Sand 2-<4 m)																														NL				
NEPM (2013) Groundwater Vapour Intrusion HSL-D (Sand 4 - <8m)																														NL				
NEPM (2013) Groundwater Vapour Intrusion Intrusive Maint Worker (Sand 2-<4m)																														*NL*				
NEPM (2013) Groundwater Vapour Intrusion Intrusive Maint Worker (Sand 4-<8m)																																		
Field_ID	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**	**Monitoring_Zone**																														
MW01	MW01	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	-
MW02	MW02	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.6	<1	<1	<1	<1	<1	<1	<1	<0.6	<1	<1	<1	-
D01_170316_SC	MW02	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	-
T01_170316_SC	MW02	17/03/2016	493672	Proposed Residential Area	<2	<2	<2	-	<2	<10	<0.001	-	<2	-	-	<2	<2	<4	-	<2	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	-
MW12	MW12	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1
MW13	MW13	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.6	<1	<1	<1	<1	<1	<1	<1	<1	<0.6	<1	<1	<1	-
MW14	MW14	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.6	<1	<1	<1	<1	<1	<1	<1	<1	<0.6	<1	<1	<1	<1
MW15	MW15	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	-
MW16	MW16	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.6	<1	<1	<1	<1	<1	<1	<1	<1	<0.6	<1	<1	<1	-
MW17	MW17	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1
MW28	MW28	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.6	<1	<1	<1	<1	<1	<1	<1	<1	<0.6	<1	<1	<1	-
MW34	MW34	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.6	<1	<1	<1	<1	<1	<1	<1	<1	<0.6	<1	<1	<1	<1
D01_170316_AW	MW34	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	-
T01_170316_AW	MW34	17/03/2016	493672	Proposed Residential Area	<2	<2	<2	-	<2	<10	<0.001	-	<2	-	-	<2	<2	<4	-	<2	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	-
MW35	MW35	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	-
MW36	MW36	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	1.2	-	-	<1	<1	23.1	-	<1	<1	<1	-	<1	<1	<0.6	<1	<1	<1	<1	<1	<1	<1	<1	<0.6	<1	<1	<1	<1
MW37	MW37	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1
MW39	MW39	17/03/2016	ES1606124	Proposed Residential Area	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1
Statistical Summary																																		
Number of Results	18	18	18	16	18	18	18	1	18	1	1	18	18	18	1	18	18	18	1	18	18	18	18	18	18	18	18	18	18	18	18	18	18	7
Number of Detects	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	23.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<2	<2	<2	<1	<2	<10	<0.001	<2	<2	<2	<2	<2	<2	23.1	<2	<2	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	23.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.56	0.56	0.56	0.5	0.56	1.4	0.0005		0.59			0.56	0.56	2.3		0.56	0.5	0.5		0.5	0.5	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.5	0.56	0.5	0.5
Median Concentration	0.5	0.5	0.5	0.5	0.5	1	0.0005	1	0.5	1	1	0.5	0.5	1	1	0.5	0.5	0.5	1	0.5	0.5	0.275	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.28	0.5	0.5	0.5	0.5
Standard Deviation	0.16	0.16	0.16	0	0.16	1.3	0		0.22			0.16	0.16	5.2		0.16	0	0		0	0	0.078	0	0	0	0	0	0	0	0	0.08	0	0.16	0	0
Number of Guideline Exceedances	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

				Chlorinated Hydrocarbons																												Halogenated Benzenes													Halogenated Hydrocarbons				Solvents	
				1,1,1-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-Dichloroethene	1,2-dichloropropane	Benzyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dichloromethane	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Pentachlorobenzene	Trichlorobenzene (total)	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Trichlorofluoromethane	Isophorone	MTBE
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
EQL				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0002	0.5	0.1	0.1	0.05	0.1	0.5	0.1	1	0.1	0.1	1	0.04	10	2	0.05	0.05	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	2	0.0001	0.1	2	0.5	0.5	2	0.0001
ANZECC (2013) Drinking Water						30[#1]		3[#1]											4[#2]	60[#3]		4[#1]	0.7[#1]				20[#7]	50[#1]	60[#3]		0.3[#1]													1[#1]	1[#1]				
ANZECC (2013) Ecological (Freshwater)																									290[#4]						3[#4]	85[#4]	160[#5]	260[#5]	60[#5]														
ANZECC (2008) Recreational Water						300[#6]		30[#6]							30[#6]			19100[#6]	40[#6]	600[#6]		40[#6]	7[#6]				200[#6]	500[#6]	600[#6]		3[#6]	5930[#6]	7430[#6]	15000[#6]		400[#6]							0.3[#6]	10[#6]	10[#6]				
Field_ID	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																																														
MW12	MW12	17/03/2016	ES1606124	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.0002	<0.5	<0.1	<0.1	<0.05	<0.1	<0.5	<0.1	<1	0.3	<0.1	<1	<0.04	-	-	3.89	0.38	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	-	<0.0001	<0.1	<0.5	<0.5	<0.5	-	<0.0001
MW14	MW14	17/03/2016	ES1606124	<0.1	<0.1	0.4	<0.1	<0.1	9.7	<0.1	<0.0002	<0.5	<0.1	<0.1	<0.05	<0.1	<0.5	<0.1	<1	9.5	<0.1	<1	<0.04	-	-	-	<0.05	0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	-	<0.0001	<0.1	<0.5	<0.5	<0.5	-	<0.0001
MW17	MW17	17/03/2016	ES1606124	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0002	<0.5	<0.1	<0.1	<0.05	<0.1	<0.5	0.18	<1	<0.1	<0.1	<1	<0.04	-	-	<0.05	<0.05	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	-	<0.0001	<0.1	<0.5	<0.5	<0.5	-	<0.0001
MW34	MW34	17/03/2016	ES1606124	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0002	<0.5	<0.1	<0.1	<0.05	<0.1	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.04	-	-	<0.05	<0.05	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	-	<0.0001	<0.1	<0.5	<0.5	<0.5	-	<0.0001
MW36	MW36	17/03/2016	ES1606124	<0.1	<0.1	1.3	<0.1	<0.1	4.2	<0.1	<0.0002	<0.5	<0.1	<0.1	<0.05	<0.1	<0.5	<0.1	<1	4.1	<0.1	<1	<0.04	-	-	-	<0.05	0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	-	<0.0001	<0.1	<0.5	<0.5	<0.5	-	<0.0001
MW37	MW37	17/03/2016	ES1606124	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0002	<0.5	<0.1	<0.1	<0.05	<0.1	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.04	<10	<2	<0.05	<0.05	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<2	<0.0001	<0.1	<0.5	<0.5	<0.5	<2	<0.0001
MW39	MW39	17/03/2016	ES1606124	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0002	<0.5	<0.1	<0.1	<0.05	<0.1	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.04	-	-	<0.05	<0.05	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	-	<0.0001	<0.1	<0.5	<0.5	<0.5	-	<0.0001
Statistical Summary																																																
Number of Results				7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	1	1	5	7	7	7	7	7	7	7	7	7	7	7	7	7	1	7	7	7	7	7	1	7
Number of Detects				0	0	2	0	0	3	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0	0	1	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0002	<0.5	<0.1	<0.1	<0.05	<0.1	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.04	<10	<2	<0.05	<0.05	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<2	<0.0001	<0.1	<0.5	<0.5	<0.5	<2	<0.0001
Minimum Detect				ND	ND	0.4	ND	ND	0.3	ND	ND	ND	ND	ND	ND	ND	ND	0.18	ND	0.3	ND	ND	ND	ND	ND	3.89	0.38	0.1	ND	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration				<0.1	<0.1	1.3	<0.1	<0.1	9.7	<0.1	<0.0002	<0.5	<0.1	<0.1	<0.05	<0.1	<0.5	0.18	<1	9.5	<0.1	<1	<0.04	<10	<2	3.89	0.38	0.2	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<2	<0.0001	<0.1	<0.5	<0.5	<0.5	<2	<0.0001
Maximum Detect				ND	ND	1.3	ND	ND	9.7	ND	ND	ND	ND	ND	ND	ND	ND	0.18	ND	9.5	ND	ND	ND	ND	ND	3.89	0.38	0.2	ND	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration				0.05	0.05	0.28	0.05	0.05	2.1	0.05	0.0001	0.25	0.05	0.05	0.025	0.05	0.25	0.069	0.5	2	0.05	0.5	0.02			0.8	0.076	0.079	0.05	0.19	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.25		0.00005	0.05	0.25	0.25	0.25		0.00005
Median Concentration				0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.0001	0.25	0.05	0.05	0.025	0.05	0.25	0.05	0.5	0.05	0.05	0.5	0.02	5	1	0.025	0.025	0.05	0.05	0.15	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.25	1	0.00005	0.05	0.25	0.25	0.25	1	0.00005
Standard Deviation				0	0	0.47	0	0	3.7	0	0	0	0	0	0	0	0	0.049	0	3.6	0	0	0			1.7	0.13	0.057	0	0.094	0	0	0	0	0	0	0	0	0			0	0	0	0		0
Number of Guideline Exceedances				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

#1:NHMRC (2011) ADWG - Health
#2:NHMRC (2011) ADWG - Health (value for dichloromethane)
#3:NHMRC (2011) ADWG - Health (total 1,2-dichloroethene)
#4:ANZECC 2000 Freshwater for the protection of 99% of species
#5:ANZECC 2000 Freshwater for the protection of 95% of species
#6:NHMRC (2008) Guidelines for Managing Risks in Recreational Water
#7:WHO (2011) Guidelines for Drinking Water Quality

				SVOCs																		VOCs
				2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Carbazole	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin	Trihalomethanes
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
EQL				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	0.0001
ANZECC (2013) Drinking Water																					
ANZECC (2013) Ecological (Freshwater)																					
ANZECC (2008) Recreational Water																					2.5[#6]
Field_ID	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																		
MW12	MW12	17/03/2016	ES1606124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001
MW14	MW14	17/03/2016	ES1606124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001
MW17	MW17	17/03/2016	ES1606124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00018
MW34	MW34	17/03/2016	ES1606124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001
MW36	MW36	17/03/2016	ES1606124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001
MW37	MW37	17/03/2016	ES1606124	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<0.0001
MW39	MW39	17/03/2016	ES1606124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001
Statistical Summary																					
Number of Results				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7
Number of Detects				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Minimum Concentration				<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<0.0001
Minimum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00018
Maximum Concentration				<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	0.00018
Maximum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00018
Average Concentration																					0.000069
Median Concentration				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	0.00005
Standard Deviation																					0.000049
Number of Guideline Exceedances				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments
#1:NHMRC (2011) ADWG - Health
#2:NHMRC (2011) ADWG - Health (value for dichloromethane)
#3:NHMRC (2011) ADWG - Health (total 1,2-dichloroethene)
#4:ANZECC 2000 Freshwater for the protection of 99% of species
#5:ANZECC 2000 Freshwater for the protection of 95% of species
#6:NHMRC (2008) Guidelines for Managing Risks in Recreational Water
#7:WHO (2011) Guidelines for Drinking Water Quality

Table 17. Groundwater Results Summary - OCs and OPs
Roche Products - 4-10 Inman Rd Dee Why
Part A Area ESA - 0330752

				Herbicides	Organochlorine Pesticides																							Organophosphorous Pesticides																						Pesticides					
				Pronamide	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Methyl parathion	Monocrotophos	Prothiofos	Chlorobenzilate	Demeton-S-methyl	Fenamiphos	Parathion	Pirimphos-ethyl
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.0005	0.5	0.5	0.5	0.5	0.5	0.5	2	2	0.5	2	0.5	0.5	2	0.5
ANZECC (2013) Drinking Water																																																
ANZECC (2013) Ecological (Freshwater)										0.03					0.006						0.01			0.2	0.01			0.01			0.01		0.01		0.15			0.05						0.004	
NHMRI (2008) Recreational Water																																															
Field_ID	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																																													
MW12	MW12	17/03/2016	ES1606124	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	-	<0.5	<0.5	<2	<0.5
MW14	MW14	17/03/2016	ES1606124	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	-	<0.5	<0.5	<2	<0.5
MW17	MW17	17/03/2016	ES1606124	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	-	<0.5	<0.5	<2	<0.5
MW34	MW34	17/03/2016	ES1606124	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	-	<0.5	<0.5	<2	<0.5
MW36	MW36	17/03/2016	ES1606124	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	-	<0.5	<0.5	<2	<0.5
MW37	MW37	17/03/2016	ES1606124	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	ANZE	<0.5	<2	<2	<0.5	<2	<0.5	<0.5	<2	<0.5
MW39	MW39	17/03/2016	ES1606124	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	-	<0.5	<0.5	<2	<0.5
Statistical Summary																																																
Number of Results				1	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	1	7	7	7	7
Number of Detects				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Minimum Concentration				<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<2	<0.5	<0.5	<2	<0.5
Minimum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration				<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	2013	<0.5	<2	<2	<0.5	<2	<0.5	<0.5	<2	<0.5
Maximum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2013	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration					0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	1	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	1	0.25	0.25	0.25	0.25	0.25	0.00025	0.25	0.25	0.25	0.25	288	0.25	1	1	0.25		0.25	0.25	1	0.25
Median Concentration				1	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	1	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	1	0.25	0.25	0.25	0.25	0.25	0.00025	0.25	0.25	0.25	0.25	0.25	0.25	1	1	0.25	1	0.25	0.25	1	0.25
Standard Deviation					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	761	0	0	0	0		0	0	0	0
Number of Guideline Exceedances				0	0	0	0	0	0	7	0	0	0	0	7	0	0	0	0	0	7	0	0	7	7	0	0	7	0	0	0	7	0	7	0	7	0	0	7	0	0	0	0	0	7	0
Number of Guideline Exceedances(Detects Only)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 18. Groundwater Results Summary - Miscellaneous Analystes
Roche Products - 4-10 Inman Rd Dee Why
Part A ESA - 0330752

