SAL Reference: 557999
Project Site: Monckton
Customer Reference: G15009

Water — Analysed as Water
PAH US EPA 16 (B and K split)

SAL Reference	557999 003
Customer Sample Reference	SP1
Date Sampled	17-MAR-2016

Determinand	Method	Test Sample	LOD	Units	
Naphthalene	T149	AR	0.01	µg/l	(13) 0.01
Acenaphthylene	T149	AR	0.01	µg/l	0.03
Acenaphthene	T149	AR	0.01	µg/l	0.01
Fluorene	T149	AR	0.01	µg/l	0.03
Phenanthrene	T149	AR	0.01	µg/l	(13) 0.01
Anthracene	T149	AR	0.01	µg/l	0.15
Fluoranthene	T149	AR	0.01	µg/l	(13) 0.01
Pyrene	T149	AR	0.01	µg/l	(13) <0.01
Benzo(a)Anthracene	T149	AR	0.01	µg/l	(13) <0.01
Chrysene	T149	AR	0.01	µg/l	0.01
Benzo(b)fluoranthene	T149	AR	0.01	µg/l	0.01
Benzo(k)fluoranthene	T149	AR	0.01	µg/l	0.01
Benzo(a)Pyrene	T149	AR	0.01	µg/l	0.01
Indeno(123-cd)Pyrene	T149	AR	0.01	µg/l	0.01
Dibenzo(ah)Anthracene	T149	AR	0.01	µg/l	0.01
Benzo(ghi)Perylene	T149	AR	0.01	µg/l	0.01
PAH(total)	T149	AR	0.01	µg/l	0.32

SAL Reference: 557999
Project Site: Monckton
Customer Reference: G15009

Water — Analysed as Water
Phenols (Speciated)

	SAL Reference	557999 001	557999 002	557999 003
	Customer Sample Reference	BH303	BH304	SP1
	Date Sampled	17-MAR-2016	17-MAR-2016	17-MAR-2016

Determinand	Method	Test Sample	LOD	Units			
Naphthols	T17	AR	0.01	mg/l	<0.01	<0.01	<0.01
Catechol	T17	AR	0.005	mg/l	<0.005	<0.005	<0.005
Cresols	T17	AR	0.005	mg/l	<0.005	<0.005	<0.005
Trimethyl phenols	T17	AR	0.01	mg/l	<0.01	<0.01	<0.01
Total Phenols	T17	AR	0.01	mg/l	<0.01	<0.01	<0.01
Xylenols	T17	AR	0.01	mg/l	<0.01	<0.01	<0.01
Phenol	T17	AR	0.005	mg/l	<0.005	<0.005	<0.005
Resorcinol	T17	AR	0.005	mg/l	<0.005	<0.005	<0.005

SAL Reference: 557999
Project Site: Monckton
Customer Reference: G15009

Water — Analysed as Water
Semi-Volatile Organic Compounds (USEPA 625)(EK)

					SAL Reference	557999 002	557999 004
					Customer Sample Reference	BH304	SVOC Blank
					Date Sampled	17-MAR-2016	25-MAR-2016
Determinand	Method	Test Sample	LOD	Units			
1,2,4-Trichlorobenzene	T16	AR	10	µg/l		<10	<10
1,2-Dichlorobenzene	T16	AR	10	µg/l		<10	<10
1,3-Dichlorobenzene	T16	AR	10	µg/l		<10	<10
1,4-Dichlorobenzene	T16	AR	10	µg/l		<10	<10
2,4,5-Trichlorophenol	T16	AR	10	µg/l		<10	<10
2,4,6-Trichlorophenol	T16	AR	10	µg/l		<10	<10
2,4-Dichlorophenol	T16	AR	10	µg/l		<10	<10
2,4-Dimethylphenol	T16	AR	10	µg/l		<10	<10
2,4-Dinitrophenol	T16	AR	10	µg/l		<10	<10
2,4-Dinitrotoluene	T16	AR	10	µg/l		<10	<10
2,6-Dinitrotoluene	T16	AR	10	µg/l		<10	<10
2-Chloronaphthalene	T16	AR	10	µg/l		<10	<10
2-Chlorophenol	T16	AR	10	µg/l		<10	<10
2-methyl phenol	T16	AR	10	µg/l		<10	<10
2-Methylnaphthalene	T16	AR	10	µg/l		<10	<10
2-Nitroaniline	T16	AR	10	µg/l		<10	<10
2-Nitrophenol	T16	AR	10	µg/l		<10	<10
3-Nitroaniline	T16	AR	10	µg/l		<10	<10
3/4-Methylphenol	T16	AR	10	µg/l		<10	<10
4-Bromophenyl phenylether	T16	AR	10	µg/l		<10	<10
4-Chloro-3-methylphenol	T16	AR	10	µg/l		<10	<10
4-Chloroaniline	T16	AR	10	µg/l		<10	<10
4-Chlorophenyl phenylether	T16	AR	10	µg/l		<10	<10
4-Nitroaniline	T16	AR	10	µg/l		<10	<10
Acenaphthene	T16	AR	10	µg/l		<10	<10
Acenaphthylene	T16	AR	10	µg/l		<10	<10
Anthracene	T16	AR	10	µg/l		<10	<10
Azobenzene	T16	AR	10	µg/l		<10	<10
Benzo(a)Anthracene	T16	AR	10	µg/l		<10	<10
Benzo(a)Pyrene	T16	AR	10	µg/l		<10	<10
Benzo(b/k)Fluoranthene	T16	AR	10	µg/l		<10	<10
Benzo(ghi)Perylene	T16	AR	10	µg/l		<10	<10
Bis (2-chloroethoxy) methane	T16	AR	10	µg/l		<10	<10
Bis (2-chloroethyl) ether	T16	AR	10	µg/l		<10	<10
Bis (2-chloroisopropyl) ether	T16	AR	10	µg/l		<10	<10
Bis (2-ethylhexyl)phthalate	T16	AR	10	µg/l		<10	<10
Butyl benzylphthalate	T16	AR	10	µg/l		<10	<10
Carbazole	T16	AR	10	µg/l		<10	<10
Chrysene	T16	AR	10	µg/l		<10	<10
Di-n-butylphthalate	T16	AR	10	µg/l		<10	<10
Di-n-octylphthalate	T16	AR	10	µg/l		<10	<10
Dibenzo(ah)Anthracene	T16	AR	10	µg/l		<10	<10
Dibenzofuran	T16	AR	10	µg/l		<10	<10
Diethyl phthalate	T16	AR	10	µg/l		<10	<10
Dimethyl phthalate	T16	AR	10	µg/l		<10	<10
Fluoranthene	T16	AR	10	µg/l		<10	<10
Fluorene	T16	AR	10	µg/l		<10	<10
Hexachlorobenzene	T16	AR	10	µg/l		<10	<10
Hexachlorobutadiene	T16	AR	10	µg/l		<10	<10
Hexachlorocyclopentadiene	T16	AR	10	µg/l		<10	<10
Hexachloroethane	T16	AR	10	µg/l		<10	<10
Indeno(123-cd)Pyrene	T16	AR	10	µg/l		<10	<10
Isophorone	T16	AR	10	µg/l		<10	<10
Naphthalene	T16	AR	10	µg/l		<10	<10
Nitrobenzene	T16	AR	10	µg/l		<10	<10
Pentachlorophenol	T16	AR	10	µg/l		<10	<10
Phenanthrene	T16	AR	10	µg/l		<10	<10
Phenol	T16	AR	10	µg/l		<10	<10
Pyrene	T16	AR	10	µg/l		<10	<10

