Certificate of Analysis

Certificate Number 17-12056-1

13-Oct-17

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 17-12056-1

Client Reference PSL17/4794

Order No (not supplied)

Contract Title The Rookery

Description 3 Soil samples.

Date Received 04-Oct-17

Date Started 04-Oct-17

Date Completed 13-Oct-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-12056, amendments.**

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 17-12056-1
Client Ref PSL17/4794
Contract Title The Rookery

			Lab No	1238846	1238847	1238848
			Sample ID	TP170929-A	TP170929-B	TP170929-C
			Depth			
			Other ID	Topsoil	Sand Sub-Soil	Stone
			Sample Type	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	2.7	1.9	1.3
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	4.4	1.4	1.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	7.2	5.0	5.8
Copper	DETSC 2301#	0.2	mg/kg	15	6.0	5.2
Lead	DETSC 2301#	0.3	mg/kg	13	3.5	5.4
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	5.9	4.9	5.7
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	35	17	48
Inorganics						
pH	DETSC 2008#			8.5	8.0	8.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.8	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.7	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	3.0	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	4.3	< 0.1	0.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	83	12	13
Sulphide	DETSC 2024*	10	mg/kg	< 10	< 10	< 10
Sulphur as S, Total	DETSC 2320	0.01	%	0.03	< 0.01	< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.05	0.01	0.01

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			Other ID	Topsoil	Sand Sub-Soil	Stone
			Sample Type	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	38	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	3.4	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	7.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	21	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	70	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	72	< 10	< 10
C5-C10 Gasoline Range Organics (GRO)	DETSC 3321*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
C10-C24 Diesel Range Organics (DRO)	DETSC 3311#	10	mg/kg	< 10	< 10	< 10
EPH (C10-C40)	DETSC 3311#	10	mg/kg	37	< 10	< 10
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.6	< 0.3	< 0.3

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Information in Support of the Analytical Results

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Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1238846	TP170929-A Topsoil SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Mercury (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP (365 days), Metals ICP Prep (365 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days), EPH/TPH (14 days)	Aliphatics/Aromatics, BTEX, Naphthalene, PAH FID, EPH/TPH
1238847	TP170929-B Sand Sub-Soil SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Mercury (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP (365 days), Metals ICP Prep (365 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days), EPH/TPH (14 days)	Aliphatics/Aromatics, BTEX, Naphthalene, PAH FID, EPH/TPH
1238848	TP170929-C - Stone SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Mercury (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP (365 days), Metals ICP Prep (365 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days), EPH/TPH (14 days)	Aliphatics/Aromatics, BTEX, Naphthalene, PAH FID, EPH/TPH

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Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months