				Amino Aliphatics				Amino Aromatics	Anilines						Explosives				Nitroaromatics			Phthalates					
				N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	1,3,5-Trinitrobenzene	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				2	2	2	2	2	4	4	2	2	2	2	0.002	4	4	2	2	2	2	10	2	2	2	2	2
ANZECC (2013) Drinking Water																											
ANZECC (2013) Ecological (Freshwater)														8		16		550						1000	3700	9.9	
NHMRI (2008) Recreational Water																											
Field ID	**LocCode**	**Sampled Date-Time**	**Lab Report Number**																								
MW37	MW37	17/03/2016	ES1606124	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<0.002	<4	<4	<2	<2	<2	<2	<10	<2	<2	<2	<2	<2
Statistical Summary																											
Number of Results				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Detects				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration				<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<0.002	<4	<4	<2	<2	<2	<2	<10	<2	<2	<2	<2	<2
Minimum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration				<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<0.002	<4	<4	<2	<2	<2	<2	<10	<2	<2	<2	<2	<2
Maximum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Median Concentration				1	1	1	1	1	2	2	1	1	1	1	0.001	2	2	1	1	1	1	5	1	1	1	1	1
Standard Deviation				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Guideline Exceedances				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Asbestos			BTEX								Chlorinated Hydroc																
	Asbestos Detected	Asbestos Type	Description	Benzene	Ethylbenzene	Toluene	Total BTEX	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 less BTEX (F1)	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform
	-	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1	0.1	0.1	0.2	0.2	0.1	0.3	10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM (2013) Asbestos HIL A																											
NEPM (2013) Asbestos HIL D																											
NEPM (2013) HIL A - Residential																											
NEPM (2013) HIL C - Recreational																											
NEPM (2013) HIL D - Commercial/ Industrial																											
CRC CARE (2011) HSL A - Direct Contact Residential				100	4500	14,000				12,000																	
CRC CARE (2011) HSL C - Direct Contact Recreational/ Open Space				120	5300	18,000				15,000																	
CRC CARE (2011) HSL D - Direct Contact Commercial/ Industrial				430	27,000	99,000				81,000																	
CRC CARE (2011) HSL - Intrusive Maintenance Worker				1100	85,000	120,000				130,000																	
NEPM (2013) HSL-D - Vapour Intrusion 0-<1m Sand				3	NL	NL				230	260																
NEPM (2013) HSL-D - Vapour Intrusion 1-<2m Sand				3	NL	NL				NL	370																
NEPM (2013) HSL-D - Vapour Intrusion 2-<4m Sand				3	NL	NL				NL	630																
NEPM (2013) HSL-D - Vapour Intrusion + 4m Sand				3	NL	NL				NL	NL																
NEPM (2013) HSL A&B Vapour Intrusion 0-<1m SAND				0.5	55	160				40	45																
NEPM (2013) HSL A&B Vapour Intrusion 1-<2m SAND				0.5	NL	220				60	70																
NEPM (2013) HSL A&B Vapour Intrusion 2-<4m SAND				0.5	NL	310				95	110																
NEPM (2013) HSL A&B Vapour Intrusion + 4m SAND				0.5	NL	540				170	200																
Human Health - Intrusive - Vapour Intrusion 0-<2m				NL	NL	NL				NL	NL																
Human Health - Intrusive - Vapour Intrusion 2-<4m				77	NL	NL				NL	NL																
Human Health - Intrusive - Vapour Intrusion + 4m				160	NL	NL				NL	NL																
NEPM (2013) ESL - Commercial & Industrial (Coarse)				**75**	**165**	**135**				**180**	**215**																
NEPM (2013) ESL - Residential & Open Space (Coarse)				**50**	**70**	**85**				**105**	**180**																
NEPM (2013) EIL - Residential and Open Space (Aged)																											
NEPM (2013) EIL - Commercial / Industrial (Aged)																											
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**																								
MW18B_1.5	ES1536229	MW18B	12/11/2015	-	-	-	<0.2	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW18B_10.0	ES1536229	MW18B	12/11/2015	-	-	-	<0.2	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW18B_20	ES1536229	MW18B	12/11/2015	-	-	-	<0.2	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW18B_8.0	ES1536229	MW18B	12/11/2015	-	-	-	<0.2	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22A_0.5	ES1536229	MW22A	11/11/2015	No	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_19.5	ES1536229	MW22C	11/11/2015	-	-	-	<0.2	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_26.0	ES1536229	MW22C	11/11/2015	-	-	-	<0.2	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_4.5	ES1536229	MW22C	11/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_8.5	ES1536229	MW22C	11/11/2015	-	-	-	<0.2	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW23A_0.2	ES1536229	MW23A	11/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW23A_1.0_ASB	ES1536229	MW23A	11/11/2015	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW23C_20.0	ES1536229	MW23C	12/11/2015	-	-	-	<0.2	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW23C_4.0	ES1536229	MW23C	11/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW24_0.5	ES1536229	MW24	11/11/2015	No	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW24_7.0	ES1536229	MW24	11/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW25_0.5	ES1536229	MW25	11/11/2015	No	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW25_4.5	ES1536229	MW25	11/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW26_0.5	ES1536229	MW26	11/11/2015	No	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW26_5.0	ES1536229	MW26	11/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW27_1.0	ES1536229	MW27	11/11/2015	No	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW27_5.0	ES1536229	MW27	11/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW28_1.3	ES1536229	MW28	12/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW28_5.0	ES1536229	MW28	12/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW29_1.0	ES1536229	MW29	12/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW29_4.5	ES1536229	MW29	12/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SB23_0.2	ES1536229	SB23	12/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SB23_5.0	ES1536229	SB23	12/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SB25_0.5	ES1536229	MW30	12/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB25_1.5	ES1536229	MW30	12/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB25_2.5	ES1536229	MW30	12/11/2015	-	-	-	<0.2	<0.5	<0.5	1.3	0.8	0.5	1.3	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB25_5.0	ES1536229	MW30	12/11/2015	-	-	-	0.3	43	1.3	161	116	0.7	**117**	**1180**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB26_1.0	ES1536229	SB26	11/11/2015	No	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB26_2.0	ES1536229	SB26	11/11/2015	-	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB26_2.0_ASB	ES1536229	SB26	11/11/2015	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB27_0.5	ES1536229	SB27	11/11/2015	No	-	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	carbons															Halogenated Benzenes								
	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM (2013) Asbestos HIL A																								
NEPM (2013) Asbestos HIL D																								
NEPM (2013) HIL A - Residential																								
NEPM (2013) HIL C - Recreational																								
NEPM (2013) HIL D - Commercial/ Industrial																								
CRC CARE (2011) HSL A - Direct Contact Residential																								
CRC CARE (2011) HSL C - Direct Contact Recreational/ Open Space																								
CRC CARE (2011) HSL D - Direct Contact Commercial/ Industrial																								
CRC CARE (2011) HSL - Intrusive Maintenance Worker																								
NEPM (2013) HSL-D - Vapour Intrusion 0-<1m Sand																								
NEPM (2013) HSL-D - Vapour Intrusion 1-<2m Sand																								
NEPM (2013) HSL-D - Vapour Intrusion 2-<4m Sand																								
NEPM (2013) HSL-D - Vapour Intrusion + 4m Sand																								
NEPM (2013) HSL A&B Vapour Intrusion 0-<1m SAND																								
NEPM (2013) HSL A&B Vapour Intrusion 1-<2m SAND																								
NEPM (2013) HSL A&B Vapour Intrusion 2-<4m SAND																								
NEPM (2013) HSL A&B Vapour Intrusion + 4m SAND																								
Human Health - Intrusive - Vapour Intrusion 0-<2m																								
Human Health - Intrusive - Vapour Intrusion 2-<4m																								
Human Health - Intrusive - Vapour Intrusion + 4m																								
NEPM (2013) ESL - Commercial & Industrial (Coarse)																								
NEPM (2013) ESL - Residential & Open Space (Coarse)																								
NEPM (2013) EIL - Residential and Open Space (Aged)																								
NEPM (2013) EIL - Commercial / Industrial (Aged)																								
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**																					
MW18B_1.5	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW18B_10.0	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	2.1	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW18B_20	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW18B_8.0	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	1.2	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22A_0.5	ES1536229	MW22A	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_19.5	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_26.0	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_4.5	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_8.5	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW23A_0.2	ES1536229	MW23A	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW23A_1.0_ASB	ES1536229	MW23A	11/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW23C_20.0	ES1536229	MW23C	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW23C_4.0	ES1536229	MW23C	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW24_0.5	ES1536229	MW24	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW24_7.0	ES1536229	MW24	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW25_0.5	ES1536229	MW25	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW25_4.5	ES1536229	MW25	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW26_0.5	ES1536229	MW26	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW26_5.0	ES1536229	MW26	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW27_1.0	ES1536229	MW27	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW27_5.0	ES1536229	MW27	11/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW28_1.3	ES1536229	MW28	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW28_5.0	ES1536229	MW28	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW29_1.0	ES1536229	MW29	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW29_4.5	ES1536229	MW29	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SB23_0.2	ES1536229	SB23	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SB23_5.0	ES1536229	SB23	12/11/2015	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SB25_0.5	ES1536229	MW30	12/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB25_1.5	ES1536229	MW30	12/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB25_2.5	ES1536229	MW30	12/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB25_5.0	ES1536229	MW30	12/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB26_1.0	ES1536229	SB26	11/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB26_2.0	ES1536229	SB26	11/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB26_2.0_ASB	ES1536229	SB26	11/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB27_0.5	ES1536229	SB27	11/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ERM

Table 7. Soil Summary - TRH, BTEX, Metals and Asbestos
Roche Products - 4-10 Inman Rd Dee Why
0315053 - Phase 2 ESA

	Halogenated Hydrocarbons					Halogenated Phenols						Inorganics		TPH										Lead	MAH								
	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	Moisture	Moisture Content (dried @ 103°C)	C10-C16	C16-C34	C34-C40	2-NAPHTHALENE	C6 - C9	C10 - C14	C15 - C28	C29-C36	>C10 - C36 (Sum of total)	>C10 - C40 (Sum of total)	C6-C10	Lead	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	1		50	100	100	50	10	20	50	50	50	50	10	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM (2013) Asbestos HIL A																																	
NEPM (2013) Asbestos HIL D																																	
NEPM (2013) HIL A - Residential											100														300								
NEPM (2013) HIL C - Recreational											120														600								
NEPM (2013) HIL D - Commercial/ Industrial											660														1500								
CRC CARE (2011) HSL A - Direct Contact Residential														3300	4500	6300								4400									
CRC CARE (2011) HSL C - Direct Contact Recreational/ Open Space														3800	5300	7400								5100									
CRC CARE (2011) HSL D - Direct Contact Commercial/ Industrial														20,000	27,000	38,000								26,000									
CRC CARE (2011) HSL - Intrusive Maintenance Worker														62,000	85,000	120,000								82,000									
NEPM (2013) HSL-D - Vapour Intrusion 0-<1m Sand																	NL																
NEPM (2013) HSL-D - Vapour Intrusion 1-<2m Sand																	NL																
NEPM (2013) HSL-D - Vapour Intrusion 2-<4m Sand																	NL																
NEPM (2013) HSL-D - Vapour Intrusion + 4m Sand																	NL																
NEPM (2013) HSL A&B Vapour Intrusion 0-<1m SAND																	110																
NEPM (2013) HSL A&B Vapour Intrusion 1-<2m SAND																	240																
NEPM (2013) HSL A&B Vapour Intrusion 2-<4m SAND																	440																
NEPM (2013) HSL A&B Vapour Intrusion + 4m SAND																	NL																
Human Health - Intrusive - Vapour Intrusion 0-<2m																	NL																
Human Health - Intrusive - Vapour Intrusion 2-<4m																	NL																
Human Health - Intrusive - Vapour Intrusion + 4m																	NL																
NEPM (2013) ESL - Commercial & Industrial (Coarse)															1700	3300	170																
NEPM (2013) ESL - Residential & Open Space (Coarse)															300	2800	120																
NEPM (2013) EIL - Residential and Open Space (Aged)																									1100								
NEPM (2013) EIL - Commercial / Industrial (Aged)																									1800								
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**																															
MW18B_1.5	ES1536229	MW18B	12/11/2015	<0.5	<5	<5	<0.5	<5	-	-	-	-	-	-	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW18B_10.0	ES1536229	MW18B	12/11/2015	<0.5	<5	<5	<0.5	<5	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW18B_20	ES1536229	MW18B	12/11/2015	<0.5	<5	<5	<0.5	<5	-	-	-	-	-	-	21.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW18B_8.0	ES1536229	MW18B	12/11/2015	<0.5	<5	<5	<0.5	<5	-	-	-	-	-	-	21.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22A_0.5	ES1536229	MW22A	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	11.7	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_19.5	ES1536229	MW22C	11/11/2015	<0.5	<5	<5	<0.5	<5	-	-	-	-	-	-	19.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_26.0	ES1536229	MW22C	11/11/2015	<0.5	<5	<5	<0.5	<5	-	-	-	-	-	-	20.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_4.5	ES1536229	MW22C	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	19.5	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW22C_8.5	ES1536229	MW22C	11/11/2015	<0.5	<5	<5	<0.5	<5	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW23A_0.2	ES1536229	MW23A	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	8.3	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	316	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW23A_1.0_ASB	ES1536229	MW23A	11/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW23C_20.0	ES1536229	MW23C	12/11/2015	<0.5	<5	<5	<0.5	<5	-	-	-	-	-	-	22.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW23C_4.0	ES1536229	MW23C	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	15.7	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW24_0.5	ES1536229	MW24	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	18.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	19	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW24_7.0	ES1536229	MW24	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	11.7	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW25_0.5	ES1536229	MW25	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	14.3	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW25_4.5	ES1536229	MW25	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	10.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW26_0.5	ES1536229	MW26	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	26.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW26_5.0	ES1536229	MW26	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	15.6	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW27_1.0	ES1536229	MW27	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	15	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW27_5.0	ES1536229	MW27	11/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	12.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW28_1.3	ES1536229	MW28	12/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	2.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW28_5.0	ES1536229	MW28	12/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	14.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW29_1.0	ES1536229	MW29	12/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	13.2	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW29_4.5	ES1536229	MW29	12/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	17.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SB23_0.2	ES1536229	SB23	12/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SB23_5.0	ES1536229	SB23	12/11/2015	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	16	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SB25_0.5	ES1536229	MW30	12/11/2015	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	14.9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	6	-	-	-	-	-	-	-	-	-
SB25_1.5	ES1536229	MW30	12/11/2015	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	16.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	12	-	-	-	-	-	-	-	-	-
SB25_2.5	ES1536229	MW30	12/11/2015	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	19	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	16	10	-	-	-	-	-	-	-	-	-
SB25_5.0	ES1536229	MW30	12/11/2015	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	18.1	-	<50	<100	<100	<50	1090	<50	<100	<100	<50	<50	1350	9	-	-	-	-	-	-	-	-	-
SB26_1.0	ES1536229	SB26	11/11/2015	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	19.7	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	16	-	-	-	-	-	-	-	-	-
SB26_2.0	ES1536229	SB26	11/11/2015	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	4.5	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<5	-	-	-	-	-	-	-	-	-
SB26_2.0_ASB	ES1536229	SB26	11/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB27_0.5	ES1536229	SB27	11/11/2015	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	17.3	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	14	-	-	-	-	-	-	-	-	-

				Metals						
				Arsenic	Cadmium	Chromium (III+VI)	Copper	Mercury	Nickel	Zinc
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				2	0.4	2	5	0.05	2	5
NEPM (2013) Asbestos HIL A										
NEPM (2013) Asbestos HIL D										
NEPM (2013) HIL A - Residential				100	20	100	6000	40	400	7400
NEPM (2013) HIL C - Recreational				300	90	300	17000	80	1200	30000
NEPM (2013) HIL D - Commercial/ Industrial				3000	900		240000	730	6000	400000
CRC CARE (2011) HSL A - Direct Contact Residential										
CRC CARE (2011) HSL C - Direct Contact Recreational/ Open Space										
CRC CARE (2011) HSL D - Direct Contact Commercial/ Industrial										
CRC CARE (2011) HSL - Intrusive Maintenance Worker										
NEPM (2013) HSL-D - Vapour Intrusion 0-<1m Sand										
NEPM (2013) HSL-D - Vapour Intrusion 1-<2m Sand										
NEPM (2013) HSL-D - Vapour Intrusion 2-<4m Sand										
NEPM (2013) HSL-D - Vapour Intrusion + 4m Sand										
NEPM (2013) HSL A&B Vapour Intrusion 0-<1m SAND										
NEPM (2013) HSL A&B Vapour Intrusion 1-<2m SAND										
NEPM (2013) HSL A&B Vapour Intrusion 2-<4m SAND										
NEPM (2013) HSL A&B Vapour Intrusion + 4m SAND										
Human Health - Intrusive - Vapour Intrusion 0-<2m										
Human Health - Intrusive - Vapour Intrusion 2-<4m										
Human Health - Intrusive - Vapour Intrusion + 4m										
NEPM (2013) ESL - Commercial & Industrial (Coarse)										
NEPM (2013) ESL - Residential & Open Space (Coarse)										
NEPM (2013) EIL - Residential and Open Space (Aged)				100		420	50		8	140
NEPM (2013) EIL - Commercial / Industrial (Aged)				160		690	65		10	170
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**							
MW18B_1.5	ES1536229	MW18B	12/11/2015	-	-	-	-	-	-	-
MW18B_10.0	ES1536229	MW18B	12/11/2015	-	-	-	-	-	-	-
MW18B_20	ES1536229	MW18B	12/11/2015	-	-	-	-	-	-	-
MW18B_8.0	ES1536229	MW18B	12/11/2015	-	-	-	-	-	-	-
MW22A_0.5	ES1536229	MW22A	11/11/2015	<5	<1	<2	<5	<0.1	<2	<5
MW22C_19.5	ES1536229	MW22C	11/11/2015	-	-	-	-	-	-	-
MW22C_26.0	ES1536229	MW22C	11/11/2015	-	-	-	-	-	-	-
MW22C_4.5	ES1536229	MW22C	11/11/2015	<5	<1	6	<5	<0.1	2	<5
MW22C_8.5	ES1536229	MW22C	11/11/2015	-	-	-	-	-	-	-
MW23A_0.2	ES1536229	MW23A	11/11/2015	<5	<1	6	63	<0.1	21	46
MW23A_1.0_ASB	ES1536229	MW23A	11/11/2015	-	-	-	-	-	-	-
MW23C_20.0	ES1536229	MW23C	12/11/2015	-	-	-	-	-	-	-
MW23C_4.0	ES1536229	MW23C	11/11/2015	<5	<1	10	<5	<0.1	4	<5
MW24_0.5	ES1536229	MW24	11/11/2015	<5	<1	10	11	<0.1	4	<5
MW24_7.0	ES1536229	MW24	11/11/2015	<5	<1	<2	<5	<0.1	<2	<5
MW25_0.5	ES1536229	MW25	11/11/2015	<5	<1	27	9	<0.1	22	16
MW25_4.5	ES1536229	MW25	11/11/2015	<5	<1	<2	<5	<0.1	<2	<5
MW26_0.5	ES1536229	MW26	11/11/2015	<5	<1	8	<5	<0.1	<2	8
MW26_5.0	ES1536229	MW26	11/11/2015	<5	<1	5	<5	<0.1	<2	<5
MW27_1.0	ES1536229	MW27	11/11/2015	<5	<1	11	<5	<0.1	<2	9
MW27_5.0	ES1536229	MW27	11/11/2015	<5	<1	3	<5	<0.1	<2	<5
MW28_1.3	ES1536229	MW28	12/11/2015	<5	<1	<2	<5	<0.1	<2	<5
MW28_5.0	ES1536229	MW28	12/11/2015	<5	<1	6	<5	<0.1	<2	<5
MW29_1.0	ES1536229	MW29	12/11/2015	<5	<1	9	<5	<0.1	<2	<5
MW29_4.5	ES1536229	MW29	12/11/2015	<5	<1	16	<5	<0.1	4	<5
SB23_0.2	ES1536229	SB23	12/11/2015	<5	<1	26	78	<0.1	180	55
SB23_5.0	ES1536229	SB23	12/11/2015	<5	<1	14	<5	<0.1	<2	<5
SB25_0.5	ES1536229	MW30	12/11/2015	<5	<1	15	<5	<0.1	<2	<5
SB25_1.5	ES1536229	MW30	12/11/2015	<5	<1	14	<5	<0.1	<2	<5
SB25_2.5	ES1536229	MW30	12/11/2015	<5	<1	19	<5	<0.1	<2	<5
SB25_5.0	ES1536229	MW30	12/11/2015	<5	<1	17	<5	<0.1	<2	<5
SB26_1.0	ES1536229	SB26	11/11/2015	<5	<1	14	<5	<0.1	<2	<5
SB26_2.0	ES1536229	SB26	11/11/2015	<5	<1	<2	<5	<0.1	<2	<5
SB26_2.0_ASB	ES1536229	SB26	11/11/2015	-	-	-	-	-	-	-
SB27_0.5	ES1536229	SB27	11/11/2015	<5	<1	14	185	1.1	6	20

