

13 April 2021

Our ref: SYDEN231101-R04-Rev0

School Infrastructure NSW
c/o CBRE
Level 21, 363 George Street
Sydney, NSW 2000

Attention: Nicholas Lawler

Dear Nicholas,

Supplementary Contamination Assessment, New Liverpool Primary School

Introduction

Coffey was engaged by School Infrastructure NSW (SINSW) to carry out supplementary contamination assessment at the proposed the New Liverpool Primary School (NLPS) which is located within the grounds of the existing Liverpool Boys and Girls High School in the Liverpool Central Business District (CBD), at 18 Forbes Street, Liverpool. The proposed NLPS is located in the eastern portion of the existing school grounds (indicated in Figure 1.)

Objective

The objective of the supplementary contamination assessment was to address the recommendations as set out within Coffey's contamination assessment report prepared for the site in 2019. During this previous investigation, arsenic was reported (230 mg/kg) within the shallow soils (0 to 0.3m) at one test pit location TP07 which exceeded the NEPM Human Health Investigation Level for residential soils (HIL A, 100 mg/kg) which is also applicable for use of the land as a primary school. Further assessment was considered warranted to consider the site's suitability for the ongoing use as a high school and for the proposed new development as a primary school. This report presents the outcomes of these supplementary works.

Scope of Works

Coffey attended site on 29 March 2021 to carry out delineation sampling around TP07. A total of ten shallow soil samples (SS1 to SS9) and one duplicate sample (DUP01 at SS3) were collected on a 3x3 grid pattern with the centre location being at the approximate location of the previous test pit location TP07. An additional soil sample located approximately 30 m east of TP07 was also collected to represent a background sample (SS10). This location was at the cricket nets adjacent to the

Supplementary Contamination Assessment, New Liverpool Primary School

concrete slabs for the bowler's run-up and was also in the proposed primary school site. The inset on Figure 1 illustrates the additional sample locations.

Sampling Methodology

A shovel was used to excavate down to approximately 0.2 m. A grass turf was removed to expose the underlying soils. Clean nitrile gloves were then used to collect an undisturbed soil at each location. Soil was placed directly within clean, uniquely labelled laboratory supplied 250ml soil jars prior to being placed into an ice cooler. At location SS3, duplicate sample DUP01 was collected by placing soil alternately in the jar for the primary sample and then the duplicate sample until both jars were filled. Soil was then logged to describe its soil type including appearance, inclusions and odour. To re-establish each location the grass turf was placed back into the hole and compacted to ensure it was level with the adjacent ground surface. Samples were then transported directly to the contracted laboratory (Eurofins) under chain of custody procedures where they were submitted for analysis of arsenic, being the contaminant of concern.

Investigation Results

The soil description at each location is included within **Table 1**. All material is described as fill material. All locations comprised a grassed surface with approximately 0.05 to 0.1m of topsoil. Most locations were relatively moist following the significant rainfall encountered during the weeks leading up to sampling. Worms were present at most locations and ants' nests were also plentiful across the sampling area. SS1 and SS3 appeared to be located in an area of different coloured grass. SS1, SS2, SS6, SS8 and SS9 were located in low-lying areas where ponding of water is more likely. These locations tend to correlate well with locations where clay was observed. The remaining locations were observed to contain more sandy soils. From a contamination perspective, sample location SS1 included material that appeared to be remnants of bottom ash or clinker from the combustion of coal (refer to Photo E). Selected photographs of the site and subsurface conditions are provided in **Table 2**.

Table 1: Soil Sampling Descriptions and Analytical Results

Sample ID	Sample Description	Sample Depth (m)	Arsenic (mg/kg)
SS1	FILL: Sandy gravel, black/brown/grey, boiler ash with no odour	0.15 m	74
SS2	FILL: Sandy clay with some gravels, low plasticity, red/brown	0.15 m	6.9
SS3	FILL: Silty sand, medium grained, red/brown, ants present	0.2 m	3.2
SS4	FILL: Silty clayey sand, fine to medium grained, red/brown	0.15 m	4.5
SS5	FILL: Silty clayey sand, fine to medium grained, red/brown. Distinct clay at 0.05 m depth	0.1 m	23
SS6	FILL: Gravelly silty sandy clay, low plasticity, red/brown	0.1 m	22

