GARDEN VALIDATION – VARSITY QUARTER

Project Name: Varsity Quarter, Northenden
Project Number: 15-698
Client: Miller Homes
Date: 07-02-2023
Project Manager & Qualifications: R. Walker - BSc (Hons), FGS, AIEMA, AMICE, MIEnvSc, Cenv
E3P Engineer: J. Beer
Garden Validation Requirements: 600mm cover system (with/without break layer)
Plots: 147

OVERVIEW

An E3P engineer attended the above site to validate the thickness of the cover system that had been placed within the rear garden of plot 147 at the site off Sale Road, Northenden.

In total 1 No. hand excavated trial pit was advanced with the resulting strata detailed to the rear of this letter.

All trial pits were completed to highlight the required cover system of 600mm (150mm topsoil and 450mm subsoil).

E3P can confirm that our independent validation demonstrates that all gardens have been installed with 150mm of certified topsoil and at least 450mm subsoil in accordance with the NHBC requirements for a site of this nature.

list of plots requiring validation and their associated validation letters is presented in Table 1 for reference.

TOPSOIL

E3P attended site on 2nd November 2022 to obtain samples of the stockpiled topsoil deposits (stockpile 5 – samples SP5 01-21) which were analysed in accordance with the E3P Remediation Strategy. Chemical analysis confirmed that these topsoil deposits were chemically suitable for use within the proposed garden areas.

The topsoil has been won from across the site.

Analysis for topsoil undertaken by I2 Analytical Laboratory using UKAS accredited methods where applicable.

Chemical analysis suite comprises heavy metals, sulphates, phenols, speciated Polycylic Aromatic Hydrocarbons (PAHs), speciated and total Petroleum Hydrocarbons (TPH) and asbestos.

Sampling frequency in accordance with the agreed Remediation Strategy. Laboratory analysis certificates attached to this validation certificate.

Chemical analysis results are included within lab report 22-95034 (attached to this letter).

SUBSOIL

E3P attended site on 2nd November 2022 to obtain samples of the stockpiled subsoil deposits (Stockpile 1 and 17 samples SP1 – 01-04, SP17-01) which were analysed in accordance with the E3P Remediation Strategy. Chemical analysis confirmed that these subsoil deposits were chemically suitable for use within the proposed garden areas.

The subsoil has been won from site.

Analysis for subsoil undertaken by I2 Analytical Laboratory using UKAS accredited methods where applicable.

Chemical analysis suite comprises heavy metals, sulphates, phenols, speciated Polycylic Aromatic Hydrocarbons (PAHs), speciated and total Petroleum Hydrocarbons (TPH) and asbestos.

Sampling frequency in accordance with the agreed Remediation Strategy. Laboratory analysis certificates attached to this validation certificate.

Chemical analysis results are included within lab report 22-95034 (attached to this letter).

CHEMICAL ANALYSIS

TOPSOIL/SUBSOIL	SOURCE	LAB REFERENCE	SAMPLE REFERENCE	PASS/FAIL
Topsoil	On-site	22-95034	SP501-21	PASS
Subsoil	On-site		SP101-04 SP17-01	

The cover system validation photographs are enclosed within this letter. For information, Table 1 includes references and validation dates of previously validated plots.

TABLE 1 – VALIDATION LETTER REFERENCE

DATE	REPORT NUMBER	PLOT NUMBER
15/12/2022	V1	220-222 & 143-145
11/01/2023	V2	146, 216-217
25/01/2023	V3	148-149
February 2023	V4	147

Plot No: 147		
Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

Depth of Cover System Materials

Depth of Cover System Materials

Depth of Cover System at Ground Level

Depth of Cover System in Relation to Plot

Henry Morgan
e3p
Taylor Road
Urmston
Manchester
M41 7JQ

e:

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 22-95034

Project / Site name:	Varsity Quarter	**Samples received on:**	04/11/2022
Your job number:	15-698	**Samples instructed on/ Analysis started on:**	07/11/2022
Your order number:	003398	**Analysis completed by:**	23/11/2022
Report Issue Number:	1	**Report issued on:**	24/11/2022
Samples Analysed:	80 soil samples		

Signed:

Dominika Warjan
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490120	2490121	2490122	2490123	2490124
Sample Reference				SP1-01	SP1-02	SP1-03	SP1-04	SP2-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	12	11	9.7	16
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO	PDO

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.9	6.7	6.7	6.6	6.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	150	170	170	160	140
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0064	0.007	0.0048	0.0059	0.031
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	13	14	9.5	12	61
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	6.4	7	4.8	5.9	30.7
Sulphide	mg/kg	1	NONE	4.8	5.4	2.8	4	6.1
Total Sulphur	mg/kg	50	MCERTS	110	120	99	100	< 50
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1	1	0.9	1.2	2.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	0.07
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	0.33
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	0.19
Fluorene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	0.41
Phenanthrene	mg/kg	0.05	NONE	0.07	0.05	< 0.05	< 0.05	4.5
Anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	0.85
Fluoranthene	mg/kg	0.05	NONE	0.1	0.07	0.05	0.05	4.7
Pyrene	mg/kg	0.05	NONE	0.11	0.09	0.06	0.06	4.1
Benzo(a)anthracene	mg/kg	0.05	NONE	0.07	0.06	0.05	< 0.05	2
Chrysene	mg/kg	0.05	NONE	0.06	0.05	< 0.05	< 0.05	1.9
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.07	0.05	< 0.05	< 0.05	1.9
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	0.78
Benzo(a)pyrene	mg/kg	0.05	NONE	0.06	< 0.05	< 0.05	< 0.05	2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	0.83
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	0.17
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.05	< 0.05	< 0.05	< 0.05	0.98

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	< 0.80	< 0.80	< 0.80	< 0.80	25.7

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490120	2490121	2490122	2490123	2490124
Sample Reference				SP1-01	SP1-02	SP1-03	SP1-04	SP2-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	4.4	4.3	3.8	3.9	13
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	9.9	9.8	9.1	9.5	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	12	11	10	41
Lead (aqua regia extractable)	mg/kg	1	MCERTS	16	18	13	13	78
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6.9	7.1	6.3	6.4	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	18	23	19	19	56
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	5.7	10
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	2.1	3.9	< 1.0	10	34
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	16	44