				Halogenated Phenols						PAHs/Phenols																								Carcinogenic PAHs		
				2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	Benzo[b+j]fluoranthene	2,4-dimethylphenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4-chloro-3-methylphenol	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ (zero)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM (2013) EIL - Commercial / Industrial (Aged)																												370								
NEPM (2013) EIL - Residential and Open Space (Aged)																												170								
NEPM (2013) HIL-A									100																			1400	300		3000		3			
NEPM (2013) HIL-C									120																			1900	300		40,000		3			
NEPM (2013) HIL-D									660																			11,000	4000		240,000		40			
CRC CARE (2011) Intrusive Maintenace- Direct Contact																												29,000								
NEPM (2013) HSL-D - Vapour Intrusion + 4m SAND																												NL								
NEPM (2013) HSL-D - Vapour Intrusion 0-<1m SAND																												NL								
NEPM (2013) HSL-D - Vapour Intrusion 1-<2m SAND																												NL								
NEPM (2013) HSL-D - Vapour Intrusion 2-<4m SAND																												NL								
NEPM (2013) HSL A&B Vapour Intrusion + 4m SAND																												NL								
NEPM (2013) HSL A&B Vapour Intrusion 0-<1m SAND																												3								
NEPM (2013) HSL A&B Vapour Intrusion 1-<2m SAND																												NL								
NEPM (2013) HSL A&B Vapour Intrusion 2-<4m SAND																												NL								
NEPM (2013) - Intrusive Maintenance Worker - Vapour Intrusion + 4m																												NL								
NEPM (2013) - Intrusive Maintenance Worker - Vapour Intrusion 0-<2m																												NL								
NEPM (2013) - Intrusive Maintenance Worker - Vapour Intrusion 2-<4m																												NL								
NEPM (2013) ESL - Commercial & Industrial (Coarse)																				1.4																
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**																																		
MW22A_0.5	ES1536229	MW22A	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW22C_4.5	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW23A_0.2	ES1536229	MW23A	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW23C_4.0	ES1536229	MW23C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW24_0.5	ES1536229	MW24	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW24_7.0	ES1536229	MW24	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW25_0.5	ES1536229	MW25	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW25_4.5	ES1536229	MW25	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW26_0.5	ES1536229	MW26	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW26_5.0	ES1536229	MW26	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW27_1.0	ES1536229	MW27	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW27_5.0	ES1536229	MW27	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW28_1.3	ES1536229	MW28	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW28_5.0	ES1536229	MW28	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW29_1.0	ES1536229	MW29	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
MW29_4.5	ES1536229	MW29	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
SB23_0.2	ES1536229	SB23	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
SB23_5.0	ES1536229	SB23	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
SB25_0.5	ES1536229	MW30	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
SB25_1.5	ES1536229	MW30	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
SB25_2.5	ES1536229	MW30	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
SB25_5.0	ES1536229	MW30	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
SB26_1.0	ES1536229	SB26	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
SB26_2.0	ES1536229	SB26	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
SB27_0.5	ES1536229	SB27	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5

				Chlorinated Hydrocarbons																															
				1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**																																
MW18B_1.5	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW18B_10.0	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	**2.1**	<0.5	<0.5	<0.5	<0.5	<5
MW18B_20	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW18B_8.0	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5	<5
MW22A_0.5	ES1536229	MW22A	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW22C_19.5	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW22C_26.0	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW22C_4.5	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW22C_8.5	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW23A_0.2	ES1536229	MW23A	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW23C_20.0	ES1536229	MW23C	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW23C_4.0	ES1536229	MW23C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW24_0.5	ES1536229	MW24	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW24_7.0	ES1536229	MW24	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW25_0.5	ES1536229	MW25	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW25_4.5	ES1536229	MW25	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW26_0.5	ES1536229	MW26	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW26_5.0	ES1536229	MW26	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW27_1.0	ES1536229	MW27	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW27_5.0	ES1536229	MW27	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW28_1.3	ES1536229	MW28	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW28_5.0	ES1536229	MW28	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW29_1.0	ES1536229	MW29	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW29_4.5	ES1536229	MW29	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
SB23_0.2	ES1536229	SB23	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
SB23_5.0	ES1536229	SB23	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5

				Halogenated Benzenes									Halogenated Hydrocarbons					MAH									Solvents					VOCs		
				1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Carbon disulfide	Vinyl acetate	cis-1,4-Dichloro-2-butene	Pentachloroethane	trans-1,4-Dichloro-2-butene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	0.5	0.5	5	0.5	0.5	0.5
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**																															
MW18B_1.5	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW18B_10.0	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW18B_20	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW18B_8.0	ES1536229	MW18B	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW22A_0.5	ES1536229	MW22A	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW22C_19.5	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW22C_26.0	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW22C_4.5	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW22C_8.5	ES1536229	MW22C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW23A_0.2	ES1536229	MW23A	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW23C_20.0	ES1536229	MW23C	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW23C_4.0	ES1536229	MW23C	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW24_0.5	ES1536229	MW24	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW24_7.0	ES1536229	MW24	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW25_0.5	ES1536229	MW25	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW25_4.5	ES1536229	MW25	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW26_0.5	ES1536229	MW26	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW26_5.0	ES1536229	MW26	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW27_1.0	ES1536229	MW27	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW27_5.0	ES1536229	MW27	11/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW28_1.3	ES1536229	MW28	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW28_5.0	ES1536229	MW28	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW29_1.0	ES1536229	MW29	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
MW29_4.5	ES1536229	MW29	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
SB23_0.2	ES1536229	SB23	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5
SB23_5.0	ES1536229	SB23	12/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5

Table 10. Groundwater Summary - TRH, BTEX and Metals
Roche Products - 4-10 Inman Rd Dee Why
0315053 - Phase 2 ESA

					BTEX							TPH										Lead	Metals							
					Benzene	Ethylbenzene	Toluene	Total BTEX	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 less BTEX (F1)	C10-C16	C16-C34	C34-C40	F2-NAPHTHALENE	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	C6-C10	Lead (Filtered)	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)
					µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL					1	1	1	0.001	2	1	2	0.02	0.05	0.1	0.1	0.05	20	50	100	50	50	100	0.02	0.001	0.001	0.0001	0.001	0.001	0.0001	0.001	0.005
Drinking Water					**1**	**300**	**800**				**600**													**0.01**	**0.01**	**0.002**	**0.05**	**2**	**0.001**	**0.02**	
Ecological (Freshwater)					950					350														0.0034		0.0002		0.0014	0.00006	0.011	0.008
Recreational					*10*	*3000*	*8000*				*6000*													*0.1*	*0.1*	*0.02*	*0.5*	*20*	*0.01*	*0.2*	
NEPM (2013) HSL C Vapour Intrusion - Recreational/Open Space - 2-<4 m Sand					NL	NL	NL				NL	NL				NL															
NEPM (2013) HSL C Vapour Intrusion - Recreational/Open Space - 4-<8 m Sand					NL	NL	NL				NL	NL				NL															
NEPM (2013) HSL A&B Vapour Intrusion - Residential - 2-<4 m Sand					800	NL	NL				NL	1				1															
NEPM (2013) HSL A&B Vapour Intrusion - Residential - 4-<8 m Sand					800	NL	NL				NL	1				1															
NEPM (2013) HSL D Vapour Intrusion - Commercial/ Industrial - 2-<4 m Sand					5000	NL	NL				NL	6				NL															
NEPM (2013) HSL D Vapour Intrusion - Commercial/ Industrial - 4-<8 m Sand					5000	NL	NL				NL	6				NL															
Vapour Intrusion - Intrusive Maint Worker 2m -8m+					NL	NL	NL				NL	NL				NL															
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**	**Matrix_Type**																											
MW01	ES1536614	MW01	18/11/2015	WATER	<1	<2	<2	<0.001	<2	<2	<2	<0.02	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.001	<0.001	<0.0001	0.004	<0.001	<0.0001	0.003	0.027
MW18	ES1536614	MW18	17/11/2015	WATER	*<20*	<20	<20	-	<40	<20	<60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW18B	ES1536614	MW18B	17/11/2015	WATER	**<5**	<5	<5	-	<10	<5	<15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW19	ES1536614	MW19	18/11/2015	WATER	*<20*	<20	<20	-	<40	<20	<60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW22A	ES1536614	MW22A	18/11/2015	WATER	<1	<2	<2	<0.001	<2	<2	<2	<0.02	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.001	<0.001	<0.0001	0.002	<0.001	<0.0001	0.003	0.007
MW22C	ES1536614	MW22C	17/11/2015	WATER	<1	<2	<2	-	<2	<2	<4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW23A	ES1536614	MW23A	17/11/2015	WATER	<1	<2	<2	<0.001	<2	<2	<2	<0.02	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.0001	0.002	0.019
MW23C	ES1536614	MW23C	17/11/2015	WATER	**<5**	<5	<5	-	<10	<5	<15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW24	ES1536614	MW24	18/11/2015	WATER	<1	<2	<2	<0.001	<2	<2	<2	<0.02	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	0.002	<0.001	<0.0001	<0.001	<0.001	<0.0001	0.006	0.021
MW25	ES1536614	MW25	18/11/2015	WATER	***141***	<2	<2	0.141	<2	<2	<2	0.05	<0.1	<0.1	<0.1	<0.1	180	<50	<100	<50	<50	<100	0.19	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.0001	0.001	0.007
MW26	ES1536614	MW26	18/11/2015	WATER	<1	<2	<2	<0.001	<2	<2	<2	<0.02	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.0001	0.001	0.006
MW27	ES1536614	MW27	18/11/2015	WATER	<1	<2	<2	<0.001	<2	<2	<2	<0.02	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.001	0.001	<0.0001	<0.001	<0.001	<0.0001	0.005	0.153
MW28	ES1536614	MW28	18/11/2015	WATER	<1	<2	<2	0.009	5	4	9	<0.02	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.001	<0.001	<0.0001	<0.001	0.002	<0.0001	0.011	0.036
MW29	ES1536614	MW29	18/11/2015	WATER	<1	<2	<2	<0.001	<2	<2	<2	<0.02	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.0001	0.001	0.006
MW30	ES1536614	MW30	18/11/2015	WATER	***4220***	**2150**	***24,100***	42.9	8860	3580	***12,400***	41.5	1.17	<0.1	<0.1	0.85	82,000	2520	<100	<50	2520 - 2595	1170	84.4	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.0001	0.001	0.006

NL - Not Limiting

		Halogenated Phenols						PAH/Phenols																						
	Benzo(a)pyrene TEQ (zero)	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	Benzo[b+j]fluoranthene	2,4-dimethylphenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4-chloro-3-methylphenol	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.5	1	1	1	1	1	2	0.001	1	1	1	2	1	1	1	1	1	0.5	1	1	1	1	1	1	1	1	0.5	1	1	1
Drinking Water																		**0.01**												
Recreational			*200*	*2000*		*3000*	*100*											*0.1*												
Ecological (Freshwater)			3	120		340	3.6																			16			320	
NEPM (2013) Vapour Intrusion - Recreational/Open Space - 2-<4 m																										NL				
NEPM (2013) Vapour Intrusion - Recreational/Open Space - 4-<8 m																										NL				
NEPM (2013) Vapour Intrusion - Residential - 2-<4 m																										NL				
NEPM (2013) Vapour Intrusion - Residential - 4-<8 m																										NL				
NEPM (2013) Vapour Intrusion - Commercial Worker - 2-<4 m																										NL				
NEPM (2013) Vapour Intrusion - Commercial Worker - 4-<8 m																										NL				
NEPM (2013) Vapour Intrusion - Intrusive Maint Worker 2m -8m+																										NL				
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**	**Matrix_Type**																										
MW01	ES1536614	MW01	18/11/2015	WATER	<0.5	<1	<1	<1	<1	<1	<2	<0.001	<1	<1	<1	<2	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
MW22A	ES1536614	MW22A	18/11/2015	WATER	<0.5	<1	<1	<1	<1	<1	<2	<0.001	<1	<1	<1	<2	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
MW23A	ES1536614	MW23A	17/11/2015	WATER	<0.5	<1	<1	<1	<1	<1	<2	<0.001	<1	<1	<1	<2	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
MW24	ES1536614	MW24	18/11/2015	WATER	<0.5	<1	<1	<1	<1	<1	<2	<0.001	<1	<1	<1	<2	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
MW25	ES1536614	MW25	18/11/2015	WATER	<0.5	<1	<1	<1	<1	<1	<2	<0.001	<1	<1	<1	<2	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	1.5	1.5	<1	<1	<1
MW26	ES1536614	MW26	18/11/2015	WATER	<0.5	<1	<1	<1	<1	<1	<2	<0.001	<1	<1	<1	<2	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
MW27	ES1536614	MW27	18/11/2015	WATER	<0.5	<1	<1	<1	<1	<1	<2	<0.001	<1	<1	<1	<2	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
MW28	ES1536614	MW28	18/11/2015	WATER	<0.5	<1	<1	<1	<1	<1	<2	<0.001	<1	<1	<1	<2	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
MW29	ES1536614	MW29	18/11/2015	WATER	<0.5	<1	<1	<1	<1	<1	<2	<0.001	<1	<1	<1	<2	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
MW30	ES1536614	MW30	18/11/2015	WATER	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<9.8	<0.0049	<4.9	<4.9	<4.9	<9.8	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	322	213	<4.9	<4.9	<4.9

