Chemical Group	Chemical Name	Units	ESL	HIL A	HIL D	HSL	NSW EPA*
	HCB	mg/kg		10	80		
	Methoxyclor	mg/kg		300	2500		
	Mirex	mg/kg		10	100		
	Toxaphene	mg/kg		20	160		
ACM	Bonded ACM	w/w		0.01%	0.05%		

**The NSW EPA Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 absolute maximum concentration (Table 4)*

The ecological and human health investigation levels nominated are not intended to be interpreted as maximum permissible levels, clean up levels or safe levels, rather, they are levels at which further investigation or assessment should be undertaken to provide assurance that unacceptable contamination does not occur. Subsequent assessment on a site-specific basis often results in higher levels being acceptable. However, since the investigation levels are generally set at conservatively low levels, they are often taken to be the acceptable levels.

Contaminants of concern identified enabled the selection of the laboratory analysis parameters.

NATA-accredited analytical laboratories used by Construction Sciences for this investigation included:

> ALS – Primary Laboratory – Wollongong.

5 Investigation Findings

5.1 Laboratory Results

A summary of results has been included below. All analytes return levels within the nominated criteria.

Laboratory Results and Documentation are included in Appendix A.

5.1.1 Hydrocarbons

All results for hydrocarbons including TRH, BTEXN and PAH were below the laboratory limit of reporting and therefore the relevant ESL and HIL criteria.

5.1.2 Metals

All results for metalloids were below relevant HIL criteria. Table 5-1 details a summary of metal results.

Table 5-1 Metal Result Summary

Analyte	Unit	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Arsenic	mg/kg	<5	<5	<5	<5	<5
Barium	mg/kg	230	300	160	240	220
Beryllium	mg/kg	<1	<1	<1	<1	<1
Boron	mg/kg	<50	<50	<50	<50	<50
Cadmium	mg/kg	<1	<1	<1	<1	<1
Chromium	mg/kg	9	12	10	14	9
Cobalt	mg/kg	5	6	6	10	6
Copper	mg/kg	<5	6	6	<5	<5
Lead	mg/kg	<5	7	<5	<5	6
Manganese	mg/kg	366	555	351	390	467
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	7	7	9	6
Selenium	mg/kg	<5	<5	<5	<5	<5
Vanadium	mg/kg	35	47	33	41	33
Zinc	mg/kg	40	52	35	42	36

5.1.3 Polychlorinated Biphenyls and Organochlorine Pesticides

All results returned for PCB's, OC's and OP's were below the limit of reporting and therefore below the nominated criteria.

5.1.4 Asbestos

Five (5) samples were collected for asbestos analysis, field sieving over a 7mm sieve (6.7mm sieve used) to assess for potential asbestos solids, prior to subsampling and laboratory analysis for absence/presence analysis of Asbestos. Testing was conducted in accordance with analysis of soils for the presence of asbestos in accordance with AS4964. Laboratory results indicate no Asbestos was identified within the soils strata in any test location at the time of sampling. No visual indicators of Asbestos were noted during the site inspection.

6 Discussion

Construction Sciences have completed a PSI at the Lynwood Quarry, concerning a portion of the proposed 2020 Excavation Zone on Lot 2 on DP1107232 (refer Figure 4-1). Five (5) samples were selected to identify and characterise the potential contamination in the area and the VENM status of the material scheduled for excavation in 2020.

A summary of the investigation is provided in Table 6-1.

Table 6-1 Soil Investigation Summary

Number of samples collected/analysed	5
Approximate Depth	639m AHD – 655m AHD
# Samples Exceeding Human Health Criteria	0
# Samples Exceeding Ecological Criteria	0
Material Status	VENM

The results of the desktop assessment, site investigation and laboratory analysis conclude that the material examined within the project area does not contain any contaminants of concern above the relevant guideline limits or criteria.

The New South Wales Environment Protection Authority (NSW EPA) denotes VENM to be a natural material (such as clay, gravel, sand, soil or rock fines) that:

> *Has been excavated or quarried from areas that are not contaminated with manufactured chemicals or process residues, as a result of industrial, commercial, mining or agricultural activities; and*

> *Does not contain sulfidic ores or soils or any other waste.*

As such, the material examined in this investigation meets the NSW EPA definition of VENM and therefore is classified and may be exported offsite as VENM.

7 Conclusion

In preparation for ongoing quarry activities at the Holcim Lynwood Quarry, Construction Sciences were engaged to perform a PSI to evaluate the VENM status of material marked for excavation as part of the 2020 Extraction Zone project area.

The scope of this assessment included a review of the site history, potential sources of contamination, collection of soil samples and subsequent laboratory analysis and reporting of the findings as compared to the applicable land use criteria. No exceedances of this criteria were noted as part of this assessment.

The results of the desktop assessment, site investigation and laboratory analysis conclude that the material examined within the project area does not contain any contaminants of concern above the relevant guideline limits and meets the NSW EPA definition of VENM. No manufactured chemicals or process residues, sulfidic ores or soils, naturally occurring asbestos or any other waste was noted as present during this investigation.

This material is classified as VENM and may be exported offsite as VENM.

APPENDIX

A

LABORATORY DOCUMENTATION

Construction Sciences

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EW1904999**	Page	: 1 of 6
Client	: **CONSTRUCTION SCIENCES PTY LTD**	Laboratory	: Environmental Division NSW South Coast
Contact	: MR DAVID DETHLEFS	Contact	: Glenn Davies
Address	:	Address	: 1/19 Ralph Black Dr, North Wollongong 2500 4/13 Geary Pl, North Nowra 2541 Australia NSW Australia
Telephone	: +61 07 3865 3212	Telephone	: 02 42253125
Project	: Lynwood Quarry VENM Holcim	Date Samples Received	: 15-Nov-2019 11:57
Order number	: EN-024-18	Date Analysis Commenced	: 16-Nov-2019
C-O-C number	: ----	Issue Date	: 19-Nov-2019 16:42
Sampler	: ----		
Site	: ----		
Quote number	: EN/024/18		
No. of samples received	: 5		
No. of samples analysed	: 5		

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Accreditation No. 825
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
				Client sampling date / time	07-Nov-2019 00:00	07-Nov-2019 00:00	07-Nov-2019 00:00	07-Nov-2019 00:00	07-Nov-2019 00:00
Compound	CAS Number	LOR	Unit		EW1904999-001	EW1904999-002	EW1904999-003	EW1904999-004	EW1904999-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		5.7	<1.0	<1.0	<1.0	<1.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres		No	No	No	No	No
Asbestos Type	1332-21-4	-	--		-	-	-	-	-
Sample weight (dry)	----	0.01	g		911	766	759	685	809
APPROVED IDENTIFIER:	----	-	--		C.OWLER	C.OWLER	C.OWLER	C.OWLER	C.OWLER
Synthetic Mineral Fibre	----	0.1	g/kg		No	No	No	No	No
Organic Fibre	----	0.1	g/kg		No	No	No	No	No
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg		230	300	160	240	220
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		9	12	10	14	9
Cobalt	7440-48-4	2	mg/kg		5	6	6	10	6
Copper	7440-50-8	5	mg/kg		<5	6	6	<5	<5
Lead	7439-92-1	5	mg/kg		<5	7	<5	<5	6
Manganese	7439-96-5	5	mg/kg		366	555	351	390	467
Nickel	7440-02-0	2	mg/kg		6	7	7	9	6
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		35	47	33	41	33
Zinc	7440-66-6	5	mg/kg		40	52	35	42	36
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
				Client sampling date / time	07-Nov-2019 00:00	07-Nov-2019 00:00	07-Nov-2019 00:00	07-Nov-2019 00:00	07-Nov-2019 00:00
Compound	CAS Number	LOR	Unit		EW1904999-001	EW1904999-002	EW1904999-003	EW1904999-004	EW1904999-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
				Client sampling date / time	07-Nov-2019 00:00	07-Nov-2019 00:00	07-Nov-2019 00:00	07-Nov-2019 00:00	07-Nov-2019 00:00
Compound	CAS Number	LOR	Unit		EW1904999-001	EW1904999-002	EW1904999-003	EW1904999-004	EW1904999-005
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		87.4	83.2	90.1	81.6	85.0
2-Chlorophenol-D4	93951-73-6	0.5	%		81.4	86.0	94.3	86.6	83.3
2.4.6-Tribromophenol	118-79-6	0.5	%		65.3	56.2	60.6	55.3	55.1
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		93.6	97.0	95.2	95.7	95.2
Anthracene-d10	1719-06-8	0.5	%		94.2	91.6	99.8	93.1	91.8
4-Terphenyl-d14	1718-51-0	0.5	%		97.4	92.8	99.2	93.2	92.1
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		94.4	93.1	86.3	108	101
Toluene-D8	2037-26-5	0.2	%		88.9	93.8	99.3	113	103
4-Bromofluorobenzene	460-00-4	0.2	%		77.8	96.8	95.6	110	101

Analytical Results

Descriptive Results

Sub-Matrix: SOIL

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	Sample 1 - 07-Nov-2019 00:00	Mid grey rocky soil.
EA200: Description	Sample 2 - 07-Nov-2019 00:00	Mid grey rocky soil.
EA200: Description	Sample 3 - 07-Nov-2019 00:00	Mid grey rocky soil.
EA200: Description	Sample 4 - 07-Nov-2019 00:00	Mid grey rocky soil.
EA200: Description	Sample 5 - 07-Nov-2019 00:00	Mid grey rocky soil.