Supplementary Contamination Assessment, New Liverpool Primary School

Sample ID	Sample Description	Sample Depth (m)	Arsenic (mg/kg)
SS7	FILL: Sandy clay, low plasticity, red/brown, ants present	0.2 m	7.9
SS8	FILL: Silty sandy clay, low plasticity, dark brown	0.25 m	6.0
SS9	FILL: Silty sandy clay, low plasticity, red/brown	0.25 m	16
SS10	FILL: Silty sandy clay, low plasticity, brown	0.25 m	7.2
DUP01	Same material as sampled at SS3	-	3.5

Samples were analysed for arsenic by the laboratory with results listed above and within the analytical laboratory certificates attached to this report. Arsenic concentrations ranged from 3.2 mg/kg (SS3) up to 74 mg/kg (SS1). We note that SS1 was the sampling location nearest to the previous location TP07 and collected from a depth interval of 0-0.3 m which reported arsenic at 230 mg/kg.

Table 2: Selected Site Photographs



Supplementary Contamination Assessment, New Liverpool Primary School



Photo C: Soil profile at SS3



Photo D: Soil at SS1



Photo E: Close up of soil at SS1

Bottom
ash

Conclusions and Recommendations

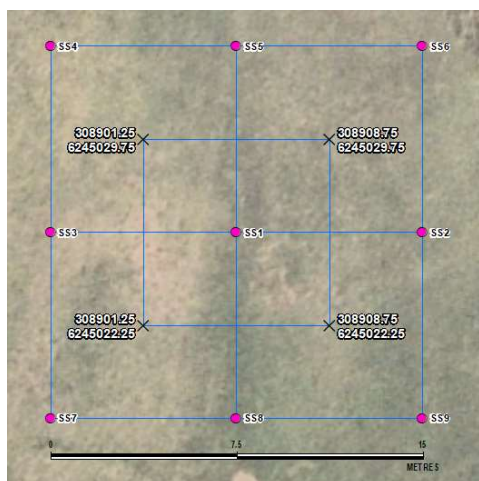
Coffey has carried out sampling and analysis to laterally delineate a previous arsenic exceedance obtained during a Contamination Assessment carried out at the New Liverpool Primary School during late 2019. The recommendations of this report were that additional sampling would be required to delineate the arsenic contamination adjacent to TP07.

Resulting shallow soil sampling reported elevated arsenic concentrations at the previous test pit TP07 location (SS1 at 74 mg/kg) and lower arsenic concentrations within the delineation sampling (up to 23 mg/kg). The following conclusions were made:

- All results from supplementary samples were reported to be less than the health investigation levels (HIL) for residential soils criteria of 100 mg/kg and ecological investigation levels (EILs) for urban residential and open spaces criteria of 100 mg/kg. This is less than the previous arsenic concentration reported of 230 mg/kg and indicates that this exceedance has been adequately spatially delineated with contamination likely to be limited to the immediate vicinity of location TP07. Note the 95th percentile upper confidence limit for the average concentration of arsenic in the vicinity of TP07 was calculated to be 135 mg/kg (based on Procedure G in NSW EPA (1995) Sampling Design Guidelines).
- Waste classification for soils located within this exceedance area are likely to be classified as restricted solid waste (RSW). Leachability assessment (TCLP) may reduce this classification to general solid waste (GSW).

The soil in the vicinity of TP07 is currently suitable for the land's use as a secondary school playing field where the HIL is 300 mg/kg and currently presents no risk to site users. It is noted an opportunity presents to relocate this soil from the proposed primary school site to the secondary school site (ie a 'land swap'). This is on the proviso that the soils are moved prior to construction commencing and once the site boundary can be firmly established. Otherwise the arsenic may present as an ongoing issue to future site users. Alternatively, the soil can be disposed of offsite to a licenced waste facility.

Based on these conclusions, it is recommended that the area adjacent to and including TP07 (approximately 4m x 4m square x 1m depth) be relocated through either excavation and either disposal offsite or relocated to a suitable area on the secondary school oval. Validation of the base of the excavation (ie TP07) should be carried out to ensure contamination does not extend vertically. Relocation works should be supervised by an environmental consultant. The coordinates of the excavation are as follows (GDA 1994 MGA Zone 56).



Supplementary Contamination Assessment, New Liverpool Primary School

Prior to development/construction, a Construction and Environmental Management Plan (CEMP) should be prepared which includes an Unexpected Finds Protocol (UFP). Coffey considers the preparation of a Remedial Action Plan (RAP) not warranted for these proposed works.