SAL Reference: 557999
Project Site: Monckton
Customer Reference: G15009

Water — Analysed as Water
TPH (CWG)

					SAL Reference	557999 001	557999 002	557999 003
					Customer Sample Reference	BH303	BH304	SP1
					Date Sampled	17-MAR-2016	17-MAR-2016	17-MAR-2016
Determinand	Method	Test Sample	LOD	Units				
TPH (C5-C6 aliphatic)	T215	AR	10	µg/l		<10	<10	<10
TPH (C6-C8 aliphatic)	T215	AR	10	µg/l		<10	<10	<10
TPH (C8-C10 aliphatic)	T215	AR	10	µg/l		<10	<10	<10
TPH DW(C10-C12 aliphatic)	T81	AR	0.01	mg/l		<0.01	**0.03**	<0.01
TPH DW(C12-C16 aliphatic)	T81	AR	0.01	mg/l		<0.01	**0.16**	<0.01
TPH DW(C16-C21 aliphatic)	T81	AR	0.01	mg/l		<0.01	<0.01	<0.01
TPH DW(C21-C35 aliphatic)	T81	AR	0.01	mg/l		<0.01	<0.01	<0.01
TPH (C6-C7 aromatic)	T215	AR	10	µg/l		<10	<10	<10
TPH (C7-C8 aromatic)	T215	AR	10	µg/l		<10	<10	<10
TPH (C8-C10 aromatic)	T215	AR	10	µg/l		<10	<10	<10
TPH DW(C10-C12 aromatic)	T81	AR	0.01	mg/l		<0.01	<0.01	<0.01
TPH DW(C12-C16 aromatic)	T81	AR	0.01	mg/l		<0.01	**0.02**	<0.01
TPH DW(C16-C21 aromatic)	T81	AR	0.01	mg/l		<0.01	**0.03**	(13) <0.01
TPH DW(C21-C35 aromatic)	T81	AR	0.01	mg/l		<0.01	<0.01	<0.01

Index to symbols used in 557999-2

Value	Description
F	Filtered
AR	As Received
13	Results have been blank corrected.
9	LOD raised due to dilution of sample
64	Analysis was performed by an alternative technique
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

Phenol analysis was carried out at SAL Manchester.

Method Index

Value	Description
T281	ICP/MS (Filtered)
T215	GC/MS (Headspace)(LV)
T16	GC/MS
T17	HPLC
T22	Titration
T7	Probe
T6	ICP/OES
T54	GC/MS (Headspace)
T686	Discrete Analyser
T149	GC/MS (SIR)
T285	ICP/OES (SIM) (Filtered)
T81	GC/FID (LV)
T373	ICP/OES (Filtered)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Alkalinity expressed as CaCO3	T22	AR	10	mg/l	N	003
Ammoniacal nitrogen	T686	F	0.05	mg/l	U	001-003
Chloride	T686	F	1	mg/l	U	001-003
NO3 expressed as N	T686	F	0.5	mg/l	U	001-002
B (Dissolved)	T373	AR	0.01	mg/l	N	003
Ca (Dissolved)	T373	AR	1	mg/l	N	003
Dissolved Mg	T285	AR	0.1	mg/l	N	003
Dissolved K	T285	AR	0.1	mg/l	N	001-003
Dissolved Na	T285	AR	0.05	mg/l	N	001-003
Sulphur (total)	T6	AR	50	mg/l	N	003
pH	T7	AR			U	003
Benzene	T54	AR	1	µg/l	U	003
EthylBenzene	T54	AR	1	µg/l	U	003
M/P Xylene	T54	AR	1	µg/l	U	003
O Xylene	T54	AR	1	µg/l	U	003
Toluene	T54	AR	1	µg/l	U	003
As (Dissolved)	T281	AR	0.2	µg/l	U	003
Cd (Dissolved)	T281	AR	0.02	µg/l	U	003
Cr (Dissolved)	T281	AR	1	µg/l	U	003
Cu (Dissolved)	T281	AR	0.5	µg/l	U	003
Pb (Dissolved)	T281	AR	0.3	µg/l	U	003
Hg (Dissolved)	T281	AR	0.05	µg/l	U	003
Ni (Dissolved)	T281	AR	1	µg/l	U	003
Se (Dissolved)	T281	AR	0.5	µg/l	U	003
Zn (Dissolved)	T281	AR	2	µg/l	U	003
Naphthalene	T149	AR	0.01	µg/l	U	003
Acenaphthylene	T149	AR	0.01	µg/l	U	003
Acenaphthene	T149	AR	0.01	µg/l	U	003
Fluorene	T149	AR	0.01	µg/l	U	003
Phenanthrene	T149	AR	0.01	µg/l	U	003
Anthracene	T149	AR	0.01	µg/l	U	003
Fluoranthene	T149	AR	0.01	µg/l	U	003

