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 F. J. Gibbs, F.I.B.M.S., F.I.P.S.T., F.R.S.H., K. J. Blanche

Your Ref: VERBAL INSTRUCTIONS
 MR PETER SEALES

SCREENED FILL
 EX: JULIETTE WAY DEPOT, PURFLEET INDUSTRIAL PARK,
 SOUTH OCKENDON, ESSEX, RM15 4YB

SUBMITTED BY SEALES ROAD HAULAGE LIMITED

RECEIVED ON 25th OCTOBER 2017

INTRODUCTION

A sample of soil was received into the laboratory for chemical analysis in order to determine the degree of contamination by those parameters listed under results.

RESULTS

IS THE SOIL SUITABLE FOR USE?	
RESIDENTIAL USE WITH PRIVATE GARDENS	YES
RESIDENTIAL USE WITHOUT PRIVATE GARDENS	YES
ALLOTMENTS	YES
PUBLIC OPEN SPACE	YES
COMMERCIAL / INDUSTRIAL SITES	YES



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 Business Reg. No. 2255616



COMMENTS

Concentrations of the zootoxic heavy metals Total Arsenic, Total Boron, Total Cadmium, Hexavalent Chromium, Trivalent Chromium, Total Mercury, Total Selenium, Total Copper, Total Nickel and Total Zinc in the sample analysed did not exceed the S4UL Generic Guideline Values for a residential scenario with home-grown produce. The concentration of Total Lead encountered did not exceed the Category 4 Screening Level for residential use with home-grown produce of 200mg/kg.

The concentration of Total Cyanide was below the screening value of 20mg/kg and the concentration of Total Phenol was below the S4UL Generic Guideline Value for a residential scenario with home-grown produce.

The concentrations of individual Polycyclic Aromatic Hydrocarbons encountered did not exceed the S4UL Generic Guideline Values for a residential scenario with home-grown produce.

The concentrations of Total Petroleum Hydrocarbons encountered did not exceed the Screening Value of 500mg/kg.

The concentrations of the phytotoxic substances Total Copper, Total Zinc and Boron encountered in the sample were below the GIEH Generic screening values for residential use.

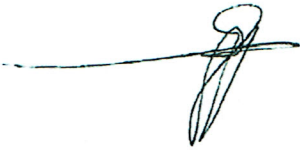
The concentration of Total Sulphate encountered did not exceed the BRE guidance level of 2400mg/kg in the sample analysed. From the water soluble sulphate concentration BRE Special Digest 1 : 2005, Tables C1 and C2 would classify the sample submitted as Class DS-1.

Asbestos was not detected in the sample submitted.

The sample was analysed using the 'Catwastesoil' assessment tool, which concluded that the sample was not hazardous in nature.

The above conclusions have been drawn on the results of the tests carried out on the sample submitted and address remediation issues for the protection of the end-user only. The comments made in this report do not address any third party liability.

p.p. SITE ANALYTICAL SERVICES LIMITED



Aubrey Davidson BSc MSc DIC
Environmental Engineer

1st November 2017

Laboratory Test Data

APPENDIX





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Analytical Report Number : 17-65377

Project / Site name:	Screened Fill 6N-1A
Your job number:	17-27487
Your order number:	1521
Report Issue Number:	1
Samples Analysed:	1 soil sample
Samples received on:	26/10/2017
Samples instructed on:	26/10/2017
Analysis completed by:	01/11/2017
Report issued on:	01/11/2017

Signed:

Rexona Rahaman
Customer Services Manager
For & on behalf of 12 Analytical Ltd.

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

Other office located at: ul. Pionierów 39, 41 - 711 Ruda Śląska, Poland
Standard sample disposal times, unless otherwise agreed with the laboratory, are :
Excel copies of reports are only valid when accompanied by this PDF certificate.



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Analytical Report Number: 17-65377
 Project / Site name: Screened Fill 6N-1A
 Your Order No: 1521



Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Date Sampled	Time Taken	Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status
844828	1	None Supplied							
		None Supplied							
		None Supplied		26/10/2017					
		None Supplied							

Petroleum Hydrocarbons	mg/kg	10	MERTS	43
TPH C10 - C40				

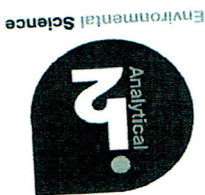
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 The results included within the report are representative of the samples submitted for analysis.

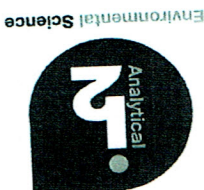
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Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
844828	1	None Supplied	None Supplied	Brown sandy loam with stones.

* These descriptions are only intended to act as a cross check if sample identifies 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 topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Analytical Report Number : 17-65377
 Project / Site name: Screened Fill 6N-1A





Environmental Science



4043

Analytical Report Number : 17-65377

Project / Site name: Screened Fill 6N-1A

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PRW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status	ISO 17025	Asbestos identification in soil	Crush Whole Sample	Free cyanide in soil	Monohydric phenols in soil	pH in soil (automated)	Speciated EPA-16 PAHs in soil	Stones content of soil	Sulphate, water soluble, in soil (16hr extraction)	Sulphide in soil	Thiocyanate in soil	Total cyanide in soil	Total organic carbon (Automated) in soil	Total sulphate (as SO4 in soil)	TPH Banding in Soil by FID
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				Either: Client specific preparation instructions - sample(s) crushed whole prior to analysis; OR sample unsuitable for standard preparation and therefore crushed whole prior to analysis.	Determination of free cyanide by distillation followed by colorimetry.	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation with colorimetry.	Determination of pH in soil by addition of water followed by automated electrometric measurement.	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer).	Determination of total cyanide by distillation followed by colorimetry.	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	Determination of hexane extractable hydrocarbons in soil by GC-FID.
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCCERTS															
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 2005 Methods for the Determination of Metals in Soil.	L038-PL	D	MCCERTS															
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE															
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation with colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clercerf, Greenberg & Eaton (Skalar)	L080-PL	W	MCCERTS															
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCCERTS															
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	MCCERTS															
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of	In-house method based on British Standard Methods and MCCERTS requirements.	L019-UK/PL	D	NONE															
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	MCCERTS															
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCCERTS															
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: Clercerf, Greenberg & Eaton (Skalar)	L080-PL	W	MCCERTS															
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCCERTS															
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCCERTS															
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCCERTS															

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Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom. 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 300C.

Analytical Report Number : 17-65377
 Project / Site name: Screened Fill 6N-1A
 Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PW)



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