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490125	2490126	2490127	2490128	2490129
Sample Reference				SP2-02	SP2-03	SP2-04	SP4-01	SP5-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	45	49	< 0.1
Moisture Content	%	0.01	NONE	17	19	13	8.1	15
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO	PDO

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.8	7.8	7.5	8.3	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	430	510	340	140	370
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.025	0.073	0.015	0.0089	0.012
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	49	150	29	18	24
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	24.6	73.3	14.6	8.9	11.8
Sulphide	mg/kg	1	NONE	3.8	4.2	7.8	6.5	6.2
Total Sulphur	mg/kg	50	MCERTS	290	320	190	110	280
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2	2.2	1.7	0.6	2.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.07	0.06	0.17	< 0.05	0.08
Acenaphthylene	mg/kg	0.05	NONE	0.06	0.06	0.06	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	0.19	0.07	0.62	< 0.05	0.06
Fluorene	mg/kg	0.05	NONE	0.16	0.08	0.5	< 0.05	0.08
Phenanthrene	mg/kg	0.05	NONE	2.4	1.2	7.1	0.1	0.63
Anthracene	mg/kg	0.05	NONE	0.47	0.22	1.5	< 0.05	0.13
Fluoranthene	mg/kg	0.05	NONE	3.3	1.5	9.8	0.2	1
Pyrene	mg/kg	0.05	NONE	3.4	1.6	8.8	0.22	1.1
Benzo(a)anthracene	mg/kg	0.05	NONE	1.8	0.89	3.6	0.13	0.56
Chrysene	mg/kg	0.05	NONE	1.8	0.87	4	0.09	0.61
Benzo(b)fluoranthene	mg/kg	0.05	NONE	1.9	0.75	3.3	0.1	0.49
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.64	0.5	1.8	0.08	0.36
Benzo(a)pyrene	mg/kg	0.05	NONE	1.8	0.92	3.4	0.11	0.51
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.84	0.42	1.8	< 0.05	0.26
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.2	0.09	0.4	< 0.05	0.06
Benzo(ghi)perylene	mg/kg	0.05	NONE	1.1	0.55	2.2	< 0.05	0.37

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	20.2	9.74	48.9	1.03	6.27

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490125	2490126	2490127	2490128	2490129
Sample Reference				SP2-02	SP2-03	SP2-04	SP4-01	SP5-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	15	12	5.4	13
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	14	12	10	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	33	35	26	13	31
Lead (aqua regia extractable)	mg/kg	1	MCERTS	83	82	62	19	64
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.4	< 0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	14	12	9.5	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	60	51	43	23	45
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	6.1	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	4.7	8.9	32	< 1.0	3.3
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	35	34	48	< 1.0	7.8
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	40	43	87	< 10	11

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490130	2490131	2490132	2490133	2490134
Sample Reference				SP5-02	SP5-03	SP5-04	SP5-05	SP5-06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	18	18	15	16
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SFS	SFS	SFS	SFS	SFS

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1	6.3	6.3	5.9	6.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	300	360	350	240	370
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0072	0.011	0.01	0.0043	0.0043
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	14	22	20	8.5	8.5
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	7.2	11.1	10.2	4.3	4.3
Sulphide	mg/kg	1	NONE	3.3	3.4	7.3	6.5	6.2
Total Sulphur	mg/kg	50	MCERTS	200	260	270	220	220
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.6	1.9	1.7	1.5	1.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.1	< 0.05	0.14	0.07	0.09
Acenaphthylene	mg/kg	0.05	NONE	0.05	< 0.05	0.07	< 0.05	0.05
Acenaphthene	mg/kg	0.05	NONE	0.12	0.05	0.15	0.05	0.11
Fluorene	mg/kg	0.05	NONE	0.14	< 0.05	0.24	0.05	0.13
Phenanthrene	mg/kg	0.05	NONE	1.3	0.49	2.5	0.52	1.4
Anthracene	mg/kg	0.05	NONE	0.27	0.09	0.56	0.12	0.31
Fluoranthene	mg/kg	0.05	NONE	2.1	0.84	3.4	0.97	2.3
Pyrene	mg/kg	0.05	NONE	2.2	0.93	3.5	1.1	2.4
Benzo(a)anthracene	mg/kg	0.05	NONE	1.1	0.38	1.6	0.52	1.1
Chrysene	mg/kg	0.05	NONE	1	0.5	1.7	0.49	1
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.98	0.36	1.4	0.36	0.85
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.58	0.37	0.83	0.39	0.74
Benzo(a)pyrene	mg/kg	0.05	NONE	1.1	0.44	1.4	0.44	1.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.54	0.21	0.72	0.23	0.45
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.16	0.05	0.17	0.06	0.08
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.7	0.28	0.9	0.33	0.61

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	12.5	4.99	19.3	5.67	12.8

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490130	2490131	2490132	2490133	2490134
Sample Reference				SP5-02	SP5-03	SP5-04	SP5-05	SP5-06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	12	13	11	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	13	12	15	10
Copper (aqua regia extractable)	mg/kg	1	MCERTS	32	29	30	25	26
Lead (aqua regia extractable)	mg/kg	1	MCERTS	72	68	69	57	68
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	0.4	0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	12	12	15	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	45	43	44	39	40
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	8.7	6.1	7.4	4.8	8.1
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	16	21	16	33	41
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	18	12
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	25	27	23	56	61

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490135	2490136	2490137	2490138	2490139
Sample Reference				SP5-07	SP5-08	SP5-09	SP5-10	SP5-11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	19	14	19	16	17
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SFS	SFS	SFS	SFS	SFS

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.3	6.4	6.3	6.3	7.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	410	350	420	370	280
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0041	0.0046	0.0065	0.0051	0.0083
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	8.2	9.2	13	10	17
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	4.1	4.6	6.5	5.1	8.3
Sulphide	mg/kg	1	NONE	3	3.9	4.3	5.2	6
Total Sulphur	mg/kg	50	MCERTS	270	240	290	1400	310
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.3	1.6	2.4	1.8	2.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.05	0.17	0.06	0.09	0.25
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	0.05	< 0.05	< 0.05	0.13
Acenaphthene	mg/kg	0.05	NONE	0.05	0.22	0.05	0.07	0.26
Fluorene	mg/kg	0.05	NONE	0.05	0.23	0.05	0.09	0.35
Phenanthrene	mg/kg	0.05	NONE	0.52	2.1	0.52	0.77	2.9
Anthracene	mg/kg	0.05	NONE	0.11	0.41	0.12	0.16	0.57
Fluoranthene	mg/kg	0.05	NONE	0.98	2.7	1.1	1.4	3.7
Pyrene	mg/kg	0.05	NONE	1	2.8	1.1	1.5	3.9
Benzo(a)anthracene	mg/kg	0.05	NONE	0.51	1.1	0.56	0.72	1.5
Chrysene	mg/kg	0.05	NONE	0.52	1.2	0.61	0.74	2
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.43	0.95	0.36	0.58	1.2
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.3	0.77	0.5	0.48	0.75
Benzo(a)pyrene	mg/kg	0.05	NONE	0.51	1.1	0.53	0.65	1.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.22	0.46	0.27	0.31	0.66
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	0.09	0.05	0.07	0.14
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.3	0.59	0.35	0.45	0.92

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	5.57	15	6.21	8.1	20.9

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490135	2490136	2490137	2490138	2490139
Sample Reference				SP5-07	SP5-08	SP5-09	SP5-10	SP5-11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	12	14	19	15
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	11	13	11	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	27	28	29	29
Lead (aqua regia extractable)	mg/kg	1	MCERTS	69	73	73	80	76
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.3	0.3	0.4	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	13	13	13	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	42	44	47	44	45
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	6.5	9.4	8	8.8	11
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	13	20	22	18	26
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	20	29	30	27	37

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490140	2490141	2490142	2490143	2490144
Sample Reference				SP5-12	SP5-13	SP5-14	SP5-15	SP5-16
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	19	17	16	16
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SPU	SPU	SPU	SPU	SPU

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.4	6.4	6.4	6.7	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	270	370	320	310	350
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0058	0.0053	0.0042	0.0056	0.0056
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	12	11	8.4	11	11
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	5.8	5.3	4.2	5.6	5.6
Sulphide	mg/kg	1	NONE	7.5	5.3	24	2.9	3.1
Total Sulphur	mg/kg	50	MCERTS	280	260	230	270	270
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.4	2.2	1.9	2	2.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.13	0.06	0.08	0.1	0.1
Acenaphthylene	mg/kg	0.05	NONE	0.08	< 0.05	< 0.05	< 0.05	0.07
Acenaphthene	mg/kg	0.05	NONE	0.16	0.06	0.09	0.09	0.15
Fluorene	mg/kg	0.05	NONE	0.22	0.06	0.09	0.08	0.21
Phenanthrene	mg/kg	0.05	NONE	2.2	0.61	0.9	0.82	2
Anthracene	mg/kg	0.05	NONE	0.4	0.14	0.18	0.17	0.39
Fluoranthene	mg/kg	0.05	NONE	2.7	1.2	1.3	1.2	2.5
Pyrene	mg/kg	0.05	NONE	2.8	1.4	1.4	1.3	2.6
Benzo(a)anthracene	mg/kg	0.05	NONE	1.3	0.66	0.67	0.66	1.1
Chrysene	mg/kg	0.05	NONE	1.2	0.71	0.64	0.64	1.2
Benzo(b)fluoranthene	mg/kg	0.05	NONE	1.1	0.55	0.55	0.51	0.88
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.57	0.42	0.32	0.38	0.54
Benzo(a)pyrene	mg/kg	0.05	NONE	1.1	0.69	0.56	0.57	1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.49	0.3	0.29	0.28	0.48
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.1	0.06	0.05	0.06	0.12
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.67	0.4	0.4	0.4	0.65

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	15.1	7.29	7.52	7.17	14

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490140	2490141	2490142	2490143	2490144
Sample Reference				SP5-12	SP5-13	SP5-14	SP5-15	SP5-16
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	14	12	14	13
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	13	13	14	12	16
Copper (aqua regia extractable)	mg/kg	1	MCERTS	34	31	29	29	33
Lead (aqua regia extractable)	mg/kg	1	MCERTS	83	120	68	69	78
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	0.3	< 0.3	0.3	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	13	12	12	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	49	49	43	42	50
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	7.8	9.9	7.5	6.9	12
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	20	22	15	13	20
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	28	32	22	20	32

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490145	2490146	2490147	2490148	2490149
Sample Reference				SP5-17	SP5-18	SP5-19	SP5-20	SP5-21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	19	17	18	16
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SPU	SPU	SPU	SPU	SPU

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.8	6.9	6.7	6.3	7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	370	310	340	280	280
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0066	0.0059	0.0072	0.0058	0.0071
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	13	12	14	12	14
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	6.6	5.9	7.2	5.8	7.1
Sulphide	mg/kg	1	NONE	3.6	19	4.9	13	4.5
Total Sulphur	mg/kg	50	MCERTS	280	280	240	210	250
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.9	2.3	2	1.9	2.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.09	0.09	< 0.05	0.13	0.13
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	0.05	0.08
Acenaphthene	mg/kg	0.05	NONE	0.19	0.08	< 0.05	0.2	0.15
Fluorene	mg/kg	0.05	NONE	0.14	0.1	< 0.05	0.18	0.2
Phenanthrene	mg/kg	0.05	NONE	1.2	0.93	0.44	1.7	1.9
Anthracene	mg/kg	0.05	NONE	0.25	0.18	0.1	0.3	0.36
Fluoranthene	mg/kg	0.05	NONE	2	1.6	0.88	1.9	2.4
Pyrene	mg/kg	0.05	NONE	2	1.7	0.97	2.1	2.7
Benzo(a)anthracene	mg/kg	0.05	NONE	0.91	0.76	0.5	0.85	1.1
Chrysene	mg/kg	0.05	NONE	1.1	0.89	0.42	1	1.3
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.79	0.61	0.45	0.72	0.87
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.57	0.43	0.21	0.53	0.61
Benzo(a)pyrene	mg/kg	0.05	NONE	0.92	0.68	0.49	0.85	1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.45	0.37	0.23	0.39	0.48
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.14	< 0.05	0.05	0.11	0.12
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.59	0.49	0.32	0.57	0.62