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Pyrene	T149	AR	0.01	µg/l	U	003
Benzo(a)Anthracene	T149	AR	0.01	µg/l	U	003
Chrysene	T149	AR	0.01	µg/l	U	003
Benzo(b)fluoranthene	T149	AR	0.01	µg/l	U	003
Benzo(k)fluoranthene	T149	AR	0.01	µg/l	U	003
Benzo(a)Pyrene	T149	AR	0.01	µg/l	U	003
Indeno(123-cd)Pyrene	T149	AR	0.01	µg/l	U	003
Dibenzo(ah)Anthracene	T149	AR	0.01	µg/l	U	003
Benzo(ghi)Perylene	T149	AR	0.01	µg/l	U	003
PAH(total)	T149	AR	0.01	µg/l	U	003
Catechol	T17	AR	0.005	mg/l	N	001-003
Cresols	T17	AR	0.005	mg/l	N	001-003
Naphthols	T17	AR	0.01	mg/l	N	001-003
Phenol	T17	AR	0.005	mg/l	N	001-003
Resorcinol	T17	AR	0.005	mg/l	N	001-003
Total Phenols	T17	AR	0.01	mg/l	N	001-003
Trimethyl phenols	T17	AR	0.01	mg/l	N	001-003
Xylenols	T17	AR	0.01	mg/l	N	001-003
1,2,4-Trichlorobenzene	T16	AR	10	µg/l	U	002,004
1,2-Dichlorobenzene	T16	AR	10	µg/l	U	002,004
1,3-Dichlorobenzene	T16	AR	10	µg/l	U	002,004
1,4-Dichlorobenzene	T16	AR	10	µg/l	U	002,004
2,4,5-Trichlorophenol	T16	AR	10	µg/l	U	002,004
2,4,6-Trichlorophenol	T16	AR	10	µg/l	U	002,004
2,4-Dichlorophenol	T16	AR	10	µg/l	U	002,004
2,4-Dimethylphenol	T16	AR	10	µg/l	U	002,004
2,4-Dinitrophenol	T16	AR	10	µg/l	N	002,004
2,4-Dinitrotoluene	T16	AR	10	µg/l	U	002,004
2,6-Dinitrotoluene	T16	AR	10	µg/l	U	002,004
2-Chloronaphthalene	T16	AR	10	µg/l	U	002,004
2-Chlorophenol	T16	AR	10	µg/l	U	002,004
2-methyl phenol	T16	AR	10	µg/l	U	002,004
2-Methylnaphthalene	T16	AR	10	µg/l	U	002,004
2-Nitroaniline	T16	AR	10	µg/l	U	002,004
2-Nitrophenol	T16	AR	10	µg/l	U	002,004
3-Nitroaniline	T16	AR	10	µg/l	U	002,004
3/4-Methylphenol	T16	AR	10	µg/l	U	002,004
4-Bromophenyl phenylether	T16	AR	10	µg/l	U	002,004
4-Chloro-3-methylphenol	T16	AR	10	µg/l	U	002,004
4-Chloroaniline	T16	AR	10	µg/l	U	002,004
4-Chlorophenyl phenylether	T16	AR	10	µg/l	U	002,004
4-Nitroaniline	T16	AR	10	µg/l	U	002,004
Acenaphthene	T16	AR	10	µg/l	U	002,004
Acenaphthylene	T16	AR	10	µg/l	U	002,004
Anthracene	T16	AR	10	µg/l	U	002,004
Azobenzene	T16	AR	10	µg/l	U	002,004
Benzo(a)Anthracene	T16	AR	10	µg/l	U	002,004
Benzo(a)Pyrene	T16	AR	10	µg/l	U	002,004
Benzo(b/k)Fluoranthene	T16	AR	10	µg/l	U	002,004
Benzo(ghi)Perylene	T16	AR	10	µg/l	U	002,004
Bis (2-chloroethoxy) methane	T16	AR	10	µg/l	U	002,004
Bis (2-chloroethyl) ether	T16	AR	10	µg/l	U	002,004
Bis (2-chloroisopropyl) ether	T16	AR	10	µg/l	U	002,004
Bis (2-ethylhexyl)phthalate	T16	AR	10	µg/l	U	002,004
Butyl benzylphthalate	T16	AR	10	µg/l	U	002,004
Carbazole	T16	AR	10	µg/l	U	002,004
Chrysene	T16	AR	10	µg/l	U	002,004
Di-n-butylphthalate	T16	AR	10	µg/l	U	002,004
Di-n-octylphthalate	T16	AR	10	µg/l	U	002,004
Dibenzo(ah)Anthracene	T16	AR	10	µg/l	U	002,004
Dibenzofuran	T16	AR	10	µg/l	U	002,004
Diethyl phthalate	T16	AR	10	µg/l	U	002,004
Dimethyl phthalate	T16	AR	10	µg/l	U	002,004
Fluoranthene	T16	AR	10	µg/l	U	002,004
Fluorene	T16	AR	10	µg/l	U	002,004
Hexachlorobenzene	T16	AR	10	µg/l	U	002,004
Hexachlorobutadiene	T16	AR	10	µg/l	U	002,004
Hexachlorocyclopentadiene	T16	AR	10	µg/l	U	002,004
Hexachloroethane	T16	AR	10	µg/l	U	002,004
Indeno(123-cd)Pyrene	T16	AR	10	µg/l	U	002,004