This report should be read with *Important Information about your Coffey Environmental Report* (attached).

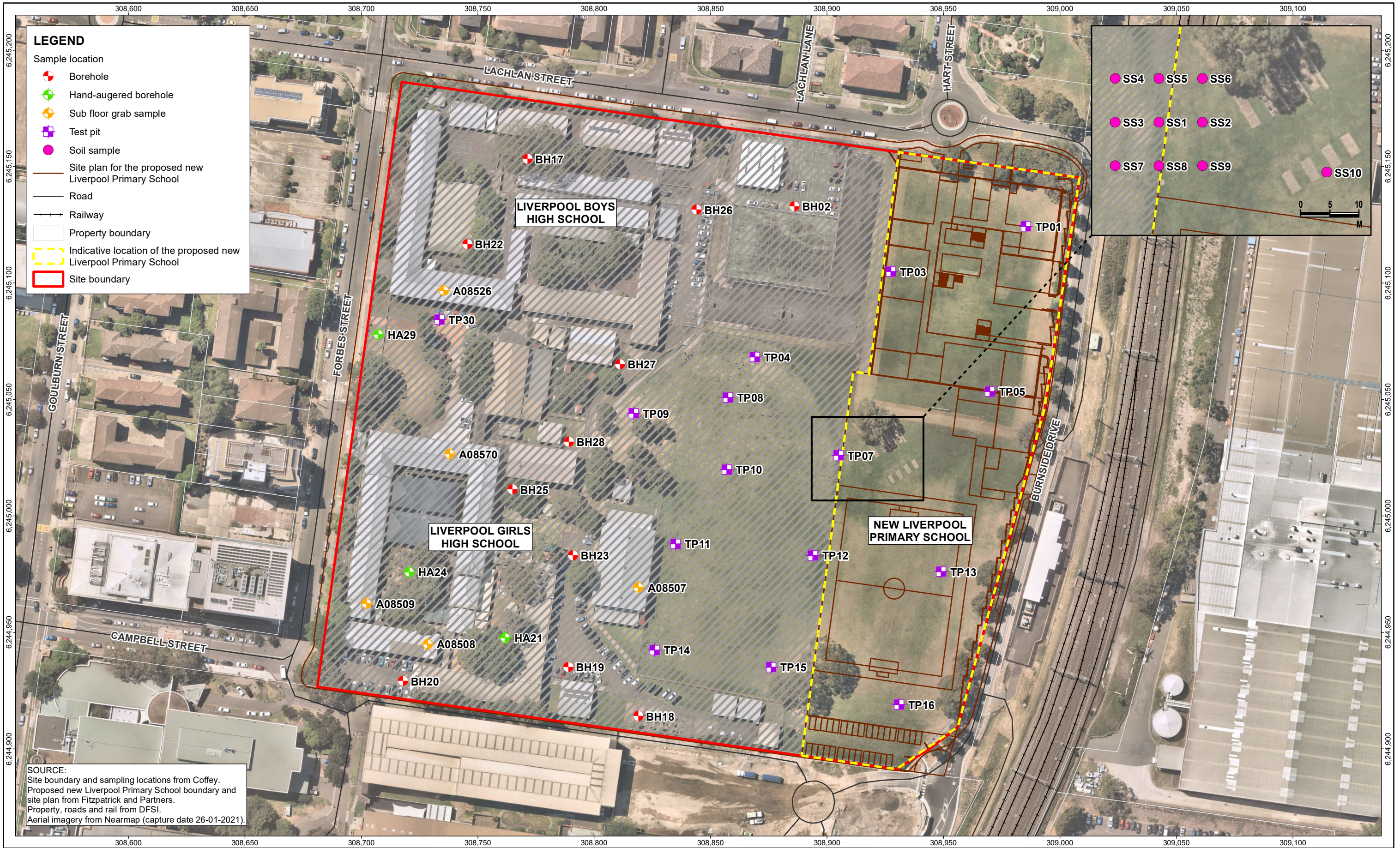
For and on behalf of Coffey,



David McFadden
Senior Associate Environmental Engineer

Attachments

1. Figure 1
2. Analytical Laboratory Certificates
3. Important Information about your Coffey Environmental Report



LEGEND

Sample location

Borehole

Hand-augered borehole

Sub floor grab sample

Test pit

Soil sample

Site plan for the proposed new Liverpool Primary School

Road

Railway

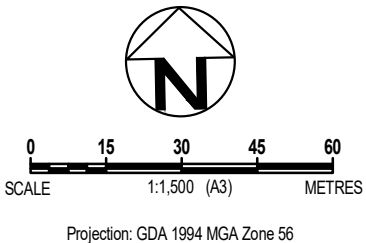
Property boundary

Indicative location of the proposed new Liverpool Primary School

Site boundary

SOURCE:
Site boundary and sampling locations from Coffey.
Proposed new Liverpool Primary School boundary and site plan from Fitzpatrick and Partners.
Property, roads and rail from DFSI.
Aerial imagery from Nearmap (capture date 26-01-2021).

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE	GH	DM	08.04.21



drawn	GH
approved	DM
date	08.04.2021
scale	AS SHOWN
original size	A3



client: DEPARTMENT OF EDUCATION: SCHOOL INFRASTRUCTURE NSW		
project: SUPPLEMENTARY CONTAMINATION ASSESSMENT NEW LIVERPOOL PRIMARY SCHOOL LIVERPOOL NSW		
title: DELINEATION SAMPLING (TP07)		
project no:	754-SYDEN231101-L01	figure no: FIGURE 1
		rev: A

MXD ref: SYDEN231101_L01_GIS001_v0_1

New Liverpool Primary School
231101-1

95% Upper Confidence Level_{Average} Calculation For Arsenic

<i>Parameter</i>	<i>Normal Distribution</i>	<i>Lognormal Distribution</i>	<i>Recommended Distribution</i>	<i>Units</i>
Analyte threshold	215	215	215	mg/kg
UCL _{average}	67.53	112.43	112.43	mg/kg
No. of samples	12	12	12	
Mean	33.77	12.63	12.63	mg/kg
Estimated Mean	33.77	26.78	26.78	mg/kg
Standard deviation	65.13	3.64	3.64	mg/kg
Suggested no. of extra samples needed	1	1.00	1.00	
Distribution	-	-	lognormal	

Distribution Test Summary Using Coefficient Of Variation

Distribution test result (as per NSW EPA guidelines) - lognormal

Distribution test result (as per Gilbert) - lognormal

The statistical analysis indicates that there is a 95% probability that the arithmetic average concentration of the contamination will not exceed 112.4279 mg/kg

Data Entered By: David McFadden

Date: 13-04-21

Checked By: Michael Dunbavan

Date: 13-04-21

References: NSW EPA, *Contaminated Sites, Sampling Design Guidelines*, September 1995
 Gilbert, R.O., 1987, *Statistical Methods For Environmental Pollution Monitoring*, Van Nostrand Reinhold, New York

Note: Where the laboratory reported a result below the method detection limit, a value equal to half the detection limit was substituted for the purposes of statistical calculation. This is regarded as normal practice by the NSW EPA. Gilbert (1987) also indicates that this is common practice on pages 177 to 178 of the text.

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **David McFadden**

Report **783761-S**
Project name **LIVERPOOL HIGH**
Project ID **SYDEN231101**
Received Date **Mar 29, 2021**

Client Sample ID			SS1	SS2	SS3	SS4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Ma53618	S21-Ma53619	S21-Ma53620	S21-Ma53621
Date Sampled			Mar 29, 2021	Mar 29, 2021	Mar 29, 2021	Mar 29, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	74	6.9	3.2	4.5
% Moisture	1	%	24	20	15	16

Client Sample ID			SS5	SS6	SS7	SS8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Ma53622	S21-Ma53623	S21-Ma53624	S21-Ma53625
Date Sampled			Mar 29, 2021	Mar 29, 2021	Mar 29, 2021	Mar 29, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	23	22	7.9	6.0
% Moisture	1	%	22	22	17	18

Client Sample ID			SS9	SS10	DUP01
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S21-Ma53626	S21-Ma53627	S21-Ma53628
Date Sampled			Mar 29, 2021	Mar 29, 2021	Mar 29, 2021
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	2	mg/kg	16	7.2	3.5
% Moisture	1	%	22	23	14

Sample History

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

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description**Heavy Metals**

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

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Mar 31, 2021

Mar 30, 2021

Holding Time

180 Days

14 Days

Australia

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

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

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

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

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

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

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

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067
Project Name: LIVERPOOL HIGH
Project ID: SYDEN231101

Order No.:
Report #: 783761
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: Mar 29, 2021 4:55 PM
Due: Apr 7, 2021
Priority: 5 Day
Contact Name: David McFadden

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Arsenic	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
Mayfield Laboratory							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	SS1	Mar 29, 2021		Soil	S21-Ma53618	X	X
2	SS2	Mar 29, 2021		Soil	S21-Ma53619	X	X
3	SS3	Mar 29, 2021		Soil	S21-Ma53620	X	X
4	SS4	Mar 29, 2021		Soil	S21-Ma53621	X	X
5	SS5	Mar 29, 2021		Soil	S21-Ma53622	X	X
6	SS6	Mar 29, 2021		Soil	S21-Ma53623	X	X
7	SS7	Mar 29, 2021		Soil	S21-Ma53624	X	X
8	SS8	Mar 29, 2021		Soil	S21-Ma53625	X	X
9	SS9	Mar 29, 2021		Soil	S21-Ma53626	X	X

Australia

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Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
Mayfield Laboratory							
External Laboratory							
10	SS10	Mar 29, 2021		Soil	S21-Ma53627	X	X
11	DUP01	Mar 29, 2021		Soil	S21-Ma53628	X	X
Test Counts						11	11

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank										
Heavy Metals										
Arsenic				mg/kg	< 2			2	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	108			80-120	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Heavy Metals										
Arsenic					Result 1					
Arsenic				%	95			75-125	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
					Result 1	Result 2	RPD			
% Moisture				%	22	22	2.0	30%	Pass	
Duplicate										
Heavy Metals										
Arsenic				mg/kg	7.2	7.3	2.0	30%	Pass	

Comments

Sample Integrity

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

Authorised by:

Ursula Long
John Nguyen

Analytical Services Manager
Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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

Australia

Melbourne
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1	SS1	Mar 29, 2021		Soil	S21-Ma53618	X	X
2	SS2	Mar 29, 2021		Soil	S21-Ma53619	X	X
3	SS3	Mar 29, 2021		Soil	S21-Ma53620	X	X
4	SS4	Mar 29, 2021		Soil	S21-Ma53621	X	X
5	SS5	Mar 29, 2021		Soil	S21-Ma53622	X	X
6	SS6	Mar 29, 2021		Soil	S21-Ma53623	X	X
7	SS7	Mar 29, 2021		Soil	S21-Ma53624	X	X
8	SS8	Mar 29, 2021		Soil	S21-Ma53625	X	X
9	SS9	Mar 29, 2021		Soil	S21-Ma53626	X	X

Australia

Melbourne

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

Sydney

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

Brisbane

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

Perth

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

Newcastle

4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland

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

Christchurch

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

Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067
Project Name: LIVERPOOL HIGH
Project ID: SYDEN231101

Order No.:
Report #: 783761
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: Mar 29, 2021 4:55 PM
Due: Apr 7, 2021
Priority: 5 Day
Contact Name: David McFadden

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Arsenic	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
Mayfield Laboratory							
External Laboratory							
10	SS10	Mar 29, 2021		Soil	S21-Ma53627	X	X
11	DUP01	Mar 29, 2021		Soil	S21-Ma53628	X	X
Test Counts						11	11

Australia
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IANZ # 1327

Christchurch

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

Sample Receipt Advice

Company name: Coffey Environments Pty Ltd NSW
Contact name: David McFadden
Project name: LIVERPOOL HIGH
Project ID: SYDEN231101
Turnaround time: 5 Day
Date/Time received: Mar 29, 2021 4:55 PM
Eurofins reference: 783761

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 0 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

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

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to David McFadden - David.McFadden@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Environments Pty Ltd NSW email address.



CHAIN OF CUSTODY RECORD



Unit F3 Bld.F 16 Mars Road Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Unit 1 21 Smallwood Place Murarie QLD 4172
07 3902 4600 EnviroSample@ldm.com.au

Unit 2 91 Laach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com



5 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@auriofns.com

OS3709, R10 Modified by: Dr. R. Simons Approved by: S. Jackson Approved on: 8 August 2011

Submission of samples to the laboratory will be deemed as acceptance of Eurofins' Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request.

Important information about your Coffey Environmental Report

Introduction

This report has been prepared by Coffey for you, as Coffey's client, in accordance with our agreed purpose, scope, schedule and budget.

The report has been prepared using accepted procedures and practices of the consulting profession at the time it was prepared, and the opinions, recommendations and conclusions set out in the report are made in accordance with generally accepted principles and practices of that profession.

The report is based on information gained from environmental conditions (including assessment of some or all of soil, groundwater, vapour and surface water) and supplemented by reported data of the local area and professional experience. Assessment has been scoped with consideration to industry standards, regulations, guidelines and your specific requirements, including budget and timing. The characterisation of site conditions is an interpretation of information collected during assessment, in accordance with industry practice,

This interpretation is not a complete description of all material on or in the vicinity of the site, due to the inherent variation in spatial and temporal patterns of contaminant presence and impact in the natural environment. Coffey may have also relied on data and other information provided by you and other qualified individuals in preparing this report. Coffey has not verified the accuracy or completeness of such data or information except as otherwise stated in the report. For these reasons the report must be regarded as interpretative, in accordance with industry standards and practice, rather than being a definitive record.

Your report has been written for a specific purpose

Your report has been developed for a specific purpose as agreed by us and applies only to the site or area investigated. Unless otherwise stated in the report, this report cannot be applied to an adjacent site or area, nor can it be used when the nature of the specific purpose changes from that which we agreed.

For each purpose, a tailored approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible quantify, risks that both recognised and potential contamination pose in the context of the agreed purpose. Such risks may be financial (for example, clean up costs or constraints on site use) and/or physical (for example, potential health risks to users of the site or the general public).

Limitations of the Report

The work was conducted, and the report has been prepared, in response to an agreed purpose and scope, within time and budgetary constraints, and in reliance on certain data and information made available to Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Coffey should be kept apprised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions.

In addition, advancements in professional practice regarding contaminated land and changes in applicable statutes and/or guidelines may affect the validity of this report. Consequently, the currency of conclusions and recommendations in this report should be verified if you propose to use this report more than 6 months after its date of issue.

The report does not include the evaluation or assessment of potential geotechnical engineering constraints of the site.

Interpretation of factual data

Environmental site assessments identify actual conditions only at those points where samples are taken and on the date collected. Data derived from indirect field measurements, and sometimes other reports on the site, are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Variations in soil and groundwater conditions may occur between test or sample locations and actual conditions may differ from those inferred to exist. No environmental assessment program, no matter how comprehensive, can reveal all subsurface details and anomalies. Similarly, no professional, no matter how well qualified, can reveal what is hidden by earth, rock or changed through time.

The actual interface between different materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but

steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of a suitably qualified and experienced environmental consultant through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other unrecognised features encountered on site. Coffey would be pleased to assist with any investigation or advice in such circumstances.

Recommendations in this report

This report assumes, in accordance with industry practice, that the site conditions recognised through discrete sampling are representative of actual conditions throughout the investigation area. Recommendations are based on the resulting interpretation.

Should further data be obtained that differs from the data on which the report recommendations are based (such as through excavation or other additional assessment), then the recommendations would need to be reviewed and may need to be revised.

Report for benefit of client

Unless otherwise agreed between us, the report has been prepared for your benefit and no other party. Other parties should not rely upon the report or the accuracy or completeness of any recommendation and should make their own enquiries and obtain independent advice in relation to such matters.

Coffey assumes no responsibility and will not be liable to any other person or organisation for, or in relation to, any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report.

To avoid misuse of the information presented in your report, we recommend that Coffey be consulted before the report is provided to another party who may not be familiar with the background and the purpose of the report. In particular, an environmental disclosure report for a property vendor may not be suitable for satisfying the needs of that property's purchaser. This report should not be applied for any purpose other than that stated in the report.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, a suitably qualified and experienced environmental consultant should be retained to explain the implications of the report to other professionals referring to the report and then review plans and specifications produced to see how other professionals have incorporated the report findings.

Given Coffey prepared the report and has familiarity with the site, Coffey is well placed to provide such

assistance. If another party is engaged to interpret the recommendations of the report, there is a risk that the contents of the report may be misinterpreted and Coffey disowns any responsibility for such misinterpretation.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists or engineers based on their interpretation of field logs, field testing and laboratory evaluation of samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

This report should be reproduced in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties.

Responsibility

Environmental reporting relies on interpretation of factual information using professional judgement and opinion and has a level of uncertainty attached to it, which is much less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. As noted earlier, the recommendations and findings set out in this report should only be regarded as interpretive and should not be taken as accurate and complete information about all environmental media at all depths and locations across the site.