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	11.3	8.89	5.06	11.5	14

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490145	2490146	2490147	2490148	2490149
Sample Reference				SP5-17	SP5-18	SP5-19	SP5-20	SP5-21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	12	12	12	14
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	12	12	12	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	28	31	29	30	33
Lead (aqua regia extractable)	mg/kg	1	MCERTS	67	72	64	68	83
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	0.3	< 0.3	0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	13	12	12	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	39	43	38	44	48
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	9.8	9.4	9.2	12	12
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	21	21	50	19	22
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	31	31	59	31	33

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490150	2490151	2490152	2490153	2490154
Sample Reference				SP6-01	SP6-02	SP6-03	SP7-01	SP7-02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	24	21	21	9.9	13
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	ASE	ASE	ASE	ASE	ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7	6.4	6.3	6.5	6.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	580	530	510	340	300
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0089	0.0065	0.0071	0.0061	0.015
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	18	13	14	12	31
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	8.9	6.5	7.1	6.1	15.4
Sulphide	mg/kg	1	NONE	3.3	7	3.1	2.2	68
Total Sulphur	mg/kg	50	MCERTS	310	340	360	240	260
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.1	3.2	3.3	2.1	1.5

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.17	< 0.05	0.05	0.13	0.63
Acenaphthylene	mg/kg	0.05	NONE	0.06	0.05	< 0.05	0.07	0.08
Acenaphthene	mg/kg	0.05	NONE	0.44	0.09	< 0.05	0.17	2
Fluorene	mg/kg	0.05	NONE	0.29	0.09	0.05	0.16	1.4
Phenanthrene	mg/kg	0.05	NONE	2.7	0.98	0.65	1.7	14
Anthracene	mg/kg	0.05	NONE	0.47	0.21	0.17	0.46	6
Fluoranthene	mg/kg	0.05	NONE	3.5	1.5	1.2	2.4	9.9
Pyrene	mg/kg	0.05	NONE	3.5	1.5	1.3	2.6	8.4
Benzo(a)anthracene	mg/kg	0.05	NONE	1.2	0.69	0.58	1.3	3.3
Chrysene	mg/kg	0.05	NONE	1.4	0.88	0.74	1.6	4.2
Benzo(b)fluoranthene	mg/kg	0.05	NONE	1.1	0.69	0.6	1.3	2.1
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.71	0.37	0.33	0.55	2.3
Benzo(a)pyrene	mg/kg	0.05	NONE	1.3	0.77	0.71	1.4	2.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.6	0.35	0.34	0.64	1.3
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.12	0.08	0.08	0.18	0.31
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.75	0.42	0.43	0.78	1.5

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	18.4	8.72	7.26	15.3	60.2

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490150	2490151	2490152	2490153	2490154
Sample Reference				SP6-01	SP6-02	SP6-03	SP7-01	SP7-02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	12	13	16	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	12	13	13	11
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	28	29	39	27
Lead (aqua regia extractable)	mg/kg	1	MCERTS	73	72	76	95	65
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.3	0.3	0.5	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	11	13	15	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	44	44	52	58	44
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	7.1
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	11	7.9	7.3	11	31
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	22	8.6	18	18	65
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	30
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	33	17	26	29	130

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490155	2490156	2490157	2490158	2490159
Sample Reference				SP8-01	SP9-01	SP9-02	SP9-03	SP9-04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	19	< 0.1
Moisture Content	%	0.01	NONE	14	20	18	16	20
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	ASE	ASE	ASE	ASE	ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.3	7.4	7.7	6.6	6.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	240	480	440	340	400
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0046	0.0076	0.0089	0.0088	0.01
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	9.1	15	18	18	21
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	4.6	7.6	8.9	8.8	10.3
Sulphide	mg/kg	1	NONE	2.8	4.2	4	3.9	3.8
Total Sulphur	mg/kg	50	MCERTS	190	310	320	350	310
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.8	3.1	2.9	2.2	2.7

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	< 0.05	0.08	0.09	0.07	0.11
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	< 0.05	0.07	0.09	0.06	0.1
Fluorene	mg/kg	0.05	NONE	< 0.05	0.09	0.08	0.07	0.07
Phenanthrene	mg/kg	0.05	NONE	0.45	0.94	0.99	0.91	1
Anthracene	mg/kg	0.05	NONE	0.1	0.21	0.22	0.15	0.22
Fluoranthene	mg/kg	0.05	NONE	0.69	1.8	1.4	1.3	1.6
Pyrene	mg/kg	0.05	NONE	0.76	1.9	1.7	1.5	1.7
Benzo(a)anthracene	mg/kg	0.05	NONE	0.36	0.9	0.75	0.61	0.81
Chrysene	mg/kg	0.05	NONE	0.47	1.1	0.93	0.79	0.97
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.36	0.87	0.74	0.63	0.79
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.16	0.45	0.35	0.3	0.38
Benzo(a)pyrene	mg/kg	0.05	NONE	0.39	0.95	0.78	0.7	0.88
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.19	0.44	0.39	0.31	0.43
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	0.11	0.09	0.08	0.1
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.25	0.59	0.46	0.39	0.5

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	4.18	10.4	9.05	7.87	9.72

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490155	2490156	2490157	2490158	2490159
Sample Reference				SP8-01	SP9-01	SP9-02	SP9-03	SP9-04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	14	15	14	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	15	15	13	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	35	36	37	94	45
Lead (aqua regia extractable)	mg/kg	1	MCERTS	74	92	99	83	100
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	0.4	0.3	0.3	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	13	14	12	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	43	57	56	50	61
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	4.6	6.4	4.2	11	16
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	10	9.6	11	25	36
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	15	16	15	36	51

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490160	2490161	2490162	2490163	2490164
Sample Reference				SP9-05	SP9-06	SP9-07	SP9-08	SP9-09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	12	13	15	12
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MLO	MLO	MLO	MLO	MLO

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.2	6.9	7.4	7	7.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	420	380	430	510	330
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0046	0.0054	0.0034	0.0067	0.0059
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	9.2	11	6.7	13	12
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	4.6	5.4	3.4	6.7	5.9
Sulphide	mg/kg	1	NONE	5	3.8	3.4	3	3.7
Total Sulphur	mg/kg	50	MCERTS	300	290	280	400	310
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.3	2.2	2.3	3.1	2.5

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.08	0.06	0.08	0.05	0.07
Acenaphthylene	mg/kg	0.05	NONE	0.05	< 0.05	0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	0.08	0.07	0.09	0.07	0.1
Fluorene	mg/kg	0.05	NONE	0.07	0.06	0.07	0.07	0.1
Phenanthrene	mg/kg	0.05	NONE	1.1	0.85	0.99	0.81	1.3
Anthracene	mg/kg	0.05	NONE	0.26	0.18	0.2	0.16	0.29
Fluoranthene	mg/kg	0.05	NONE	2.2	1.3	1.5	1.2	1.9
Pyrene	mg/kg	0.05	NONE	2.3	1.5	1.6	1.3	1.9
Benzo(a)anthracene	mg/kg	0.05	NONE	1	0.65	0.79	0.64	0.89
Chrysene	mg/kg	0.05	NONE	1.3	0.78	0.95	0.79	1.1
Benzo(b)fluoranthene	mg/kg	0.05	NONE	1.1	0.55	0.76	0.69	0.84
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.51	0.52	0.37	0.33	0.4
Benzo(a)pyrene	mg/kg	0.05	NONE	1.1	0.69	0.88	0.8	0.91
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.56	0.35	0.37	0.36	0.42
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.14	0.07	0.09	0.08	0.1
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.64	0.43	0.46	0.46	0.54

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	12.4	8.02	9.26	7.83	10.9

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490160	2490161	2490162	2490163	2490164
Sample Reference				SP9-05	SP9-06	SP9-07	SP9-08	SP9-09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	14	15	14	15
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	14	14	14	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	35	36	33	39
Lead (aqua regia extractable)	mg/kg	1	MCERTS	99	94	91	89	100
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	0.4	0.4	0.4	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	14	13	13	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	60	55	56	57	58
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	13	18	14	9.2	14
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	30	35	24	22	26
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	43	53	38	31	40

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490165	2490166	2490167	2490168	2490169
Sample Reference				SP9-10	SP9-11	SP9-12	SP9-13	SP9-14
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	0.3	1.2	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	10	11	12	12
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MLO	MLO	ASE	ASE	ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6	5.9	6.4	6.4	6.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	470	480	300	440	380
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0047	0.0063	0.0022	0.0076	0.0036
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	9.3	13	4.3	15	7.1
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	4.7	6.3	2.2	7.6	3.6
Sulphide	mg/kg	1	NONE	< 1.0	1.7	4.1	4.2	3.4
Total Sulphur	mg/kg	50	MCERTS	350	380	270	340	300
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.1	3.2	2	2.6	2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	1.1	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	< 0.05	0.07	0.07	0.06	0.19
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	0.12	0.06	< 0.05	0.09
Acenaphthene	mg/kg	0.05	NONE	< 0.05	0.17	0.14	0.08	0.2
Fluorene	mg/kg	0.05	NONE	0.06	0.27	0.16	0.07	0.24
Phenanthrene	mg/kg	0.05	NONE	0.58	2.9	1.8	1	2.4
Anthracene	mg/kg	0.05	NONE	0.12	0.57	0.38	0.23	0.45
Fluoranthene	mg/kg	0.05	NONE	0.99	3.4	2.6	1.6	2.7
Pyrene	mg/kg	0.05	NONE	1.1	3.5	2.9	1.7	2.9
Benzo(a)anthracene	mg/kg	0.05	NONE	0.57	1.7	1.3	0.83	1.3
Chrysene	mg/kg	0.05	NONE	0.7	1.5	1.5	0.97	1.5
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.48	1.3	0.94	0.7	1.2
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.44	0.73	0.98	0.72	0.58
Benzo(a)pyrene	mg/kg	0.05	NONE	0.65	1.5	1.4	0.88	1.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.29	0.65	0.58	0.45	0.6
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.07	0.15	0.15	0.11	0.14
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.37	0.8	0.74	0.58	0.71

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	6.45	19.4	15.7	10.1	16.6

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490165	2490166	2490167	2490168	2490169
Sample Reference				SP9-10	SP9-11	SP9-12	SP9-13	SP9-14
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	14	14	18	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	14	14	16	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	41	35	43	41
Lead (aqua regia extractable)	mg/kg	1	MCERTS	82	93	87	120	99
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	0.4	0.5	0.5	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	14	14	15	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	52	59	58	63	59
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	2.1	4.1	2.8	4.5
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	4.6	4.9
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	4	11	14	19	15
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	8.6	18	31	38	28
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	13	31	49	65	52

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490170	2490171	2490172	2490173	2490174
Sample Reference				SP9-15	SP9-16	SP9-17	SP9-18	SP9-19
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	0.9	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	11	13	13	11
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JSW	JSW	JSW	JSW	JSW

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.3	6.3	6.1	7.5	6.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	430	330	430	380	370
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0054	0.0032	0.0082	0.0034	0.0051
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	11	6.4	16	6.8	10
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	5.4	3.2	8.2	3.4	5.1
Sulphide	mg/kg	1	NONE	3.5	2.6	3.9	2.2	2.5
Total Sulphur	mg/kg	50	MCERTS	300	240	320	290	270
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.4	1.9	2.4	2	2.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.07	0.08	0.06	0.05	0.1
Acenaphthylene	mg/kg	0.05	NONE	0.05	0.06	0.05	0.05	0.06
Acenaphthene	mg/kg	0.05	NONE	0.09	0.07	0.08	0.06	0.16
Fluorene	mg/kg	0.05	NONE	0.1	0.08	0.07	0.06	0.15
Phenanthrene	mg/kg	0.05	NONE	1.2	0.94	0.93	0.78	1.8
Anthracene	mg/kg	0.05	NONE	0.26	0.2	0.2	0.17	0.41
Fluoranthene	mg/kg	0.05	NONE	1.7	1.4	1.5	1.2	2.5
Pyrene	mg/kg	0.05	NONE	1.9	1.6	1.6	1.3	2.6
Benzo(a)anthracene	mg/kg	0.05	NONE	0.89	0.67	0.72	0.66	1.2
Chrysene	mg/kg	0.05	NONE	1.1	0.8	0.91	0.84	1.4
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.67	0.54	0.7	0.59	0.91
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.72	0.63	0.36	0.56	0.92
Benzo(a)pyrene	mg/kg	0.05	NONE	0.97	0.73	0.72	0.77	1.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.44	0.35	0.39	0.35	0.56
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.1	0.07	0.1	0.1	0.14
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.52	0.45	0.48	0.46	0.72

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	10.7	8.62	8.83	8	14.9

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490170	2490171	2490172	2490173	2490174
Sample Reference				SP9-15	SP9-16	SP9-17	SP9-18	SP9-19
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	14	16	16	14
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	13	14	15	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	41	40	45	44	35
Lead (aqua regia extractable)	mg/kg	1	MCERTS	100	100	110	98	83
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	0.6	0.4	0.5	0.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	13	14	15	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	58	50	64	67	54
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	6.4	< 2.0	< 2.0	< 2.0	6.5
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	7.4	< 4.0	< 4.0	< 4.0	8.6
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	18	4.6	8.3	8.5	20
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	31	11	15	15	39
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	62	16	24	23	74

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490175	2490176	2490177	2490178	2490179
Sample Reference				SP9-20	SP9-21	SP10-01	SP10-02	SP10-03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	0.3	< 0.1	1.3
Moisture Content	%	0.01	NONE	12	11	10	11	11
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JSW	JSW	JSW	JSW	JSW

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.3	7.4	7.8	8.1	8.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	520	240	420	370	440
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0055	0.0042	0.028	0.047	0.041
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	11	8.3	56	94	81
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	5.5	4.2	27.8	47	40.7
Sulphide	mg/kg	1	NONE	2.2	2.7	7.1	8.6	15
Total Sulphur	mg/kg	50	MCERTS	360	260	250	260	260
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.1	2.1	1.3	1.2	1.4

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	1.2	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.07	0.08	0.05	0.17	< 0.05
Acenaphthylene	mg/kg	0.05	NONE	0.09	0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	0.08	0.1	0.07	< 0.05	< 0.05
Fluorene	mg/kg	0.05	NONE	0.1	0.12	0.06	0.06	< 0.05
Phenanthrene	mg/kg	0.05	NONE	1.4	1.1	0.85	0.65	0.48
Anthracene	mg/kg	0.05	NONE	0.29	0.23	0.17	0.14	0.11
Fluoranthene	mg/kg	0.05	NONE	2.1	1.5	1.2	0.91	0.9
Pyrene	mg/kg	0.05	NONE	2.2	1.6	1.2	0.94	0.92
Benzo(a)anthracene	mg/kg	0.05	NONE	1.1	0.73	0.56	0.42	0.42
Chrysene	mg/kg	0.05	NONE	1.2	0.85	0.67	0.55	0.56
Benzo(b)fluoranthene	mg/kg	0.05	NONE	1	0.57	0.55	0.44	0.39
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.52	0.56	0.3	0.21	0.41
Benzo(a)pyrene	mg/kg	0.05	NONE	1.1	0.77	0.64	0.47	0.54
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.52	0.33	0.29	0.23	0.25
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.13	0.08	0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.63	0.41	0.36	0.26	0.31

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	12.5	9.06	6.99	5.45	5.29

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490175	2490176	2490177	2490178	2490179
Sample Reference				SP9-20	SP9-21	SP10-01	SP10-02	SP10-03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	14	10	11	9.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	1.9	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	14	12	12	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	34	35	29	22	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	85	120	54	52	47
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	0.4	0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	13	11	11	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	54	56	44	43	39
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	3.3	3.6	< 2.0	3.5	3.1
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	8.4	10	3.6	7.1	5.7
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	16	23	10	50	37
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	19	14
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	28	37	14	79	60

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490180	2490181	2490182	2490183	2490184
Sample Reference				SP10-04	SP10-05	SP10-06	SP10-07	SP11-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	0.6	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	12	12	10	11
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA	DSA	DSA

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.8	8	8.5	8.6	7.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	460	340	490	620	270
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.034	0.028	0.062	0.065	0.017
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	68	56	120	130	33
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	33.9	28.2	61.9	64.7	16.6
Sulphide	mg/kg	1	NONE	15	7.5	13	29	5.6
Total Sulphur	mg/kg	50	MCERTS	280	260	350	410	230
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.2	1.5	1.6	1.3	1.8

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.05	< 0.05	< 0.05	< 0.05	0.11
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	0.07	< 0.05	0.15	0.09	0.09
Fluorene	mg/kg	0.05	NONE	0.07	< 0.05	0.12	0.07	0.08
Phenanthrene	mg/kg	0.05	NONE	0.82	0.48	1.2	0.84	0.92
Anthracene	mg/kg	0.05	NONE	0.2	0.1	0.24	0.18	0.21
Fluoranthene	mg/kg	0.05	NONE	1.3	0.83	1.5	1.3	1.3
Pyrene	mg/kg	0.05	NONE	1.3	0.87	1.5	1.3	1.3
Benzo(a)anthracene	mg/kg	0.05	NONE	0.59	0.4	0.7	0.74	0.6
Chrysene	mg/kg	0.05	NONE	0.72	0.56	0.86	0.62	0.7
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.63	0.44	0.68	0.65	0.61
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.27	0.26	0.38	0.37	0.34
Benzo(a)pyrene	mg/kg	0.05	NONE	0.63	0.48	0.81	0.75	0.68
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.33	0.24	0.34	0.39	0.34
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.06	< 0.05	0.07	0.08	0.07
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.39	0.29	0.44	0.47	0.37

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	7.41	4.95	9.03	7.87	7.75

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490180	2490181	2490182	2490183	2490184
Sample Reference				SP10-04	SP10-05	SP10-06	SP10-07	SP11-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	10	10	12	11	7.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	13	16	14	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21	21	31	27	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	59	52	64	59	37
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	10	13	13	12	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	46	45	59	51	39
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	6	3.1	4.7	5.9	7.8
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	9.9	5.1	18	8.9	18
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	16	< 10	23	15	26

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490185	2490186	2490187	2490188	2490189
Sample Reference				SP11-02	SP11-03	SP12-01	SP12-02	SP12-03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	11	17	20	20
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA	DSA	DSA

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.1	7.2	7.1	7.6	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	250	330	450	530	510
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.018	0.025	0.038	0.046	0.085
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	35	49	76	92	170
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	17.6	24.6	38.2	45.8	85.1
Sulphide	mg/kg	1	NONE	5.6	6.2	23	2.6	3.3
Total Sulphur	mg/kg	50	MCERTS	200	260	350	420	600
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.7	1.4	2.2	2.5	2.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	0.12	< 0.05	0.1
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	0.07	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	0.13	0.06	0.09
Fluorene	mg/kg	0.05	NONE	< 0.05	< 0.05	0.13	0.05	0.08
Phenanthrene	mg/kg	0.05	NONE	0.5	0.47	1.5	0.86	0.83
Anthracene	mg/kg	0.05	NONE	0.12	0.11	0.3	0.32	0.17
Fluoranthene	mg/kg	0.05	NONE	0.77	1	2.2	1.7	1.3
Pyrene	mg/kg	0.05	NONE	0.77	1	2.4	1.7	1.3
Benzo(a)anthracene	mg/kg	0.05	NONE	0.44	0.5	1	0.69	0.73
Chrysene	mg/kg	0.05	NONE	0.36	0.56	1.3	0.8	0.77
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.39	0.48	0.99	0.68	0.79
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.19	0.27	0.48	0.54	0.34
Benzo(a)pyrene	mg/kg	0.05	NONE	0.43	0.58	1.1	0.69	0.79
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.2	0.25	0.52	0.3	0.35
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	0.05	0.13	< 0.05	0.07
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.22	0.29	0.62	0.43	0.49

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	4.39	5.6	13	8.81	8.23

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490185	2490186	2490187	2490188	2490189
Sample Reference				SP11-02	SP11-03	SP12-01	SP12-02	SP12-03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.8	8.7	14	16	24
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	12	15	16	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	24	35	36	59
Lead (aqua regia extractable)	mg/kg	1	MCERTS	35	42	89	89	140
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.3	0.4	0.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	10	18	15	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	35	38	53	55	89
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	4.2	4.2	11	6.7	6.5
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	6.7	11	18	28	17
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	11	15	29	34	24

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490190	2490191	2490192	2490193	2490194
Sample Reference				SP12-04	SP12-05	SP13-01	SP13-02	SP16-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	21	14	13	17
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SSZ	SSZ	SSZ	SSZ	SSZ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7	7.5	7.1	7.1	6.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	490	420	230	380	390
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.052	0.051	0.0097	0.012	0.014
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	100	100	19	24	27
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	52.2	51.1	9.7	11.8	13.5
Sulphide	mg/kg	1	NONE	9.4	6.6	3.8	4.3	6
Total Sulphur	mg/kg	50	MCERTS	350	330	240	270	300
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2	2.7	1.7	1.7	2.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.09	0.4	0.12	0.08	0.12
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	0.06	< 0.05	< 0.05	0.05
Acenaphthene	mg/kg	0.05	NONE	0.17	0.81	0.07	0.06	0.12
Fluorene	mg/kg	0.05	NONE	0.17	0.53	0.09	< 0.05	0.14
Phenanthrene	mg/kg	0.05	NONE	2	5.1	0.75	0.69	1.3
Anthracene	mg/kg	0.05	NONE	0.38	0.87	0.17	0.13	0.27
Fluoranthene	mg/kg	0.05	NONE	2.4	4.4	1.1	1.1	1.9
Pyrene	mg/kg	0.05	NONE	2.3	4.7	1.2	1.2	2.1
Benzo(a)anthracene	mg/kg	0.05	NONE	1.2	2.2	0.5	0.54	0.82
Chrysene	mg/kg	0.05	NONE	1.1	2	0.67	0.63	1
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.92	1.8	0.52	0.44	0.83
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.47	1	0.24	0.42	0.43
Benzo(a)pyrene	mg/kg	0.05	NONE	1	2	0.56	0.55	0.86
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.47	0.69	0.28	0.27	0.42
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.1	0.19	0.06	0.06	0.09
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.58	1.1	0.35	0.34	0.49

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	13.4	27.8	6.65	6.45	10.9

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490190	2490191	2490192	2490193	2490194
Sample Reference				SP12-04	SP12-05	SP13-01	SP13-02	SP16-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	15	14	14	13
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	16	14	15	11
Copper (aqua regia extractable)	mg/kg	1	MCERTS	32	37	32	33	31
Lead (aqua regia extractable)	mg/kg	1	MCERTS	83	91	75	75	77
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	0.4	< 0.3	0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	14	15	15	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	53	53	57	51	43
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	11	8.9	5.2	5.9
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	8.7	16	16	12	15
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	24	15	28	23	27
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	33	41	53	41	48

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490195	2490196	2490197	2490198	2490199
Sample Reference				SP16-02	SP16-03	SP16-04	SP16-05	SP17-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	17	16	17	3.1
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SSZ	SSZ	SSZ	SSZ	SSZ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7	6.1	6.2	5.8	7.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	420	470	310	410	54
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0083	0.0085	0.011	0.0082	0.0024
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	17	17	23	16	4.7
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	8.3	8.5	11.4	8.2	2.4
Sulphide	mg/kg	1	NONE	2.9	3	3.4	4.9	2.2
Total Sulphur	mg/kg	50	MCERTS	370	320	260	350	< 50
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.3	2.3	2.1	2.3	< 0.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.06	0.05	0.27	0.07	< 0.05
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	0.06	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	0.06	0.06	0.13	0.09	< 0.05
Fluorene	mg/kg	0.05	NONE	0.07	0.1	0.12	0.08	< 0.05
Phenanthrene	mg/kg	0.05	NONE	0.76	1.1	1.2	0.98	< 0.05
Anthracene	mg/kg	0.05	NONE	0.16	0.24	0.23	0.2	< 0.05
Fluoranthene	mg/kg	0.05	NONE	1.4	1.6	1.6	1.6	< 0.05
Pyrene	mg/kg	0.05	NONE	1.5	1.8	1.8	1.7	< 0.05
Benzo(a)anthracene	mg/kg	0.05	NONE	0.64	0.97	0.77	0.75	< 0.05
Chrysene	mg/kg	0.05	NONE	0.82	0.76	0.9	0.94	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.73	0.77	0.75	0.77	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.33	0.4	0.34	0.66	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	0.75	0.85	0.79	0.84	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.36	0.4	0.38	0.4	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.09	0.09	0.09	0.1	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.42	0.44	0.49	0.5	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	8.08	9.68	9.83	9.68	< 0.80