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Isophorone	T16	AR	10	µg/l	U	002,004
Naphthalene	T16	AR	10	µg/l	U	002,004
Nitrobenzene	T16	AR	10	µg/l	U	002,004
Pentachlorophenol	T16	AR	10	µg/l	U	002,004
Phenanthrene	T16	AR	10	µg/l	U	002,004
Phenol	T16	AR	10	µg/l	U	002,004
Pyrene	T16	AR	10	µg/l	U	002,004
TPH (C5-C6 aliphatic)	T215	AR	10	µg/l	N	001-003
TPH (C6-C8 aliphatic)	T215	AR	10	µg/l	N	001-003
TPH (C8-C10 aliphatic)	T215	AR	10	µg/l	N	001-003
TPH DW(C10-C12 aliphatic)	T81	AR	0.01	mg/l	N	001-003
TPH DW(C12-C16 aliphatic)	T81	AR	0.01	mg/l	N	001-003
TPH DW(C16-C21 aliphatic)	T81	AR	0.01	mg/l	N	001-003
TPH DW(C21-C35 aliphatic)	T81	AR	0.01	mg/l	N	001-003
TPH (C6-C7 aromatic)	T215	AR	10	µg/l	N	001-003
TPH (C7-C8 aromatic)	T215	AR	10	µg/l	N	001-003
TPH (C8-C10 aromatic)	T215	AR	10	µg/l	N	001-003
TPH DW(C10-C12 aromatic)	T81	AR	0.01	mg/l	N	001-003
TPH DW(C12-C16 aromatic)	T81	AR	0.01	mg/l	N	001-003
TPH DW(C16-C21 aromatic)	T81	AR	0.01	mg/l	N	001-003
TPH DW(C21-C35 aromatic)	T81	AR	0.01	mg/l	N	001-003

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Certificate of Analysis

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Report Number: 558017-1

Date of Report: 06-Apr-2016

Customer: Patrick Parsons Ltd
Orient House
16 McPhater St
Glasgow
G4 0HW

Customer Contact: Mr Jim Heather

Customer Job Reference: G15009
Date Job Received at SAL: 25-Mar-2016
Date Analysis Started: 30-Mar-2016
Date Analysis Completed: 06-Apr-2016

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
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Tests covered by this certificate were conducted in accordance with SAL SOPs
All results have been reviewed in accordance with Section 25 of the SAL Quality Manual

UKAS TESTING
1549

Report checked and authorised by :
Miss Ashleigh Hanna
Project Manager

Issued by :
Miss Ashleigh Hanna
Project Manager

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SAL Reference: 558017
Customer Reference: G15009

Leachate
Miscellaneous

Analysed as Water

				SAL Reference	558017 002	558017 005	558017 006	558017 008	558017 014
				Customer Sample Reference	TP1103 1.3m	TP1105 2.9m	TP1005 0.8m	TP1006 2.8m	TP1010 1.0m
				Date Sampled	Deviating	Deviating	Deviating	Deviating	Deviating
Determinand	Method	Test Sample	LOD	Units					
Ammoniacal nitrogen	T686	10:1	0.05	mg/l	0.11	-	-	2.2	3.9
Chloride	T686	10:1	1	mg/l	3	-	-	6	5
B (Dissolved)	T373	10:1	0.01	mg/l	<0.01	<0.01	<0.01	-	-
Sulphur (total)	T6	10:1	50	mg/l	<50	73	<50	-	-
Cyanide(Total)	T4	10:1	0.05	mg/l	<0.05	<0.05	<0.05	-	-
Sulphide	T4	10:1	0.05	mg/l	-	-	<0.05	-	-
pH	T7	10:1			7.5	6.1	7.6	-	-

SAL Reference: 558017
Customer Reference: G15009

Leachate
Miscellaneous

Analysed as Water

				SAL Reference	558017 015	558017 016	558017 021	558017 024	558017 027
				Customer Sample Reference	TP1011 1.9m	TP1012 2.0m	TP1014 1.7m	TP1017 1.0m	TP1020 1.2m
				Date Sampled	Deviating	Deviating	Deviating	Deviating	Deviating
Determinand	Method	Test Sample	LOD	Units					
Ammoniacal nitrogen	T686	10:1	0.05	mg/l	7.5	0.40	<0.05	<0.05	<0.05
Chloride	T686	10:1	1	mg/l	3	-	1	3	2
B (Dissolved)	T373	10:1	0.01	mg/l	-	<0.01	<0.01	<0.01	<0.01
Sulphur (total)	T6	10:1	50	mg/l	-	<50	<50	<50	260
Cyanide(Total)	T4	10:1	0.05	mg/l	-	<0.05	<0.05	<0.05	0.53
TPH (C10-C35)	T81	10:1	0.01	mg/l	-	(13) <0.01	-	-	-
pH	T7	10:1			-	5.9	6.4	7.0	6.5