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Construction Sciences

Construction Sciences Pty Ltd
ABN: 74 128 806 735

Address:
South Marulan Road,
South Marulan NSW 2579

Laboratory: NSW Central Aggregates Laboratory

ATTERBERG LIMITS REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14311-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 1 of 5

Test Procedures:	T108, T109, T102 (CA3), T105, T120		
Sample Number	22659/S/36903	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020		
Sampled By	Rebecca Collier		
Date Tested	18/02/2020		
Att. Drying Method	Air Dried	Material Source	Holcim Lynwood Quarry
Atterberg Preparation	Dry Sieved	Material Type	DGB 20 (NLYNDGB20)
Material Description	-		

Atterberg Limits Results

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		**21**	23
Plastic Limit (%)		**18**	20
Plasticity Index (%)	2	**3**	6
Linear Shrinkage (%)			
Linear Shrinkage Defects:			

Remarks	Supplement to Simplified Report Number 200305RC1154

NATA

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
Corporate Site Number: 22659

Approved Signatory: Christopher Lo
Form ID: W11bRep Rev 1

Construction Sciences

Construction Sciences Pty Ltd
ABN: 74 128 806 735

Address:
South Marulan Road,
South Marulan NSW 2579

Laboratory: NSW Central Aggregates Laboratory

ATTERBERG LIMITS REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14311-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 2 of 5

Test Procedures:	T108, T109, T105, T120		
Sample Number	22659/S/36905	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020		
Sampled By	Rebecca Collier		
Date Tested	18/02/2020		
Att. Drying Method	Air Dried	Material Source	Holcim Lynwood Quarry
Atterberg Preparation	Dry Sieved	Material Type	DGB 20 (NLYNDGB20)
Material Description	-		

Atterberg Limits Results

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		**22**	23
Plastic Limit (%)		**17**	20
Plasticity Index (%)	2	**5**	6
Linear Shrinkage (%)			
Linear Shrinkage Defects:			

Remarks	Supplement to Simplified Report Number 200305RC1154

NATA

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
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Approved Signatory: Christopher Lo
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Construction Sciences

Construction Sciences Pty Ltd
ABN: 74 128 806 735

Address:
South Marulan Road,
South Marulan NSW 2579

Laboratory: NSW Central Aggregates Laboratory

ATTERBERG LIMITS REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14311-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 3 of 5

Test Procedures:	T108, T109, T105, T120		
Sample Number	22659/S/36906	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020		
Sampled By	Rebecca Collier		
Date Tested	18/02/2020		
Att. Drying Method	Air Dried	Material Source	Holcim Lynwood Quarry
Atterberg Preparation	Dry Sieved	Material Type	DGB 20 (NLYNDGB20)
Material Description	-		

Atterberg Limits Results

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		**22**	23
Plastic Limit (%)		**17**	20
Plasticity Index (%)	2	**5**	6
Linear Shrinkage (%)			
Linear Shrinkage Defects:			

Remarks	Supplement to Simplified Report Number 200305RC1154

NATA

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Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
Corporate Site Number: 22659

Approved Signatory: Christopher Lo
Form ID: W11bRep Rev 1

Construction Sciences

Construction Sciences Pty Ltd
ABN: 74 128 806 735

Address:
South Marulan Road,
South Marulan NSW 2579

Laboratory: NSW Central Aggregates Laboratory

ATTERBERG LIMITS REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14311-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 4 of 5

Test Procedures:	T108, T109, AS1289.3.4.1, T102 (CA3), T105, T120		
Sample Number	22659/S/37271	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@10:20
Date Sampled	21/02/2020		
Sampled By	Jack O'Dowd		
Date Tested	26/02/2020		
Att. Drying Method	Air Dried	Material Source	Holcim Lynwood Quarry
Atterberg Preparation	Dry Sieved	Material Type	DGB 20 (NLYNDGB20)
Material Description	-		

Atterberg Limits Results			
Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		**22**	23
Plastic Limit (%)		**18**	20
Plasticity Index (%)	2	**4**	6
Linear Shrinkage (%)		**1.5**	
Linear Shrinkage Defects:	N/A		

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ATTERBERG LIMITS REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14311-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 5 of 5

Test Procedures:	T108, T109, AS1289.3.4.1, T102 (CA3), T105, T120		
Sample Number	22659/S/37272	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@10:20
Date Sampled	21/02/2020		
Sampled By	Jack O'Dowd		
Date Tested	26/02/2020		
Att. Drying Method	Air Dried	Material Source	Holcim Lynwood Quarry
Atterberg Preparation	Dry Sieved	Material Type	DGB 20 (NLYNDGB20)
Material Description	-		

Atterberg Limits Results

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		**22**	23
Plastic Limit (%)		**18**	20
Plasticity Index (%)	2	**4**	6
Linear Shrinkage (%)		**1.0**	
Linear Shrinkage Defects:	N/A		

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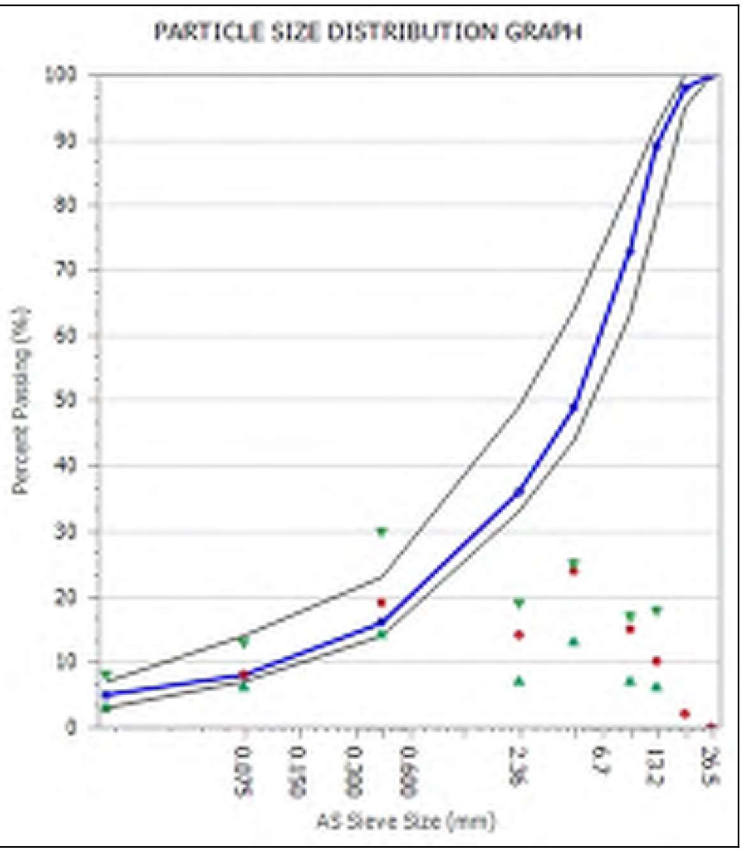
Holcim
Subcontracting Cardno testing services.
Concrete enquiries phone 131 188
Aggregate enquiries phone 1300 555 277

PARTICLE SIZE DISTRIBUTION REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14310-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 1 of 5

Test Procedures:	T106 + T107, T102 (CA3), T105		
Sample Number	22659/S/36903	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020 07:15		
Sampled By	Rebecca Collier		
Date Tested	13/02/2020		
Material Source	Holcim Lynwood Quarry	Material Type	DGB 20 (NLYNDGB20)

AS Sieve (mm)	Percent Passing			Percent Retained		
	Spec Min (%)	**Result (%)**	Spec Max (%)	Spec Min (%)	**Result (%)**	Spec Max (%)
26.5	100	**100**	100		**0**	
19.0	95	**98**	100		**2**	
13.2	78	**89**	92	6	**10**	18
9.5	63	**73**	83	7	**15**	17
4.75	44	**49**	64	13	**24**	25
2.36	33	**36**	49	7	**14**	19
0.425	14	**16**	23	14	**19**	30
0.075	7	**8**	14	6	**8**	13
0.0135	3	**5**	7	3	**3**	8



Remarks	Supplement to Simplified Report Number 200305RC1154

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Accreditation Number: 1986
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Form ID: W9RetRep Rev 1

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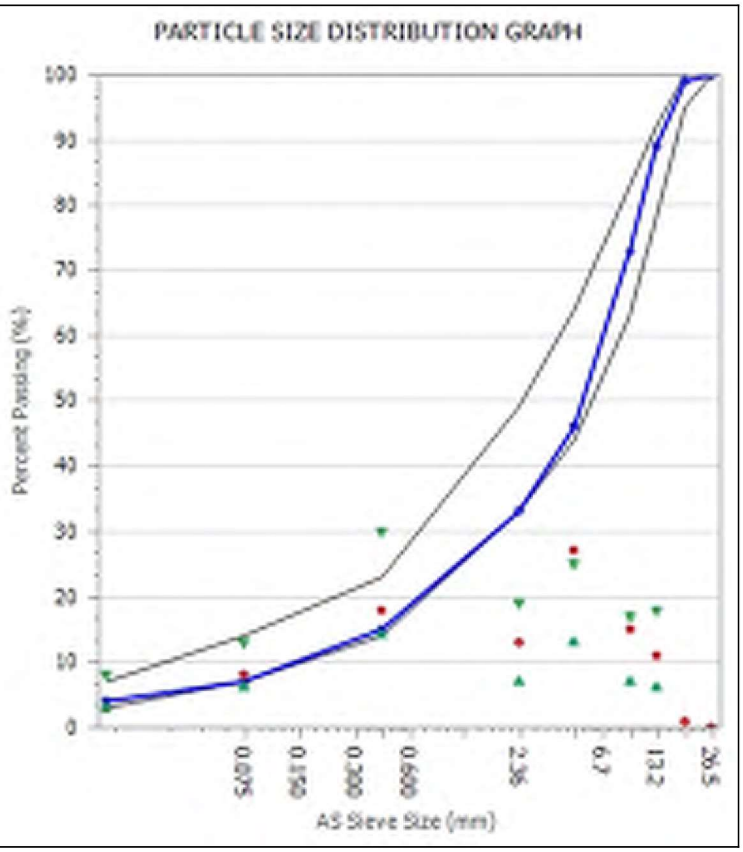
PARTICLE SIZE DISTRIBUTION REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14310-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 2 of 5

Test Procedures:	T106 + T107, T102, T105		
Sample Number	22659/S/36905	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020 07:15		
Sampled By	Rebecca Collier		
Date Tested	14/02/2020		
Material Source	Holcim Lynwood Quarry	Material Type	DGB 20 (NLYNDGB20)

AS Sieve (mm)	Percent Passing			Percent Retained		
	Spec Min (%)	**Result (%)**	Spec Max (%)	Spec Min (%)	**Result (%)**	Spec Max (%)
26.5	100	**100**	100		**0**	
19.0	95	**99**	100		**1**	
13.2	78	**89**	92	6	**11**	18
9.5	63	**73**	83	7	**15**	17
4.75	44	**46**	64	13	**27**	25
2.36	33	**33**	49	7	**13**	19
0.425	14	**15**	23	14	**18**	30
0.075	7	**7**	14	6	**8**	13
0.0135	3	**4**	7	3	**3**	8