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 22-95034
Project / Site name: Varsity Quarter
Your Order No: 003398

Lab Sample Number				2490195	2490196	2490197	2490198	2490199
Sample Reference				SP16-02	SP16-03	SP16-04	SP16-05	SP17-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	13	12	15	3.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	13	11	11	13	7.6
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	38	32	35	6.4
Lead (aqua regia extractable)	mg/kg	1	MCERTS	99	89	72	98	5.5
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	0.3	0.4	0.4	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	11	11	13	8.6
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	54	45	43	52	18
Petroleum Hydrocarbons								
TPH (C5 - C6) $_{HS_1D_TOTAL}$	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) $_{HS_1D_TOTAL}$	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) $_{EH_CU_1D_TOTAL}$	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) $_{EH_CU_1D_TOTAL}$	mg/kg	4	NONE	< 4.0	< 4.0	4.6	< 4.0	< 4.0
TPH (C16 - C21) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	10	18	12	10	< 1.0
TPH (C21 - C35) $_{EH_CU_1D_TOTAL}$	mg/kg	1	NONE	22	35	25	29	< 1.0
TPH (C35 - C40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH_CU+HS_1D_TOTAL}$	mg/kg	10	NONE	32	53	41	40	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number : 22-95034
Project / Site name: Varsity Quarter

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2490120	SP1-01	None Supplied	None Supplied	Brown sandy clay with gravel.
2490121	SP1-02	None Supplied	None Supplied	Brown sandy clay with gravel.
2490122	SP1-03	None Supplied	None Supplied	Brown sandy clay with gravel and vegetation.
2490123	SP1-04	None Supplied	None Supplied	Brown sand with gravel.
2490124	SP2-01	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490125	SP2-02	None Supplied	None Supplied	Brown clay and sand with vegetation.
2490126	SP2-03	None Supplied	None Supplied	Brown clay and sand with vegetation.
2490127	SP2-04	None Supplied	None Supplied	Brown clay and loam with stones and vegetation.
2490128	SP4-01	None Supplied	None Supplied	Brown sandy clay with stones.
2490129	SP5-01	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490130	SP5-02	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490131	SP5-03	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490132	SP5-04	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490133	SP5-05	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490134	SP5-06	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490135	SP5-07	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490136	SP5-08	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490137	SP5-09	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490138	SP5-10	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490139	SP5-11	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490140	SP5-12	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490141	SP5-13	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490142	SP5-14	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490143	SP5-15	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490144	SP5-16	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490145	SP5-17	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490146	SP5-18	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490147	SP5-19	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490148	SP5-20	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490149	SP5-21	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490150	SP6-01	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490151	SP6-02	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490152	SP6-03	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490153	SP7-01	None Supplied	None Supplied	Brown sand with gravel and vegetation.
2490154	SP7-02	None Supplied	None Supplied	Brown sand with gravel and vegetation.
2490155	SP8-01	None Supplied	None Supplied	Brown sand with gravel and vegetation.
2490156	SP9-01	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490157	SP9-02	None Supplied	None Supplied	Brown sandy loam with vegetation and plastic.
2490158	SP9-03	None Supplied	None Supplied	Brown sandy loam with vegetation and stones.
2490159	SP9-04	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490160	SP9-05	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490161	SP9-06	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490162	SP9-07	None Supplied	None Supplied	Brown sandy loam with vegetation.
2490163	SP9-08	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490164	SP9-09	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490165	SP9-10	None Supplied	None Supplied	Brown sandy loam with vegetation and stones.
2490166	SP9-11	None Supplied	None Supplied	Brown sandy loam with vegetation and stones.
2490167	SP9-12	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490168	SP9-13	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490169	SP9-14	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490170	SP9-15	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490171	SP9-16	None Supplied	None Supplied	Brown sandy loam with vegetation and stones.
2490172	SP9-17	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490173	SP9-18	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490174	SP9-19	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490175	SP9-20	None Supplied	None Supplied	Brown sandy loam with vegetation and gravel
2490176	SP9-21	None Supplied	None Supplied	Brown sandy loam with vegetation and stones.
2490177	SP10-01	None Supplied	None Supplied	Brown gravelly sand with vegetation and stones.
2490178	SP10-02	None Supplied	None Supplied	Brown sandy clay with vegetation and stones.

Analytical Report Number : 22-95034
Project / Site name: Varsity Quarter

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2490179	SP10-03	None Supplied	None Supplied	Brown sandy clay with vegetation and stones.
2490180	SP10-04	None Supplied	None Supplied	Brown sandy clay with vegetation and stones.
2490181	SP10-05	None Supplied	None Supplied	Brown sandy clay with vegetation and stones.
2490182	SP10-06	None Supplied	None Supplied	Brown sandy clay with vegetation and stones.
2490183	SP10-07	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490184	SP11-01	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490185	SP11-02	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490186	SP11-03	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490187	SP12-01	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490188	SP12-02	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490189	SP12-03	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490190	SP12-04	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490191	SP12-05	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490192	SP13-01	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490193	SP13-02	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490194	SP16-01	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490195	SP16-02	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490196	SP16-03	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490197	SP16-04	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490198	SP16-05	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2490199	SP17-01	None Supplied	None Supplied	Brown sand with gravel.

Analytical Report Number : 22-95034
Project / Site name: Varsity Quarter

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	NONE
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

Analytical Report Number : 22-95034
Project / Site name: Varsity Quarter

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total