SAL Reference: 558017
Customer Reference: G15009

Leachate
Miscellaneous

Analysed as Water

				SAL Reference	558017 029	558017 032	558017 035	558017 038
				Customer Sample Reference	TP1021 1.4m	TP1024 0.4m	TP1026 0.7m	TP1031 1.6m
				Date Sampled	Deviating	Deviating	Deviating	Deviating
Determinand	Method	Test Sample	LOD	Units				
Ammoniacal nitrogen	T686	10:1	0.05	mg/l	<0.05	0.12	<0.05	-
Chloride	T686	10:1	1	mg/l	2	280	-	-
B (Dissolved)	T373	10:1	0.01	mg/l	<0.01	0.01	<0.01	<0.01
Sulphur (total)	T6	10:1	50	mg/l	<50	65	<50	120
Cyanide(Total)	T4	10:1	0.05	mg/l	<0.05	<0.05	<0.05	<0.05
pH	T7	10:1			6.8	6.2	6.1	6.6

Trial Pit Log

Trialpit No: **TP16**
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No. G151311	Co-ords: 437433.52 - 411986.21 Level: 69.72
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 1.80	Date 14/05/2015 Scale 1:25 Logged IMC
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30 0.30 0.30	B D ES		0.40	69.32		MADE GROUND - Compacted mixed rubble fill with coal, ash, tar, clinker and brick fragments. Very strong hydrocarbon odour and visible oil on bricks.
				1.20	68.52		MADE GROUND - Buried brick structure encountered: Visible brick arch structure and brick walls encountered - Identified on site as former Exhaust House cellar (local site knowledge). Infilled with bricks and rubble fill.
	1.50 1.50 1.50	B D ES		1.60	68.12		MADE GROUND - Mixed rubble fill with brick fragments and abundant whole and half bricks. Black stained with very strong hydrocarbon odour - heavy oil. Visible oil on bricks. Frequent buried metal and timber objects and buried rags within the fill.
	1.80 1.80 1.80	B D ES		1.80	67.92		Weak, brittle, medium to coarse SANDSTONE. Black oil staining and strong hydrocarbon odour - heavy oil.
							End of pit at 1.80 m

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: TP17
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No. G151311	Co-ords: 437479.19 - 411980.04 Level: 69.28
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 3.00	Date 14/05/2015 Scale 1:25 Logged IMC
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND - Compacted coke, coal and ash fill. *Visible evidence of oil spillage on ground surface. Strong hydrocarbon odour - heavy oil.*
	0.50 0.50 0.50	B D ES		0.50	68.78		CONCRETE
				0.80	68.48		MADE GROUND - Mixed rubble fill comprising reworked, fragmented sandstone as a sandy cobbly fine to coarse sub-angular to angular gravel of sandstone. Occasional bricks and fragments of coke, coal and ash.
	1.00 1.00 1.00	B D ES		1.00	68.28		Weak, brittle, medium to coarse light orangish brown SANDSTONE.
	2.00 2.00 2.00	B D ES					
	3.00 3.00 3.00	B D ES		3.00 3.00	66.28 66.28		Trial pit terminated in sandstone. End of pit at 3.00 m

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: TP18
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No. G151311	Co-ords: 437550.99 - 412006.03 Level: 69.81
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 1.50	Date 20/05/2015
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		Scale 1:25 Logged IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50 0.50	B D ES		0.60	69.21		MADE GROUND - Compacted mixed fill of crushed coke, coal, ash sand, gravel and occasional brick fragments. Gravel is fine to medium sub-rounded to angular of sandstone and mudstone, sand is fine to coarse.
				0.90	68.91		CONCRETE - Old concrete slab/footing.
	1.00 1.00 1.00	B D ES		1.20	68.61		Loose, medium to coarse, orange, sandy cobbly GRAVEL of sandstone. Sand is fine to coarse, cobbles are small to medium, sub-rounded to sub-angular.
	1.50 1.50 1.50	B D ES		1.50	68.31		Weak, brittle, coarse, orange SANDSTONE. End of pit at 1.50 m

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: TP19
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No.: G151311	Co-ords: 437387.87 - 411952.01
			Level: 69.94
			Date: 15/05/2015
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m):	Scale: 1:25
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd	Depth: 1.75	Logged: IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50 0.50	B D ES		0.60	69.34		MADE GROUND - Compacted reddish brown sandy gravel fill. Sand is fine to coarse. Gravel is mostly fine, occasionally medium and coarse, sub-angular to angular of sandstone and mudstone. Frequent crushed brick, concrete fragments, coke, coal and ash.
	1.00 1.00 1.00	B D ES		1.20	68.74		MADE GROUND - Reworked orangish brown gravelly fine to coarse sand. Gravel is fine to medium, occaisonally coarse, sub-rounded to sub-angular of sandstone. Occasional brick and concrete fragments.
	1.50 1.50 1.50	B D ES		1.75	68.19		Weak, brittle, coarse orange SANDSTONE. End of pit at 1.75 m

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: **TP20**
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No.: G151311	Co-ords: 437406.58 - 411947.35
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Level: 70.55	Date: 15/05/2015
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd	Dimensions (m): Depth 1.80	Scale: 1:25
			Logged: IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50 0.50	B D ES		0.70	69.85		MADE GROUND - Compacted reddish brown mixed rubble fill with brick fragments, whole and half bricks, coke, coal, ash, sand and gravel.
	1.00 1.00 1.00	B D ES		1.25	69.30		MADE GROUND - Reworked orange sandstone, sandy medium to coarse, sub-angular to angular gravel and small to medium sub-angular to angular cobbles. Bluish green colouring visible to sand and fine gravel.
	1.50 1.50 1.50	B D ES		1.80	68.75		Weak, brittle orange SANDSTONE. End of pit at 1.80 m