Remarks	Supplement to Simplified Report Number 200305RC1154

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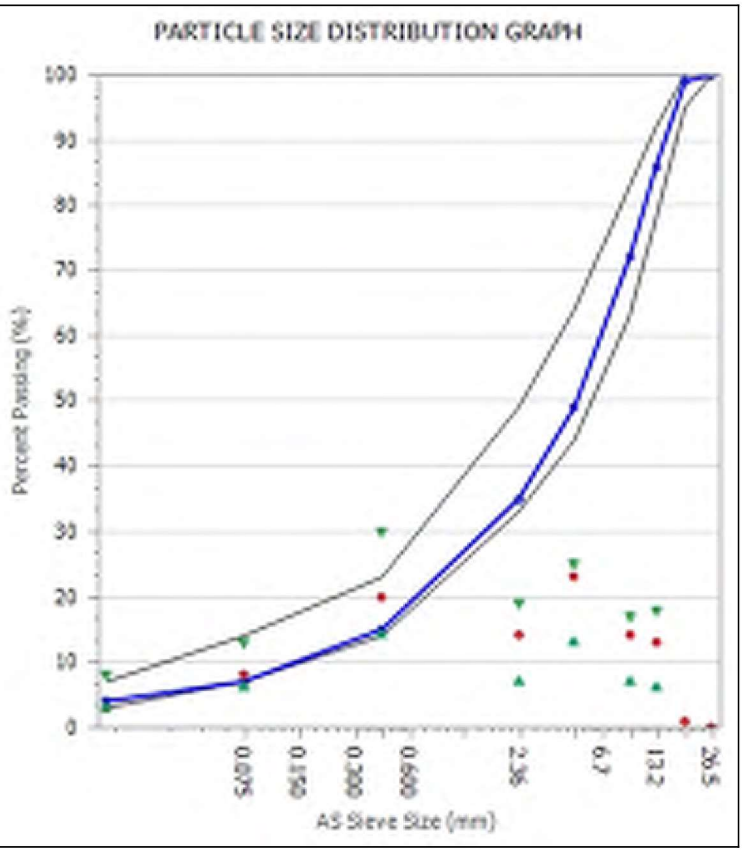
Client:	HOLCIM PTY LTD	Report Number:	22659/R/14310-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 3 of 5

Test Procedures:	T106 + T107, T102, T105		
Sample Number	22659/S/36906	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020 07:15		
Sampled By	Rebecca Collier		
Date Tested	14/02/2020		
Material Source	Holcim Lynwood Quarry	Material Type	DGB 20 (NLYNDGB20)

AS Sieve (mm)	Percent Passing			Percent Retained		
	Spec Min (%)	**Result (%)**	Spec Max (%)	Spec Min (%)	**Result (%)**	Spec Max (%)
26.5	100	**100**	100		**0**	
19.0	95	**99**	100		**1**	
13.2	78	**86**	92	6	**13**	18
9.5	63	**72**	83	7	**14**	17
4.75	44	**49**	64	13	**23**	25
2.36	33	**35**	49	7	**14**	19
0.425	14	**15**	23	14	**20**	30
0.075	7	**7**	14	6	**8**	13
0.0135	3	**4**	7	3	**3**	8



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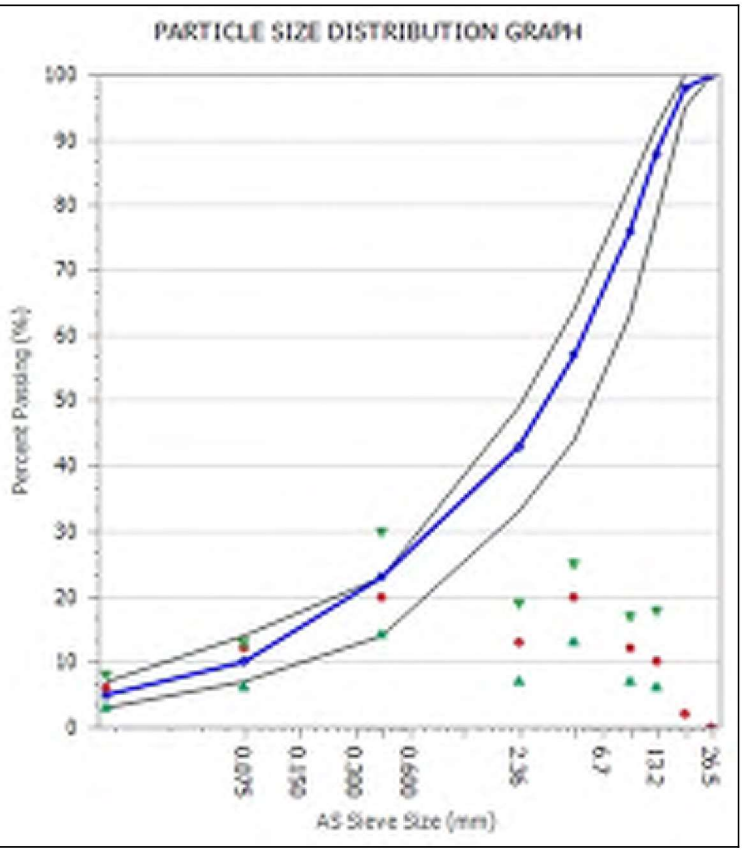
PARTICLE SIZE DISTRIBUTION REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14310-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 4 of 5

Test Procedures:	T106 + T107, T102 (CA3), T105		
Sample Number	22659/S/37271	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@10:20
Date Sampled	21/02/2020 10:20		
Sampled By	Jack O'Dowd		
Date Tested	21/02/2020		
Material Source	Holcim Lynwood Quarry	Material Type	DGB 20 (NLYNDGB20)

AS Sieve (mm)	Percent Passing			Percent Retained		
	Spec Min (%)	**Result (%)**	Spec Max (%)	Spec Min (%)	**Result (%)**	Spec Max (%)
26.5	100	**100**	100		**0**	
19.0	95	**98**	100		**2**	
13.2	78	**88**	92	6	**10**	18
9.5	63	**76**	83	7	**12**	17
4.75	44	**57**	64	13	**20**	25
2.36	33	**43**	49	7	**13**	19
0.425	14	**23**	23	14	**20**	30
0.075	7	**10**	14	6	**12**	13
0.0135	3	**5**	7	3	**6**	8



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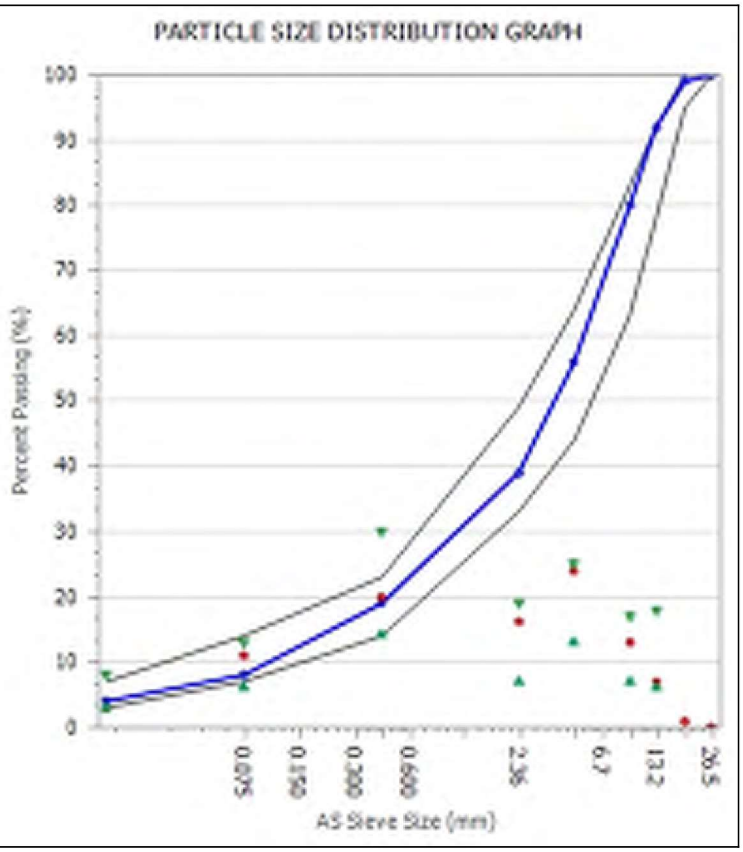
PARTICLE SIZE DISTRIBUTION REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14310-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 5 of 5

Test Procedures:	T106 + T107, T102 (CA3), T105		
Sample Number	22659/S/37272	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@10:20
Date Sampled	21/02/2020 10:20		
Sampled By	Jack O'Dowd		
Date Tested	21/02/2020		
Material Source	Holcim Lynwood Quarry	Material Type	DGB 20 (NLYNDGB20)

AS Sieve (mm)	Percent Passing			Percent Retained		
	Spec Min (%)	**Result (%)**	Spec Max (%)	Spec Min (%)	**Result (%)**	Spec Max (%)
26.5	100	**100**	100		**0**	
19.0	95	**99**	100		**1**	
13.2	78	**92**	92	6	**7**	18
9.5	63	**80**	83	7	**13**	17
4.75	44	**56**	64	13	**24**	25
2.36	33	**39**	49	7	**16**	19
0.425	14	**19**	23	14	**20**	30
0.075	7	**8**	14	6	**11**	13
0.0135	3	**4**	7	3	**3**	8



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Aggregate enquiries phone 1300 555 277

PARTICLE SHAPE BY PROPORTIONAL CALLIPER REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14094-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	26/02/2020 Page 1 of 3

Test Procedures:	T213		
Sample Number	22659/S/36903	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020		
Sampled By	Rebecca Collier		
Date Tested	26/02/2020		
Material Source	Holcim Lynwood Quarry	Material Type	DGB 20 (NLYNDGB20)

Caliper Ratio	2:1
Flat Particles (%)	11.2
Elongated Particles (%)	5.5
Flat & Elongated Particles (%)	0.0

Specification	NLYNDGB20 RMS 3051 Ed 6	Spec Minimum	Result	Spec Maximum
	Misshapen Particles (%):	-	17	35

Remarks	Supplement to Simplified Report Number 200226CL1404

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Corporate Site Number: 22659

Approved Signatory: Christopher Lo
Form ID: W37Rep Rev 1

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Address:
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South Marulan NSW 2579

