

8th September 2022
NSW Land and Housing Corporation
Level 2, 31-39 Macquarie Street,
Parramatta, NSW 2150

Attn: Gerald Alexander

RE: 22 Spring Street, Wagga Wagga, NSW, 2650
PHASE 3 ASBESTOS CLEARANCE & SOIL TESTING LAHC 2022-024
Report Reference: CLR26952-R1

Dear Mr. Alexander,

EnviroScience Solutions Pty Ltd were engaged by NSW Land and Housing Corporation to undertake soil sampling and a visual inspection post demolition, of the residential property located at 22 Spring Street, Wagga Wagga, NSW, 2650.

At the completion of demolition works, a visual inspection of the area was undertaken. The purpose of the inspection was to confirm that the asbestos containing materials and associated residues had been successfully removed. In addition to the visual clearance, two test pits were excavated within the house footprint to test for asbestos and chemical contaminants of concern at depth. It should be noted that this is not a clearance report that all asbestos products have been removed as the works were limited to the areas detailed in this report.

A visual inspection was undertaken on the 26th of August 2022 by Juliet Duffy, Licensed Asbestos Assessor No LAA000102 at the completion of the Demolition Works. Please refer to the images below, which depict the satisfactory completion of the removal works.

Table 1: Site after Demolition 28th August 2022, 22 Spring Street, Wagga Wagga, NSW, 2650.



Image 1: House Footprint – Test Pit 1



Image 2: Rear Yard — Test Pit 2



Image 3: Stockpile



Image 4: Site successfully remediated at the completion of works



Image 5: Site successfully remediated at the completion of works

Two (2) test pit locations were established one (1) within the original house footprint and one (1) in the rear yard. The test pits were excavated to an approximate depth of 500mm. Two (2) samples from the test pit, and one (1) sample from the stockpile was taken for asbestos analysis.

Asbestos materials were not detected within the test pit and stockpile. The soil surface also remains clear of asbestos debris. It should be noted that analysis for friable asbestos or asbestos fines all samples obtained were negative for asbestos (Table 2).

Two (2) samples were obtained from the test pit for chemical contamination analysis, and one (1) additional sample taken from the stockpile scraped from the surface. The samples were sent to EnviroLab Chatswood on the 28th of August 2022 and processed for analytes including: Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene, Naphthalene and xylene (BTEXN). The results were compared to the NEPM Residential A, Human Health Investigation Levels (HIL'S). The analytical results for the samples taken do not exceed or trigger any of the HIL's for heavy metals hydrocarbon or asbestos contamination.

Asbestos

Sample	Depth (mm)	Date Sampled	ACM (+7mm) (g)	FA (-7mm to +2mm) (g)	AF (-2mm) (g)	Asbestos Concentration (%w/w) ACM	Asbestos Concentration (% w/w) FA	Asbestos Concentration (%w/w) AF
Stockpile	0-100	28/08/2022	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 1 – House Footprint	0-100	28/08/2022	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 2 – Rear Yard	0-100	28/08/2022	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Residential A Screening Levels Bonded ACM (%w/w)						0.01% w/w		
All Site Uses FA (%w/w)							0.001%w/w	
All Site Uses AF (%w/w)								0.001%w/w
*NAD (No Asbestos Detected)								

Table 2: Asbestos Results vs HIL A criteria (WA DOH, 2021)

Metals and Inorganics

Sample	Depth (mm)	Date Sampled	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
26952-S1	0-100	28/08/2022	<4	<0.4	27	17	20	<0.1	17	52
26952-S2	0-100	28/08/2022	<4	<0.4	32	20	17	<0.1	24	37
26952-S3	0-100	28/08/2022	<4	<0.4	20	11	16	<0.1	13	27
95%upper confidence Level			N/A	N/A	33.15	21.19	20.02	N/A	24.30	52.91
Residential A Health Based Levels (mg/kg)			100	20	100	6000	300	40	400	7400

Table 3: Heavy Metals Results vs HIL A Criteria

vTRH/BTEXN in Soil

Sample	Depth (mm)	Date Sampled	TRH C6-C10 (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	Benzene (mg/kg)
26952-S1	0-100	28/08/2022	<25	<0.5	<1	<3	<1	<0.2
26952-S2	0-100	28/08/2022	<25	<0.5	<1	<3	<1	<0.2
26952-S3	0-100	28/08/2022	<25	<0.5	<1	<3	<1	<0.2
95%upper confidence Level			N/A	N/A	N/A	N/A	N/A	N/A
Residential A Health Based Levels (mg/kg)			4400	14000	4500	12000	1400	100

Table 4: TRH & BTEX Results vs HSL A

svTRH

Sample	Depth (mm)	Date Sampled	TRH C10-C16	TRH C16-C34	TRH C34-C40
26952-S1	0-100	28/08/2022	<50	<100	<100
26952-S2	0-100	28/08/2022	<50	<100	<100
26952-S3	0-100	28/08/2022	<50	<100	<100
95%upper confidence Level			N/A	N/A	N/A
Residential A Health Based Levels (mg/kg)			3300	4500	6300

Table 5: TRH Vs HIL A Levels

Accessing of the area can safely proceed.

Reported by:



Juliet Duffy MSM Syd Uni

Director, Occupational Hygienist

Asbestos Assessor Licence No: LAA 000 102

Appendix 1 – Soil Sampling Analysis Results– EnviroScience Solutions A26952-R1

Appendix 2 – Envirolab Certificate of Analysis 304337

LIMITATIONS

The following limitations also apply to cleared demolition sites and remediated contaminated areas.

- 1 To the extent permitted by law, EnviroScience Solutions Pty Ltd will not be responsible in tort, contract or otherwise for any loss or damage, including for any personal injuries or death, or any consequential loss, loss of markets and pure economic loss, suffered by the Customer, whether or not the loss or damage occurs in the course of performance by EnviroScience Solutions of this contract or in events which are in the contemplation of EnviroScience Solutions and/or the Customer or in events which are foreseeable by EnviroScience Solutions and/or the Customer.
- 2 To the extent that liability has not been effectively excluded by the proceeding clause, then EnviroScience Solutions limits its liability to:
 - (a) The supply of services again; or
 - (b) The payment of the cost of supplying the services again, at the election of EnviroScience Solutions Pty Ltd.

LABORATORY ANALYSIS REPORT Asbestos Identification Report - Soil

Report No: B26952-R1	Report Date: Monday, 29 August 2022
Client: NSW Land & Housing Corporation	Analysed Date: Monday, 29 August 2022
Client Address: Locked Bag 4001, Ashfield, NSW, 1800	Laboratory Receival Date: Monday, 29 August 2022
	Sampled Date: Friday, 26 August 2022
	Sampled by : Juliet Duffy
Attention: Gerald Alexander	Approved Identifier and Signatory: Arpit Dabhi
Sampled From: 22 Spring Street, Wagga Wagga NSW 2650	
Site Sample Method:	A 10 litre soil sample was collected from each sampling point. The samples were sieved with a 7mm screen on site. The +7mm fraction of the samples was spread out and examined for pieces with a potential to contain asbestos. Any fragments of material suspected of containing asbestos were extracted, given a sample number and subjected to further analysis. A representative soil sample was then collected from the sieved sample, labelled and transported back to EnviroScience Solutions laboratory. The soil sample comprised a minimum of 500ml of soil and was contained in a labelled ziplock plastic bag.
Test Method:	Polarised Light Microscopy (PLM) including Dispersion Staining (DS), EnviroScience Solutions in-house laboratory method, in accordance with Australian Standard AS4964-2004 'Method for the qualitative identification of asbestos in bulk samples'. Accredited for compliance with ISO/IEC:17025-Testing. At reporting Limit of 0.1g/kg.
Subsampling Soil Method:	If required, the whole of the laboratory sample was dried. The -7mm fraction was sieved with a 2mm screen. The -7 to +2mm fraction of the sample was examined for pieces with a potential to contain asbestos using a stereo microscope. Any fragments of material suspected of containing asbestos were extracted and subjected to further analysis. As per ISO 3082:2009(E), a sub-sample approximately 30 to 60g of the -2mm fraction of the sample was created by coning and quartering. This sample was examined using a stereo microscope, any -2mm fragments of suspected asbestos material or asbestos fines were extracted for analysis. Trace analysis was carried out on the remainder of the sample to determine whether it contained respirable asbestos fibres at a level above the reporting limit of 0.1g/kg. Note that taking a sub-sample of the -2mm fraction means that the result may not be representative of the whole sample.

LABORATORY ANALYSIS REPORT Asbestos Identification Report

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Client: NSW Land & Housing Corporation

Analysed Date: Monday, 29 August 2022

Client Address: Locked Bag 4001,
Ashfield, NSW, 1800

Laboratory Receival Date: Monday, 29 August 2022

Sampled Date: Friday, 26 August 2022

Attention: Gerald Alexander

Approved Identifier and Signatory: Arpit Dabhi

Sampled From: 22 Spring Street, Wagga Wagga NSW

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk	Weight	Result.
26952-S1 493gm	Building Footprint Stockpile Scrape	Brown Soil	+7mm gm	Nil		
			-7 +2mm 303gm	Nil		Organic
		Sub Sample	-2mm 54gm	Nil		Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk	Weight	Result.
26952-S2 420gm	Building Footprint Double Trench	Brown Soil	+7mm gm	Nil		
			-7 +2mm 298gm	Nil		Organic
		Sub Sample	-2mm 57gm	Nil		Organic

LABORATORY ANALYSIS REPORT

Asbestos Identification Report

Report No: B26952-R1
Client: NSW Land & Housing Corporation
Client Address: Locked Bag 4001,
 Ashfield, NSW, 1800
Report Date: Monday, 29 August 2022
Analysed Date: Monday, 29 August 2022
Laboratory Receival Date: Monday, 29 August 2022
Sampled Date: Friday, 26 August 2022
Attention: Gerald Alexander
Approved Identifier and Signatory: Arpit Dabhi
Sampled From: 22 Spring Street, Wagga Wagga NSW

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk	Weight	Result.
26952-S3 511gm	Rear Yard Trench	Brown Soil	+7mm gm	Nil		
			-7 +2mm 242gm	Nil		Organic
		Sub Sample	-2mm 61gm	Nil		Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

CERTIFICATE OF ANALYSIS 304337

Client Details

Client	EnviroScience Solutions
Attention	Juliet Duffy
Address	PO Box 1645, Dubbo, NSW, 2830

Sample Details

Your Reference	<u>26952, 22 Spring St, Wagga Wagga, NSW, 2650</u>
Number of Samples	3 Soil
Date samples received	30/08/2022
Date completed instructions received	30/08/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
 Samples were analysed as received from the client. Results relate specifically to the samples as received.
 Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	06/09/2022
Date of Issue	06/09/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Jaimie Loa-Kum-Cheung, Senior Chemist
 Josh Williams, Organics and LC Supervisor
 Liam Timmins, Organic Instruments Team Leader

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil				
Our Reference		304337-1	304337-2	304337-3
Your Reference	UNITS	1	2	3
Date Sampled		26/08/2022	26/08/2022	26/08/2022
Type of sample		Soil	Soil	Soil
Date extracted	-	31/08/2022	31/08/2022	31/08/2022
Date analysed	-	04/09/2022	04/09/2022	04/09/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	107	104	101

svTRH (C10-C40) in Soil				
Our Reference		304337-1	304337-2	304337-3
Your Reference	UNITS	1	2	3
Date Sampled		26/08/2022	26/08/2022	26/08/2022
Type of sample		Soil	Soil	Soil
Date extracted	-	31/08/2022	31/08/2022	31/08/2022
Date analysed	-	04/09/2022	04/09/2022	04/09/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	83	82	83

Acid Extractable metals in soil				
Our Reference		304337-1	304337-2	304337-3
Your Reference	UNITS	1	2	3
Date Sampled		26/08/2022	26/08/2022	26/08/2022
Type of sample		Soil	Soil	Soil
Date prepared	-	02/09/2022	02/09/2022	02/09/2022
Date analysed	-	05/09/2022	05/09/2022	05/09/2022
Arsenic	mg/kg	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	27	32	20
Copper	mg/kg	17	20	11
Lead	mg/kg	20	17	16
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	17	24	13
Zinc	mg/kg	52	37	27

Moisture				
Our Reference		304337-1	304337-2	304337-3
Your Reference	UNITS	1	2	3
Date Sampled		26/08/2022	26/08/2022	26/08/2022
Type of sample		Soil	Soil	Soil
Date prepared	-	31/08/2022	31/08/2022	31/08/2022
Date analysed	-	01/09/2022	01/09/2022	01/09/2022
Moisture	%	5.1	8.0	14

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	[NT]
Date extracted	-			31/08/2022	[NT]	[NT]	[NT]	[NT]	31/08/2022	[NT]
Date analysed	-			04/09/2022	[NT]	[NT]	[NT]	[NT]	04/09/2022	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	100	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	89	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	88	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	111	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	91	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	[NT]
Date extracted	-			31/08/2022	[NT]	[NT]	[NT]	[NT]	31/08/2022	[NT]
Date analysed	-			03/09/2022	[NT]	[NT]	[NT]	[NT]	03/09/2022	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	88	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	71	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	88	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	71	[NT]
Surrogate o-Terphenyl	%		Org-020	86	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	[NT]
Date prepared	-			02/09/2022	[NT]	[NT]	[NT]	[NT]	02/09/2022	[NT]
Date analysed	-			05/09/2022	[NT]	[NT]	[NT]	[NT]	05/09/2022	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	107	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	103	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.