							Chlorinated Hydrocarbons																										
							1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride
							µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL							1	1	5	1	1	1	5	1	5	1	1	1	5		1	1	1	1	1	5	1	1	1	5		5	1	1	1	1	1
Drinking Water												**30**				**3**											**4**	**60**			**4**	**0.7**		**50**	**60**		**0.3**
Ecological (Freshwater)										*6500*																											
Recreational												300				30							30			19100	40	600			40	7	200	500	600		3
Vapour Intrusion - Commercial/Industrial Acute Risk (Derived)																																22000000				
Vapour Intrusion - Commercial/Industrial Chronic Risk (Derived)																																40				
WHO (2011) - Drinking Water (TCE Only)																																**20**				
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**	**Matrix_Type**																																	
MW18	ES1536614	MW18	17/11/2015	WATER	<20	<20	<20	31	<20	<20	<20	<20	<20	**<20**	<20	<20	<20	-	<20	<20	<20	<20	<200	<20	**<200**	24	<20	<20	-	<20	**30400**	24	<20	<20	<200
MW18B	ES1536614	MW18B	17/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	**2670**	<5	<5	<5	<50
MW19	ES1536614	MW19	18/11/2015	WATER	<20	<20	<20	<20	<20	<20	<20	<20	<20	**<20**	<20	<20	<20	-	<20	<20	<20	<20	<200	<20	**<200**	<20	<20	<20	-	<20	**24000**	30	<20	<20	<200
MW22A	ES1536614	MW22A	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	6	<5	<5	<5	<50
MW22B	ES1536614	MW22B	17/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	<5	<5	<5	<5	<50
MW23A	ES1536614	MW23A	17/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	5	<5	<5	<5	<50
MW23B	ES1536614	MW23B	17/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	**3290**	<5	<5	<5	<50
MW24	ES1536614	MW24	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	<5	<5	<5	<5	<50
MW25	ES1536614	MW25	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	<5	<5	<5	<5	<50
MW26	ES1536614	MW26	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	<5	<5	<5	<5	<50
MW27	ES1536614	MW27	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	<5	<5	<5	<5	<50
MW28	ES1536614	MW28	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	<5	<5	<5	<5	<50
MW29	ES1536614	MW29	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	-	<5	<5	<5	<5	<50	<5	**<50**	<5	<5	<5	-	<5	<5	<5	<5	<5	<50

					Halogenated Benzenes									Halogenated Hydrocarbons					MAH									Solvents						VOCs		
					1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Carbon disulfide	Ethanol	Vinyl acetate	cis-1,4-Dichloro-2-butene	Pentachloroethane	trans-1,4-Dichloro-2-butene
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					5	5	1	1	1	5	1	1	1	1	1	1	1	1	1	1	1	5	5	5	5	1	5	1	50	1	1	50	50	5	5	5
Drinking Water														**1**	**1**											**30**									
Ecological (Freshwater)					*3*	*85*	*160*	*260*	*60*																						*1400*				
Recreational					5930	7430	15000		400					10	10											300									
Vapour Intrusion - Commercial/Industrial Acute Risk (Derived)																																			
Vapour Intrusion - Commercial/Industrial Chronic Risk (Derived)																																			
WHO (2011) - Drinking Water (TCE Only)																																			
Field_ID	**Lab_Report_Number**	**LocCode**	**Sampled_Date-Time**	**Matrix_Type**																															
MW18	ES1536614	MW18	17/11/2015	WATER	<20	<20	<20	<20	<20	<20	<20	<20	<20	**<20**	**<200**	<200	<20	<200	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<200	<200	<200	<20	-	<200	<20	<20	<20
MW18B	ES1536614	MW18B	17/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	-	<50	<5	<5	<5
MW19	ES1536614	MW19	18/11/2015	WATER	<20	<20	<20	<20	<20	<20	<20	<20	<20	**<20**	**<200**	<200	<20	<200	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<200	<200	<200	<20	-	<200	<20	<20	<20
MW22A	ES1536614	MW22A	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	-	<50	<5	<5	<5
MW22B	ES1536614	MW22B	17/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	-	<50	<5	<5	<5
MW23A	ES1536614	MW23A	17/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	-	<50	<5	<5	<5
MW23B	ES1536614	MW23B	17/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	-	<50	<5	<5	<5
MW24	ES1536614	MW24	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	-	<50	<5	<5	<5
MW25	ES1536614	MW25	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	-	<50	<5	<5	<5
MW26	ES1536614	MW26	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	-	<50	<5	<5	<5
MW27	ES1536614	MW27	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	-	<50	<5	<5	<5
MW28	ES1536614	MW28	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	<50	<50	<5	<5	<5
MW29	ES1536614	MW29	18/11/2015	WATER	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	**<50**	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<5	-	<50	<5	<5	<5

		Asbestos				Inorganics				TRH												BTEX							Metals													
	APPROVED IDENTIFIER:	Asbestos Containing Material	Asbestos Containing Material	Asbestos Detected	Asbestos Type	Electrical conductivity *(lab)	Clay (<2 µm)	Moisture	pH (Lab)	C10-C16	C16-C34	C34-C40	C10-C16 less N (F2)	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	C6-C10 less BTEX (F1)	C6-C10	Benzene	Ethylbenzene	Toluene	Total BTEX	Xylene (m & p)	Xylene (o)	Xylene Total	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
	1	g	%		-	µS/cm	%	%	pH_Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.1	0.01			1	1	1	0.1	50	100	100	50	10	50	100	100	50	50	10	10	0.2	0.5	0.5	0.2	0.5	0.5	0.5	5	10	1	50	1	2	2	5	5	5	0.1	2	5	5	5
NEPM (2013) Asbestos HIL A			0.01																																						
NEPM (2013) Asbestos HIL D			0.05																																						
NEPM (2013) HIL A - Residential																													100		60	4500	20	100	100	6000	300	3800	40	400	200		7400
NEPM (2013) HIL C - Recreational																													300		90	20,000	90	300	300	17,000	600	19,000	80	1200	700		30,000
NEPM (2013) HIL D - Commercial/ Industrial																													3000		500	300,000	900	3600	4000	240,000	1500	60,000	730	6000	10,000		400,000
CRC CARE (2011) HSL A - Direct Contact Residential										3300	4500	6300									4400	100	4500	14,000				12,000														
CRC CARE (2011) HSL C - Direct Contact Recreational/ Open Space										3800	5300	7400									5100	120	5300	18,000				15,000														
CRC CARE (2011) HSL D - Direct Contact Commercial/ Industrial										20,000	27,000	38,000									26,000	430	27,000	99,000				81,000														
CRC CARE (2011) HSL - Intrusive Maintenance Worker										62,000	85,000	120,000									82,000	1100	85,000	120,000				130,000														
NEPM (2013) HSL-D - Vapour Intrusion 0-<1m Sand													NL							260		3	NL	NL				230														
NEPM (2013) HSL-D - Vapour Intrusion 1-<2m Sand													NL							370		3	NL	NL				NL														
NEPM (2013) HSL-D - Vapour Intrusion 2-<4m Sand													NL							630		3	NL	NL				NL														
NEPM (2013) HSL-D - Vapour Intrusion + 4m Sand													NL							NL		3	NL	NL				NL														
NEPM (2013) HSL A&B Vapour Intrusion 0-<1m SAND													110							45		0.5	55	160				40														
NEPM (2013) HSL A&B Vapour Intrusion 1-<2m SAND													240							70		0.5	NL	220				60														
NEPM (2013) HSL A&B Vapour Intrusion 2-<4m SAND													440							110		0.5	NL	310				95														
NEPM (2013) HSL A&B Vapour Intrusion + 4m SAND													NL							200		0.5	NL	540				170														
Human Health - Intrusive - Vapour Intrusion 0-<2m													NL							NL		77	NL	NL				NL														
Human Health - Intrusive - Vapour Intrusion 2-<4m													NL							NL		160	NL	NL				NL														
Human Health - Intrusive - Vapour Intrusion + 4m													NL							NL		NL	NL	NL				NL														
NEPM (2013) ESL - Residential and Open Space (Coarse)											300	2800	120							180		50	70	85				105														
NEPM (2013) ESL - Commercial & Industrial (Coarse)											1700	3300	170							215		75	165	135				180														
NEPM (2013) EIL - Residential and Open Space (Aged)																													100					420		50	1100			8			140
NEPM (2013) EIL - Commercial / Industrial (Aged)																													160					690		65	1800			10			170
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																																						
ES1532018004	MW02_0.5	MW02	21/09/2015	ES1532018	-	-	-		-	-	-	20.9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	80	<1	<50	<1	15	<2	<5	28	<5	<0.1	<2	<5	44	<5
ES1532018005	MW02_6.0	MW02	22/09/2015	ES1532018	-	-	-		-	-	-	8.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	20	3	<5	14	21	<0.1	2	<5	10	27
ES1532018033	MW04_1.0	MW04	22/09/2015	ES1532018	-	-	-		-	-	-	10.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	10	<2	<5	8	16	<0.1	4	<5	22	<5
ES1532263001	MW04_2.0	MW04	23/09/2015	ES1532263	-	-	-		-	-	-	10.7	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	8	<2	<5	6	<5	<0.1	<2	<5	14	<5
ES1532018056	MW05_0.5	MW05	22/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	10.2	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	4	<2	<5	<5	11	<0.1	2	<5	9	<5
ES1532263002	MW05_3.0	MW05	23/09/2015	ES1532263	-	-	-		-	42	-	16.5	4.8	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	12	<2	<5	6	<5	<0.1	<2	<5	61	<5
ES1532018030	MW06_0.5	MW06	22/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	13.2	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	18	<2	<5	7	<5	<0.1	3	<5	48	<5
ES1532263003	MW06_0.6	MW06	23/09/2015	ES1532263	G.Morgan	-	-	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263010	MW06_4.0	MW06	23/09/2015	ES1532263	-	-	-	-	-	-	-	17.6	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	17	<2	<5	8	<5	<0.1	2	5	34	<5
ES1532263005	MW07_0.1	MW07	23/09/2015	ES1532263	G.Morgan	-	-	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263006	MW07_0.5	MW07	23/09/2015	ES1532263	-	-	-		-	-	-	7.9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	40	<1	<50	<1	7	<2	<5	18	58	<0.1	3	<5	14	19
ES1532263012	MW07_4.0	MW07	23/09/2015	ES1532263	-	-	-		-	-	-	6.6	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	3	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
ES1532018032	MW08_1.5	MW08	22/09/2015	ES1532018	G.Morgan	-	-	No	-	-	-	9.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	30	<1	<50	<1	10	2	<5	9	34	<0.1	3	<5	18	15
ES1532263023	MW08_6.0	MW08	24/09/2015	ES1532263	-	-	-		-	-	-	18.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	9	<2	<5	7	<5	<0.1	2	<5	13	<5
ES1532018031	MW09_1.5	MW09	22/09/2015	ES1532018	G.Morgan	-	-	No	-	-	-	12.6	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	3	<2	<5	5	8	<0.1	<2	<5	13	<5
ES1532263024	MW09_4.0	MW09	24/09/2015	ES1532263	-	-	-		-	-	-	18	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	10	<2	<5	7	<5	<0.1	4	<5	10	<5
ES1532018048	MW10_0.5	MW10	22/09/2015	ES1532018	-	-	-		-	-	-	6.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	2	<2	<5	10	<5	<0.1	<2	<5	<5	10
ES1532018049	MW10_4.0	MW10	22/09/2015	ES1532018	-	-	-		-	-	-	9.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	9	<2	<5	7	<5	<0.1	2	<5	11	<5
ES1532263035	MW11_0.5	MW11	25/09/2015	ES1532263	-	-	-		-	-	-	4.5	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	<2	<2	<5	7	6	<0.1	<2	<5	<5	7
ES1532018029	MW11_1.0	MW11	22/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	6.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	2	<2	19	20	<5	<0.1	<2	<5	<5	13
ES1532263004	MW11_5.0	MW11	23/09/2015	ES1532263	-	-	-		-	-	-	15.2	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	9	<2	<5	7	<5	<0.1	2	<5	<5	<5
ES1532018006	MW12_1.0	MW12	21/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	5.9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	<2	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
ES1532018007	MW12_4.0	MW12	22/09/2015	ES1532018	-	-	-		-	-	-	11.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	10	<2	<5	5	<5	<0.1	<2	<5	18	<5
ES1532018008	MW13_0.5	MW13	21/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	5.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	<2	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
ES1532018009	MW13_7.0	MW13	22/09/2015	ES1532018	-	-	-		-	-	-	11.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	15	<2	<5	6	5	<0.1	<2	<5	56	<5
ES1532018010	MW14_0.5	MW14	21/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	2.9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	30	<1	<50	2	4	2	10	88	55	<0.1	6	<5	<5	201
ES1532018011	MW14_5.0	MW14	22/09/2015	ES1532018	-	-	-		-	-	-	12.6	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	7	<2	<5	6	<5	<0.1	2	<5	5	<5
ES1532018012	MW15_1.5	MW15	21/09/2015	ES1532018	G.Morgan	-	-	No	-	-	-	9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	5	<2	<5	5	6	<0.1	<2	<5	7	9
ES1532018013	MW15_4.0	MW15	22/09/2015	ES1532018	-	-	-		-	-	-	14.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	6	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
ES1532018014	MW16_0.3	MW16	21/09/2015	ES1532018	G.Morgan	-	-	No	-	-	-	3.7	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	3	6	19	25	131	<0.1	15	<5	9	62
ES1532018015	MW16_3.0	MW16	22/09/2015	ES1532018	-	-	-		-	-	-	10.9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	16	<2	<5	7	<5	0.1	6	<5	24	<5
ES1532018055	MW17_1.0	MW17	21/09/2015	ES1532018	G.Morgan	-	-	No	-	-	-	25.5	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	4	<2	<5	<5	<5	<0.1	2	<5	7	<5
ES1532018016	MW17_4.0	MW17	22/09/2015	ES1532018	-	-	-		-	-	-	15.6	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	9	<2	<5	6	<5	<0.1	<2	<5	10	<5
ES1532018039	MW18_1.5	MW18	21/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	4.3	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	2	<2	7	<5	<5	<0.1	<2	<5	<5	<5
ES1532018040	MW18_4.0	MW18	21/09/2015	ES1532018	-	-	-		-	-	-	11.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	8	<2	8	7	<5	<0.1	2	<5	10	<5
ES1532018001	MW19_1.5	MW19	21/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	4.2	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	17	<2	9	20	58	<0.1	6	<5	6	36
ES1532263034	MW19_1.5	MW19	25/09/2015	ES1532263	-	-	-		-	-	-	4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	<2	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
ES1532018037	MW19_4.0	MW19	22/09/2015	ES1532018	-	-	-		-	-	-	7.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	6	<2	<5	8	5	<0.1	<2	<5	14	7
ES1532263019	MW20_0.2	MW20	24/09/2015	ES1532263	C.Cowler	<0.0004	<0.001	Yes	Am	-	-	12.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	11	<2	8	9	59	<0.1	6	<5	13	16
ES1532263046	MW20_1.8	MW20	24/09/2015	ES1532263	-	-	-		11	-	6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263020	MW20_3.0	MW20	24/09/2015	ES1532263	-	-	-		-	-	-	13.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	10	<2	<5	5	<5	<0.1	<2	<5	27	7
ES1532263021	MW21_0.1	MW21	24/09/2015	ES1532263	C.Cowler	-	-	No	-	-	-	8.6	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	5	<2	<5	<5	17	<0.1	2	<5	9	8
ES1532263022	MW21_5.5	MW21	24/09/2015	ES1532263	-	-	-		-	-	-	11.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	4	<2	<5	<5	<5	<0.1	<2	<5	5	<5
ES1532263041	PIPE	PIPE	25/09/2015	ES1532263	N.Webb	-	-	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532018035	SB01_0.5	SB01	21/09/2015	ES1532018	-	-	-		-	-	-	18.7	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	30	<1	<50	<1	22	<2	<5	11	<5	<0.1	<2	<5	44	<5

Table 10. Soil Summary - TRH, BTEX, Metals, Asbestos and Inorganics
Roche Products - 4-10 Inman Rd Dee Why
0315053 - Phase 2 ESA

		Asbestos				Inorganics				TRH												BTEX							Metals															
	APPROVED IDENTIFIER:	Asbestos Containing Material	Asbestos Containing Material	Asbestos Detected	Asbestos Type	Electrical conductivity *(lab)	Clay (<2 µm)	Moisture	pH (Lab)	C10-C16	C16-C34	C34-C40	C10-C16 less N (F2)	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	C6-C10 less BTEX (F1)	C6-C10	Benzene	Ethylbenzene	Toluene	Total BTEX	Xylene (m & p)	Xylene (o)	Xylene Total	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
	-	g	%		-	µS/cm	%	%	pH_Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.1	0.01			1	1	1	0.1	50	100	100	50	10	50	100	100	50	50	10	10	0.2	0.5	0.5	0.2	0.5	0.5	0.5	5	10	1	50	1	2	2	5	5	5	0.1	2	5	5	5
NEPM (2013) Asbestos HIL A			0.01																																							
NEPM (2013) Asbestos HIL D			0.05																																							
NEPM (2013) HIL A - Residential																													100		60	4500	20	100	100	6000	300	3800	40	400	200		7400
NEPM (2013) HIL C - Recreational																													300		90	20,000	90	300	300	17,000	600	19,000	80	1200	700		30,000
NEPM (2013) HIL D - Commercial/ Industrial																													3000		500	300,000	900	3600	4000	240,000	1500	60,000	730	6000	10,000		400,000
CRC CARE (2011) HSL A - Direct Contact Residential										3300	4500	6300									4400	100	4500	14,000				12,000														
CRC CARE (2011) HSL C - Direct Contact Recreational/ Open Space										3800	5300	7400									5100	120	5300	18,000				15,000														
CRC CARE (2011) HSL D - Direct Contact Commercial/ Industrial										20,000	27,000	38,000									26,000	430	27,000	99,000				81,000														
CRC CARE (2011) HSL - Intrusive Maintenance Worker										62,000	85,000	120,000									82,000	1100	85,000	120,000				130,000														
NEPM (2013) HSL-D - Vapour Intrusion 0-<1m Sand													NL							260		3	NL	NL				230														
NEPM (2013) HSL-D - Vapour Intrusion 1-<2m Sand													NL							370		3	NL	NL				NL														
NEPM (2013) HSL-D - Vapour Intrusion 2-<4m Sand													NL							630		3	NL	NL				NL														
NEPM (2013) HSL-D - Vapour Intrusion + 4m Sand													NL							NL		3	NL	NL				NL														
NEPM (2013) HSL A&B Vapour Intrusion 0-<1m SAND													110							45		0.5	55	160				40														
NEPM (2013) HSL A&B Vapour Intrusion 1-<2m SAND													240							70		0.5	NL	220				60														
NEPM (2013) HSL A&B Vapour Intrusion 2-<4m SAND													440							110		0.5	NL	310				95														
NEPM (2013) HSL A&B Vapour Intrusion + 4m SAND													NL							200		0.5	NL	540				170														
Human Health - Intrusive - Vapour Intrusion 0-<2m													NL							NL		77	NL	NL				NL														
Human Health - Intrusive - Vapour Intrusion 2-<4m													NL							NL		160	NL	NL				NL														
Human Health - Intrusive - Vapour Intrusion + 4m													NL							NL		NL	NL	NL				NL														
NEPM (2013) ESL - Residential and Open Space (Coarse)											300	2800	120							180		50	70	85				105														
NEPM (2013) ESL - Commercial & Industrial (Coarse)											1700	3300	170							215		75	165	135				180														
NEPM (2013) EIL - Residential and Open Space (Aged)																													100					420		50	1100			8			140
NEPM (2013) EIL - Commercial / Industrial (Aged)																													160					690		65	1800			10			170
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																																							
ES1532263007	SB02_0.1	SB02	23/09/2015	ES1532263	S.Spooner	-	-	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263043	SB02_1.0	SB02	23/09/2015	ES1532263	-	-	-		-	-	13.5	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	11	<2	<5	6	<5	<0.1	<2	<5	27	<5
ES1532263008	SB03_0.1	SB03	23/09/2015	ES1532263	S.Spooner	-	-	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263009	SB03_0.5	SB03	23/09/2015	ES1532263	S.Spooner	-	-	No	-	-	-	11.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	14	<2	<5	6	<5	<0.1	3	<5	29	<5
ES1532018028	SB07_1.0	SB07	22/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	11.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	7	<2	<5	5	<5	<0.1	2	<5	13	<5
ES1532263011	SB07_4.5	SB07	23/09/2015	ES1532263	-	-	-		-	-	14.6	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	9	<2	<5	9	<5	<0.1	8	<5	5	<5
ES1532018041	SB08_0.5	SB08	22/09/2015	ES1532018	-	-	-		-	-	13	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	5	<2	<5	<5	<5	<0.1	<2	<5	12	<5
ES1532018043	SB08_3.0	SB08	22/09/2015	ES1532018	-	-	-		-	-	14.9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	13	<2	<5	8	<5	<0.1	3	<5	8	<5
ES1532018044	SB09_1.0	SB09	22/09/2015	ES1532018	G.Morgan	-	-	No	-	-	-	16.1	-	530	370	<100	530	<10	120	760	<100	880 - 930	900	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	10	<2	8	13	<5	<0.1	<2	<5	11	<5
ES1532018045	SB09_5.0	SB09	22/09/2015	ES1532018	-	-	-		-	-	15	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	16	<2	<5	7	<5	<0.1	<2	<5	28	<5
ES1532018034	SB10_0.5	SB10	21/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	7.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	<2	<2	<5	35	20	<0.1	<2	<5	<5	26
ES1532263014	SB11_0.5	SB11	23/09/2015	ES1532263	-	-	-		-	-	11.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	9	5	<5	6	<5	0.1	6	<5	17	<5
ES1532263031	SB12_0.5	SB12	24/09/2015	ES1532263	-	-	-		-	-	10.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	12	<2	<5	6	6	<0.1	2	<5	25	<5
ES1532263027	SB13_1.5	SB13	24/09/2015	ES1532263	-	-	-		-	-	14.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	23	<2	<5	6	<5	<0.1	<2	<5	30	<5
ES1532263030	SB14_0.25	SB14	24/09/2015	ES1532263	-	-	-		-	-	4.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	6	<2	<5	<5	10	<0.1	<2	<5	10	<5
ES1532263028	SB16_0.25	SB16	24/09/2015	ES1532263	-	-	-		-	-	2	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	<2	<2	6	26	14	<0.1	<2	<5	<5	25
ES1532263029	SB16_1.5	SB16	24/09/2015	ES1532263	-	-	-		-	14	8	-	5.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263044	SB17_0.2	SB17	24/09/2015	ES1532263	S.Spooner	-	-	No	-	-	-	10.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	5	<2	6	11	60	<0.1	<2	<5	6	71
ES1532263013	SB18_0.5	SB18	23/09/2015	ES1532263	G.Morgan	-	-	No	-	-	-	2.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	<2	<2	<5	<5	15	<0.1	<2	<5	<5	31
ES1532263017	SB19_0.5	SB19	23/09/2015	ES1532263	-	-	-		-	-	7.1	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	11	6	<5	<5	51	<0.1	8	<5	15	<5
ES1532263033	SB20_1.5	SB20	25/09/2015	ES1532263	-	-	-		-	-	12.9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	80	<1	<50	<1	8	22	62	34	519	<0.1	54	<5	27	38
ES1532263032	SB21_0.25	SB21	24/09/2015	ES1532263	-	-	-		-	-	6.5	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	30	<1	<50	<1	32	8	6	6	223	<0.1	26	<5	33	14
ES1532018002	SB22_1.0	SB22	22/09/2015	ES1532018	-	-	-		-	-	6.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	7	<2	<5	7	52	<0.1	5	<5	12	13
ES1532018003	SB22_5.0	SB22	22/09/2015	ES1532018	-	-	-		-	-	16.2	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	20	<1	<50	<1	19	<2	<5	8	<5	<0.1	2	<5	<5	<5
ES1532018017	TP01_0.2	TP01	17/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532018018	TP01_0.6	TP01	21/09/2015	ES1532018	-	-	-		-	-	21.9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	8	80	<1	<50	<1	30	<2	<5	25	<5	<0.1	<2	<5	119	26
ES1532018019	TP02_0.5	TP02	21/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	7.9	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	6	<2	<5	7	36	<0.1	<2	<5	10	12
ES1532018020	TP02_2.5	TP02	21/09/2015	ES1532018	-	-	-		-	-	5.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	<2	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
ES1532018021	TP03_1.5	TP03	21/09/2015	ES1532018	G.Morgan	77.2	1.03	Yes	Ch	-	-	2.5	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	<2	<2	<5	<5	<5	<0.1	<2	<5	<5	<5
ES1532018022	TP03_2.6	TP03	21/09/2015	ES1532018	-	-	-		-	-	12.2	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	7	<2	<5	<5	<5	0.1	2	<5	15	<5
ES1532018024	TP04_1.0	TP04	21/09/2015	ES1532018	G.Morgan	-	-	No	-	-	-	8.3	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	<2	<2	<5	<5	6	<0.1	<2	<5	<5	<5
ES1532018025	TP04_2.5	TP04	21/09/2015	ES1532018	-	-	-		-	-	13.6	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<10	<1	<50	<1	6	<2	<5	<5	<5	<0.1	2	<5	18	<5
ES1532018026	TP05_0.5	TP05	21/09/2015	ES1532018	S.Spooner	-	-	No	-	-	-	9.8	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	10	<1	<50	<1	<2	<2	<5	<5	<5	<0.1	<2	<5	<5	9
ES1532018027	TP05_1.5	TP05	21/09/2015	ES1532018	-	-	-		-	-	17.4	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<10	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	40	<1	<50	<1	19	<2	<5	16	<5	<0.1	<2	<5	44	<5

ERM

Table 11. Soil Summary - PAH Phenols
Roche Products - 4-10 Inman Rd Dee Why
0315053 - Phase 2 ESA

					Halogenated Phenols						PAH/Phenols																								
					2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	Benzo[b+j]fluoranthene	7,12-dimethylbenz(a)anthracene	2,4-dimethylphenol	2-chloronaphthalene	2-methylnaphthalene	2-methylphenol	2-nitrophenol	3-&4-methylphenol	3-methylcholanthrene	4-chloro-3-methylphenol	Acenaphthene	Acenaphthylene	Acetophenone	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (half LOR)	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM (2013) EIL - Commercial / Industrial (Aged)																															370				
NEPM (2013) EIL - Residential and Open Space (Aged)																															170				
NEPM (2013) HIL-A										100																3					1400	300		3000	
NEPM (2013) HIL-C										120																3					1900	300		40,000	
NEPM (2013) HIL-D										660																40					11,000	4000		240,000	
CRC CARE (2011) Intrusive Maintenace- Direct Contact																															29,000				
NEPM (2013) HSL-D - Vapour Intrusion + 4m SAND																															NL				
NEPM (2013) HSL-D - Vapour Intrusion 0-<1m SAND																															NL				
NEPM (2013) HSL-D - Vapour Intrusion 1-<2m SAND																															NL				
NEPM (2013) HSL-D - Vapour Intrusion 2-<4m SAND																															NL				
NEPM (2013) HSL A&B Vapour Intrusion + 4m SAND																															NL				
NEPM (2013) HSL A&B Vapour Intrusion 0-<1m SAND																															3				
NEPM (2013) HSL A&B Vapour Intrusion 1-<2m SAND																															NL				
NEPM (2013) HSL A&B Vapour Intrusion 2-<4m SAND																															NL				
NEPM (2013) - Intrusive Maintenance Worker - Vapour Intrusion + 4m																															NL				
NEPM (2013) - Intrusive Maintenance Worker - Vapour Intrusion 0-<2m																															NL				
NEPM (2013) - Intrusive Maintenance Worker - Vapour Intrusion 2-<4m																															NL				
NEPM (2013) ESL - Commercial & Industrial (Coarse)																									1.4										
SampleCode	Field_ID	LocCode	Sampled_Date-Time	Lab_Report_Number																																
ES1532018004	MW02_0.5	MW02	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018005	MW02_6.0	MW02	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018033	MW04_1.0	MW04	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263001	MW04_2.0	MW04	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018056	MW05_0.5	MW05	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263002	MW05_3.0	MW05	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018030	MW06_0.5	MW06	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263003	MW06_0.6	MW06	23/09/2015	ES1532263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263010	MW06_4.0	MW06	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263005	MW07_0.1	MW07	23/09/2015	ES1532263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263006	MW07_0.5	MW07	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263012	MW07_4.0	MW07	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018032	MW08_1.5	MW08	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263023	MW08_6.0	MW08	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018031	MW09_1.5	MW09	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263024	MW09_4.0	MW09	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018048	MW10_0.5	MW10	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018049	MW10_4.0	MW10	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263035	MW11_0.5	MW11	25/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018029	MW11_1.0	MW11	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263004	MW11_5.0	MW11	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018006	MW12_1.0	MW12	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018007	MW12_4.0	MW12	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018008	MW13_0.5	MW13	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018009	MW13_7.0	MW13	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018010	MW14_0.5	MW14	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018011	MW14_5.0	MW14	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018012	MW15_1.5	MW15	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018013	MW15_4.0	MW15	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018014	MW16_0.3	MW16	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018015	MW16_3.0	MW16	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018055	MW17_1.0	MW17	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018016	MW17_4.0	MW17	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018039	MW18_1.5	MW18	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018040	MW18_4.0	MW18	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018001	MW19_1.5	MW19	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263034	MW19_1.5	MW19	25/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018037	MW19_4.0	MW19	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263019	MW20_0.2	MW20	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263046	MW20_1.8	MW20	24/09/2015	ES1532263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263020	MW20_3.0	MW20	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

					Halogenated Phenols						PAH/Phenols																								
					2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	Benzo[b+j]fluoranthene	7,12-dimethylbenz(a)anthracene	2,4-dimethylphenol	2-chloronaphthalene	2-methylnaphthalene	2-methylphenol	2-nitrophenol	3-&4-methylphenol	3-methylcholanthrene	4-chloro-3-methylphenol	Acenaphthene	Acenaphthylene	Acetophenone	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (half LOR)	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM (2013) EIL - Commercial / Industrial (Aged)																															370				
NEPM (2013) EIL - Residential and Open Space (Aged)																															170				
NEPM (2013) HIL-A										100																3					1400	300		3000	
NEPM (2013) HIL-C										120																3					1900	300		40,000	
NEPM (2013) HIL-D										660																40					11,000	4000		240,000	
CRC CARE (2011) Intrusive Maintenace- Direct Contact																															29,000				
NEPM (2013) HSL-D - Vapour Intrusion + 4m SAND																															NL				
NEPM (2013) HSL-D - Vapour Intrusion 0-<1m SAND																															NL				
NEPM (2013) HSL-D - Vapour Intrusion 1-<2m SAND																															NL				
NEPM (2013) HSL-D - Vapour Intrusion 2-<4m SAND																															NL				
NEPM (2013) HSL A&B Vapour Intrusion + 4m SAND																															NL				
NEPM (2013) HSL A&B Vapour Intrusion 0-<1m SAND																															3				
NEPM (2013) HSL A&B Vapour Intrusion 1-<2m SAND																															NL				
NEPM (2013) HSL A&B Vapour Intrusion 2-<4m SAND																															NL				
NEPM (2013) - Intrusive Maintenance Worker - Vapour Intrusion + 4m																															NL				
NEPM (2013) - Intrusive Maintenance Worker - Vapour Intrusion 0-<2m																															NL				
NEPM (2013) - Intrusive Maintenance Worker - Vapour Intrusion 2-<4m																															NL				
NEPM (2013) ESL - Commercial & Industrial (Coarse)																									1.4										
SampleCode	Field_ID	LocCode	Sampled_Date-Time	Lab_Report_Number																															
ES1532263021	MW21_0.1	MW21	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263022	MW21_5.5	MW21	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018035	SB01_0.5	SB01	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263007	SB02_0.1	SB02	23/09/2015	ES1532263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263043	SB02_1.0	SB02	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263008	SB03_0.1	SB03	23/09/2015	ES1532263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263009	SB03_0.5	SB03	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018028	SB07_1.0	SB07	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263011	SB07_4.5	SB07	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018041	SB08_0.5	SB08	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018043	SB08_3.0	SB08	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018044	SB09_1.0	SB09	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018045	SB09_5.0	SB09	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018034	SB10_0.5	SB10	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263014	SB11_0.5	SB11	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263031	SB12_0.5	SB12	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263027	SB13_1.5	SB13	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263030	SB14_0.25	SB14	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263028	SB16_0.25	SB16	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263029	SB16_1.5	SB16	24/09/2015	ES1532263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532263044	SB17_0.2	SB17	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263013	SB18_0.5	SB18	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263017	SB19_0.5	SB19	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263033	SB20_1.5	SB20	25/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263032	SB21_0.25	SB21	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018002	SB22_1.0	SB22	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018003	SB22_5.0	SB22	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018017	TP01_0.2	TP01	17/09/2015	ES1532018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532018018	TP01_0.6	TP01	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018019	TP02_0.5	TP02	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018020	TP02_2.5	TP02	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018021	TP03_1.5	TP03	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018022	TP03_2.6	TP03	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018024	TP04_1.0	TP04	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018025	TP04_2.5	TP04	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018026	TP05_0.5	TP05	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018027	TP05_1.5	TP05	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table 12. Soil Summary - OP, OC and PCBs
Roche Products - 4-10 Inman Rd Dee Why
0315053 - Phase 2 ESA

	Herbicides	Organochlorine Pesticides																									Organophosphorous Pesticides															Pesticides					PCBs
	Pronamide	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Methyl parathion	Monocrotophos	Prothiofos	Chlorobenzilate	Demeton-S-methyl	Fenamiphos	Parathion	Pirimphos-ethyl	PCBs (Sum of total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.05	0.5	0.05	0.05	0.2	0.05	0.1
NEPM (2013) HIL-A					6		50						240		270								6		300					160																1
NEPM (2013) HIL-C					10		70						400		340								10		400					250																1
NEPM (2013) HIL-D					45		530						3600		2000								50		2500					2000																7
NEPM (2013) EIL - Residential and Open Space (Aged)												180																																	
NEPM (2013) EIL - Commercial / Industrial (Aged)												640																																	

SampleCode	Field_ID	LocCode	Sampled_Date-Time	Lab_Report_Number																																											
ES1532018004	MW02_0.5	MW02	21/09/2015	ES1532018	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.1
ES1532018033	MW04_1.0	MW04	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263001	MW04_2.0	MW04	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018056	MW05_0.5	MW05	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263002	MW05_3.0	MW05	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018030	MW06_0.5	MW06	22/09/2015	ES1532018	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.05	<0.05	<0.2	<0.05	<0.1
ES1532263010	MW06_4.0	MW06	23/09/2015	ES1532263	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.05	<0.05	<0.2	<0.05	<0.1
ES1532018032	MW08_1.5	MW08	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263023	MW08_6.0	MW08	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018031	MW09_1.5	MW09	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263024	MW09_4.0	MW09	24/09/2015	ES1532263	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.05	<0.05	<0.2	<0.05	<0.1
ES1532018029	MW11_1.0	MW11	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018006	MW12_1.0	MW12	21/09/2015	ES1532018	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.05	<0.05	<0.2	<0.05	<0.1
ES1532018007	MW12_4.0	MW12	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018008	MW13_0.5	MW13	21/09/2015	ES1532018	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.05	<0.05	<0.2	<0.05	<0.1
ES1532018009	MW13_7.0	MW13	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018012	MW15_1.5	MW15	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018013	MW15_4.0	MW15	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018055	MW17_1.0	MW17	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018016	MW17_4.0	MW17	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018039	MW18_1.5	MW18	21/09/2015	ES1532018	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.05	<0.05	<0.2	<0.05	<0.1
ES1532018040	MW18_4.0	MW18	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018001	MW19_1.5	MW19	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263034	MW19_1.5	MW19	25/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018037	MW19_4.0	MW19	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263022	MW21_5.5	MW21	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263043	SB02_1.0	SB02	23/09/2015	ES1532263	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.05	<0.05	<0.2	<0.05	<0.1
ES1532263009	SB03_0.5	SB03	23/09/2015	ES1532263	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.05	<0.05	<0.2	<0.05	<0.1
ES1532018028	SB07_1.0	SB07	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263011	SB07_4.5	SB07	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018041	SB08_0.5	SB08	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018043	SB08_3.0	SB08	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263014	SB11_0.5	SB11	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263031	SB12_0.5	SB12	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263027	SB13_1.5	SB13	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263030	SB14_0.25	SB14	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263028	SB16_0.25	SB16	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263044	SB17_0.2	SB17	24/09/2015	ES1532263	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.05	<0.05	<0.2	<0.05	<0.1
ES1532263013	SB18_0.5	SB18	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263017	SB19_0.5	SB19	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532263032	SB21_0.25	SB21	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018002	SB22_1.0	SB22	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018003	SB22_5.0	SB22	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	-	-	<0.5	<0.5	<1	<2	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	-
ES1532018018	TP01_0.6	TP01	21/09/2015	ES1532018	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.05	<0.05	<0.2	<0.05	<0.1

SampleCode	Field_ID	LocCode	Sampled_Date-Time	Lab_Report_Number	Amino Aliphatics					Amino Aromatics	Anilines					
					N-Nitrosodiphenyl & Diphenylamine	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM (2013) HIL-A																
NEPM (2013) HIL-C																
NEPM (2013) HIL-D																
ES1532018004	MW02_0.5	MW02	21/09/2015	ES1532018	-	-	-	-	-	-	-	-	-	-	-	-
ES1532018033	MW04_1.0	MW04	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263001	MW04_2.0	MW04	23/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018056	MW05_0.5	MW05	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263002	MW05_3.0	MW05	23/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018030	MW06_0.5	MW06	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263010	MW06_4.0	MW06	23/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018032	MW08_1.5	MW08	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263023	MW08_6.0	MW08	24/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018031	MW09_1.5	MW09	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263024	MW09_4.0	MW09	24/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018029	MW11_1.0	MW11	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018006	MW12_1.0	MW12	21/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018007	MW12_4.0	MW12	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018008	MW13_0.5	MW13	21/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018009	MW13_7.0	MW13	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018012	MW15_1.5	MW15	21/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018013	MW15_4.0	MW15	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018055	MW17_1.0	MW17	21/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018016	MW17_4.0	MW17	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018039	MW18_1.5	MW18	21/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018040	MW18_4.0	MW18	21/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018001	MW19_1.5	MW19	21/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263034	MW19_1.5	MW19	25/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018037	MW19_4.0	MW19	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263022	MW21_5.5	MW21	24/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263043	SB02_1.0	SB02	23/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263009	SB03_0.5	SB03	23/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018028	SB07_1.0	SB07	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263011	SB07_4.5	SB07	23/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018041	SB08_0.5	SB08	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018043	SB08_3.0	SB08	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263014	SB11_0.5	SB11	23/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263031	SB12_0.5	SB12	24/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263027	SB13_1.5	SB13	24/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263030	SB14_0.25	SB14	24/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263028	SB16_0.25	SB16	24/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263044	SB17_0.2	SB17	24/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263013	SB18_0.5	SB18	23/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263017	SB19_0.5	SB19	23/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532263032	SB21_0.25	SB21	24/09/2015	ES1532263	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018002	SB22_1.0	SB22	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018003	SB22_5.0	SB22	22/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5
ES1532018018	TP01_0.6	TP01	21/09/2015	ES1532018	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5

SampleCode	Chlorinated Hydrocarbons															
	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromodichloromethane	Bromoform	Carbon tetrachloride
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM (2013) HIL-A																
NEPM (2013) HIL-C																
NEPM (2013) HIL-D																
ES1532018004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532018033	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263001	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018056	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018030	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018032	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018031	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018029	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018006	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018007	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018008	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018009	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018013	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018055	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018016	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018039	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018040	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018001	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263034	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018037	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263043	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263009	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018028	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018041	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018043	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263031	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263027	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263030	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263028	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263044	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263013	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263017	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532263032	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018003	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ES1532018018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

SampleCode	Chlorinated Hydrocarbons (continued)														
	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	5	0.5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5
NEPM (2013) HIL-A															
NEPM (2013) HIL-C															
NEPM (2013) HIL-D															
ES1532018004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532018033	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263001	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018056	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263002	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018030	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263010	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018032	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263023	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018031	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263024	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018029	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018006	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018007	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018008	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018009	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018012	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018013	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018055	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018016	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018039	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018040	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018001	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263034	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018037	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263022	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263043	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263009	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018028	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263011	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018041	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018043	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263014	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263031	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263027	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263030	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263028	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263044	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263013	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263017	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532263032	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018002	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018003	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
ES1532018018	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5

					Explosives				Halogenated Benzenes											Halogenated Hydrocarbons					MAH									Nitroaromatics			Phthalates						Solvents						
					1,3,5-Trinitrobenzene	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Pentachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Carbon disulfide	Ethanol	Isophorone	Vinyl acetate
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.5	0.5	5	5	0.5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	5	5	0.5	5	0.5	5
NEPM (2013) HIL-A																		10																															
NEPM (2013) HIL-C																		10																															
NEPM (2013) HIL-D																		80																															
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																																													
ES1532018004	MW02_0.5	MW02	21/09/2015	ES1532018	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532018033	MW04_1.0	MW04	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263001	MW04_2.0	MW04	23/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018056	MW05_0.5	MW05	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263002	MW05_3.0	MW05	23/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018030	MW06_0.5	MW06	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263010	MW06_4.0	MW06	23/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018032	MW08_1.5	MW08	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263023	MW08_6.0	MW08	24/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018031	MW09_1.5	MW09	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263024	MW09_4.0	MW09	24/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018029	MW11_1.0	MW11	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018006	MW12_1.0	MW12	21/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018007	MW12_4.0	MW12	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018008	MW13_0.5	MW13	21/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018009	MW13_7.0	MW13	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018012	MW15_1.5	MW15	21/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018013	MW15_4.0	MW15	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018055	MW17_1.0	MW17	21/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018016	MW17_4.0	MW17	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018039	MW18_1.5	MW18	21/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018040	MW18_4.0	MW18	21/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018001	MW19_1.5	MW19	21/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263034	MW19_1.5	MW19	25/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018037	MW19_4.0	MW19	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263022	MW21_5.5	MW21	24/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<5
ES1532263043	SB02_1.0	SB02	23/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263009	SB03_0.5	SB03	23/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018028	SB07_1.0	SB07	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<5
ES1532263011	SB07_4.5	SB07	23/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<5
ES1532018041	SB08_0.5	SB08	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018043	SB08_3.0	SB08	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<5
ES1532263014	SB11_0.5	SB11	23/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263031	SB12_0.5	SB12	24/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263027	SB13_1.5	SB13	24/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<0.5	<5
ES1532263030	SB14_0.25	SB14	24/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263028	SB16_0.25	SB16	24/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263044	SB17_0.2	SB17	24/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263013	SB18_0.5	SB18	23/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263017	SB19_0.5	SB19	23/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532263032	SB21_0.25	SB21	24/09/2015	ES1532263	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018002	SB22_1.0	SB22	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018003	SB22_5.0	SB22	22/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5
ES1532018018	TP01_0.6	TP01	21/09/2015	ES1532018	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	-	<0.5	<5

					SVOCs																		VOCs			N.N - dimethylformamide	Radionucleides / Activity	
					2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Carbazole	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin	cis-1,4-Dichloro-2-butene	Pentachloroethane	trans-1,4-Dichloro-2-butene	N,N - dimethylformamide	Gross Alpha	Gross Beta
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Bq/kg DW	Bq/kg DW
EQL					0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	500	500
NEPM (2013) HIL-A																												
NEPM (2013) HIL-C																												
NEPM (2013) HIL-D																												
SampleCode	Field_ID	LocCode	Sampled_Date-Time	Lab_Report_Number																								
ES1532018004	MW02_0.5	MW02	21/09/2015	ES1532018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532018033	MW04_1.0	MW04	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-
ES1532263001	MW04_2.0	MW04	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-
ES1532018056	MW05_0.5	MW05	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-
ES1532263002	MW05_3.0	MW05	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-
ES1532018030	MW06_0.5	MW06	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-
ES1532263010	MW06_4.0	MW06	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-
ES1532018032	MW08_1.5	MW08	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263023	MW08_6.0	MW08	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018031	MW09_1.5	MW09	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-
ES1532263024	MW09_4.0	MW09	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-
ES1532018029	MW11_1.0	MW11	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-
ES1532018006	MW12_1.0	MW12	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<500	<500
ES1532018007	MW12_4.0	MW12	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	1050	520
ES1532018008	MW13_0.5	MW13	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	530	<500
ES1532018009	MW13_7.0	MW13	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	1200	1170
ES1532018012	MW15_1.5	MW15	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018013	MW15_4.0	MW15	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018055	MW17_1.0	MW17	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018016	MW17_4.0	MW17	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018039	MW18_1.5	MW18	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018040	MW18_4.0	MW18	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018001	MW19_1.5	MW19	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263034	MW19_1.5	MW19	25/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018037	MW19_4.0	MW19	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263022	MW21_5.5	MW21	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263043	SB02_1.0	SB02	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263009	SB03_0.5	SB03	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
ES1532018028	SB07_1.0	SB07	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
ES1532263011	SB07_4.5	SB07	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
ES1532018041	SB08_0.5	SB08	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018043	SB08_3.0	SB08	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263014	SB11_0.5	SB11	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263031	SB12_0.5	SB12	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263027	SB13_1.5	SB13	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263030	SB14_0.25	SB14	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263028	SB16_0.25	SB16	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263044	SB17_0.2	SB17	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
ES1532263013	SB18_0.5	SB18	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263017	SB19_0.5	SB19	23/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532263032	SB21_0.25	SB21	24/09/2015	ES1532263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018002	SB22_1.0	SB22	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018003	SB22_5.0	SB22	22/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-
ES1532018018	TP01_0.6	TP01	21/09/2015	ES1532018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	1150	620

Table 14. Groundwater Summary - TRH, BTEX and Metals
Roche Products - 4-10 Inman Rd Dee Why
0315053 - Phase 2 ESA