Laboratory: NSW Central Aggregates Laboratory

PARTICLE SHAPE BY PROPORTIONAL CALLIPER REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14094-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	26/02/2020 Page 2 of 3

Test Procedures:	T213		
Sample Number	22659/S/36905	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020		
Sampled By	Rebecca Collier		
Date Tested	25/02/2020		
Material Source	Holcim Lynwood Quarry	Material Type	DGB 20 (NLYNDGB20)

Caliper Ratio	2:1
Flat Particles (%)	12.6
Elongated Particles (%)	6.0
Flat & Elongated Particles (%)	0.0

Specification	NLYNDGB20 RMS 3051 Ed 6	Spec Minimum	Result	Spec Maximum
	Misshapen Particles (%):	-	19	35

Remarks	Supplement to Simplified Report Number 200226CL1404

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Corporate Site Number: 22659

Approved Signatory: Christopher Lo
Form ID: W37Rep Rev 1

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South Marulan NSW 2579

Laboratory: NSW Central Aggregates Laboratory

Holcim
Subcontracting Cardno testing services.
Concrete enquiries phone 131 188
Aggregate enquiries phone 1300 555 277

PARTICLE SHAPE BY PROPORTIONAL CALLIPER REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14094-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	26/02/2020 Page 3 of 3

Test Procedures:	T213		
Sample Number	22659/S/36906	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020		
Sampled By	Rebecca Collier		
Date Tested	24/02/2020		
Material Source	Holcim Lynwood Quarry	Material Type	DGB 20 (NLYNDGB20)

Caliper Ratio	2:1
Flat Particles (%)	21.9
Elongated Particles (%)	7.5
Flat & Elongated Particles (%)	1.4

Specification	NLYNDGB20 RMS 3051 Ed 6	Spec Minimum	Result	Spec Maximum
	Misshapen Particles (%):	-	31	35

Remarks	Supplement to Simplified Report Number 200226CL1404

NATA

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Accreditation Number: 1986
Corporate Site Number: 22659

Approved Signatory: Christopher Lo
Form ID: W37Rep Rev 1

Construction Sciences

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Aggregate enquiries phone 1300 555 277

Report for
Acid Soluble Sulfate Content in Road Construction Materials

Wollongong Laboratory
Unit 1, 140 Industrial Road, Oak Flats, NSW, 2529

Client:	Holcim Australia Pty Ltd	Report No:	T1179753232-090320
Address:	799 Pacific Hwy Chatswood NSW 2067	Project No:	10848/P/8
Project:	Supplied Sampled Materials Testing - Lynwood	Request No:	10848/T/11797
		Sample No:	10848/S/53232
		Client Request Ref:	

Client Reference:	22659/S/36903	Area Description:		
Component:		Location:	Client Sample ID	Sampled@07:15
Sample Source:	Holcim Lynwood Quarry			22659/S/36903
Sample Description:	DGB 20 (NLYNDGB20)			
Sampling Method:	AS1141.3.1 Cl 9.4			
Sampled By:	Rebecca Collier	Date Sampled:	11/02/20 07:15	
Tested By:	Joshua Mulligan	Date Tested:	09/03/20	

Test Method: T219

TEST RESULT

Percent SO_3	**0.06**	(Acid soluble sulfate expressed as SO_3 (Sulfite))

Remarks: Results apply to sample/s as received.

Corporate Site Number: 10848
Accreditation Number: 1986

NATA WORLD RECOGNISED ACCREDITATION

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing

Signature

Name: Tim Mathie
Function: Authorised Signatory
Date: 13-Mar-20

Construction Sciences

Construction Sciences Pty Ltd
ABN: 74 128 806 735

Address:
South Marulan Road,
South Marulan NSW 2579

Laboratory: NSW Central Aggregates Laboratory

WET/DRY VARIATION REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14199-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	5/03/2020 Page 1 of 1

Test Procedures:	T215		
Sample Number	22659/S/36903	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020		
Sampled By	Rebecca Collier		
Date Tested	4/03/2020		
Material Source	Holcim Lynwood Quarry	Material Type	DGB 20 (NLYNDGB20)

Preparation Notes:	-	Test Cylinder Diameter (mm)	150mm
Bulk Sample Type:	-	Nominal Bulk Sample Size (mm):	20
Test Fraction (mm):	19.0mm - 9.5mm	Material Breakdown (%)	0.0
Ten Percent Fines Dry (kN):	**173**	Ten Percent Fines Wet (kN):	**146**
Specification:	NLYNDGB20 RMS 3051 Ed 6	Wet / Dry Strength Spec:	Min: - Max: 35
Ten Percent Fines Dry Spec:	Min: Max:	Ten Percent Fines Wet Spec:	Min: 70 Max: -

Wet / Dry Strength Variation (%)	16

Duplicate testing was performed in accordance with T215

Remarks: Supplement to Simplified Report Number 200305RC1154

NATA

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
Corporate Site Number: 22659

Approved Signatory: Christopher Lo
Form ID: W13Rep Rev 1

Division

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Walan
62 Wellington St,
Riverstone, NSW
2765

18 May, 2020

luke.mcneilage@lafargeholcim.com

Dear Paul Doyle,

RE: DGB20 ex RHDC as ENM

I would like to confirm that all constituents contained within Holcim Lynwoods DGB20 product is compliant as per the ENM classification requirements. The material is natural and sourced solely from Lynwood hardrock quarry. Material sold from Lynwood is free from contaminates as tabled in the ENM report.

The material was sampled at Lynwood Quarries Primary Scalping Circuit which is the earliest point in the production process in which a comprehensive sample can be obtained (ref. Image 1). The sample is deemed to representative of all possible raw material constituents that may be found in final products. I have also attached for your review Lynwood Quarries petrographic analysis for both manufactured sand and aggregate products.

We trust that you have received the test report with the test results to classify the individual components as ENM.

Should you have any further queries, please do not hesitate to contact me.

Yours sincerely,

Luke McNeilage (Technical Supervisor)

Mobile: 0419474701

Division

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Walan
62 Wellington St,
Riverstone, NSW
2765

18 May, 2020

luke.mcneilage@lafargeholcim.com

Dear Paul Doyle,

RE: Request for Updated DGB20 Compliance Certificates (Submission)

As requested the blend ratio used to construct this stockpile was 4:1 Lynwood Crusher Run: Lynwood Crusher Dust.

Holcim would like to confirm that all Lynwood Quarry DGB20 stockpiles are tested to RMS 3051 ED6. 4000T DGB20 Stockpile SP-122 has been verified as conforming as per RMS3051 11.4.1.1 and 11.4.2.

Stockpile Grading Confomity Calculations RMS 3051 Edition 6 Rev 0

	% Passing Sieve SP-122					Passing Specification							
Sieve mm	Sample 1 S/36903	Sample 2 S/36905	Sample 3 S/36906	Sample 4 S/37271	Sample 5 S/37272	Lower	Upper	Mean	Lowest	Highest	T1	Tn	Conforming?
26.5	100	100	100	100	100	100	100	100	100	100	0.00	0.00	Conforming
19	98	99	99	98	99	95	100	99	98	99	0.00	0.00	Conforming
13.2	89	89	86	88	92	78	92	89	86	92	0.00	0.00	Conforming
9.5	73	73	72	76	80	63	83	75	72	80	0.00	0.00	Conforming
6.7	0	0	0	0	0	-	-	-	-	-	-	-	-
4.75	49	46	49	57	56	44	64	51	46	57	0.00	0.00	Conforming
2.36	36	33	35	43	39	33	49	37	33	43	0.00	0.00	Conforming
0.425	16	15	15	23	19	14	23	18	15	23	0.00	0.00	Conforming
0.075	8	7	7	10	8	7	14	8	7	10	0.00	0.00	Conforming
0.0135	5	4	4	5	4	3	7	4	4	5	0.00	0.00	Conforming
	% Retained Sieve					Retained Specification							
Sieve mm	Sample 1 S/38344	Sample 2 S/38345	Sample 3 S/38346	Sample 4 S/38347	Sample 5 S/38568	Lower	Upper	Mean	Lowest	Highest	T1	Tn	Conforming?
19													
	9	10	13	10	7	6	18	10	7	13	0.00	0.00	Conforming
13.2													
	16	16	14	12	12	7	17	14	12	16	0.00	0.00	Conforming
9.5													
	24	27	23	19	24	13	25	23	19	27	0.00	1.25	Conforming
4.75													
	13	13	14	14	17	7	19	14	13	17	0.00	0.00	Conforming
2.36													
	20	18	20	20	20	14	30	20	18	20	0.00	0.00	Conforming
0.425													
	8	8	8	13	11	6	13	10	8	13	0.00	0.00	Conforming
0.075													
	3	3	3	5	4	3	8	4	3	5	0.00	0.00	Conforming
0.0135													

Sample No.s & Corresponding Critical T-Values from 3051			
No. Samples	3	4	5
Value	1.15	1.46	1.67

We trust that you have received the suite of confirming tests for SP-122.

Yours sincerely,

Luke McNeilage (Technical Supervisor)

Mobile: 0419474701

Analytical Table
Wentworthville Public School

		Metals								Soil Properties		PAH				BTEX					TPH				TPH	Foreign Material Content								RTA_T276								Inerganic	Asbestos	
		Arsenic	Cadmium	Chromium	Cooper	Lead	Mercury	Nickel	Zinc	Conductivity (1:5 aqueous extract)	pH (aqueous extract)	Benzo(a) pyrene	Naphthalene	Benzo(a)pyrene TEQ (zero)	PAHs (Sum)	Benzene	Toluene	Ethylbenzene	Xylene (Sum)	C6 - C10 less BTEX (F1)	C10 - C16 less Naphthalene (F2)	C16 - C34	C34 - C40	C10 - C36 (Sum)	Cloth	Paint	Paper	Plastic	Bitumen	Rubber	Wood	Total (rubber, plastic, bitumen, paint, cloth, paper and wood)	Ceramic and slag (not from blast furnace slag)*	Fly, bottom and other blast furnace slag*	Plastics*	Asphalt*	Glass*	Metal*	Stone*	Vegetable matter*	Initial Weight	Asbestos Reported Results	Asbestos (Fines and Fibrous FA+AF)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µs/cm	pH_Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	KG	Comment	% (w/w)
EQL		2	0.4	5	5	5	0.1	5	5	10	0.1	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.3	20	50	100	100	50	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.01		
NSW 2014 Excavated Natural Material (Absolute Max)		40	1	150	200	100	1	60	300	1,500	4.5 to 10	1			40	0.5	65	25	15					500								0.1											
NSW 2014 Excavated Natural Material (Max Average)		20	0.5	75	100	50	0.5	30	150	1,500	5 to 9	0.5			20									250								0.05											
Field ID	**Date**																																										
DISC_1C	14-05-20	<2	<0.4	<5	<5	<5	<0.1	<5	10	36	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	<0.1	0.9	<0.1	<0.1	<0.1	<0.1	99	<0.05	<0.01	1[#]	0.0000
DISC_1D	14-05-20	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<100	<100	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DISC_2C	14-05-20	<2	<0.4	8.3	<5	<5	<0.1	<5	12	31	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	<0.1	2.1	<0.1	<0.1	<0.1	<0.1	98	<0.05	<0.01	1[#]	0.0000
DISC_2D	14-05-20	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<100	<100	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DISC_3C	14-05-20	<2	<0.4	<5	<5	<5	<0.1	<5	5.4	35	7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	<0.1	0.6	<0.1	<0.1	<0.1	<0.1	99	<0.05	<0.01	1[#]	0.0000
DISC_3D	14-05-20	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<100	<100	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistics																																											
Number of Results		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	ND	ND
Minimum Detect		ND	ND	8.3	ND	ND	ND	ND	5.4	31	7.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	ND	ND	ND	ND	98	ND	ND	ND
Maximum Concentration		<2	<0.4	8.3	<5	<5	<0.1	<5	12	36	8	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<100	<100	<50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	<0.1	2.1	<0.1	<0.1	<0.1	<0.1	99	<0.05	<0.01	ND	ND
Average Concentration *		1	0.2	4.4	2.5	2.5	0.05	2.5	9.1	34	8	0.25	0.25	0.25	0.25	0.05	0.05	0.05	0.15	10	25	50	50	25	0.025	0.025	0.025	0.025	0.025	0.025	0.025	ND	0.05	1.2	0.05	0.05	0.05	0.05	99	0.025	0.005	ND	ND
95% UCL (Student's-t) *		1	0.2	10.08	2.5	2.5	0.05	2.5	14.84	38.46	8.064	0.25	0.25	0.25	0.25	0.05	0.05	0.05	0.15	10	25	50	50	25	0.025	0.025	0.025	0.025	0.025	0.025	0.025	ND	0.05	2.538	0.05	0.05	0.05	0.05	99.44	0.025	0.005	ND	ND

* A Non Detect Multiplier of 0.5 has been applied.

Comments
#1 No asbestos detected.No trace asbestos detected.

Photographs	
Report Name:	Western Stage 1 Validation Report
Project Reference:	PS119057
Site Details:	Wentworthville Public School

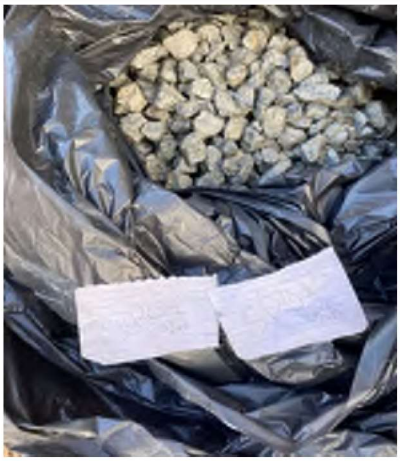

Photo 1: Example of imported material used around OSD tank

Photo 2: Imported Lynwood certified material (quarried product)

Photo 3: Placement of imported material

Photo 4: Placement of imported material around any exposed walls

End of photolog

WSP Australia P/L NSW
Level 27, Ernst & Young Centre
Sydney
NSW 2001

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Hamish Donovan**

Report **719520-S**
Project name WWPS - ENM
Project ID PS119057
Received Date May 14, 2020

Client Sample ID			**DISC_1C**	**DISC_1D**	**DISC_2C**	**DISC_2D**
Sample Matrix			**Solid**	**Soil**	**Solid**	**Soil**
Eurofins Sample No.			**S20-My20968**	**S20-My20969**	**S20-My20970**	**S20-My20971**
Date Sampled			**Not Provided**	**Not Provided**	**Not Provided**	**Not Provided**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	< 20
TRH C15-C28	50	mg/kg	-	< 50	-	< 50
TRH C29-C36	50	mg/kg	-	< 50	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50	-	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	107	-	107
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	< 50
TRH >C16-C34	100	mg/kg	-	< 100	-	< 100
TRH >C34-C40	100	mg/kg	-	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	-	< 0.5

Client Sample ID			DISC_1C	DISC_1D	DISC_2C	DISC_2D
Sample Matrix			Solid	Soil	Solid	Soil
Eurofins Sample No.			S20-My20968	S20-My20969	S20-My20970	S20-My20971
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	84	-	85
p-Terphenyl-d14 (surr.)	1	%	-	97	-	96
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	36	-	31	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.0	-	8.0	-
% Moisture	1	%	1.2	1.9	1.0	< 1
Heavy Metals						
Arsenic	2	mg/kg	< 2	-	< 2	-
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	-
Chromium	5	mg/kg	< 5	-	8.3	-
Copper	5	mg/kg	< 5	-	< 5	-
Lead	5	mg/kg	< 5	-	< 5	-
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	-
Nickel	5	mg/kg	< 5	-	< 5	-
Zinc	5	mg/kg	10	-	12	-
Foreign Materials - ENM						
Initial Weight	0.01	kg	< 0.01	-	< 0.01	-
Foreign Material - Type I						
Metal*	0.1	%	< 0.1	-	< 0.1	-
Glass*	0.1	%	< 0.1	-	< 0.1	-
Asphalt*	0.1	%	< 0.1	-	< 0.1	-
Stone*	0.1	%	99	-	98	-
Ceramic and slag (other than blast furnace slag)*	0.1	%	< 0.1	-	< 0.1	-
Foreign Material - Type II						
Plaster*	0.1	%	< 0.1	-	< 0.1	-
Clay lumps and other friable material*	0.1	%	0.9	-	2.1	-
Foreign Material - Type III						
Rubber*	0.05	%	< 0.05	-	< 0.05	-
Plastic*	0.05	%	< 0.05	-	< 0.05	-
Bitumen*	0.05	%	< 0.05	-	< 0.05	-
Paper*	0.05	%	< 0.05	-	< 0.05	-
Cloth*	0.05	%	< 0.05	-	< 0.05	-
Paint*	0.05	%	< 0.05	-	< 0.05	-
Wood*	0.05	%	< 0.05	-	< 0.05	-
Vegetable matter*	0.05	%	< 0.05	-	< 0.05	-

Client Sample ID			DISC_3C	DISC_3D
Sample Matrix			Solid	Soil
Eurofins Sample No.			S20-My20972	S20-My20973
Date Sampled			Not Provided	Not Provided
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	-	< 20
TRH C10-C14	20	mg/kg	-	< 20
TRH C15-C28	50	mg/kg	-	< 50
TRH C29-C36	50	mg/kg	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50
BTEX				
Benzene	0.1	mg/kg	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50
TRH >C16-C34	100	mg/kg	-	< 100
TRH >C34-C40	100	mg/kg	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	87
p-Terphenyl-d14 (surr.)	1	%	-	94
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	35	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.9	-
% Moisture	1	%	21	4.2

Client Sample ID			DISC_3C	DISC_3D
Sample Matrix			Solid	Soil
Eurofins Sample No.			S20-My20972	S20-My20973
Date Sampled			Not Provided	Not Provided
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	< 2	-
Cadmium	0.4	mg/kg	< 0.4	-
Chromium	5	mg/kg	< 5	-
Copper	5	mg/kg	< 5	-
Lead	5	mg/kg	< 5	-
Mercury	0.1	mg/kg	< 0.1	-
Nickel	5	mg/kg	< 5	-
Zinc	5	mg/kg	5.4	-
Foreign Materials - ENM				
Initial Weight	0.01	kg	< 0.01	-
Foreign Material - Type I				
Metal*	0.1	%	< 0.1	-
Glass*	0.1	%	< 0.1	-
Asphalt*	0.1	%	< 0.1	-
Stone*	0.1	%	99	-
Ceramic and slag (other than blast furnace slag)*	0.1	%	< 0.1	-
Foreign Material - Type II				
Plaster*	0.1	%	< 0.1	-
Clay lumps and other friable material*	0.1	%	0.6	-
Foreign Material - Type III				
Rubber*	0.05	%	< 0.05	-
Plastic*	0.05	%	< 0.05	-
Bitumen*	0.05	%	< 0.05	-
Paper*	0.05	%	< 0.05	-
Cloth*	0.05	%	< 0.05	-
Paint*	0.05	%	< 0.05	-
Wood*	0.05	%	< 0.05	-
Vegetable matter*	0.05	%	< 0.05	-

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	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	May 14, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	May 14, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 14, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 14, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	May 14, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Sydney	May 14, 2020	7 Days
- Method: LTM-INO-4030 Conductivity			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	May 14, 2020	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals M8	Sydney	May 14, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	May 14, 2020	14 Days
- Method: LTM-GEN-7080 Moisture			
Foreign Material - Type I	Sydney	May 14, 2020	180 Days
- Method: RMS Method T276			
Foreign Material - Type II	Sydney	May 14, 2020	180 Days
- Method: RMS Method T276			
Foreign Material - Type III	Sydney	May 14, 2020	180 Days
- Method: RMS Method T276			

eurofins | Environment Testing

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IANZ # 1290

Company Name: WSP Australia P/L NSW
Address: Level 27, Ernst & Young Centre
Sydney
NSW 2001

Project Name: WWPS - ENM
Project ID: PS119057

Order No.: PS119057
Report #: 719520
Phone: 02 9272 5586
Fax: 02 9272 5101

Received: May 14, 2020 5:57 PM
Due: May 15, 2020
Priority: 1 Day
Contact Name: Hamish Donovan

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos Absence /Presence	Conductivity (1:5 aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Foreign Materials - ENM	Moisture Set	Eurofins | mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271												
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	DISC_1C	Not Provided		Solid	S20-My20968	X	X	X	X	X	X	
2	DISC_1D	Not Provided		Soil	S20-My20969						X	X
3	DISC_2C	Not Provided		Solid	S20-My20970	X	X	X	X	X	X	
4	DISC_2D	Not Provided		Soil	S20-My20971						X	X
5	DISC_3C	Not Provided		Solid	S20-My20972	X	X	X	X	X	X	
6	DISC_3D	Not Provided		Soil	S20-My20973						X	X
Test Counts						3	3	3	3	3	6	3

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	94			70-130	Pass	
TRH C10-C14	%	78			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	103			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	109			70-130	Pass	
m&p-Xylenes	%	108			70-130	Pass	
o-Xylene	%	106			70-130	Pass	
Xylenes - Total*	%	107			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	84			70-130	Pass	
TRH C6-C10	%	94			70-130	Pass	
TRH >C10-C16	%	80			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	90			70-130	Pass	
Acenaphthylene	%	90			70-130	Pass	
Anthracene	%	93			70-130	Pass	
Benz(a)anthracene	%	108			70-130	Pass	
Benzo(a)pyrene	%	109			70-130	Pass	
Benzo(b&j)fluoranthene	%	112			70-130	Pass	
Benzo(g.h.i)perylene	%	99			70-130	Pass	
Benzo(k)fluoranthene	%	104			70-130	Pass	
Chrysene	%	107			70-130	Pass	
Dibenz(a.h)anthracene	%	97			70-130	Pass	
Fluoranthene	%	99			70-130	Pass	
Fluorene	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	95			70-130	Pass	
Naphthalene	%	90			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	97			70-130	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25°C as rec.)	%	107			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	105			70-130	Pass	
Cadmium	%	117			70-130	Pass	
Chromium	%	113			70-130	Pass	
Copper	%	114			70-130	Pass	
Lead	%	112			70-130	Pass	
Mercury	%	112			70-130	Pass	
Nickel	%	113			70-130	Pass	
Zinc	%	111			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-My13828	NCP	%	77			70-130	Pass	
Cadmium	S20-My13828	NCP	%	119			70-130	Pass	
Chromium	S20-My13146	NCP	%	105			70-130	Pass	
Copper	S20-My13828	NCP	%	117			70-130	Pass	
Lead	S20-My13828	NCP	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury	S20-My13828	NCP	%	115			70-130	Pass	
Nickel	S20-My13828	NCP	%	110			70-130	Pass	
Zinc	S20-My13828	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S20-My12761	NCP	%	71			70-130	Pass	
TRH C10-C14	S20-My03989	NCP	%	76			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S20-My12761	NCP	%	87			70-130	Pass	
Toluene	S20-My12761	NCP	%	94			70-130	Pass	
Ethylbenzene	S20-My12761	NCP	%	95			70-130	Pass	
m&p-Xylenes	S20-My12761	NCP	%	92			70-130	Pass	
o-Xylene	S20-My12761	NCP	%	91			70-130	Pass	
Xylenes - Total*	S20-My12761	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S20-My12761	NCP	%	77			70-130	Pass	
TRH C6-C10	S20-My12761	NCP	%	76			70-130	Pass	
TRH >C10-C16	S20-My03989	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S20-My12764	NCP	%	94			70-130	Pass	
Acenaphthylene	S20-My12764	NCP	%	96			70-130	Pass	
Anthracene	S20-My12764	NCP	%	97			70-130	Pass	
Benz(a)anthracene	S20-My12764	NCP	%	116			70-130	Pass	
Benzo(a)pyrene	S20-My12764	NCP	%	114			70-130	Pass	
Benzo(b&j)fluoranthene	S20-My12764	NCP	%	118			70-130	Pass	
Benzo(g.h.i)perylene	S20-My12764	NCP	%	104			70-130	Pass	
Benzo(k)fluoranthene	S20-My12764	NCP	%	107			70-130	Pass	
Chrysene	S20-My12764	NCP	%	110			70-130	Pass	
Dibenz(a.h)anthracene	S20-My12764	NCP	%	102			70-130	Pass	
Fluoranthene	S20-My12764	NCP	%	105			70-130	Pass	
Fluorene	S20-My12764	NCP	%	96			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S20-My12764	NCP	%	100			70-130	Pass	
Naphthalene	S20-My12764	NCP	%	94			70-130	Pass	
Phenanthrene	S20-My12764	NCP	%	98			70-130	Pass	
Pyrene	S20-My12764	NCP	%	101			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	S20-My13097	NCP	uS/cm	230	260	9.8	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S20-My13097	NCP	pH Units	9.3	9.3	Pass	30%	Pass	
% Moisture	S20-My20900	NCP	%	6.0	6.3	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-My13358	NCP	mg/kg	3.9	3.7	5.0	30%	Pass	
Cadmium	S20-My13358	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-My13358	NCP	mg/kg	27	26	3.0	30%	Pass	
Copper	S20-My13358	NCP	mg/kg	12	11	6.0	30%	Pass	
Lead	S20-My13358	NCP	mg/kg	15	15	<1	30%	Pass	
Mercury	S20-My13358	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Nickel	S20-My13358	NCP	mg/kg	11	11	5.0	30%	Pass	
Zinc	S20-My13358	NCP	mg/kg	36	35	5.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S20-My13140	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S20-My20926	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S20-My20926	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S20-My20926	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S20-My13140	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S20-My13140	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S20-My13140	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S20-My13140	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S20-My13140	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S20-My13140	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S20-My13140	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S20-My13140	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S20-My20926	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S20-My20926	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S20-My20926	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S20-My12763	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised By

Alena Bounkeua	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Gabriele Cordero	Senior Analyst-Inorganic (NSW)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Nibha Vaidya	Senior Analyst-Asbestos (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.

E3. ARDMORE PARK QUARRY

Ardmore Park Quarry - analytical results
Wentworthville Public School

PS119057

	TRH				BTEX				PAH							Metals								OCP	Asbestos Identification in Soi
	C6 - C10 less BTEX (F1)	C10 - C16 less Naphthalene (F2)	C16 - C34	C34 - C40	Benzene	Toluene	Ethylbenzene	Xylene (Sum)	1-Methylnaphthalene	2-methylnaphthalene	Benzo(a) pyrene	Naphthalene	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum)	Total Positive PAHs	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	DDT	Asbestos fibres
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	25	25	90	120	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.2	0.8	0.8	1	0.3	0.5	0.5	1	0.05	0.5	2	0.1	0
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind												370				160[#1]		310[#2]	85[#3]	1,800[#4]		55[#5]	110[#6]	640	
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space												170				100[#1]		190[#2]	60[#3]	1,100[#4]		30[#5]	70[#6]	180	
NEPM 2013 Table 1B(6) ESLs for Comm/Ind																									
Clay 0-2m	215[#7]		2,500		95	135	185	95			1.4														
Sand 0-2m	215[#8]		1,700	3,300	75	135	165	180			1.4														
Silt 0-2m	215[#9]		2,500	6,600	95	135	185	95			1.4														
NEPM 2013 Table 1B(6) ESLs for Urban Res																									
Clay 0-2m	180[#7]		1,300	5,600	65	105	125	45			0.7														
Sand 0-2m	180[#7]		300	2,800	50	85	70	105			0.7														
Silt 0-2m	180[#7]		1,300	5,600	65	105	125	45			0.7														
Field ID	**Date**																								
DGB01	**17-06-20**	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.2	<0.8	<0.8	<1	<0.3	4.7	11	<1	<0.05	23	10	<0.1	0[#10]
DGB02	**17-06-20**	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.2	<0.8	<0.8	<1	<0.3	4.5	12	<1	<0.05	18	10	<0.1	0[#10]
DGB03	**17-06-20**	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.2	<0.8	<0.8	<1	<0.3	4.6	14	<1	<0.05	21	12	<0.1	0[#10]

Photographs	
Report Name:	Western Stage 1 Validation Report
Project Reference:	PS119057
Site Details:	Wentworthville Public School

Photo 1: Entrance of the Ardmore Park Quarry

Photo 2: Example of imported aggregate material sampled from Ardmore Park Quarry

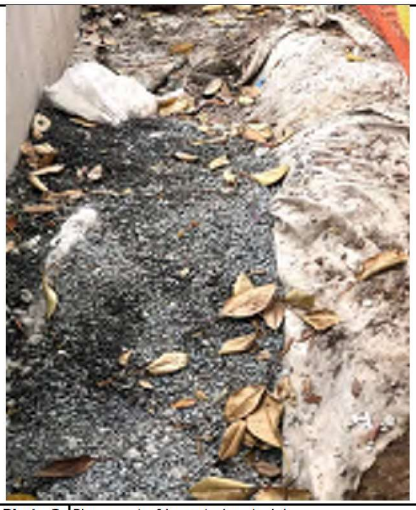

Photo 3: Placement of imported material

Photo 4: Placement of imported material

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To whom it may concern

Multiquip make the following declarations that

- All materials supplied from it's Bungonia quarry are natural products excavated from natural sand and basalt deposits.
- No contaminated or recycled materials have ever been imported to the above quarry site.
- None of the quarry products sourced from the site contain any recycled materials
- The quarry site is not located in an acid sulphate soil area.
- Overburden depths preclude the likehood of any agricultural chemical being present in the quarry products
- Materials from the quarry are considered VENM on the above basis

Steve Wall

Quarry Operations Manager

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Hamish Donovan
Client	WSP AUSTRALIA PTY LIMITED
Address	Level 27, Ernst & Young Centre 680 George St NSW 2000
Telephone	02 9272 1453
Facsimile	02 9272 5101
Email	Hamish.Donovan@wsp.com
Project	**PS119057**
Order Number	**PS119057**
Samples	3

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
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Email	au.environmental.sydney@sgs.com
SGS Reference	**SE207621 R0**
Date Received	17/6/2020
Date Reported	18/6/2020

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

No respirable fibres detected in all soil samples using trace analysis technique.

A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures due to large volume. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Environmental Services recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam.

SIGNATORIES

Bennet LO
Senior Organic Chemist/Metals Chemist

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

VOC's in Soil [AN433] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
TRH C6-C9	mg/kg	20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
TRH C10-C14	mg/kg	20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
Arsenic, As	mg/kg	1	<1	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	4.7	4.5	4.6
Copper, Cu	mg/kg	0.5	11	12	14
Lead, Pb	mg/kg	1	<1	<1	<1
Nickel, Ni	mg/kg	0.5	23	18	21
Zinc, Zn	mg/kg	2	10	10	12

Mercury in Soil [AN312] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
% Moisture	%w/w	1	1.6	1.8	1.9

Fibre Identification in soil [AN602] Tested: 17/6/2020

PARAMETER	UOM	LOR	DGB01 SOIL - 17/6/2020 SE207621.001	DGB02 SOIL - 17/6/2020 SE207621.002	DGB03 SOIL - 17/6/2020 SE207621.003
Asbestos Detected	No unit	-	No	No	No

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid , mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser . Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken . This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup /fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS /ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602	The sample can be reported "no asbestos found at the reporting limit of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

STATEMENT OF QA/QC PERFORMANCE

SE207621 R0

CLIENT DETAILS

Contact	Hamish Donovan
Client	WSP AUSTRALIA PTY LIMITED
Address	Level 27, Ernst & Young Centre 680 George St NSW 2000
Telephone	02 9272 1453
Facsimile	02 9272 5101
Email	Hamish.Donovan@wsp.com
Project	**PS119057**
Order Number	**PS119057**
Samples	3

LABORATORY DETAILS

Manager	Huong Crawford
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Email	au.environmental.sydney@sgs.com
SGS Reference	**SE207621 R0**
Date Received	17 Jun 2020
Date Reported	18 Jun 2020

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	5 items

SAMPLE SUMMARY

HOLDING TIME SUMMARY

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SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Fibre Identification in soil — Method: ME-(AU)-[ENV]AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202138	17 Jun 2020	17 Jun 2020	17 Jun 2021	17 Jun 2020	17 Jun 2021	18 Jun 2020
DGB02	SE207621.002	LB202138	17 Jun 2020	17 Jun 2020	17 Jun 2021	17 Jun 2020	17 Jun 2021	18 Jun 2020
DGB03	SE207621.003	LB202138	17 Jun 2020	17 Jun 2020	17 Jun 2021	17 Jun 2020	17 Jun 2021	18 Jun 2020

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202175	17 Jun 2020	17 Jun 2020	15 Jul 2020	17 Jun 2020	15 Jul 2020	18 Jun 2020
DGB02	SE207621.002	LB202175	17 Jun 2020	17 Jun 2020	15 Jul 2020	17 Jun 2020	15 Jul 2020	18 Jun 2020
DGB03	SE207621.003	LB202175	17 Jun 2020	17 Jun 2020	15 Jul 2020	17 Jun 2020	15 Jul 2020	18 Jun 2020

Moisture Content — Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202150	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	22 Jun 2020	18 Jun 2020
DGB02	SE207621.002	LB202150	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	22 Jun 2020	18 Jun 2020
DGB03	SE207621.003	LB202150	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	22 Jun 2020	18 Jun 2020

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB02	SE207621.002	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB03	SE207621.003	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB02	SE207621.002	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB03	SE207621.003	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB02	SE207621.002	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB03	SE207621.003	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB02	SE207621.002	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB03	SE207621.003	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202174	17 Jun 2020	17 Jun 2020	14 Dec 2020	17 Jun 2020	14 Dec 2020	18 Jun 2020
DGB02	SE207621.002	LB202174	17 Jun 2020	17 Jun 2020	14 Dec 2020	17 Jun 2020	14 Dec 2020	18 Jun 2020
DGB03	SE207621.003	LB202174	17 Jun 2020	17 Jun 2020	14 Dec 2020	17 Jun 2020	14 Dec 2020	18 Jun 2020

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB02	SE207621.002	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB03	SE207621.003	LB202149	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202148	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB02	SE207621.002	LB202148	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB03	SE207621.003	LB202148	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DGB01	SE207621.001	LB202148	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB02	SE207621.002	LB202148	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020
DGB03	SE207621.003	LB202148	17 Jun 2020	17 Jun 2020	01 Jul 2020	17 Jun 2020	27 Jul 2020	18 Jun 2020

SURROGATES

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Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	DGB01	SE207621.001	%	60 - 130%	87
	DGB02	SE207621.002	%	60 - 130%	85
	DGB03	SE207621.003	%	60 - 130%	82

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	DGB01	SE207621.001	%	60 - 130%	89
	DGB02	SE207621.002	%	60 - 130%	89
	DGB03	SE207621.003	%	60 - 130%	88
d14-p-terphenyl (Surrogate)	DGB01	SE207621.001	%	60 - 130%	92
	DGB02	SE207621.002	%	60 - 130%	92
	DGB03	SE207621.003	%	60 - 130%	90

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	DGB01	SE207621.001	%	70 - 130%	89
	DGB02	SE207621.002	%	70 - 130%	89
	DGB03	SE207621.003	%	70 - 130%	88
d14-p-terphenyl (Surrogate)	DGB01	SE207621.001	%	70 - 130%	92
	DGB02	SE207621.002	%	70 - 130%	92
	DGB03	SE207621.003	%	70 - 130%	90
d5-nitrobenzene (Surrogate)	DGB01	SE207621.001	%	70 - 130%	84
	DGB02	SE207621.002	%	70 - 130%	83
	DGB03	SE207621.003	%	70 - 130%	81

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	DGB01	SE207621.001	%	60 - 130%	87
	DGB02	SE207621.002	%	60 - 130%	85
	DGB03	SE207621.003	%	60 - 130%	82

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	DGB01	SE207621.001	%	60 - 130%	93
	DGB02	SE207621.002	%	60 - 130%	102
	DGB03	SE207621.003	%	60 - 130%	89
d4-1,2-dichloroethane (Surrogate)	DGB01	SE207621.001	%	60 - 130%	110
	DGB02	SE207621.002	%	60 - 130%	117
	DGB03	SE207621.003	%	60 - 130%	108
d8-toluene (Surrogate)	DGB01	SE207621.001	%	60 - 130%	109
	DGB02	SE207621.002	%	60 - 130%	117
	DGB03	SE207621.003	%	60 - 130%	107

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	DGB01	SE207621.001	%	60 - 130%	93
	DGB02	SE207621.002	%	60 - 130%	102
	DGB03	SE207621.003	%	60 - 130%	89
d4-1,2-dichloroethane (Surrogate)	DGB01	SE207621.001	%	60 - 130%	110
	DGB02	SE207621.002	%	60 - 130%	117
	DGB03	SE207621.003	%	60 - 130%	108
d8-toluene (Surrogate)	DGB01	SE207621.001	%	60 - 130%	109
	DGB02	SE207621.002	%	60 - 130%	117
	DGB03	SE207621.003	%	60 - 130%	107

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB202175.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB202149.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	78

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB202149.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	100
		d14-p-terphenyl (Surrogate)	%	-	99

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB202149.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB202149.001		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	99
		2-fluorobiphenyl (Surrogate)	%	-	100
		d14-p-terphenyl (Surrogate)	%	-	99

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB202149.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	78

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number		Parameter	Units	LOR	Result
LB202174.001		Arsenic, As	mg/kg	1	<1
		Cadmium, Cd	mg/kg	0.3	<0.3
		Chromium, Cr	mg/kg	0.5	<0.5
		Copper, Cu	mg/kg	0.5	<0.5
		Nickel, Ni	mg/kg	0.5	<0.5
		Lead, Pb	mg/kg	1	<1
		Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result
LB202149.001		TRH C10-C14	mg/kg	20	<20
		TRH C15-C28	mg/kg	45	<45
		TRH C29-C36	mg/kg	45	<45
		TRH C37-C40	mg/kg	100	<100
		TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB202148.001	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	112
		d8-toluene (Surrogate)	%	-	112
		Bromofluorobenzene (Surrogate)	%	-	95
	Totals	Total BTEX	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB202148.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	112

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207644.002	LB202175.010	Mercury	mg/kg	0.05	0.014437702	30.0213852567	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207621.003	LB202150.018	% Moisture	%w/w	1	1.9	1.6	88	20

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207621.003	LB202149.021		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.13	30	2

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207621.003	LB202149.021		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207621.003	LB202149.021		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207621.003	LB202149.021		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	2

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207644.002	LB202174.010		Arsenic, As	mg/kg	1	2.05199382762	8.629717355	71	33
			Cadmium, Cd	mg/kg	0.3	0.06341265320	1.734543801	200	0
			Chromium, Cr	mg/kg	0.5	8.131186550723	584436157(	33	97 †
			Copper, Cu	mg/kg	0.5	32.842686591	68.343322727	30	68 †
			Nickel, Ni	mg/kg	0.5	7.732875822313	9660009917	35	57 †
			Lead, Pb	mg/kg	1	19.28388694836	9.955040371(	34	63 †
			Zinc, Zn	mg/kg	2	42.03268090630	6611590909	33	63 †

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207621.003	LB202149.021		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207621.003	LB202148.021	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.8	11.1	50	3
			d8-toluene (Surrogate)	mg/kg	-	10.7	11.1	50	3
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	9.1	50	2
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE207621.003	LB202148.021		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.8	11.1	30	3
			d8-toluene (Surrogate)	mg/kg	-	10.7	11.1	30	3
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	9.1	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB202175.002	Mercury	mg/kg	0.05	0.24	0.2	70 - 130	118

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB202149.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	89
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	90
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	92
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	89
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	89
		p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	73
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.15	40 - 130	77

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB202149.002		Dichlorvos	mg/kg	0.5	1.5	2	60 - 140	75
		Diazinon (Dimpylate)	mg/kg	0.5	1.7	2	60 - 140	87
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	2	60 - 140	94
		Ethion	mg/kg	0.2	1.6	2	60 - 140	82
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	94
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB202149.002		Naphthalene	mg/kg	0.1	4.4	4	60 - 140	111
		Acenaphthylene	mg/kg	0.1	4.2	4	60 - 140	104
		Acenaphthene	mg/kg	0.1	4.7	4	60 - 140	116
		Phenanthrene	mg/kg	0.1	4.6	4	60 - 140	114
		Anthracene	mg/kg	0.1	4.3	4	60 - 140	108
		Fluoranthene	mg/kg	0.1	4.2	4	60 - 140	105
		Pyrene	mg/kg	0.1	4.2	4	60 - 140	106
		Benzo(a)pyrene	mg/kg	0.1	4.6	4	60 - 140	116
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	87
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	94
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB202149.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	111