1 2 3 4 5

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

AGS

Trial Pit Log

Trialpit No: TP21
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No.: G151311	Co-ords: 437442.60 - 411957.08 Level: 71.35
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 2.10	Date
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		Scale 1:25 Logged IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30 0.30 0.30 0.40 0.40 0.40	B D ES B D ES		0.35	71.00		MADE GROUND - Compacted fill comprising fine to medium sub-rounded to sub-angular sandy gravel of sandstone. Sand is fine to coarse. Occasional coke, coal, ash, brick and concrete fragments.
	1.00 1.00 1.00	B D ES					MADE GROUND - Reddish brown, rubble fill of broken and crushed bricks with occasional concrete fragments and some coke, coal and ash.
	1.50 1.50 1.50	B D ES		1.50	69.85		Medium dense, orange gravelly cobbly fine to coarse sand. Gravel is fine to coarse, sub-rouned to sub-angular of sandstone. Cobbles are mostly small occasionally medium sub-rouned to sub-angular of sandstone.
				1.85	69.50		Weak, brittle coarse orange SANDSTONE.
				2.10	69.25		End of pit at 2.10 m

1
2
3
4
5

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

AGS

Trial Pit Log

Trialpit No: **TP22**
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No.: G151311	Co-ords: 437478.00 - 411967.00
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Level: 69.31	Date: 18/05/2015
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd	Dimensions (m): Depth 1.10	Scale: 1:25
			Logged: IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20	69.11		CONCRETE - Reinforced slab.
	0.30	B					MADE GROUND - Mixed rubble fill of brick fragments, coke, coal, ash and mixed gravel of sandstone and mudstone.
	0.30	D					*Black oil staining visible and strong hydrocarbon (heavy oil) odour.*
	0.30	ES					
	0.60	B					
	0.60	D					
	0.60	ES					
				0.80	68.51		Weak, brittle, coarse SANDSTONE. Dark coloured/ stained with a moderate to strong hydrocarbon odour.
	1.10	B		1.10	68.21		Trial pit terminated at 1.1m bgl in sandstone.
	1.10	D		1.10	68.21		End of pit at 1.10 m
	1.10	ES					

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: **TP23**
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No.: G151311	Co-ords: 437496.54 - 411952.73
			Level: 71.60
			Date: 19/05/2015
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 2.50	Scale: 1:25
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		Logged: IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND - Orangish brown, compacted fine to coarse, sub-angular, sandstone gravel fill.
				0.20	71.40		MADE GROUND - Reddish brown, mixed compacted rubble fill of crushed brick, coal, coke and ash, within a gravelly fine to coarse sand matrix. Gravel is fine to coarse, sub-angular to angular of sandstone. Frequent small to large sub-angular cobbles of sandstone.
	0.30	B					
	0.30	D					
	0.30	ES					
	0.50	B					
	0.50	D					
	0.50	ES					
	1.00	B					
	1.00	D					
	1.00	ES					
	1.50	B					
	1.50	D					
	1.50	ES					
				2.20	69.40		Weak, brittle, coarse orangish brown SANDSTONE.
				2.50	69.10		End of pit at 2.50 m

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: TP24
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No. G151311	Co-ords: 437556.98 - 411945.28 Level: 69.75
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 1.00	Date 20/05/2015 Scale 1:25
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		Logged IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30	B					MADE GROUND - Medium to dark grey, compacted mixed fill of hardcore, crushed coke, coal, ash, brick fragments sand and gravel. Gravel is fine to coarse sub-rounded to angular of sandstone and mudstone. Sand is fine to coarse.
	0.30	D					
	0.30	ES					
	0.50	B					
	0.50	D					
	0.50	ES					
				0.80	68.95		Weak, brittle, coarse orangish brown SANDSTONE.
	1.00	B		1.00	68.75		End of pit at 1.00 m
	1.00	D					

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: TP25
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No.: G151311	Co-ords: 437426.80 - 411940.94
			Level: 71.80
			Date: 19/05/2015
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m):	Scale: 1:25
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd	Depth: 2.50	Logged: IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND - Yellowish orange, compacted fine to coarse, sub-angular, sandstone gravel fill.
	0.30	B		0.25	71.55		
	0.30	D					MADE GROUND - Brick rubble fill with abundant whole bricks, occasional pieces of pottery, glass, ceramic, metal and timber, with frequent coke, coal and ash.
	0.30	ES					
	0.50	B					
	0.50	D					
	0.50	ES					
	1.00	B					
	1.00	D					
	1.00	ES					
	1.50	B					
	1.50	D					
	1.50	ES					
				1.80	70.00		Medium dense orange gravelly cobbly SAND. Gravel is fine to coarse, sub-rounded to sub-angular of sandstone. Cobbles are small to medium, sub-angular of sandstone.
	2.00	B					
	2.00	D					
	2.00	ES					
				2.30	69.50		Weak, brittle, coarse, orange SANDSTONE.
	2.50	B		2.50	69.30		Trial pit terminated at 2.5m bgl in sandstone.
	2.50	D		2.50	69.30		End of pit at 2.50 m
	2.50	ES					

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: **TP26**

Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No.: G151311	Co-ords: 437448.78 - 411922.16
			Level: 71.03
Date	19/05/2015		
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 0.50	
Scale	1:25		
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		
Logged	IMC		

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	B		0.20	70.83		MADE GROUND - Compacted hardcore and rubble fill with crushed brick, ash, coke, coal, fine to coarse sand and fine to medium sub-angular gravel of sandstone.
	0.20	D					Weak, brittle reddish brown medium to coarse SANDSTONE.
	0.20	ES					
	0.50	B		0.50	70.53		Trial pit terminated at 0.5m bgl on sandstone.
	0.50	D		0.50	70.53		End of pit at 0.50 m
	0.50	ES					