					TRH										BTEX						Metals															
					C10-C16	C10-C16 Less NAPHTHALENE (F2)	C16-C34	C34-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	C6-C10 less BTEX (F1)	C6-C10	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total	Arsenic (Filtered)	Barium (Filtered)	Boron (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Lead (Filtered)	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Selenium (Filtered)	Vanadium (Filtered)	Zinc (Filtered)
					mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL					0.1	0.1	0.1	0.1	20	50	100	50	50	100	0.02	0.02	1	2	2	2	2	2	0.001	0.001	0.05	0.0001	0.001	0.001	0.001	0.001	0.001	0.0001	0.001	0.01	0.01	0.005
NEPM (2013) GIL - Drinking Water																	**1**	**300**	**800**			**600**	**0.01**	**2**	**4**	**0.002**	**0.05**		**2**	**0.01**	**0.5**	**0.001**	**0.02**	**0.01**		
Ecological (Freshwater)																	950				350				0.37	0.0002			0.0014	0.0034	1.9	0.00006	0.011	0.005		0.008
Recreational Direct Contact																	*10*	*3000*	*8000*			*6000*	*0.1*	*20*	*40*	*0.02*	*0.5*		*20*	*0.1*	*5*	*0.01*	*0.2*	*0.1*		
NEPM (2013) HSL C Vapour Intrusion - Recreational/Open Space - 2-<4 m Sand						NL									NL		NL	NL	NL			NL														
NEPM (2013) HSL C Vapour Intrusion - Recreational/Open Space - 4-<8 m Sand						NL									NL		NL	NL	NL			NL														
NEPM (2013) HSL A&B Vapour Intrusion - Residential - 2-<4 m Sand						1									1		800	NL	NL			NL														
NEPM (2013) HSL A&B Vapour Intrusion - Residential - 4-<8 m Sand						1									1		800	NL	NL			NL														
NEPM (2013) HSL D Vapour Intrusion - Commercial/ Industrial - 2-<4 m Sand						NL									6		5000	NL	NL			NL														
NEPM (2013) HSL D Vapour Intrusion - Commercial/ Industrial - 4-<8 m Sand						NL									6		5000	NL	NL			NL														
Vapour Intrusion - Intrusive Maint Worker 2m -8m+						NL									NL		NL	NL	NL			NL														
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																																
ES1532818019	MW02	MW02	1/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	0.001	0.06	<0.05	<0.0001	0.001	0.004	<0.001	<0.001	0.49	<0.0001	<0.001	<0.01	<0.01	0.011
ES1532818015	MW04	MW04	1/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.029	<0.05	<0.0001	<0.001	0.001	0.001	<0.001	0.03	<0.0001	0.002	<0.01	<0.01	0.011
ES1532818016	MW05	MW05	1/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.02	<0.05	<0.0001	<0.001	0.002	<0.001	<0.001	0.038	<0.0001	0.001	<0.01	<0.01	0.011
ES1532818017	MW06	MW06	1/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.007	<0.05	<0.0001	<0.001	<0.001	0.001	<0.001	0.024	<0.0001	0.001	<0.01	<0.01	0.008
ES1532818028	MW07	MW07	2/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.012	<0.05	<0.0001	<0.001	<0.001	0.001	<0.001	0.013	<0.0001	0.002	<0.01	<0.01	0.011
ES1532818029	MW08	MW08	2/10/2015	ES1532818	0.2	0.19	0.28	<0.1	490	150	360	<50	510 - 535	480	0.26	0.49	**225**	<2	<2	<2	<2	<2	<0.001	0.052	<0.05	<0.0001	<0.001	0.001	0.002	0.001	0.03	<0.0001	0.002	<0.01	<0.01	0.018
ES1532818026	MW09	MW09	2/10/2015	ES1532818	<0.1	<0.1	0.14	<0.1	470	<50	180	<50	180 - 230	140	0.1	0.47	***366***	<2	<2	<2	2	2 - 3	<0.001	0.05	0.07	<0.0001	<0.001	0.002	0.001	<0.001	0.033	<0.0001	0.003	**0.01**	<0.01	0.02
ES1532818024	MW10	MW10	2/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.021	0.1	<0.0001	<0.001	<0.001	0.002	<0.001	0.021	<0.0001	0.002	<0.01	<0.01	0.014
ES1532818025	MW11	MW11	2/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.018	0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.012	<0.0001	0.001	<0.01	<0.01	0.013
ES1532818002	MW12	MW12	30/09/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.04	<0.05	<0.0001	0.001	0.003	0.006	**0.013**	0.064	<0.0001	<0.001	<0.01	<0.01	0.026
ES1532818006	MW13	MW13	30/09/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.09	<0.05	<0.0001	<0.001	0.014	<0.001	<0.001	0.19	<0.0001	0.002	<0.01	<0.01	0.024
ES1532818001	MW14	MW14	30/09/2015	ES1532818	0.18*	0.18*	0.1*	<0.1	30*	270*	100*	<50	370*	<100	0.03*	0.03*	<1	<2	<2	<2	<2	<2	<0.001	0.039	<0.05	<0.0001	<0.001	0.002	<0.001	<0.001	0.057	<0.0001	0.004	<0.01	<0.01	0.024
ES1532818018	MW15	MW15	1/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.145	<0.05	<0.0001	<0.001	0.002	0.002	0.002	0.038	<0.0001	0.004	<0.01	<0.01	0.022
ES1532818012	MW16	MW16	1/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	2	<2	<2	<2	0.001	0.034	<0.05	<0.0001	<0.001	0.001	0.002	<0.001	0.019	<0.0001	<0.001	<0.01	<0.01	0.02
ES1532818011	MW17	MW17	1/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.017	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.004	<0.0001	0.001	<0.01	<0.01	0.02
ES1532818010	MW18	MW18	1/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	32,700	<50	<100	<50	<50	<100	33.2	33.2	*<50*	<50	<50	<50	<50	<50	<0.001	0.04	0.06	0.0001	<0.001	0.002	0.003	0.001	0.023	<0.0001	0.002	<0.01	<0.01	0.035
ES1532818009	MW19	MW19	1/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	28,300	<50	<100	<50	<50	<100	28.4	28.4	*<50*	<50	<50	<50	<50	<50	<0.001	0.052	0.11	<0.0001	<0.001	0.001	<0.001	0.001	0.016	<0.0001	0.002	<0.01	<0.01	0.02
ES1532818022	MW20	MW20	2/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	0.001	0.044	<0.05	<0.0001	<0.001	0.002	<0.001	<0.001	0.177	<0.0001	0.002	<0.01	<0.01	0.011
ES1532818027	MW21	MW21	2/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	40	<50	<100	<50	<50	<100	0.03	0.04	***12***	<2	<2	<2	<2	<2	<0.001	0.022	<0.05	<0.0001	<0.001	0.001	0.001	<0.001	0.014	<0.0001	0.002	**0.01**	<0.01	0.009
ES1532818005	RP10	RP10	30/09/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	0.002	0.008	<0.05	<0.0001	<0.001	<0.001	0.002	<0.001	0.005	<0.0001	0.001	<0.01	<0.01	0.016
ES1532818014	RP12	RP12	1/10/2015	ES1532818	0.2*	0.2*	<0.1	<0.1	20	450*	100*	<50	550*	<100	0.03*	0.02	<1	<2	<2	<2	<2	<2	<0.001	0.011	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.006	0.0003*	<0.001	<0.01	<0.01	0.015*
ES1532818003	RP2	RP2	30/09/2015	ES1532818	0.36	0.36	<0.1	<0.1	120	310	<100	<50	310 - 385	360	0.12	0.12	<1	4	<2	<2	<2	<2	<0.001	0.019	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.045	<0.0001	0.001	<0.01	<0.01	0.017
ES1532818004	RP2A	RP2A	30/09/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.016	<0.05	<0.0001	<0.001	<0.001	0.003	<0.001	0.011	<0.0001	0.001	<0.01	<0.01	0.009
ES1532818013	RP7	RP7	1/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.012	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.005	<0.0001	<0.001	<0.01	<0.01	0.019
ES1532818023	RP8	RP8	2/10/2015	ES1532818	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.02	<1	<2	<2	<2	<2	<2	<0.001	0.049	1.04	<0.0001	<0.001	<0.001	<0.001	0.001	0.012	<0.0001	0.001	<0.01	<0.01	0.018

* Inter laboratory or Intra laboratory duplicate value substituted as a conservative measure where value was higher than parent

	Halogenated Phenols						PAH/Phenols																														
	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	Benzo[b+j]fluoranthene	7,12-dimethylbenz(a)anthracene	2,4-dimethylphenol	2-chloronaphthalene	2-methylnaphthalene	2-methylphenol	2-nitrophenol	3-&4-methylphenol	3-methylcholanthrene	4-chloro-3-methylphenol	Acenaphthene	Acenaphthylene	Acetophenone	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (zero)	Benzo(b+j) & Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	1	1	1	1	1	2	0.001	2	1	2	2	1	1	2	2	1	1	1	2	1	1	0.5	0.5	4	1	1	1	1	1	1	1	1	0.5	1	1	1
NEPM (2013) GIL - Drinking Water																						**0.01**															
NEPM (2013) GIL - Ecological (Freshwater)		3	120		340	3.6																									16			320	
Recreational Direct Contact		*200*	*2000*		*3000*	*100*																*0.1*														
NEPM (2013) Vapour Intrusion - Recreational/Open Space - 2-<4 m																															NL				
NEPM (2013) Vapour Intrusion - Recreational/Open Space - 4-<8 m																															NL				
NEPM (2013) Vapour Intrusion - Residential - 2-<4 m																															NL				
NEPM (2013) Vapour Intrusion - Residential - 4-<8 m																															NL				
NEPM (2013) Vapour Intrusion - Commercial Worker - 2-<4 m																															NL				
NEPM (2013) Vapour Intrusion - Commercial Worker - 4-<8 m																															NL				
NEPM (2013) Vapour Intrusion - Intrusive Maint Worker 2m -8m+																															NL				

SampleCode	Field_ID	LocCode	Sampled_Date-Time	Lab_Report_Number																																	
ES1532818019	MW02	MW02	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	**<0.5**	<0.5	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818015	MW04	MW04	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818016	MW05	MW05	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818017	MW06	MW06	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818028	MW07	MW07	2/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	**<0.5**	<0.5	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818029	MW08	MW08	2/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	**<0.5**	<0.5	-	<1	<1	<1	<1	<1	<1	<1	11	6.8	<1	<1	<1
ES1532818026	MW09	MW09	2/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	7	2	<1	2.5	<1
ES1532818024	MW10	MW10	2/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818025	MW11	MW11	2/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818002	MW12	MW12	30/09/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818006	MW13	MW13	30/09/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818001	MW14	MW14	30/09/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	**<0.5**	<0.5	-	<1	<1	<1	<1	<1	<1	<1	3*	3*	<1	4*	<1
ES1532818018	MW15	MW15	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818012	MW16	MW16	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	**<0.5**	<0.5	-	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818011	MW17	MW17	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818010	MW18	MW18	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818009	MW19	MW19	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818022	MW20	MW20	2/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818027	MW21	MW21	2/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818005	RP10	RP10	30/09/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	**<0.5**	<0.5	-	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818014	RP12	RP12	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	**<0.5**	<0.5	-	<1	<1	<1	<1	<1	<1	<1	1*	3*	<1	<1	<1
ES1532818003	RP2	RP2	30/09/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	**<0.5**	<0.5	-	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818004	RP2A	RP2A	30/09/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	**<0.5**	<0.5	-	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818013	RP7	RP7	1/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	-	<1	-	-	<1	<1	<2	-	<1	<1	<1	-	<1	<1	**<0.5**	<0.5	-	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1532818023	RP8	RP8	2/10/2015	ES1532818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	**<0.5**	<0.5	<4	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1

* Inter laboratory or Intra laboratory duplicate value substituted as a conservative measure where value was higher than parent

	Herbicides	Organochlorine Pesticides																							Organophosphorous Pesticides														Pesticides					PCBs
	Pronamide	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Methyl parathion	Monocrotophos	Prothiofos	Chlorobenzilate	Demeton-S-methyl	Fenamiphos	Parathion	Pirimphos-ethyl	PCBs (Sum of total)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.0005	0.5	0.5	0.5	0.5	0.5	0.5	2	2	0.5	2	0.5	0.5	2	0.5	1
NEPM (2013) GIL - Drinking Water					**0.3**		**2**					**9**													**30**				**10**		**4**													
NHMRC (2008) Recreational					*3*		*20*					*90*													*300*				*100*		*40*													
NEPM (2013) - Ecological (Freshwater)							0.03					0.006						0.01			0.2	0.01			0.01				0.01		0.01		0.15			0.05						0.004		

SampleCode	Field_ID	LocCode	Sampled_Date-Time	Lab_Report_Number																																										
ES1532818001	MW14	MW14	30/09/2015	ES1532818	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	-	<0.5	<0.5	<2	<0.5	<1
ES1532818002	MW12	MW12	30/09/2015	ES1532818	<2	<2	<2	<2	<4	<2	-	-	-	<2	<2	<4	<4	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	-	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	-	-	-	<2	<2	-	-	-	<2	-
ES1532818006	MW13	MW13	30/09/2015	ES1532818	<2	<2	<2	<2	<4	<2	-	-	-	<2	<2	<4	<4	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	-	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	<2	-
ES1532818009	MW19	MW19	1/10/2015	ES1532818	<2	<2	<2	<2	<4	<2	-	-	-	<2	<2	<4	<4	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	-	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	<2	-
ES1532818010	MW18	MW18	1/10/2015	ES1532818	<2	<2	<2	<2	<4	<2	-	-	-	<2	<2	<4	<4	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	-	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	<2	-
ES1532818011	MW17	MW17	1/10/2015	ES1532818	<2	<2	<2	<2	<4	<2	-	-	-	<2	<2	<4	<4	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	-	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	<2	-
ES1532818012	MW16	MW16	1/10/2015	ES1532818	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	-	<0.5	<0.5	<2	<0.5	<1
ES1532818015	MW04	MW04	1/10/2015	ES1532818	<2	<2	<2	<2	<4	<2	-	-	-	<2	<2	<4	<4	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	-	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	<2	-
ES1532818016	MW05	MW05	1/10/2015	ES1532818	<2	<2	<2	<2	<4	<2	-	-	-	<2	<2	<4	<4	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	-	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	<2	-
ES1532818017	MW06	MW06	1/10/2015	ES1532818	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<2	<0.5	<0.5	<2	<0.5	<1
ES1532818018	MW15	MW15	1/10/2015	ES1532818	<2	<2	<2	<2	<4	<2	-	-	-	<2	<2	<4	<4	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	-	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	<2	-
ES1532818019	MW02	MW02	1/10/2015	ES1532818	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	-	<0.5	<0.5	<2	<0.5	<1
ES1532818022	MW20	MW20	2/10/2015	ES1532818	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<2	<0.5	<0.5	<2	<0.5	<1
ES1532818023	RP8	RP8	2/10/2015	ES1532818	<2	<2	<2	<2	<4	<2	-	-	-	<2	<2	<4	<4	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	-	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	<2	-
ES1532818024	MW10	MW10	2/10/2015	ES1532818	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<2	<0.5	<0.5	<2	<0.5	<1
ES1532818025	MW11	MW11	2/10/2015	ES1532818	<2	<2	<2	<2	<4	<2	-	-	-	<2	<2	<4	<4	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	-	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	-	-	-	<2	-
ES1532818026	MW09	MW09	2/10/2015	ES1532818	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<2	<0.5	<0.5	<2	<0.5	<1
ES1532818027	MW21	MW21	2/10/2015	ES1532818	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<2	<0.5	<0.5	<2	<0.5	<1

Table 17. Groundwater Summary - VOC and SVOCs
Roche Products - 4-10 Inman Rd Dee Why
0315053 - Phase 2 ESA

	Amino Aliphatics				Amino Aromatics	Anilines						Chlorinated Hydrocarbons																										
	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	2	2	2	2	2	4	4	2	2	2	2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	50	5	50	5	5	5	2	10	2	5	5	5
Vapour Intrusion - Commercial/Industrial Acute Risk (Derived)																																					22000000		
Vapour Intrusion - Commercial/Industrial Chronic Risk (Derived)																																					40		
WH (2011) - Drinking Water (TCE Only)																																					**20**		
NEPM (2013) GIL - Drinking Water																	**30**				**3**									**4**	**60**			**0.7**				**50**	**60**
NEPM (2013) GIL - Ecological (Freshwater)											8				6500																					290			
NHMRC (2008) - Recreational																	*300*				*30*						*30*		*19,100*	*40*	*600*			*7*				*500*	*600*

SampleCode	Field_ID	LocCode	Sampled_Date-Time	Lab_Report_Number																																					
ES1532818001	MW14	MW14	30/09/2015	ES1532818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532818002	MW12	MW12	30/09/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5
ES1532818006	MW13	MW13	30/09/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5
ES1532818009	MW19	MW19	1/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<50	<50	<50	<50	<50	**<50**	<50	<50	<50	*<50*	<50	<50	<50	<50	<50	<50	<50	<500	<50	*<500*	<50	<50	<50	**<2**	<10	<2	**28,500**	<50	<50
ES1532818010	MW18	MW18	1/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<50	<50	<50	<50	<50	**<50**	<50	<50	<50	*<50*	<50	<50	<50	<50	<50	<50	<50	<500	<50	*<500*	<50	<50	<50	**<2**	<10	<2	**32,900**	<50	<50
ES1532818011	MW17	MW17	1/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5
ES1532818012	MW16	MW16	1/10/2015	ES1532818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532818015	MW04	MW04	1/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5
ES1532818016	MW05	MW05	1/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5
ES1532818017	MW06	MW06	1/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5
ES1532818018	MW15	MW15	1/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5
ES1532818019	MW02	MW02	1/10/2015	ES1532818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532818022	MW20	MW20	2/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5
ES1532818023	RP8	RP8	2/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5
ES1532818024	MW10	MW10	2/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	10	<5	<5
ES1532818025	MW11	MW11	2/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5
ES1532818026	MW09	MW09	2/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	8	<5	<5
ES1532818027	MW21	MW21	2/10/2015	ES1532818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5

Table 17. Groundwater Summary - VOC and SVOCs
Roche Products - 4-10 Inman Rd Dee Why
0315053 - Phase 2 ESA

					Explosives				Halogenated Benzenes										Halogenated Hydrocarbons					MAH									Nitroaromatics			Phthalates					
					trans-1,3-dichloropropene	Vinyl chloride	1,3,5-Trinitrobenzene	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Pentachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate
					µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					5	50	0.002	4	4	2	5	2	2	2	2	5	5	5	5	0.5	2	5	50	50	5	50	5	5	5	5	5	5	5	5	5	2	2	2	10	2	2	2	2	2
Vapour Intrusion - Commercial/Industrial Acute Risk (Derived)																																									
Vapour Intrusion - Commercial/Industrial Chronic Risk (Derived)																																									
WH (2011) - Drinking Water (TCE Only)																																									
NEPM (2013) GIL - Drinking Water						0.3																1	1											30 [#3]								
NEPM (2013) GIL - Ecological (Freshwater)								16		550	3	85	160	260	60																								1000 [#6]	3700 [#6]	9.9 [#5]	
NHMRC (2008) - Recreational						*3*					*5930*	*7430*	*15,000*		*400*							*10*	*10*											*300* [#4]								
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																																						
ES1532818001	MW14	MW14	30/09/2015	ES1532818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532818002	MW12	MW12	30/09/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818006	MW13	MW13	30/09/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818009	MW19	MW19	1/10/2015	ES1532818	<50	<500	<0.002	<4	<4	<2	<50	<2	<2	<2	<2	<50	<50	<50	<50	<4	<2	<50	<500	<500	<50	<500	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818010	MW18	MW18	1/10/2015	ES1532818	<50	<500	<0.002	<4	<4	<2	<50	<2	<2	<2	<2	<50	<50	<50	<50	<4	<2	<50	<500	<500	<50	<500	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818011	MW17	MW17	1/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818012	MW16	MW16	1/10/2015	ES1532818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532818015	MW04	MW04	1/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818016	MW05	MW05	1/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818017	MW06	MW06	1/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<0.5	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818018	MW15	MW15	1/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818019	MW02	MW02	1/10/2015	ES1532818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532818022	MW20	MW20	2/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<0.5	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818023	RP8	RP8	2/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818024	MW10	MW10	2/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<0.5	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818025	MW11	MW11	2/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818026	MW09	MW09	2/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<0.5	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2
ES1532818027	MW21	MW21	2/10/2015	ES1532818	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<0.5	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2

					Solvents							SVOCs																		VOCs			Isotopes		N,N-dimethylformamide
					Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Carbon disulfide	Ethanol	Isophorone	Vinyl acetate	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Carbazole	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin	cis-1,4-Dichloro-2-butene	Pentachloroethane	trans-1,4-Dichloro-2-butene	Gross Alpha	Gross Beta Activity - 40k	N,N-dimethylformamide
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	Bq/L	Bq/L	µg/L
EQL					50	50	50	5	50	2	50	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	5	5	5	0.05	0.1	5
Vapour Intrusion - Commercial/Industrial Acute Risk (Derived)																																	
Vapour Intrusion - Commercial/Industrial Chronic Risk (Derived)																																	
WH (2011) - Drinking Water (TCE Only)																																	
NEPM (2013) GIL - Drinking Water																															**0.5**	**0.5**	
NEPM (2013) GIL - Ecological (Freshwater)									1400																								
NHMRC (2008) - Recreational																																	
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																													
ES1532818001	MW14	MW14	30/09/2015	ES1532818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532818002	MW12	MW12	30/09/2015	ES1532818	<50	<50	<50	<5	-	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	0.11	<0.10	-
ES1532818006	MW13	MW13	30/09/2015	ES1532818	<50	<50	<50	<5	-	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	<0.05	<0.10	-
ES1532818009	MW19	MW19	1/10/2015	ES1532818	<500	<500	<500	<50	-	<2	<500	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<50	<50	<50	-	-	-
ES1532818010	MW18	MW18	1/10/2015	ES1532818	<500	<500	<500	<50	<50	<2	<500	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<50	<50	<50	-	-	<5
ES1532818011	MW17	MW17	1/10/2015	ES1532818	<50	<50	<50	<5	-	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	-
ES1532818012	MW16	MW16	1/10/2015	ES1532818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532818015	MW04	MW04	1/10/2015	ES1532818	<50	<50	<50	<5	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	<5
ES1532818016	MW05	MW05	1/10/2015	ES1532818	<50	<50	<50	<5	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	<5
ES1532818017	MW06	MW06	1/10/2015	ES1532818	<50	<50	<50	<5	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	<5
ES1532818018	MW15	MW15	1/10/2015	ES1532818	<50	<50	<50	<5	-	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	-
ES1532818019	MW02	MW02	1/10/2015	ES1532818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1532818022	MW20	MW20	2/10/2015	ES1532818	<50	<50	<50	<5	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	-
ES1532818023	RP8	RP8	2/10/2015	ES1532818	<50	<50	<50	<5	-	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	-
ES1532818024	MW10	MW10	2/10/2015	ES1532818	<50	<50	<50	<5	-	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	-
ES1532818025	MW11	MW11	2/10/2015	ES1532818	<50	<50	<50	<5	-	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	-
ES1532818026	MW09	MW09	2/10/2015	ES1532818	<50	<50	<50	<5	-	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	-
ES1532818027	MW21	MW21	2/10/2015	ES1532818	<50	<50	<50	<5	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5	-	-	-

Table 18. Surface Water and Sediment Summary - TRH, BTEX and Metals
Roche Products - 4-10 Inman Rd Dee Why
0315053 - Phase 2 ESA

					BTEX							TPH											Lead	Metals							
					Benzene	Ethylbenzene	Toluene	Total BTEX	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 less BTEX (F1)	C10-C16	C16-C34	C34-C40	F2-NAPHTHALENE	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	C6-C10	Lead (Filtered)	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)
					µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL					1	2	2	0.001	2	2	2	0.02	0.1	0.1	0.1	0.1	20	50	100	50	50	100	0.02	0.001	0.001	0.0001	0.001	0.001	0.0001	0.001	0.005
Drinking Water					**1**[#3]	**300**[#3]	**800**[#3]				**600**[#3]													**0.01**[#3]	**0.01**[#3]	**0.002**[#3]	**0.05**[#3]	**2**[#3]	**0.001**[#3]	**0.02**[#3]	
Ecological (Freshwater)					950[#6]						350[#6]													0.0034[#6]		0.0002[#6]		0.0014[#6]	0.00006[#5]	0.011[#6]	0.008[#6]
Recreational					*10*[#4]	*3000*[#4]	*8000*[#4]				*6000*[#4]													*0.1*[#4]	*0.1*[#4]	*0.02*[#4]	*0.5*[#4]	*20*[#4]	*0.01*[#4]	*0.2*[#4]	
Surface Water																															
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																											
ES1533818001	SW1	SW1	15/10/2015	ES1533818	<1	<2	<2	<0.001	<2	<2	<2	<0.02	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.001	0.002	<0.0001	<0.001	0.004	<0.0001	<0.001	0.017
ES1533818002	SW2	SW2	15/10/2015	ES1533818	<1	<2	<2	<0.001	<2	<2	<2	<0.02	<0.1	<0.1	<0.1	<0.1	<20	<50	<100	<50	<50	<100	<0.02	<0.001	0.005	<0.0001	<0.001	0.011	<0.0001	<0.001	0.03
Sediment																															
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ES1533818003	SW2	SW2 Sediment	15/10/2015	ES1533818	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	17	<5	<1	21	19	0.1	10	298

					Halogenated Phenols						PAH/Phenols																												
					2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	Benzo[b+j]fluoranthene	7,12-dimethylbenz(a)anthracene	2,4-dimethylphenol	2-chloronaphthalene	2-methylnaphthalene	2-methylphenol	2-nitrophenol	3-&4-methylphenol	3-methylcholanthrene	4-chloro-3-methylphenol	Acenaphthene	Acenaphthylene	Acetophenone	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					1	1	1	1	1	2	0.001	2	1	2	2	1	1	2	2	1	1	1	2	1	1	0.5	1	1	1	1	1	1	1	1	0.5	1	1	1
Drinking Water																										**0.01**[#3]												
Ecological (Freshwater)						3[#5]	120[#5]		340[#5]	3.6[#5]																								16[#6]			320[#6]	
Recreational						*200* [#4]	*2000* [#4]		*3000* [#4]	*100* [#4]																*0.1* [#4]												
Surface Water																																					
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																																	
ES1533818001	SW1	SW1	15/10/2015	ES1533818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	***<0.5***	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
ES1533818002	SW2	SW2	15/10/2015	ES1533818	<1	<1	<1	<1	<1	<2	<0.001	<2	<1	<2	<2	<1	<1	<2	<2	<1	<1	<1	<2	<1	<1	***<0.5***	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Sediment																																					
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ES1533818003	SW2	SW2 Sediment	15/10/2015	ES1533818	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

	Organochlorine Pesticides																								Organophosphorous Pesticides															Pesticides				
	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Methyl parathion	Monocrotophos	Prothiofos	Chlorobenzilate	Demeton-S-methyl	Fenamiphos	Parathion	Pirimphos-ethyl
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.0005	0.5	0.5	0.5	0.5	0.5	0.5	2	2	0.5	2	0.5	0.5	2	0.5
Drinking Water																																												
Ecological (Freshwater)						0.03[#5]					0.006[#5]						0.01[#5]			0.2[#6]	0.01[#5]			0.01[#5]				0.01[#6]		0.01[#6]		0.15[#6]			0.05[#6]							0.004[#6]	
Recreational																																											

Surface Water

SampleCode	Field_ID	LocCode	Sampled_Date-Time	Lab_Report_Number																																									
ES1533818001	SW1	SW1	15/10/2015	ES1533818	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<2	<0.5	<0.5	<0.5	<2	<0.5
ES1533818002	SW2	SW2	15/10/2015	ES1533818	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<2	<0.5	<0.5	<0.5	<2	<0.5

Sediment

SampleCode	Field_ID	LocCode	Sampled_Date-Time	Lab_Report_Number																																									
ES1533818003	SW2	SW2 Sediment	15/10/2015	ES1533818	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.5	<0.5	<0.05	<0.05	<0.2	<0.5	<0.2

					Amino Aliphatics				**Amino Aromatics**	**Anilines**					
					N-nitrosodiethylamine	**N-nitrosodi-n-butylamine**	**N-nitrosodi-n-propylamine**	**N-Nitrosomethylethylamine**	**1-naphthylamine**	**2-nitroaniline**	**3-nitroaniline**	**4-chloroaniline**	**4-nitroaniline**	**2-methyl-5-nitroaniline**	**Aniline**
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					2	2	2	2	2	4	4	2	2	2	2
Drinking Water															
Ecological (Freshwater)															8[#5]
Recreational															
Surface Water															
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**											
ES1533818001	SW1	SW1	15/10/2015	ES1533818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2
ES1533818002	SW2	SW2	15/10/2015	ES1533818	<2	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2
Sediment															
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ES1533818003	SW2	SW2 Sediment	15/10/2015	ES1533818	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5

					Chlorinated Hydrocarbons															
					1,1,1,2-tetrachloroethane	**1,1,1-trichloroethane**	**1,1,2,2-tetrachloroethane**	**1,1,2-trichloroethane**	**1,1-dichloroethane**	**1,1-dichloroethene**	**1,1-dichloropropene**	**1,2,3-trichloropropane**	**1,2-dibromo-3-chloropropane**	**1,2-dichloroethane**	**1,2-dichloropropane**	**1,3-dichloropropane**	**2,2-dichloropropane**	**Bromodichloromethane**	**Bromoform**	**Carbon tetrachloride**
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Drinking Water										**30[#3]**				**3[#3]**						
Ecological (Freshwater)								6500[#6]												
Recreational										*300[#4]*				*30[#4]*						*30[#4]*
Surface Water																				
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																
ES1533818001	SW1	SW1	15/10/2015	ES1533818	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
ES1533818002	SW2	SW2	15/10/2015	ES1533818	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sediment																				
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ES1533818003	SW2	SW2 Sediment	15/10/2015	ES1533818	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

					Chlorinated Hydrocarbons														
					Chlorodibromomethane	**Chloroethane**	**Chloroform**	**Chloromethane**	**cis-1,2-dichloroethene**	**cis-1,3-dichloropropene**	**Dibromomethane**	**Hexachlorobutadiene**	**Hexachlorocyclopentadiene**	**Hexachloroethane**	**Trichloroethene**	**Tetrachloroethene**	**trans-1,2-dichloroethene**	**trans-1,3-dichloropropene**	**Vinyl chloride**
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					5	50	5	50	5	5	5	2	10	2	5	5	5	5	50
Drinking Water								**4[#1]**	**60[#2]**			**0.7[#3]**				**50[#3]**	**60[#2]**		**0.3[#3]**
Ecological (Freshwater)														290[#5]					
Recreational							*19100[#4]*	*40[#4]*	*600[#4]*			*7[#4]*			*200[#4]*	*500[#4]*	*600[#4]*		*3[#4]*
Surface Water																			
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**															
ES1533818001	SW1	SW1	15/10/2015	ES1533818	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5	<5	*<50*
ES1533818002	SW2	SW2	15/10/2015	ES1533818	<5	<50	<5	*<50*	<5	<5	<5	**<2**	<10	<2	<5	<5	<5	<5	*<50*
Sediment																			
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ES1533818003	SW2	SW2 Sediment	15/10/2015	ES1533818	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5

Table 21. Surface Water and Sediment Summary - VOCs and SVOCs
Roche Products - 4-10 Inman Rd Dee Why
0315053 - Phase 2 ESA

						Explosives				Halogenated Benzenes												Halogenated Hydrocarbons					MAH										Nitroaromatics			Phthalates						Solvents						
						1,3,5-Trinitrobenzene	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Pentachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Carbon disulfide	Isophorone	Vinyl acetate
						mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.002	4	4	2	5	2	2	2	2	5	5	5	5	0.5	2	5	50	50	5	50	5	5	5	5	5	5	5	5	5	2	2	2	10	2	2	2	2	2	50	50	50	5	2	50
Drinking Water																					**1**[#3]	**1**[#3]										**30**[#3]																	
Ecological (Freshwater)							16[#5]		550[#6]	3[#5]	85[#5]	160[#6]	260[#6]	60[#6]																											1000[#6]	3700[#6]	9.9[#5]								
Recreational										*5930* [#4]	*7430* [#4]	*15000* [#4]		*400* [#4]							*10* [#4]	*10* [#4]										*300* [#4]																		
Surface Water																																																	
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																																													
ES1533818001	SW1	SW1	15/10/2015	ES1533818		<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<0.5	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	<2	<2	<50	<50	<50	<5	<2	<50
ES1533818002	SW2	SW2	15/10/2015	ES1533818		<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<0.5	<2	<5	<50	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<2	<10	<2	<2	<2	8	<2	<50	<50	<50	<5	<2	<50
Sediment																																																
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ES1533818003	SW2	SW2 Sediment	15/10/2015	ES1533818		<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	**3.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<5

						SVOCs																	VOCs		
						2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Carbazole	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrospyrrolidine	Phenacetin	cis-1,4-Dichloro-2-butene	Pentachloroethane	trans-1,4-Dichloro-2-butene
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	5	5	5
Drinking Water																									
Ecological (Freshwater)																									
Recreational																									
Surface Water																									
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**																					
ES1533818001	SW1	SW1	15/10/2015	ES1533818		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5
ES1533818002	SW2	SW2	15/10/2015	ES1533818		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<5	<5	<5
Sediment																									
SampleCode	**Field_ID**	**LocCode**	**Sampled_Date-Time**	**Lab_Report_Number**		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ES1533818003	SW2	SW2 Sediment	15/10/2015	ES1533818		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5