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB202174.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	107
	Cadmium, Cd	mg/kg	0.3	5.4	5.41	80 - 120	100
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	105
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	105
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	104
	Lead, Pb	mg/kg	1	96	89.9	80 - 120	106
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB202149.002		TRH C10-C14	mg/kg	20	48	40	60 - 140	120
		TRH C15-C28	mg/kg	45	50	40	60 - 140	125
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	100
	TRH F Bands	TRH >C10-C16	mg/kg	25	47	40	60 - 140	118
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	125
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	90

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB202148.002	Monocyclic	Benzene	mg/kg	0.1	3.8	5	60 - 140	76
	Aromatic	Toluene	mg/kg	0.1	3.9	5	60 - 140	77
		Ethylbenzene	mg/kg	0.1	3.9	5	60 - 140	78
		m/p-xylene	mg/kg	0.2	7.9	10	60 - 140	79
		o-xylene	mg/kg	0.1	3.9	5	60 - 140	77
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.6	10	70 - 130	106
		d8-toluene (Surrogate)	mg/kg	-	10.7	10	70 - 130	107
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB202148.002		TRH C6-C10	mg/kg	25	82	92.5	60 - 140	89
		TRH C6-C9	mg/kg	20	77	80	60 - 140	96
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.6	10	70 - 130	106
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	59	62.5	60 - 140	94

MATRIX SPIKES

SE207621 R0

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE207621.001	LB202175.004	Mercury	mg/kg	0.05	0.22	<0.05	0.2	109

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE207621.001	LB202174.004	Arsenic, As	mg/kg	1	51	<1	50	101
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	87
		Chromium, Cr	mg/kg	0.5	55	4.7	50	100
		Copper, Cu	mg/kg	0.5	61	11	50	101
		Nickel, Ni	mg/kg	0.5	72	23	50	98
		Lead, Pb	mg/kg	1	50	<1	50	99
		Zinc, Zn	mg/kg	2	60	10	50	100

MATRIX SPIKE DUPLICATES

SE207621 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: https://www.sgs.com.au/~/media/Local/Australia/Documents/ Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Hamish Donovan
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Address	Level 27, Ernst & Young Centre 680 George St NSW 2000
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Project	**PS119057**
Order Number	**PS119057**
Samples	3

LABORATORY DETAILS

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SGS Reference	**SE207621 R0**
Date Received	17 Jun 2020
Date Reported	18 Jun 2020

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

No respirable fibres detected in all soil samples using trace analysis technique.

A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures due to large volume. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Environmental Services recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam.

SIGNATORIES

Bennet LO
Senior Organic Chemist/Metals Chemis

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

ANALYTICAL REPORT

SE207621 R0

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE207621.001	DGB01	Soil	202g Rocks	17 Jun 2020	No Asbestos Found	
SE207621.002	DGB02	Soil	216g Rocks	17 Jun 2020	No Asbestos Found	
SE207621.003	DGB03	Soil	236g Rocks	17 Jun 2020	No Asbestos Found	

METHOD SUMMARY

SE207621 R0

METHOD	METHODOLOGY SUMMARY
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602	The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable ’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service .
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy , including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos -containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

source: Sydney.pdf page: 1 SGS Ref: SE207621_COC

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page 1 of 1

SGS Environmental Services
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email: au.samplereceipt.sydney@sgs.com

Company Name: WSP
Address: LEVEL 27
680 GEORGE ST
SYDNEY, NSW 2000
Contact Name: Hamish Donovan ; Cleo Wu

Project Name/No: PS119057
Purchase Order No: PS119057
Results Required By: 24 hrs TAT
Telephone: 0400 359 547 ; 0404 786 197
Quote No. WSP PB – SE – E66QBU
Email Results: Hamish.Donovan@wsp.com ; cleo.wu@wsp.com

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	C17	Asbestos P/A
DGB01	17.06.2020	1		X		1B 1J	X	X
DGB02	17.06.2020	2		X		1B 1J	X	X
DGB03	17.06.2020	3		X		1B 1J	X	X

Analysis to be advised 25g
* sub sample from Asb bag

SGS EHS Sydney COC
SE207621

Relinquished By: ~~Claire Williamson~~ Cleo Wu	Date/Time: 17.06.2020	Received By:	Date/Time 17/06/20 @ 11.20
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: Yes/ No	Temperature: Ambient / Chilled	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No:
	Comments: * B = Bag J = Jar		

Uncontrolled template when printed

SAMPLE RECEIPT ADVICE

SE207621

CLIENT DETAILS

Contact	Hamish Donovan
Client	WSP AUSTRALIA PTY LIMITED
Address	Level 27, Ernst & Young Centre 680 George St NSW 2000
Telephone	02 9272 1453
Facsimile	02 9272 5101
Email	Hamish.Donovan@wsp.com
Project	**PS119057**
Order Number	**PS119057**
Samples	3

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Wed 17/6/2020
Report Due	Thu 18/6/2020
SGS Reference	**SE207621**

SUBMISSION DETAILS

This is to confirm that 3 samples were received on Wednesday 17/6/2020. Results are expected to be ready by COB Thursday 18/6/2020.
Please quote SGS reference SE207621 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	Other Lab	Sample cooling method	None
Samples received in correct containers	Yes	Sample counts by matrix	3 Soil
Date documentation received	17/6/2020	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	18.3°C	Sufficient sample for analysis	Yes
Turnaround time requested	Next Day		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

SAMPLE RECEIPT ADVICE

SE207621

CLIENT DETAILS

Client WSP AUSTRALIA PTY LIMITED

Project PS119057

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	DGB01	29	14	26	11	7	10	11	7
002	DGB02	29	14	26	11	7	10	11	7
003	DGB03	29	14	26	11	7	10	11	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE207621

CLIENT DETAILS

Client WSP AUSTRALIA PTY LIMITED

Project PS119057

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content
001	DGB01	1	1	1
002	DGB02	1	1	1
003	DGB03	1	1	1

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

Construction Sciences

Construction Sciences Pty Ltd
ABN: 74 128 806 735

Address:
South Marulan Road,
South Marulan NSW 2579

Laboratory: NSW Central Aggregates Laboratory

ATTERBERG LIMITS REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14311-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 1 of 5

Test Procedures:	T108, T109, T102 (CA3), T105, T120		
Sample Number	22659/S/36903	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020		
Sampled By	Rebecca Collier		
Date Tested	18/02/2020		
Att. Drying Method	Air Dried	Material Source	Holcim Lynwood Quarry
Atterberg Preparation	Dry Sieved	Material Type	DGB 20 (NLYNDGB20)
Material Description	-		

Atterberg Limits Results

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		**21**	23
Plastic Limit (%)		**18**	20
Plasticity Index (%)	2	**3**	6
Linear Shrinkage (%)			
Linear Shrinkage Defects:			

Remarks	Supplement to Simplified Report Number 200305RC1154

NATA

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
Corporate Site Number: 22659

Approved Signatory: Christopher Lo
Form ID: W11bRep Rev 1

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Laboratory: NSW Central Aggregates Laboratory

ATTERBERG LIMITS REPORT

Client:	HOLCIM PTY LTD	Report Number:	22659/R/14311-1
Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 2 of 5

Test Procedures:	T108, T109, T105, T120		
Sample Number	22659/S/36905	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020		
Sampled By	Rebecca Collier		
Date Tested	18/02/2020		
Att. Drying Method	Air Dried	Material Source	Holcim Lynwood Quarry
Atterberg Preparation	Dry Sieved	Material Type	DGB 20 (NLYNDGB20)
Material Description	-		

Atterberg Limits Results

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		**22**	23
Plastic Limit (%)		**17**	20
Plasticity Index (%)	2	**5**	6
Linear Shrinkage (%)			
Linear Shrinkage Defects:			

Remarks	Supplement to Simplified Report Number 200305RC1154

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Client Address:	LEVEL 8, 799 PACIFIC HWY, CHATSWOOD	Project Number:	22659/P/8
Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 3 of 5

Test Procedures:	T108, T109, T105, T120		
Sample Number	22659/S/36906	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@07:15
Date Sampled	11/02/2020		
Sampled By	Rebecca Collier		
Date Tested	18/02/2020		
Att. Drying Method	Air Dried	Material Source	Holcim Lynwood Quarry
Atterberg Preparation	Dry Sieved	Material Type	DGB 20 (NLYNDGB20)
Material Description	-		

Atterberg Limits Results

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		**22**	23
Plastic Limit (%)		**17**	20
Plasticity Index (%)	2	**5**	6
Linear Shrinkage (%)			
Linear Shrinkage Defects:			

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Project:	Lynwood Quarry Material Assessment	Lot Number:	DGB20-122
Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 4 of 5

Test Procedures:	T108, T109, AS1289.3.4.1, T102 (CA3), T105, T120		
Sample Number	22659/S/37271	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@10:20
Date Sampled	21/02/2020		
Sampled By	Jack O'Dowd		
Date Tested	26/02/2020		
Att. Drying Method	Air Dried	Material Source	Holcim Lynwood Quarry
Atterberg Preparation	Dry Sieved	Material Type	DGB 20 (NLYNDGB20)
Material Description	-		

Atterberg Limits Results			
Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		**22**	23
Plastic Limit (%)		**18**	20
Plasticity Index (%)	2	**4**	6
Linear Shrinkage (%)		**1.5**	
Linear Shrinkage Defects:	N/A		

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Location:	Lynwood	Internal Test Request:	22659/T/8379
Supplied To:	n/a	Client Reference/s:	DGB20-122 TR-341
Area Description:		Report Date / Page:	17/03/2020 Page 5 of 5

Test Procedures:	T108, T109, AS1289.3.4.1, T102 (CA3), T105, T120		
Sample Number	22659/S/37272	Sample Location	
Sampling Method	AS1141.3.1 Cl 9.4	Stockpile	Sampled@10:20
Date Sampled	21/02/2020		
Sampled By	Jack O'Dowd		
Date Tested	26/02/2020		
Att. Drying Method	Air Dried	Material Source	Holcim Lynwood Quarry
Atterberg Preparation	Dry Sieved	Material Type	DGB 20 (NLYNDGB20)
Material Description	-		

Atterberg Limits Results

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit (%)		**22**	23
Plastic Limit (%)		**18**	20
Plasticity Index (%)	2	**4**	6
Linear Shrinkage (%)		**1.0**	
Linear Shrinkage Defects:	N/A		

Remarks	Supplement to Simplified Report Number 200305RC1154

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