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

AGS

Trial Pit Log

Trialpit No: **TP27**

Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No. G151311	Co-ords: 437466.28 - 411948.96 Level: 71.03
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 1.50	Date 19/05/2015 Scale 1:25
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		Logged IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30	B					MADE GROUND - Compacted hardcore and rubble fill with crushed brick, ash, coke, coal, fine to coarse sand and fine to medium sub-angular gravel of sandstone.
	0.30	D					
	0.30	ES		0.40	70.63		
	0.50	B					MADE GROUND - Compacted reddish brown mixed rubble fill.
	0.50	D					
	0.50	ES					
	1.00	B					
	1.00	D					
	1.00	ES					
				1.20	69.83		Weak, reddish brown, medium to coarse SANDSTONE.
	1.50	B		1.50	69.53		End of pit at 1.50 m
	1.50	D					
	1.50	ES					

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

AGS

Trial Pit Log

Trialpit No: **TP28**

Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No.: G151311	Co-ords: 437515.79 - 411888.77 Level: 70.91
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 0.60	Date: 18/05/2015 Scale: 1:25
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		Logged: IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20	70.71		MADE GROUND - Compacted orangish brown medium to coarse sub-angular to angular sandstone gravel fill (hard core) with occasional coal, coke, ash and brick fragmetns.
	0.30	B					Weak, brittle, coarse orange SANDSTONE.
	0.30	D					
	0.30	ES					
	0.60	B		0.60	70.31		Trial pit terminated at 0.6m bgl on sandstone bedrock.
	0.60	D		0.60	70.31		End of pit at 0.60 m
	0.60	ES					

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: **TP31**
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No. G151311	Co-ords: 437425.31 - 412322.93 Level: 63.89
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 2.00	Date 12/05/2015 Scale 1:25
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		Logged IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30	B					MADE GROUND - Dark grey/black mixed rubble fill of coke, coal, ash, clinker brick and concrete fragments.
	0.30	D					
	0.30	ES					
	0.50	B					
	0.50	D		0.60	63.29		
	0.50	ES					Weak, brittle coarse orange SANDSTONE.
	1.00	B					
	1.00	D					
	1.00	ES					
	1.50	B					
	1.50	D					
	1.50	ES					
	2.00	B		2.00	61.89		End of pit at 2.00 m
	2.00	D					

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: **TP32**
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No.: G151311	Co-ords: 437475.14 - 412311.83
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD		Level: 64.81
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		Dimensions (m): Depth 2.20

Date: 12/05/2015
Scale: 1:25
Logged: IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.00 - 0.30	B					MADE GROUND - Crushed coke, coal, ash fill with occasional fine sandstone gravels and fine to coarse sand.
	0.30	D					
	0.30	ES		0.40	64.41		
	0.50	D					MADE GROUND - Reworked crushed mudstone fill with occasional brick, coke, coal and ash.
	0.50	ES					
	0.50 - 0.80	B					
				0.80	64.01		MADE GROUND - Reworked sandy gravel fill with coal, coke and ash fragments. Gravel is fine to coarse, sub-rounded to sub-angular of mudstone. Sand is fine to coarse.
	1.00	D					
	1.00	ES					
	1.00 - 1.40	B					
				1.25	63.56		
				1.40	63.41		Trial pit terminated in mudstone.
	1.50 - 1.80	B					Weak, brittle, orangish grey MUDSTONE.
	2.00 - 2.20	B					
				2.20	62.61		End of pit at 2.20 m

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: **TP33**
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No. G151311	Co-ords: 437470.73 - 411928.50 Level: 70.98
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 0.40	Date 20/05/2015
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		Scale 1:25 Logged IMC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	B					MADE GROUND - Medium to coarse sub-angular gravel fill (hard core).
	0.10	D		0.20	70.78		
	0.10	ES					Weak, brittle, coarse orange SANDSTONE.
	0.40	B		0.40	70.58		
	0.40	D		0.40	70.58		Trial pit terminated at 0.4m bgl in SANDSTONE. End of pit at 0.40 m
	0.40	ES					

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Summary of Ground Gas and Groundwater Monitoring

JOB DETAILS:
Client: Hargreaves **Job No: G15009**
Site: Monckton Cokeworks
Date: **Project Manager:** JH

Monitoring Point	GAS CONCENTRATIONS										VOLATILES		FLOW DATA			WELL AND WATER DATA					Comments
	Methane (%v/v)		Carbon dioxide (%v/v)		Carbon monoxide (%v/v)		Hydrogen sulphide (%v/v)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Average Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Response Zone	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady			Peak	Steady							
BH305	0.00	0.00	4.50	4.50	0.00	0.00	0.00	0.00	15.70	15.70	0.10	0.00	0.00	0.00	0.00	9.06	0.00	0.00	-9.06	0	
BH301	0.00	0.00	2.10	2.10	0.00	0.00	0.00	0.00	12.70	12.70	0.00	0.00	0.00	0.00	0.00	8.79	0.00	0.00	-8.79	0	
RBH4	0.00	0.00	3.50	3.50	0.00	0.00	0.00	0.00	3.50	3.50	1.50	0.00	0.00	0.00	0.00	8.01	0.00	0.00	-8.01	0	
RBH4a	0.00	0.00	1.40	1.40	0.00	0.00	0.00	0.00	11.80	11.80	0.00	0.00	2.60	2.60	0.00	7.01	0.00	0.00	-7.01	0	
BH304	0.00	0.00	8.40	6.20	0.00	0.00	0.00	0.00	6.20	6.20	8.40	0.00	0.30	0.30	0.00	6.18	0.00	0.00	-6.18	0	
WS5	0.00	0.00	5.20	2.10	1.00	0.00	0.00	0.00	10.80	11.70	0.00	0.00	0.90	0.90	0.00	7.05	0.00	0.00	-7.05	0	
0	0.10	0.10	2.20	2.20	0.00	0.00	0.00	0.00	5.40	5.40	0.40	0.00	0.90	0.90	0.00	5.71	0.00	0.00	-5.71	0	
0	0.10	0.10	2.00	2.00	0.00	0.00	0.00	0.00	0.70	0.70	3.20	0.00	1.80	1.80	0.00	4.41	0.00	0.00	-4.41	0	
0	0.00	0.00	4.70	4.70	0.00	0.00	0.00	0.00	1.80	1.80	0.20	0.00	1.40	1.40	0.00	3.96	0.00	0.00	-3.96	0	
0	3.00	3.00	1.40	1.40	0.00	0.00	1.00	0.00	15.10	15.10	0.00	0.00	0.00	0.00	0.00	5.83	0.00	0.00	-5.83	0	
	0.00	0.00	2.20	0.40	0.00	0.00	0.00	0.00	18.80	18.80	0.00	0.00	0.00	0.00	0.00	5.09	0.00	0.00	-5.09	0	
	0.00	0.00	4.50	4.50	0.00	0.00	0.00	0.00	2.00	2.00	0.80	0.00	0.00	0.00	0.00	4.03	0.00	0.00	-4.03	0	
	0.00	0.00	3.50	3.50	0.00	0.00	0.00	0.00	15.60	16.70	0.70	0.00	0.00	0.00	0.00	5.90	0.00	0.00	-5.90	0	
Max	3.00	3.00	8.40	6.20	1.00	0.00	1.00	0.00	18.80	18.80	8.40	0.00	2.60	2.60	0.00	9.06	0.00	0.00	-3.96		
Min	0.00	0.00	1.40	0.40	0.00	0.00	0.00	0.00	0.70	0.70	0.00	0.00	0.00	0.00	0.00	3.96	0.00	0.00	-9.06		
GSV (l/hr)	0.078		0.1612																		

PATRICKPARSONS

Appendix C
Chemical Test Results

SAL
a CONCEPT LIFE SCIENCES company

Scientific Analysis Laboratories is a limited company registered in England and Wales (No 2514788) whose address is at Hadfield House, Hadfield Street, Manchester M16 9FE

Scientific Analysis Laboratories Ltd

Certificate of Analysis

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Kelvin South Business Park
East Kilbride
G75 0YF
Tel : 01355 573340
Fax : 01355 573341

Report Number: 557999-2

Date of Report: 12-Apr-2016

Customer: Patrick Parsons Ltd
Orient House
16 McPhater St
Glasgow
G4 0HW

Customer Contact: Mr Jim Heather

Customer Job Reference: G15009
Customer Site Reference: Monckton
Date Job Received at SAL: 25-Mar-2016
Date Analysis Started: 31-Mar-2016
Date Analysis Completed: 12-Apr-2016

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs
All results have been reviewed in accordance with Section 25 of the SAL Quality Manual

UKAS TESTING
1549

Report checked and authorised by :
Alison Forrester
Project Manager

Issued by :
Alison Forrester
Project Manager

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Trial Pit Log

Trialpit No: TP3
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No. G151311	Co-ords: 437381.76 - 412168.12 Level: 64.19
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 3.80	Date 14/05/2015 Scale 1:25 Logged IMC
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30 0.30 0.30	B D ES					MADE GROUND - Fine to coarse, dark greyish black, crushed and compacted coke fill ('carpet').
	0.80 0.80 0.80	B D ES		0.80	63.38		CONCRETE - Reinforced slab.
	1.50 1.50 1.50	B D ES		1.50	62.68		MADE GROUND - Mixed rubble fill with brick, coal, coke and ash fragments in a reworked sandy gravelly clay matrix. Frequent buried metal and timber objects.
	2.00 2.00 2.00	B D ES		2.00	62.18		Medium dense, orange gravelly cobbly fine to coarse SAND . Gravel is medium to coarse (mostly coarse) sub-angular to angular of sandstone. Cobbles are small to medium sub-angular to angular of sandstone.
	3.00 3.00 3.00	B D ES		3.00	61.18		Weak, brittle, coarse orange SANDSTONE.
	3.80 3.80 3.80	B D ES		3.80	60.38		End of pit at 3.80 m

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability:

Trial Pit Log

Trialpit No: TP4
Sheet 1 of 1

Project Name:	Monckton Production Facility	Project No. G151311	Co-ords: 437437.73 - 412225.69 Level: 64.66
Location:	Lund Hill Lane, Royston, Barnsley, S71 4BD	Dimensions (m): Depth 3.20	Date 14/05/2015 Scale 1:25 Logged IMC
Client:	Hargreaves Ltd c/o Patrick Parsons Ltd		

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30 0.30 0.30	B D ES		0.35	64.31		MADE GROUND - Fine to medium, crushed compacted coke ('carpet').
	1.00 1.00 1.00	B D ES					MADE GROUND - Reddish brown mixed brick rubble fill, comprising crushed brick fill, weathered bricks, lumps of concrete, occasional coke, coal, ash, sand and gravel. Gravel is fine to medium of sandstone, sand is fine to coarse.
	2.00 2.00 2.00	B D ES					
	3.00 3.00 3.00	B D ES		3.00 3.20 3.20	61.66 61.46 61.46		CONCRETE - Large concrete obstruction encountered. Attempted to break through. Trial pit terminated on concrete obstruction. End of pit at 3.20 m

Remarks: No groundwater encountered. Stability: Good. Backfilled with arisings. Log issue: Draft.

Stability: