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Post Certification Report

AECOM
St. George's House
2nd Floor
5 St. George's Road
Wimbledon
Greater London
SW19 4DR
Attention: Tim Rolfe

Date:	14/12/2016	**Location:**	Shell Shoreham Airport
Customer:	H_URS_WIM	**No. Of Samples Received:**	2
Your Reference:		**Samples Scheduled:**	2

Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

ALS Environmental is part of ALS Life Sciences Limited. ALS Life Sciences Limited registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

Post Certification Report

Customer : H_URS_WIM

Client Reference :

Location : Shell Shoreham Airport

Results Legend

X Test

N No Determination Possible

			Lab Sample No(s)			
			14404045		14404043	
			Customer Sample Reference		FL01		FL202	
			AGS Reference					
			Depth (m)		0.50		0.50	
			Container	250g Amber Jar	60g VOC (ALE215)	250g Amber Jar	60g VOC (ALE215)
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 2		X		X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 2		X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2			X		X
Oxygenates (S)	All	NDPs: 0 Tests: 2			X		X
PAH by GCMS	All	NDPs: 0 Tests: 2		X		X	
Sample description	All	NDPs: 0 Tests: 1		X			
VOC MS (S)	All	NDPs: 0 Tests: 2			X		X

Post Certification Report

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	FL01	FL202
			Depth (m)	0.50	0.50
			Sample Type	Soil/Solid	Soil/Solid
			Date Sampled	25/10/2016	25/10/2016
			Date Received	26/10/2016	26/10/2016
			SDG Ref	161026-81	161026-81
			Lab Sample No.(s)	14404045	14404043
			AGS Reference		
Moisture Content Ratio (% of as received sample)	%	PM024		10	13
Bromofluorobenzene**	%	TM288		118	117
Ethanol	<50 µg/kg	TM288		156	<50
tert Butanol	<10 µg/kg	TM288		<10	<10
Diisopropyl ether	<1 µg/kg	TM288		<1	<1
tert-butyl ethyl ether	<1 µg/kg	TM288		<1	<1

Post Certification Report

Customer : H_URS_WIM **Client Reference :**

Location : Shell Shoreham Airport

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	FL01	FL202				
			Depth (m)	0.50	0.50				
			Sample Type	Soil/Solid	Soil/Solid				
			Date Sampled	25/10/2016	25/10/2016				
			Date Received	26/10/2016	26/10/2016				
			SDG Ref	161026-81	161026-81				
			Lab Sample No.(s)	14404045	14404043				
			AGS Reference						
Aliphatics >C12-C16	<100 µg/kg	TM173		<100	964				
Aliphatics >C16-C21	<100 µg/kg	TM173		1380	2240				
Aliphatics >C21-C35	<100 µg/kg	TM173		10200	3280				
Aliphatics >C35-C44	<100 µg/kg	TM173		1530	<100				

Post Certification Report

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	FL01	FL202
Depth (m)	0.50	0.50
Sample Type	Soil/Solid	Soil/Solid
Date Sampled	25/10/2016	25/10/2016
Date Received	26/10/2016	26/10/2016
SDG Ref	161026-81	161026-81
Lab Sample No.(s)	14404045	14404043
AGS Reference		

Component	LOD/Units	Method		
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	368
Aromatics >EC16-EC21	<100 µg/kg	TM173	2170	4780
Aromatics >EC21-EC35	<100 µg/kg	TM173	14800	13500

Post Certification Report

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

Results Legend		Customer Sample Ref.	FL01	FL202				
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.	Depth (m)	0.50	0.50				
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid	Soil/Solid				
tot.unfilt	Total / unfiltered sample.	Date Sampled	25/10/2016	25/10/2016				
*	subcontracted test.	Date Received	26/10/2016	26/10/2016				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	SDG Ref	161026-81	161026-81				
		Lab Sample No.(s)	14404045	14404043				
		AGS Reference						
1-5&+§@	Sample deviation (see appendix)							

Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	81	125				
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10				
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	51.3				
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	60.4				
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	104				
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10				
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	54.7				
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	69.5				

Post Certification Report

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

Results Legend		Customer Sample Ref.	FL01	FL202				
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.	Depth (m)	0.50	0.50				
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid	Soil/Solid				
tot.unfilt	Total / unfiltered sample.	Date Sampled	25/10/2016	25/10/2016				
*	subcontracted test.	Date Received	26/10/2016	26/10/2016				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	SDG Ref	161026-81	161026-81				
		Lab Sample No.(s)	14404045	14404043				
		AGS Reference						
1-5&+§@	Sample deviation (see appendix)							

Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	91.9	101				
Acenaphthene-d10 % recovery**	%	TM218	89.3	98.8				
Phenanthrene-d10 % recovery**	%	TM218	87.5	97.2				
Chrysene-d12 % recovery**	%	TM218	77.5	89.5				
Perylene-d12 % recovery**	%	TM218	81.3	96.2				
Naphthalene	<9 µg/kg	TM218	<9 M	30.6 M				
Acenaphthylene	<12 µg/kg	TM218	<12 M	36.1 M				
Acenaphthene	<8 µg/kg	TM218	<8 M	21.3 M				
Fluorene	<10 µg/kg	TM218	<10 M	15.6 M				
Phenanthrene	<15 µg/kg	TM218	31.6 M	392 M				
Anthracene	<16 µg/kg	TM218	<16 M	97 M				
Fluoranthene	<17 µg/kg	TM218	70.3 M	1080 M				
Pyrene	<15 µg/kg	TM218	62.1 M	1020 M				
Benz(a)anthracene	<14 µg/kg	TM218	51.3 M	491 M				
Chrysene	<10 µg/kg	TM218	43.1 M	539 M				
Benzo(b)fluoranthene	<15 µg/kg	TM218	57.1 M	728 M				
Benzo(k)fluoranthene	<14 µg/kg	TM218	18.7 M	272 M				
Benzo(a)pyrene	<15 µg/kg	TM218	39.6 M	596 M				
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	28.2 M	381 M				
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 M	101 M				
Benzo(g,h,i)perylene	<24 µg/kg	TM218	36.4 M	455 M				
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	438	6260				

Post Certification Report

Customer : H_URS_WIM **Client Reference :**

Location : Shell Shoreham Airport

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	FL01	FL202				
			Depth (m)	0.50	0.50				
			Sample Type	Soil/Solid	Soil/Solid				
			Date Sampled	25/10/2016	25/10/2016				
			Date Received	26/10/2016	26/10/2016				
			SDG Ref	161026-81	161026-81				
			Lab Sample No.(s)	14404045	14404043				
			AGS Reference						
Toluene-d8**	%	TM116		94.5	98				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<10 M	<10 M				
Benzene	<9 µg/kg	TM116		<9 M	<9 M				
Toluene	<7 µg/kg	TM116		<7 M	<7 M				
Ethylbenzene	<4 µg/kg	TM116		<4 M	<4 M				
p/m-Xylene	<10 µg/kg	TM116		<10 #	<10 #				
o-Xylene	<10 µg/kg	TM116		<10 M	<10 M				
Tert-amyl methyl ether	<10 µg/kg	TM116		<10 #	<10 #				

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

Table of Results - Appendix

REPORT KEY

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10-7

NDP	No Determination Possible	#	ISO 17025 Accredited	*	Subcontracted Test	M	MCERTS Accredited
NFD	No Fibres Detected	PFD	Possible Fibres Detected	»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM218	Determination of PAH by GCMS Microwave extraction	The determination of PAH in soil samples by microwave extraction and GC-MS		
TM288		Determination of Oxygenates in Soils by Headspace/GC-MS		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

Test Completion Dates

Lab Sample No(s)	14404045	14404043
Customer Sample Ref.	FL01	FL202
AGS Ref.		
Depth	0.50	0.50
Type	SOLID	SOLID
EPH CWG (Aliphatic) GC (S)	01-Nov-2016	01-Nov-2016
EPH CWG (Aromatic) GC (S)	01-Nov-2016	01-Nov-2016
GRO by GC-FID (S)	31-Oct-2016	31-Oct-2016
Oxygenates (S)	27-Oct-2016	27-Oct-2016
PAH by GCMS	31-Oct-2016	31-Oct-2016
Sample description	27-Oct-2016	27-Oct-2016
VOC MS (S)	31-Oct-2016	31-Oct-2016

Post Certification Report

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

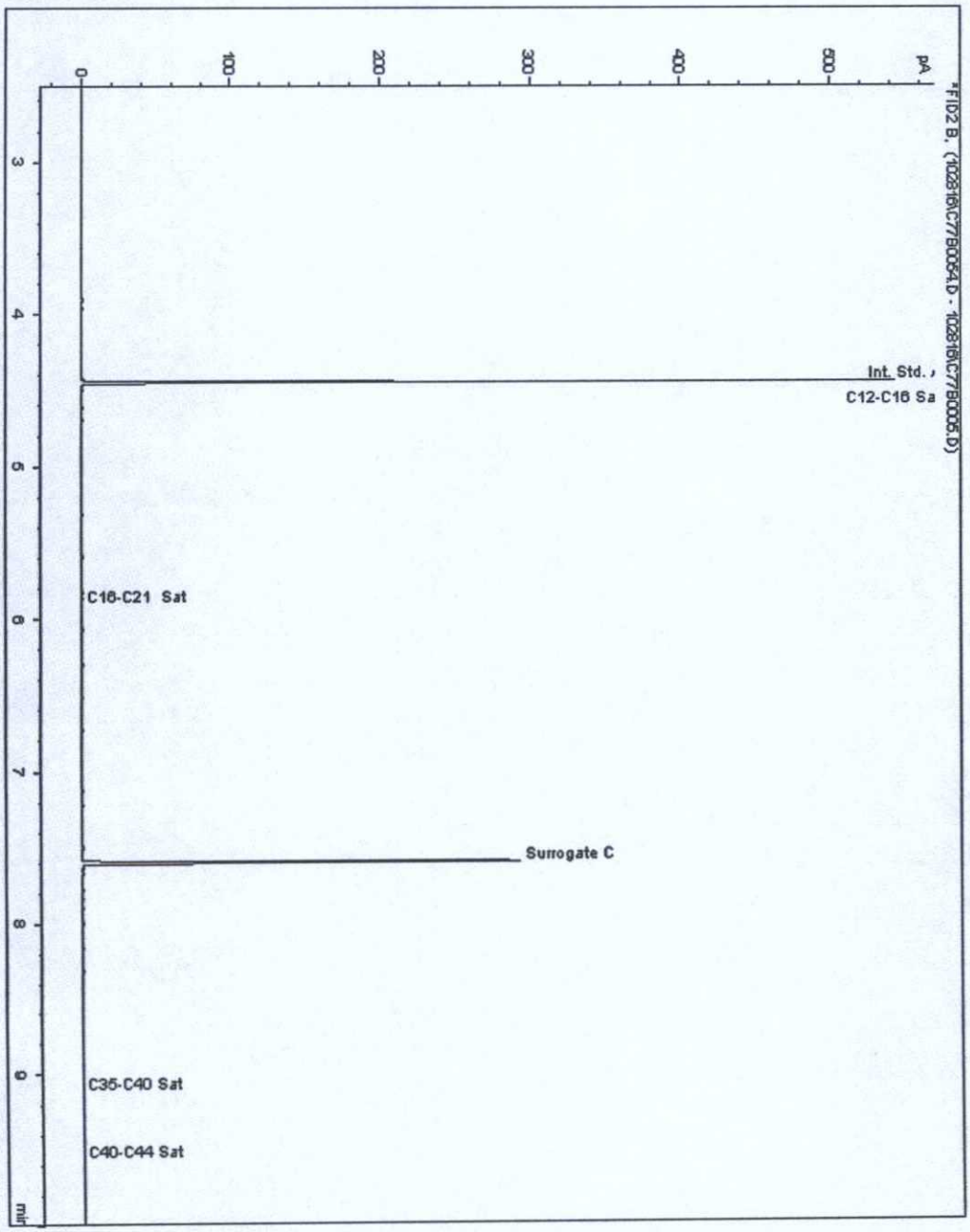
Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
14412436

Sample No : 14,412,436 **Depth :** 0.50
Sample ID : FL202

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 13520614-
Date Acquired : 10/29/2016 2:46:18 AM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.028



Post Certification Report

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

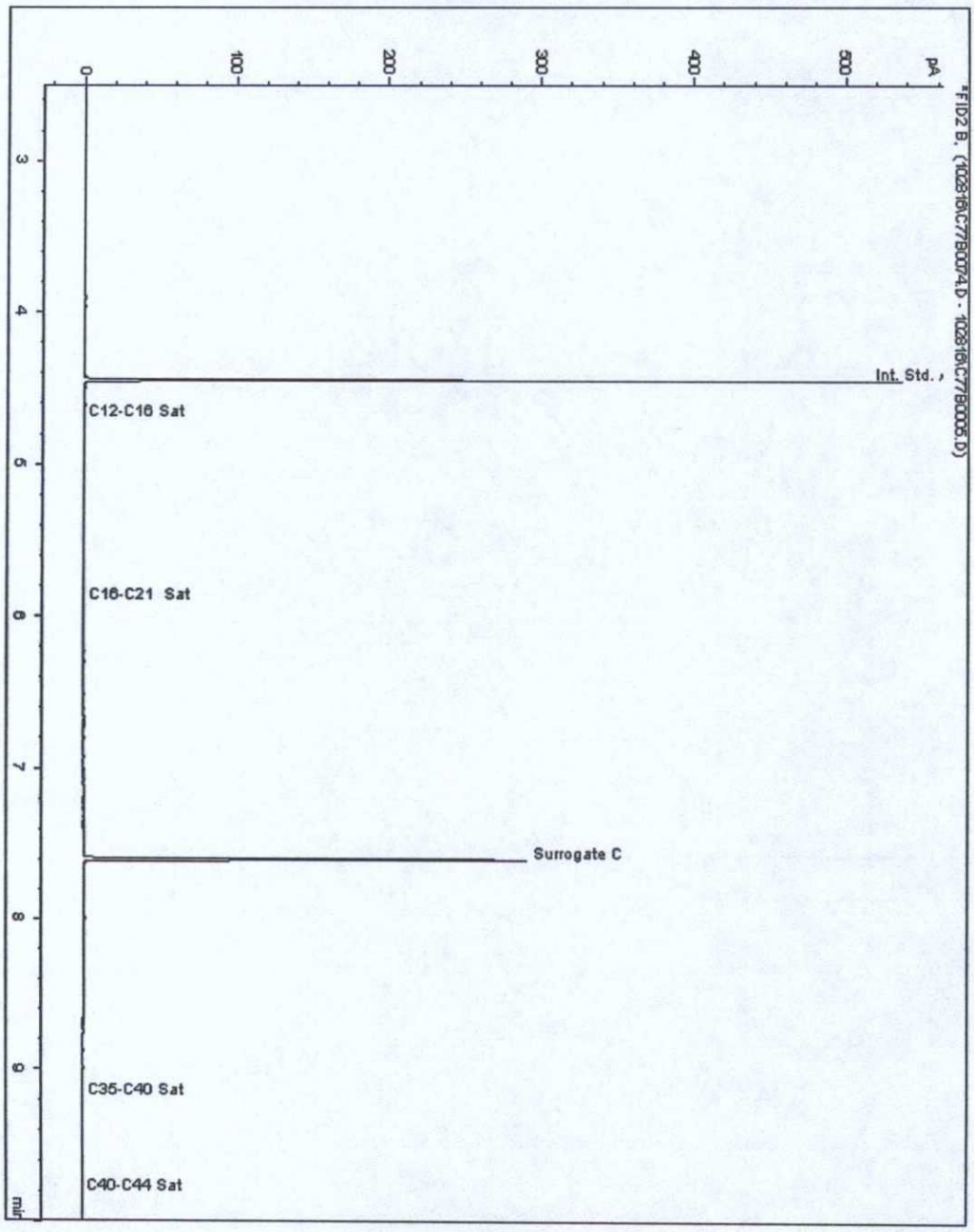
Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
14412763

Sample No : 14,412,763 **Depth :** 0.50
Sample ID : FL01

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 13520623-
Date Acquired : 10/29/2016 8:21:13 AM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.982



Post Certification Report

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

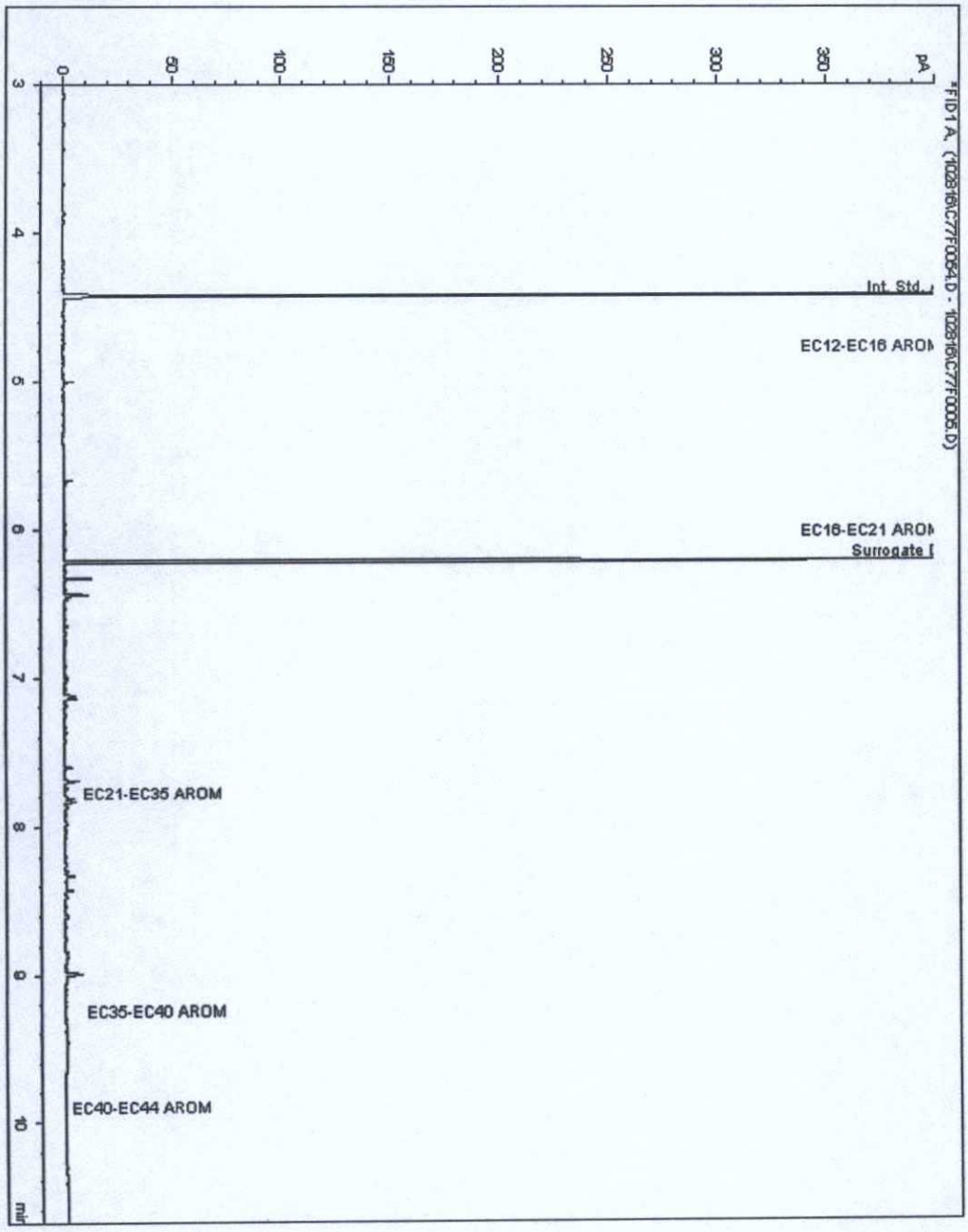
Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)
14412436

Sample No : 14,412,436 **Depth :** 0.50
Sample ID : FL202

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 13520615-
Date Acquired : 10/29/2016 2:46:18 AM
Units : ppb
Dilution:



Post Certification Report

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

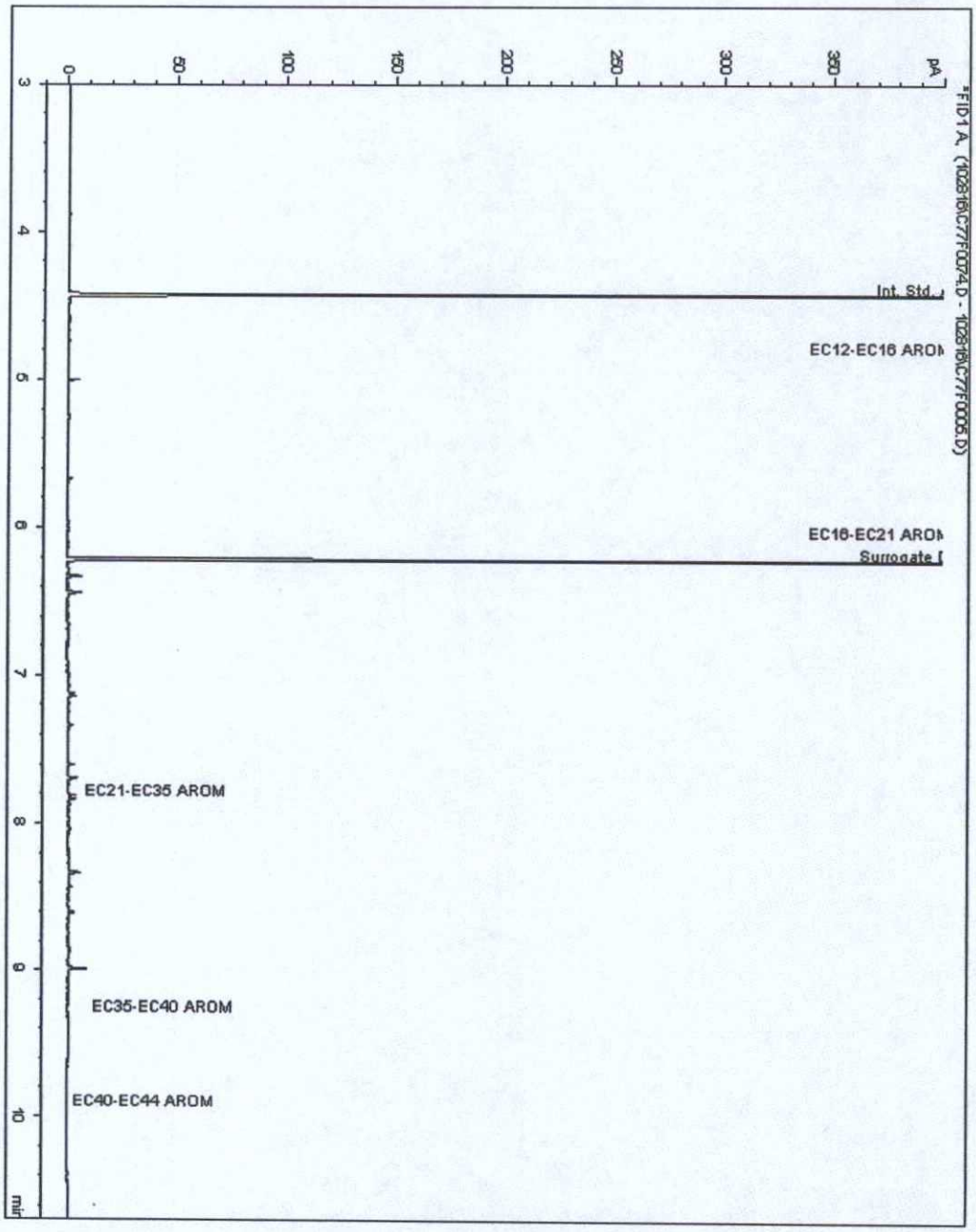
Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)
14412763

Sample No : 14,412,763 **Depth :** 0.50
Sample ID : FL01

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 13520624-
Date Acquired : 10/29/2016 8:21:13 AM
Units : ppb
Dilution:



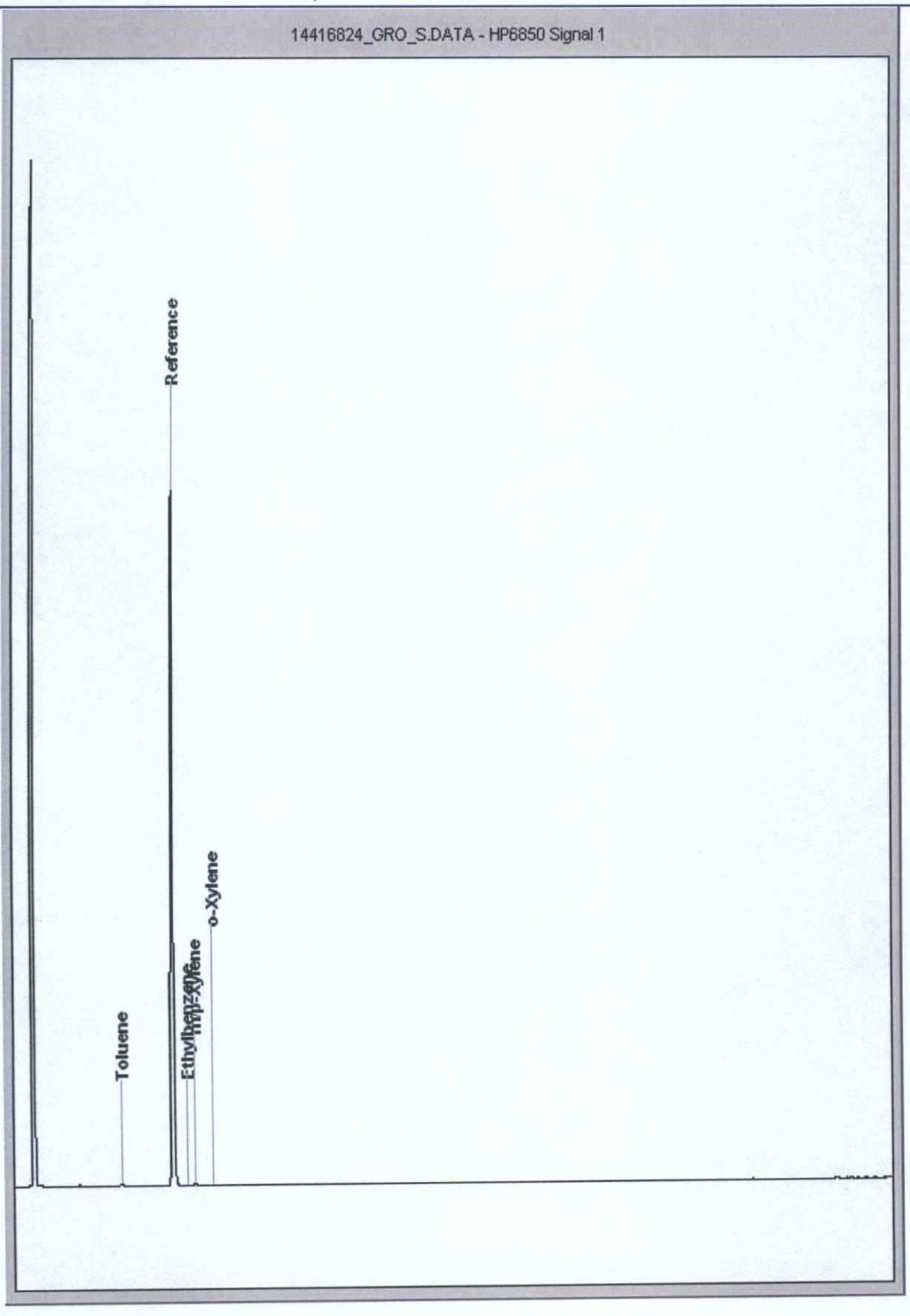
Post Certification Report

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

Chromatogram

Analysis: GRO by GC-FID (S)
14416824

Sample No : 14,416,824 **Depth :** 0.50
Sample ID : FL01



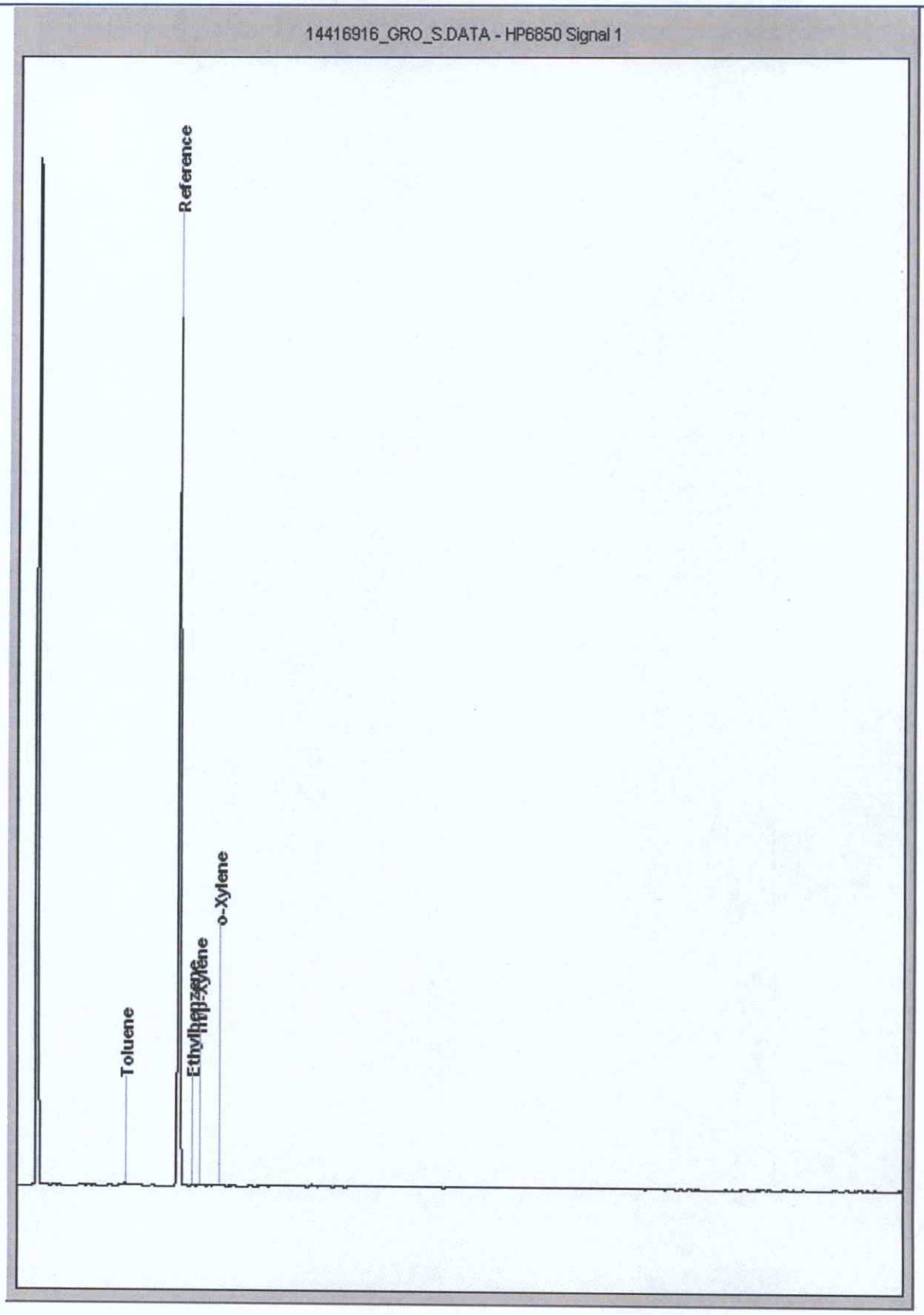
Post Certification Report

Customer : H_URS_WIM
Client Reference :
Location : Shell Shoreham Airport

Chromatogram

Analysis: GRO by GC-FID (S)
14416916

Sample No : 14,416,916 **Depth :** 0.50
Sample ID : FL202



Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than:
- Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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email: customerservices@alcontrol.com
Website: www.alsenvironmental.co.uk

Post Certification Report

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Greater London
SW19 4DR
Attention: Kathryn Mellor

Date:	14/12/2016	**Location:**	SHELL SHOREHAM
Customer:	H_URS_WIM	**No. Of Samples Received:**	5
Your Reference:	60491154	**Samples Scheduled:**	5

Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

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Post Certification Report

Customer : H_URS_WIM

Client Reference : 60491154
Location : SHELL SHOREHAM

Results Legend

X Test

N No Determination Possible

			Lab Sample No(s)	14269761			14269762			14269763			14269764			14269766		
			Customer Sample Reference	EXA06			EXA11			EXA12			EXA18			EXA24		
			AGS Reference															
			Depth (m)	1.90			2.20			2.20			1.40			2.10		
			Container	1kg TUB	250g Amber Jar	60g VOC (ALE215)	250g Amber Jar	60g VOC (ALE215)		250g Amber Jar	60g VOC (ALE215)		250g Amber Jar	60g VOC (ALE215)		1kg TUB	250g Amber Jar	60g VOC (ALE215)
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2		X												X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 5			X		X			X			X				X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 5			X		X			X			X				X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 5				X		X			X			X				X
Oxygenates (S)	All	NDPs: 0 Tests: 5				X		X			X			X				X
PAH by GCMS	All	NDPs: 0 Tests: 5			X		X			X			X				X	
Sample description	All	NDPs: 0 Tests: 4			X		X						X				X	
VOC MS (S)	All	NDPs: 0 Tests: 5				X		X			X			X				X

Post Certification Report

Customer : H_URS_WIM **Client Reference :** 60491154
Location : SHELL SHOREHAM

Results Legend		Customer Sample Ref.	EXA06	EXA11	EXA12	EXA18	EXA24	
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.	Depth (m)	1.90	2.20	2.20	1.40	2.10	
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
tot.unfilt	Total / unfiltered sample.	Date Sampled	04/10/2016	04/10/2016	04/10/2016	04/10/2016	04/10/2016	
*	subcontracted test.	Date Received	05/10/2016	05/10/2016	05/10/2016	05/10/2016	05/10/2016	
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	SDG Ref	161005-109	161005-109	161005-109	161005-109	161005-109	
		Lab Sample No.(s)	14269761	14269762	14269763	14269764	14269766	
1-5&+§@	Sample deviation (see appendix)	AGS Reference						

Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	6.7	10	11	11	11	
Bromofluorobenzene**	%	TM288	114	101	116	104	99.2	
Ethanol	<50 µg/kg	TM288	<50	<50	<50	<50	<50	
tert Butanol	<10 µg/kg	TM288	<10	<10	<10	<10	<10	
Diisopropyl ether	<1 µg/kg	TM288	<1	<1	<1	<1	<1	
tert-butyl ethyl ether	<1 µg/kg	TM288	<1	<1	<1	<1	<1	

Post Certification Report

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Results Legend	
#	ISO17025 accredited.
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aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	EXA06	EXA11	EXA12	EXA18	EXA24	
			Depth (m)	1.90	2.20	2.20	1.40	2.10	
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
			Date Sampled	04/10/2016	04/10/2016	04/10/2016	04/10/2016	04/10/2016	
			Date Received	05/10/2016	05/10/2016	05/10/2016	05/10/2016	05/10/2016	
			SDG Ref	161005-109	161005-109	161005-109	161005-109	161005-109	
			Lab Sample No.(s)	14269761	14269762	14269763	14269764	14269766	
			AGS Reference						
Aliphatics >C12-C16	<100 µg/kg	TM173		708	3260	7320	12700	6250	
Aliphatics >C16-C21	<100 µg/kg	TM173		4990	6130	25000	37000	25100	
Aliphatics >C21-C35	<100 µg/kg	TM173		14700	14300	79000	70900	38600	
Aliphatics >C35-C44	<100 µg/kg	TM173		2820	6130	24900	28100	9090	

Post Certification Report

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Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	EXA06	EXA11	EXA12	EXA18	EXA24	
			Depth (m)	1.90	2.20	2.20	1.40	2.10	
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
			Date Sampled	04/10/2016	04/10/2016	04/10/2016	04/10/2016	04/10/2016	
			Date Received	05/10/2016	05/10/2016	05/10/2016	05/10/2016	05/10/2016	
			SDG Ref	161005-109	161005-109	161005-109	161005-109	161005-109	
			Lab Sample No.(s)	14269761	14269762	14269763	14269764	14269766	
			AGS Reference						
Aromatics >EC12-EC16	<100 µg/kg	TM173		1080	2300	8560	4860	4010	
Aromatics >EC16-EC21	<100 µg/kg	TM173		9700	10200	28400	23100	39000	
Aromatics >EC21-EC35	<100 µg/kg	TM173		47000	44000	102000	105000	153000	

Post Certification Report

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Results Legend		Customer Sample Ref.	EXA06	EXA11	EXA12	EXA18	EXA24	
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.	Depth (m)	1.90	2.20	2.20	1.40	2.10	
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
tot.unfilt	Total / unfiltered sample.	Date Sampled	04/10/2016	04/10/2016	04/10/2016	04/10/2016	04/10/2016	
*	subcontracted test.	Date Received	05/10/2016	05/10/2016	05/10/2016	05/10/2016	05/10/2016	
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	SDG Ref	161005-109	161005-109	161005-109	161005-109	161005-109	
		Lab Sample No.(s)	14269761	14269762	14269763	14269764	14269766	
1-5&+§@	Sample deviation (see appendix)	AGS Reference						

Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	95	75	87	70	81	
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	249	10.1	
Aliphatics >C6-C8	<10 µg/kg	TM089	10.7	52.2	<10	1190	47	
Aliphatics >C8-C10	<10 µg/kg	TM089	16.1	84.4	13.4	625	122	
Aliphatics >C10-C12	<10 µg/kg	TM089	31.1	153	19	707	136	
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	10.2	<10	
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	123	11.2	
Aromatics >EC8-EC10	<10 µg/kg	TM089	22.5	73.3	21.3	788	119	
Aromatics >EC10-EC12	<10 µg/kg	TM089	21.4	102	12.3	471	90.7	

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**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	EXA06	EXA11	EXA12	EXA18	EXA24	
			Depth (m)	1.90	2.20	2.20	1.40	2.10	
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
			Date Sampled	04/10/2016	04/10/2016	04/10/2016	04/10/2016	04/10/2016	
			Date Received	05/10/2016	05/10/2016	05/10/2016	05/10/2016	05/10/2016	
			SDG Ref	161005-109	161005-109	161005-109	161005-109	161005-109	
			Lab Sample No.(s)	14269761	14269762	14269763	14269764	14269766	
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94	108	96.1	94.2	95.3	
Acenaphthene-d10 % recovery**	%	TM218		88.1	113	97.7	97.3	88.9	
Phenanthrene-d10 % recovery**	%	TM218		85.5	113	98	96.8	87	
Chrysene-d12 % recovery**	%	TM218		84.3	124	106	106	88.1	
Perylene-d12 % recovery**	%	TM218		93.8	126	111	112	94.9	
Naphthalene	<9 µg/kg	TM218		35.4 M	75.6 #	62 M	71.7 #	57 M	
Acenaphthylene	<12 µg/kg	TM218		68.1 M	231 #	155 M	157 #	156 M	
Acenaphthene	<8 µg/kg	TM218		32.9 M	106 #	150 M	87.5 #	93 M	
Fluorene	<10 µg/kg	TM218		27.6 M	125 #	153 M	86.7 #	72.1 M	
Phenanthrene	<15 µg/kg	TM218		416 M	2610 #	1800 M	959 #	976 M	
Anthracene	<16 µg/kg	TM218		135 M	813 #	545 M	354 #	383 M	
Fluoranthene	<17 µg/kg	TM218		1530 M	6580 #	3920 M	3240 #	3720 M	
Pyrene	<15 µg/kg	TM218		1370 M	5950 #	3220 M	2810 #	3250 M	
Benz(a)anthracene	<14 µg/kg	TM218		837 M	3700 #	1970 M	1860 #	1950 M	
Chrysene	<10 µg/kg	TM218		790 M	2810 #	1510 M	1340 #	1750 M	
Benzo(b)fluoranthene	<15 µg/kg	TM218		1270 M	4340 #	2420 M	2430 #	2680 M	
Benzo(k)fluoranthene	<14 µg/kg	TM218		414 M	1630 #	955 M	917 #	959 M	
Benzo(a)pyrene	<15 µg/kg	TM218		1070 M	3590 #	1970 M	2050 #	2290 M	
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		576 M	2030 #	1160 M	1220 #	1210 M	
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		173 M	619 #	343 M	337 #	344 M	
Benzo(g,h,i)perylene	<24 µg/kg	TM218		625 M	2400 #	1410 M	1530 #	1290 M	
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		9370	37600	21700	19400	21200	

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diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	EXA06	EXA11	EXA12	EXA18	EXA24	
			Depth (m)	1.90	2.20	2.20	1.40	2.10	
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
			Date Sampled	04/10/2016	04/10/2016	04/10/2016	04/10/2016	04/10/2016	
			Date Received	05/10/2016	05/10/2016	05/10/2016	05/10/2016	05/10/2016	
			SDG Ref	161005-109	161005-109	161005-109	161005-109	161005-109	
			Lab Sample No.(s)	14269761	14269762	14269763	14269764	14269766	
			AGS Reference						
Toluene-d8**	%	TM116		99.6	97.6	97.1	89.8	97.7	
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<10 M	<10 #	<10 M	<10 #	<10 M	
Benzene	<9 µg/kg	TM116		<9 M	<9 #	<9 M	<9 #	<9 M	
Toluene	<7 µg/kg	TM116		<7 M	<7 #	<7 M	69.9 #	<7 M	
Ethylbenzene	<4 µg/kg	TM116		<4 M	<4 #	<4 M	43.4 #	<4 M	
p/m-Xylene	<10 µg/kg	TM116		<10	<10 #	<10 #	92.2 #	<10 #	
o-Xylene	<10 µg/kg	TM116		<10 M	<10 #	<10 M	129 #	<10 M	
Tert-amyl methyl ether	<10 µg/kg	TM116		<10	<10 #	<10 #	<10 #	<10 #	

Post Certification Report

Customer : H_URS_WIM
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Location : SHELL SHOREHAM

Asbestos Identification

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthrophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	EXA06 NS Z 1.90 SOLID 04/10/2016 00:00:00 11/10/2016 10:32:37 161005-109 14,269,761 TM048	14/10/16	Paul Poynton	-	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	EXA24 NS Z 2.10 SOLID 04/10/2016 00:00:00 11/10/2016 10:37:56 161005-109 14,269,766 TM048	14/10/16	Paul Poynton	-	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected

Customer : H_URS_WIM
Client Reference : 60491154
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Table of Results - Appendix

REPORT KEY

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10-7

NDP	No Determination Possible	#	ISO 17025 Accredited	*	Subcontracted Test	M	MCERTS Accredited
NFD	No Fibres Detected	PFD	Possible Fibres Detected	»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM218	Determination of PAH by GCMS Microwave extraction	The determination of PAH in soil samples by microwave extraction and GC-MS		
TM288		Determination of Oxygenates in Soils by Headspace/GC-MS		
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Customer : H_URS_WIM

Client Reference : 60491154
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Test Completion Dates

Lab Sample No(s)	14269761	14269762	14269763	14269764	14269766
Customer Sample Ref.	EXA06	EXA11	EXA12	EXA18	EXA24
AGS Ref.					
Depth	1.90	2.20	2.20	1.40	2.10
Type	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	14-Oct-2016				14-Oct-2016
EPH CWG (Aliphatic) GC (S)	12-Oct-2016	11-Oct-2016	12-Oct-2016	11-Oct-2016	12-Oct-2016
EPH CWG (Aromatic) GC (S)	12-Oct-2016	11-Oct-2016	12-Oct-2016	11-Oct-2016	12-Oct-2016
GRO by GC-FID (S)	11-Oct-2016	11-Oct-2016	11-Oct-2016	11-Oct-2016	11-Oct-2016
Oxygenates (S)	12-Oct-2016	12-Oct-2016	12-Oct-2016	12-Oct-2016	12-Oct-2016
PAH by GCMS	12-Oct-2016	12-Oct-2016	12-Oct-2016	12-Oct-2016	12-Oct-2016
Sample description	07-Oct-2016	07-Oct-2016	07-Oct-2016	07-Oct-2016	07-Oct-2016
VOC MS (S)	11-Oct-2016	11-Oct-2016	11-Oct-2016	11-Oct-2016	11-Oct-2016

Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

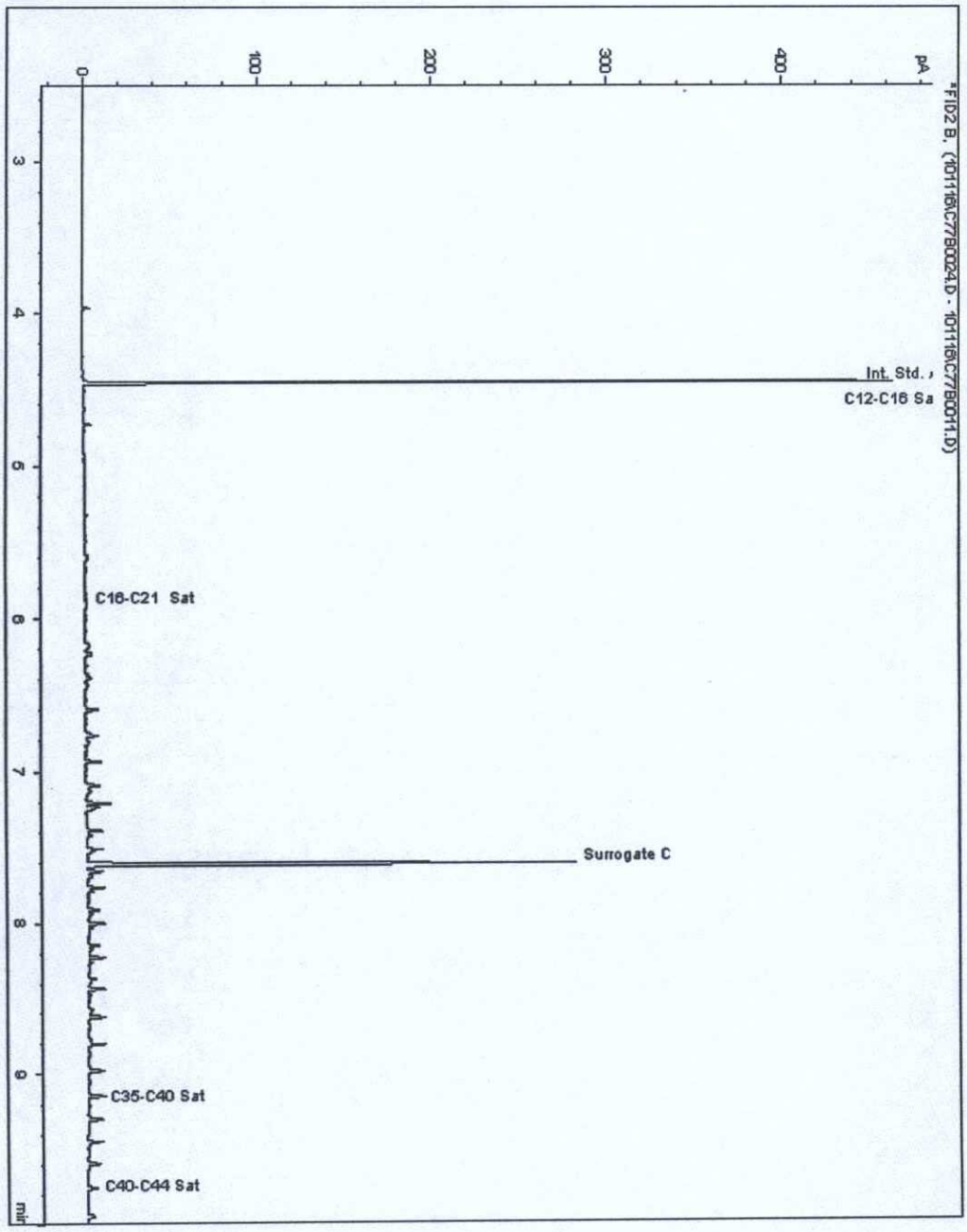
Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
14282586

Sample No : 14,282,586 **Depth :** 2.20
Sample ID : EXA12

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 13406812-
Date Acquired : 10/12/2016 6:26:49 AM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.978



Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

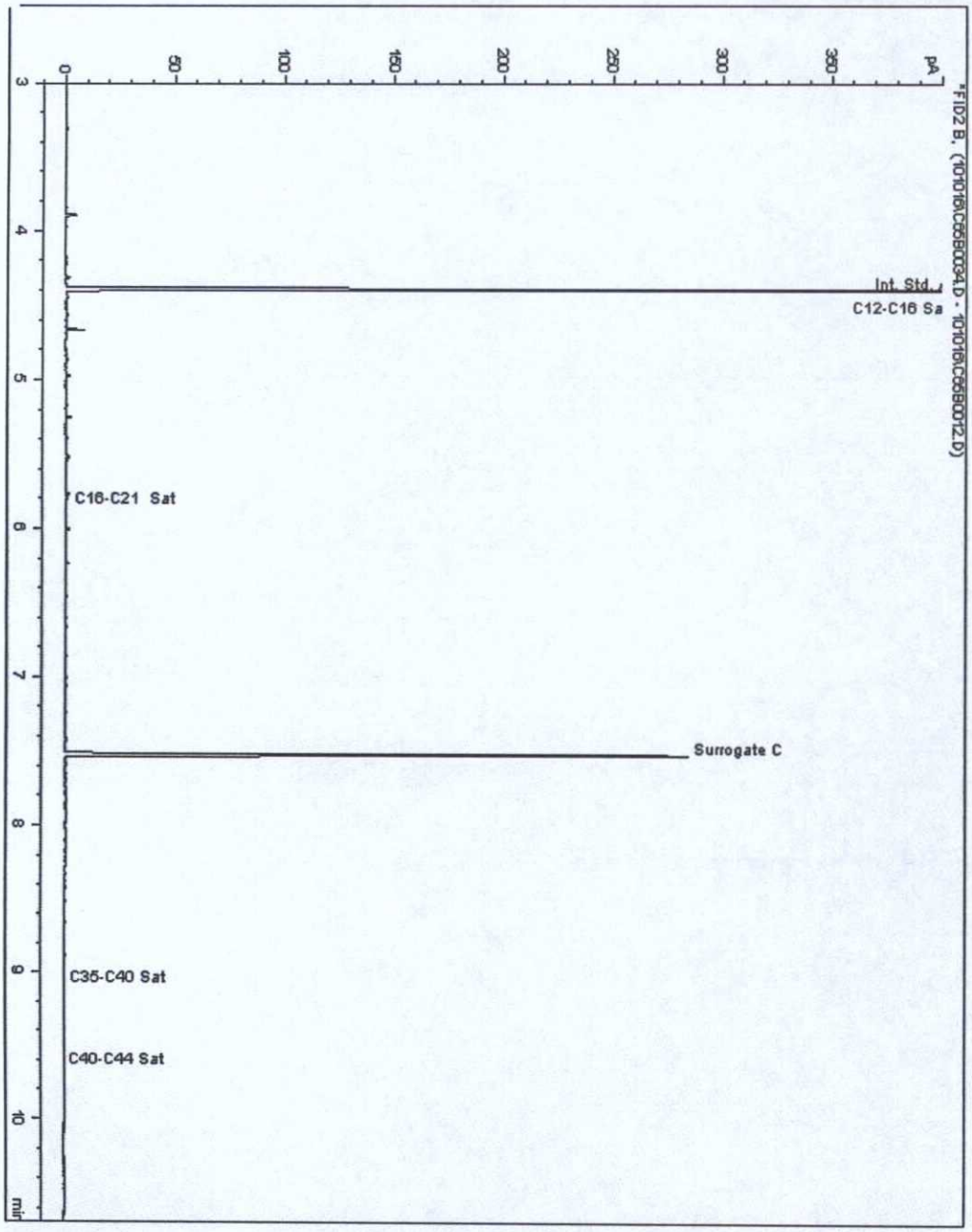
Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
14282651

Sample No : 14,282,651 **Depth :** 2.20
Sample ID : EXA11

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 13406803-
Date Acquired : 11/10/2016 02:58:35 PM
Units : ppb
Dilution: EXA-W5[2.20] ->



Post Certification Report

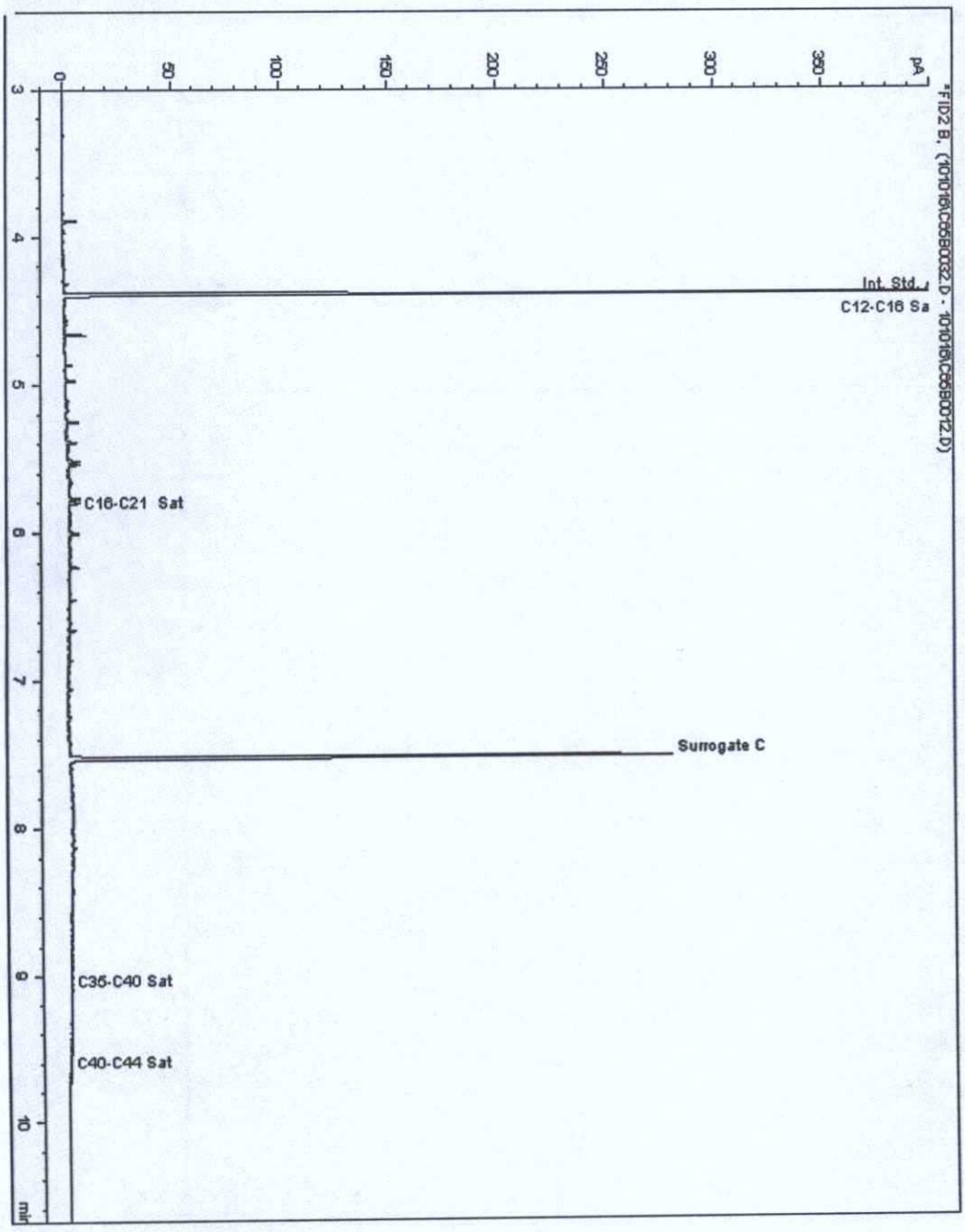
Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S) **Sample No :** 14,282,731 **Depth :** 1.40
14282731 **Sample ID :** EXA18

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 13406821-
Date Acquired : 11/10/2016 02:26:36 PM
Units : ppb
Dilution: EXA-W7[1.40] ->



Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

Chromatogram

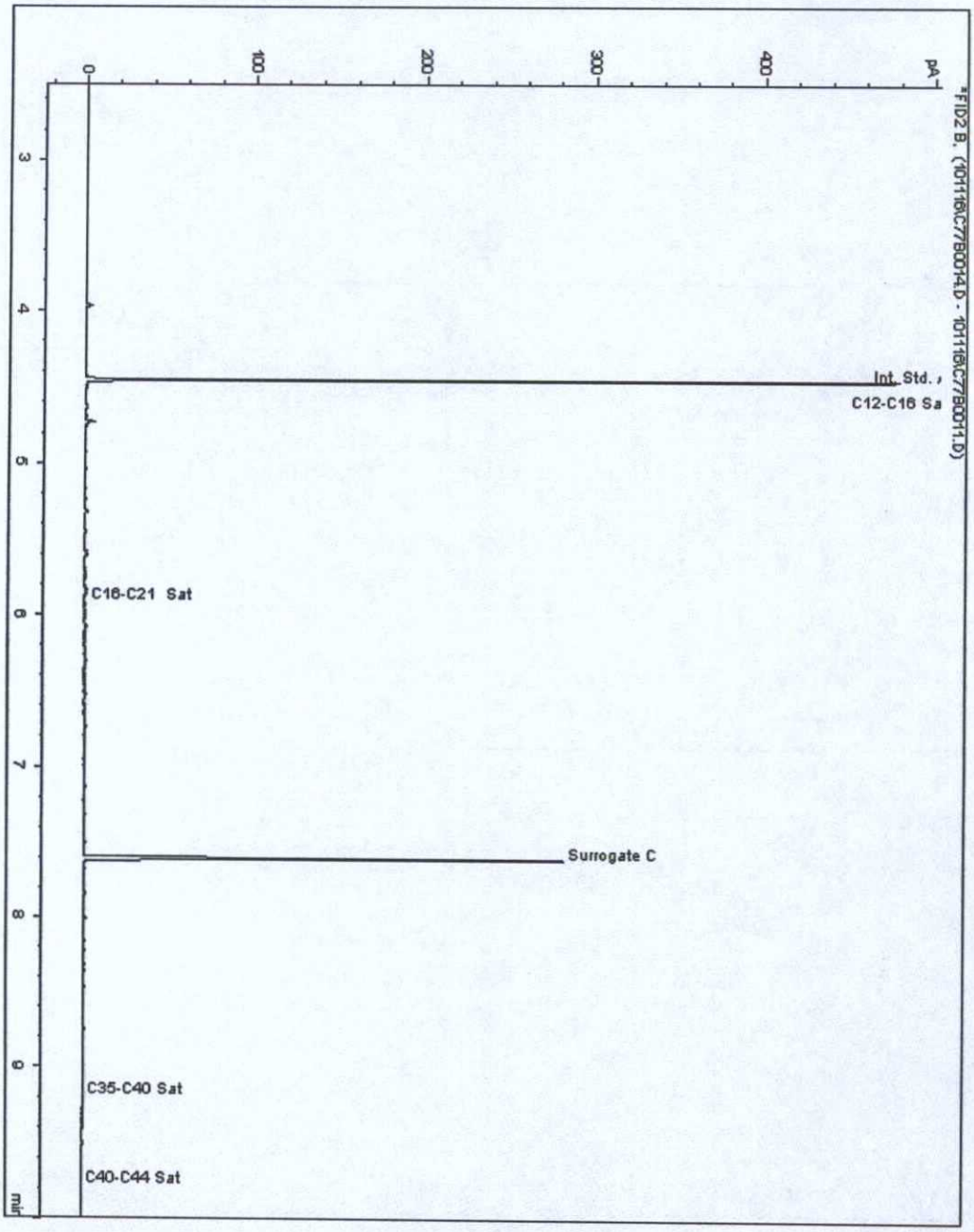
Analysis: EPH CWG (Aliphatic) GC (S)
14286606

Sample No :
Sample ID : EXA06

14,286,606**Depth :**1.90

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 13406791-
Date Acquired : 10/11/2016 3:45:00 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.972



Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

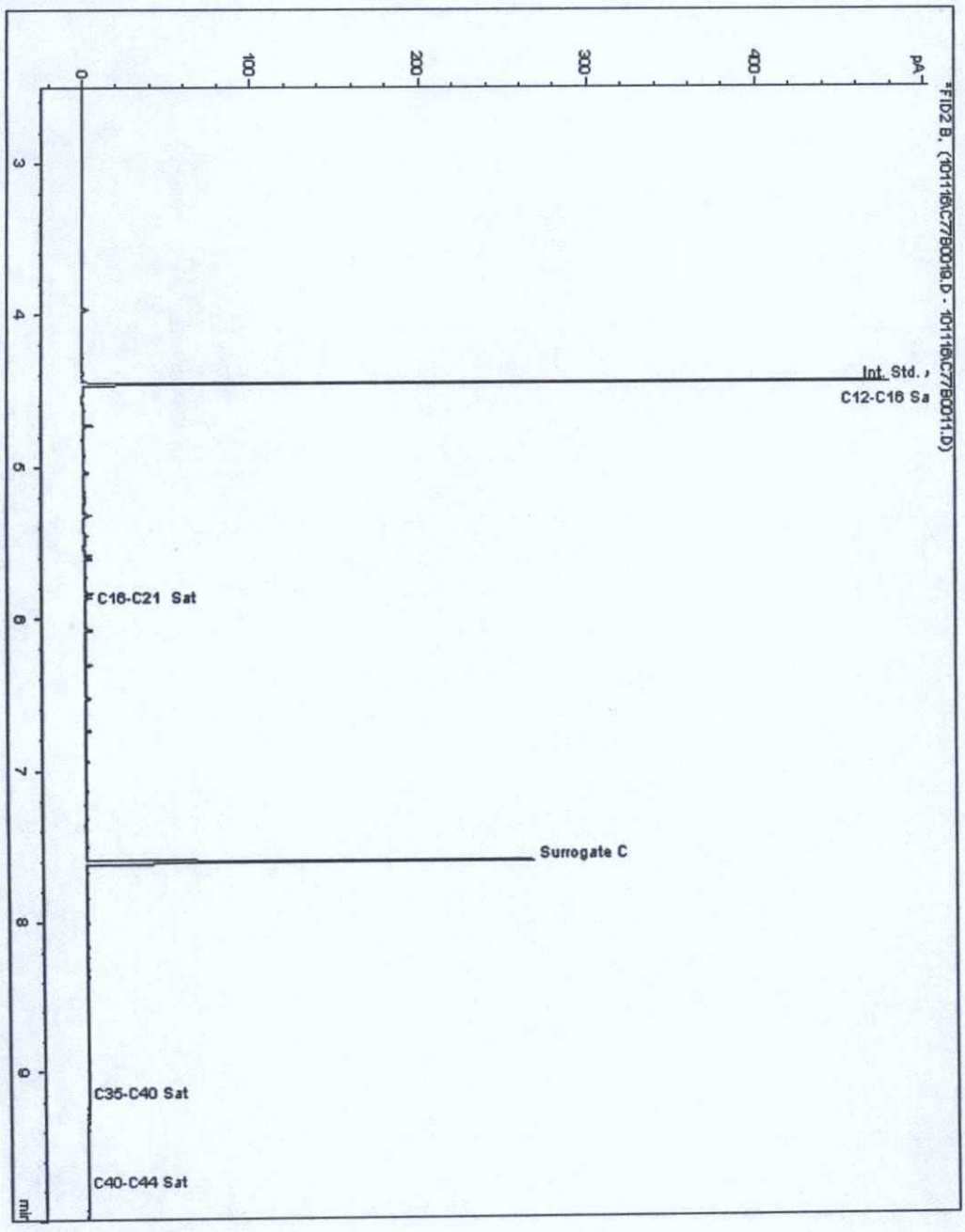
Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
14286719

Sample No : 14,286,719 **Depth :** 2.10
Sample ID : EXA24

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 13406830-
Date Acquired : 10/11/2016 5:08:55 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.995



Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

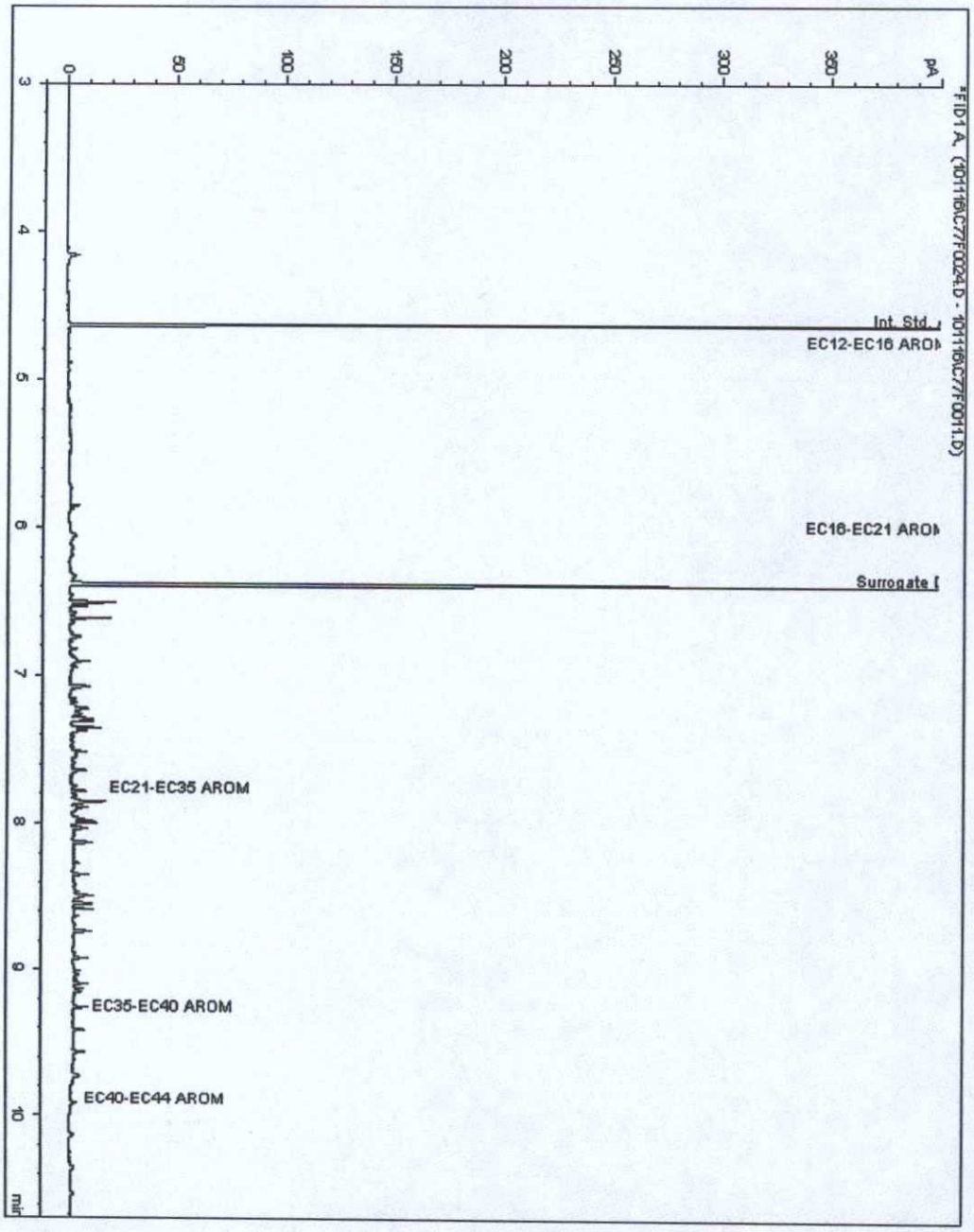
Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)
14282586

Sample No : 14,282,586 **Depth :** 2.20
Sample ID : EXA12

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 13406813-
Date Acquired : 10/12/2016 6:26:48 AM
Units : ppb
Dilution:



Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

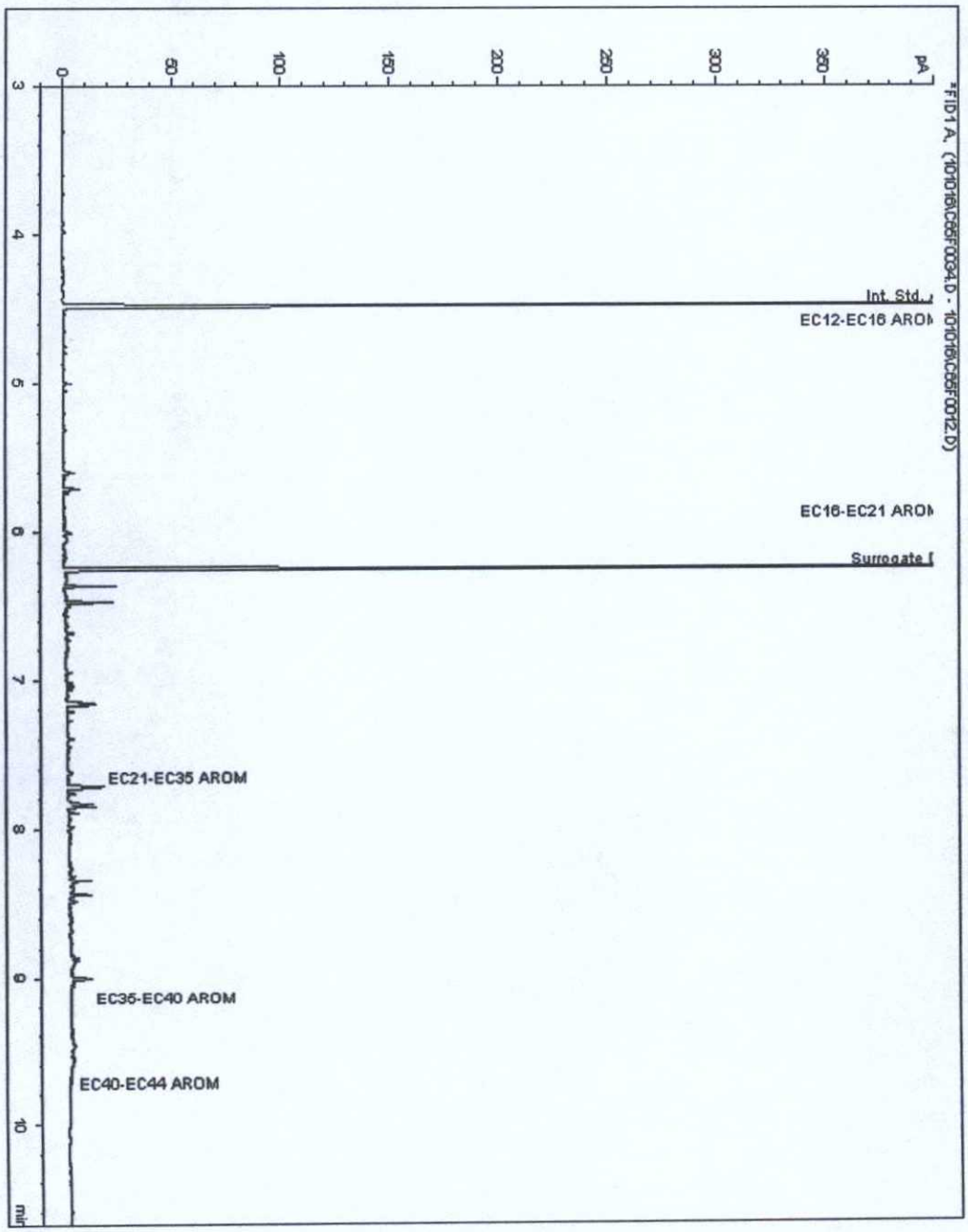
Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)
14282651

Sample No : 14,282,651 **Depth :** 2.20
Sample ID : EXA11

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 13406804-
Date Acquired : 11/10/2016 02:58:35 PM
Units : ppb
Dilution: EXA-W5[2.20] ->



Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

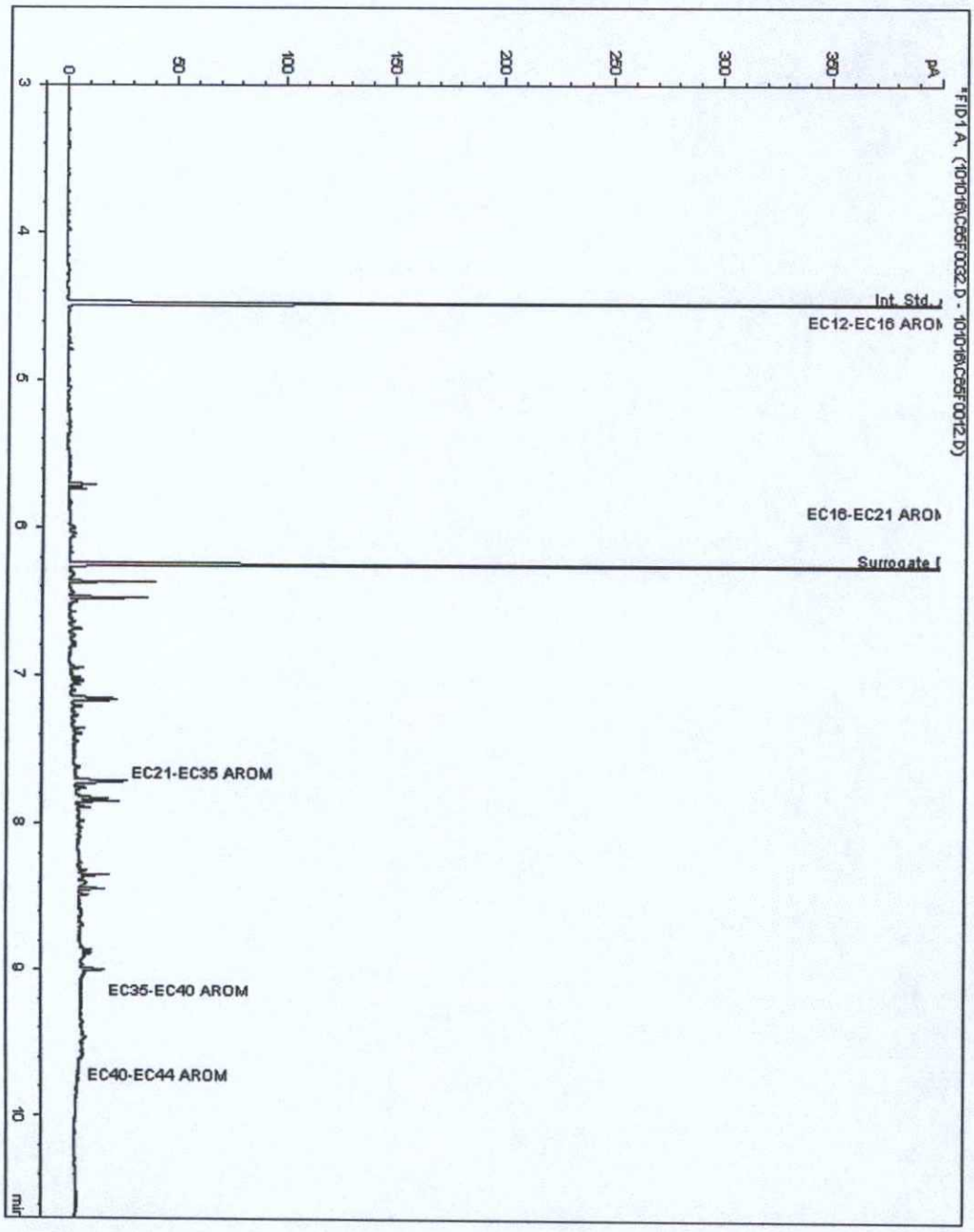
Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)
14282731

Sample No : 14,282,731 **Depth :** 1.40
Sample ID : EXA18

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 13406822-
Date Acquired : 11/10/2016 02:26:36 PM
Units : ppb
Dilution: EXA-W7[1.40] ->



Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

Chromatogram

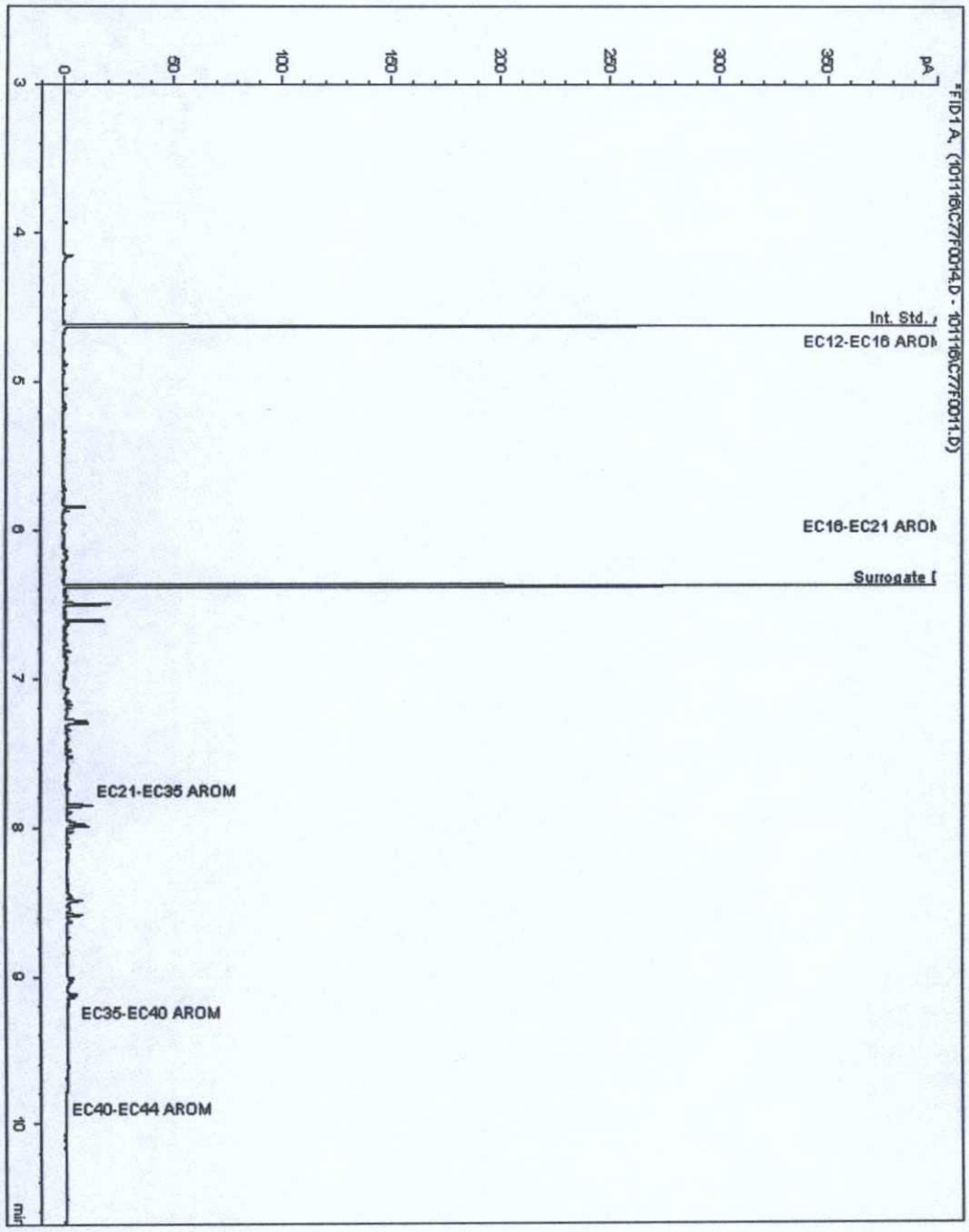
Analysis: EPH CWG (Aromatic) GC (S)
14286606

Sample No :
Sample ID : EXA06

14,286,606**Depth :**1.90

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 13406792-
Date Acquired : 10/11/2016 3:45:00 PM
Units : ppb
Dilution:



Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

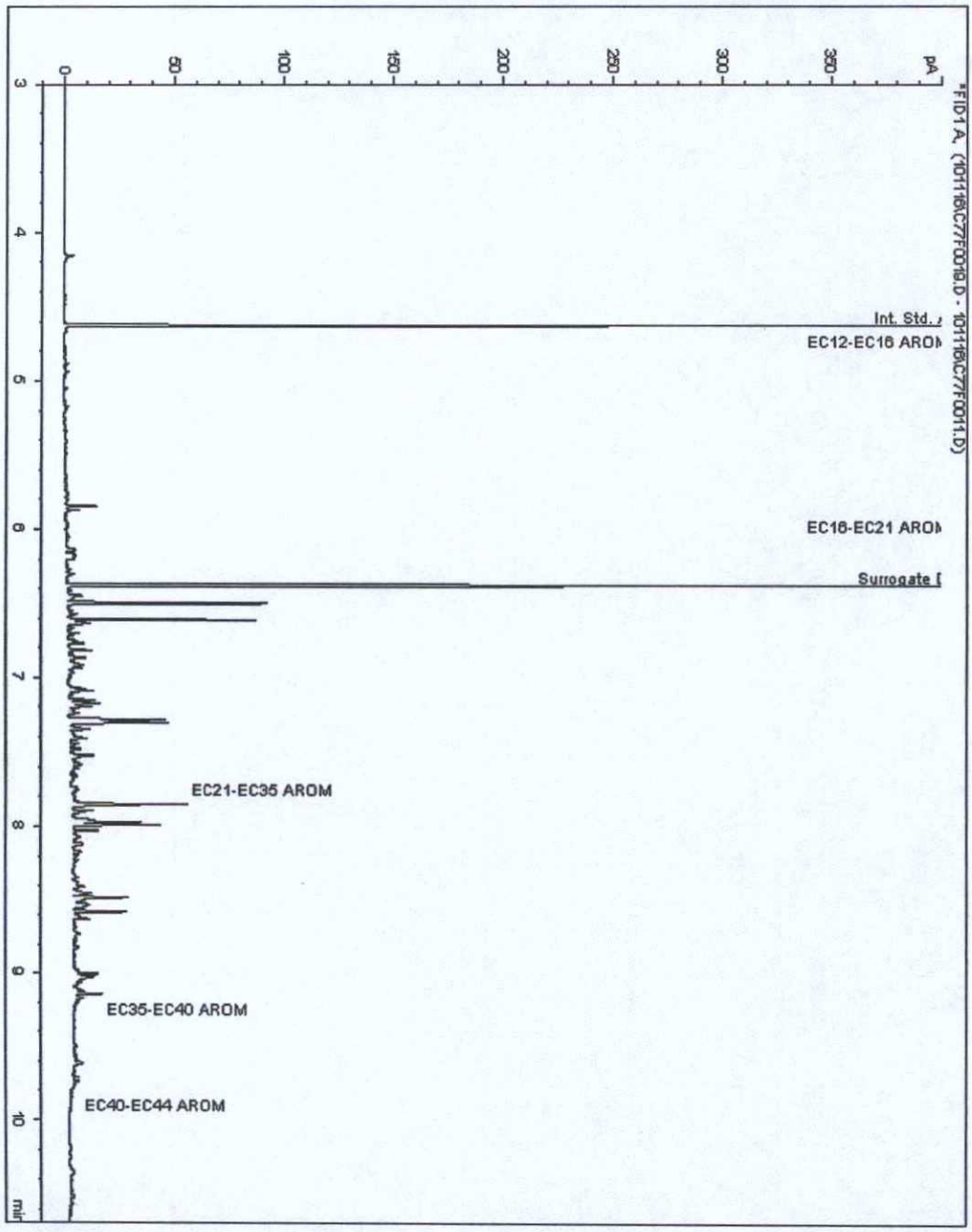
Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)
14286719

Sample No : 14,286,719 **Depth :** 2.10
Sample ID : EXA24

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 13406831-
Date Acquired : 10/11/2016 5:08:55 PM
Units : ppb
Dilution:



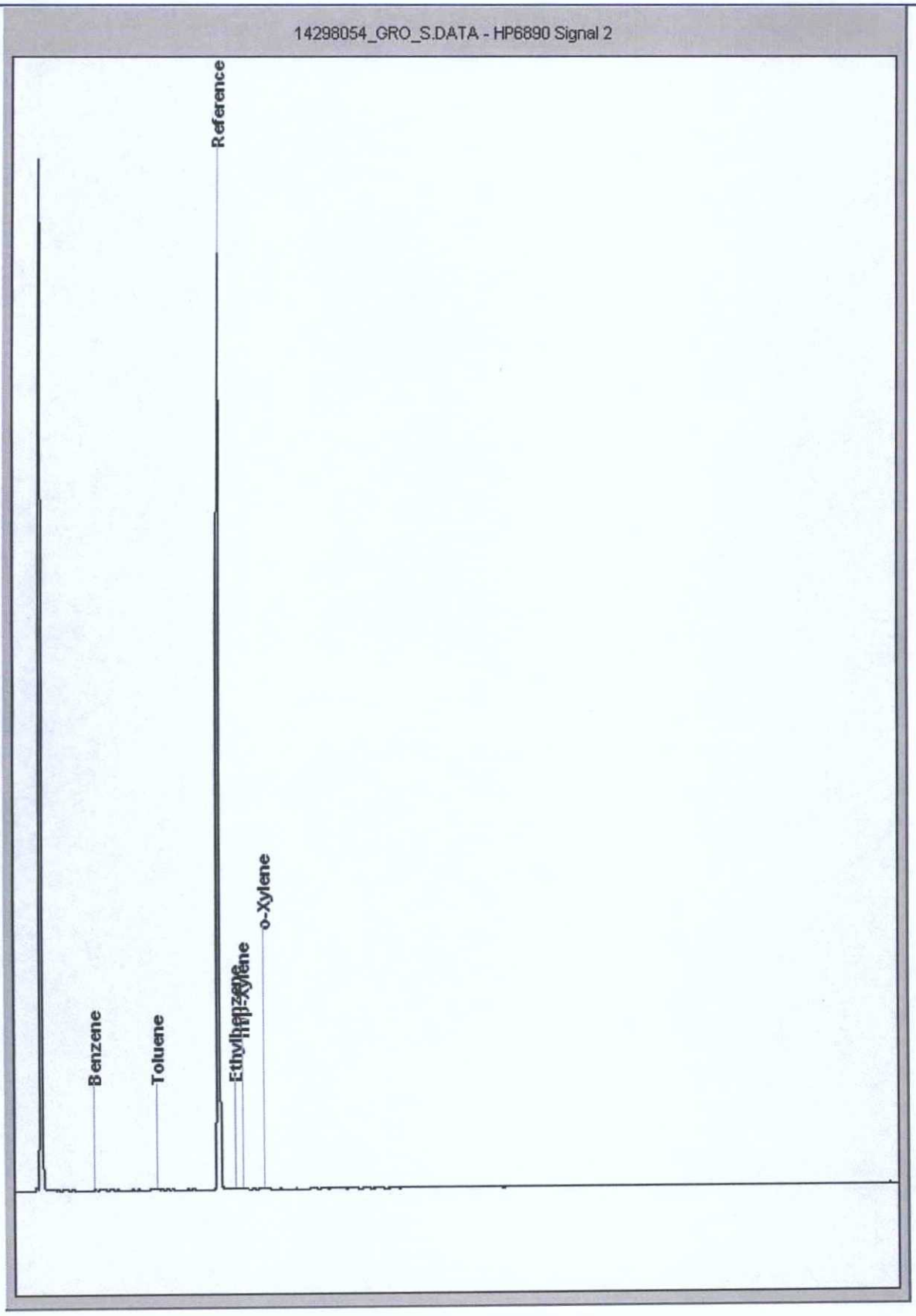
Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

Chromatogram

Analysis: GRO by GC-FID (S)
14298054

Sample No : 14,298,054 **Depth :** 2.20
Sample ID : EXA12



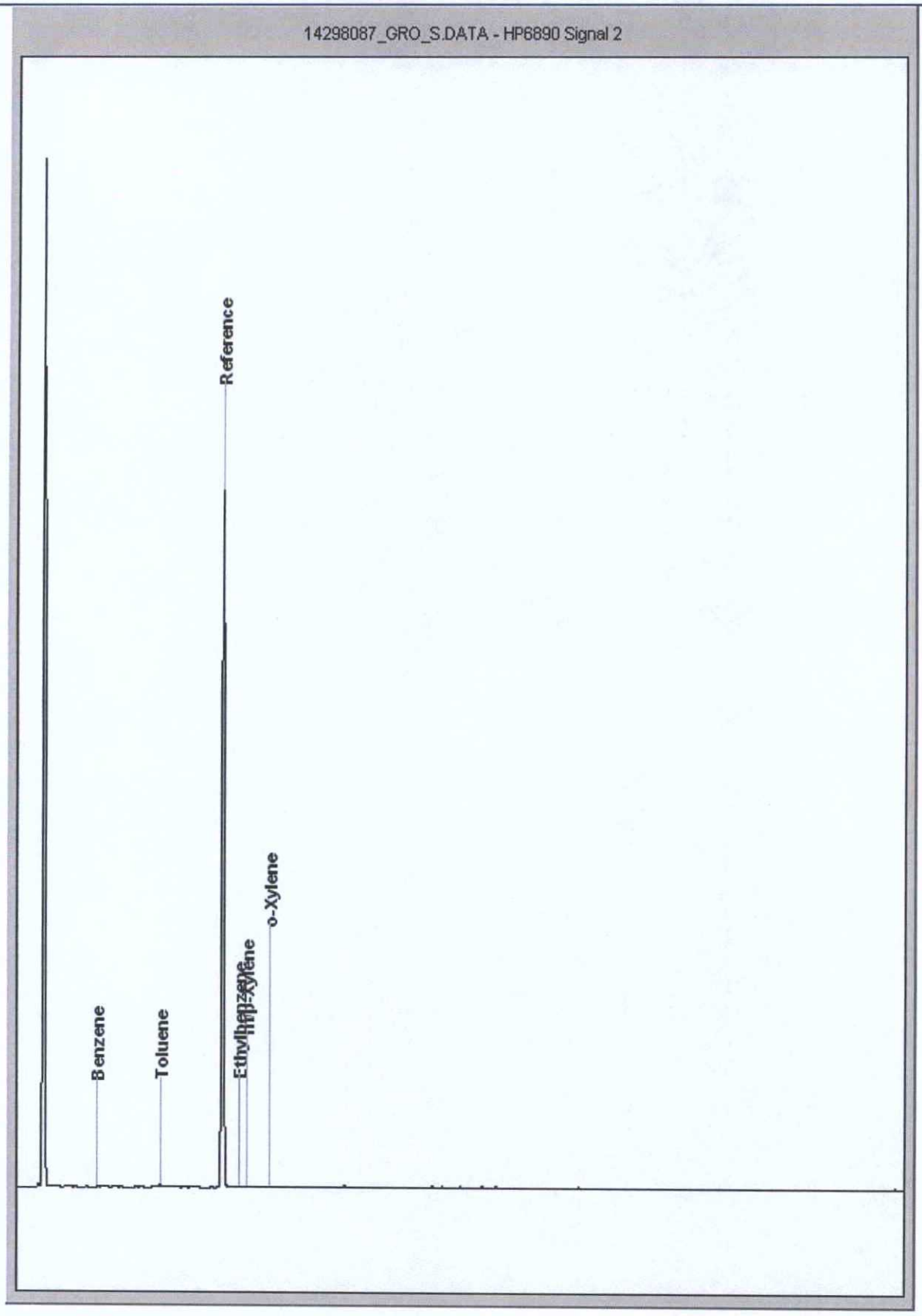
Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

Chromatogram

Analysis: GRO by GC-FID (S)
14298087

Sample No : 14,298,087 **Depth :** 2.20
Sample ID : EXA11



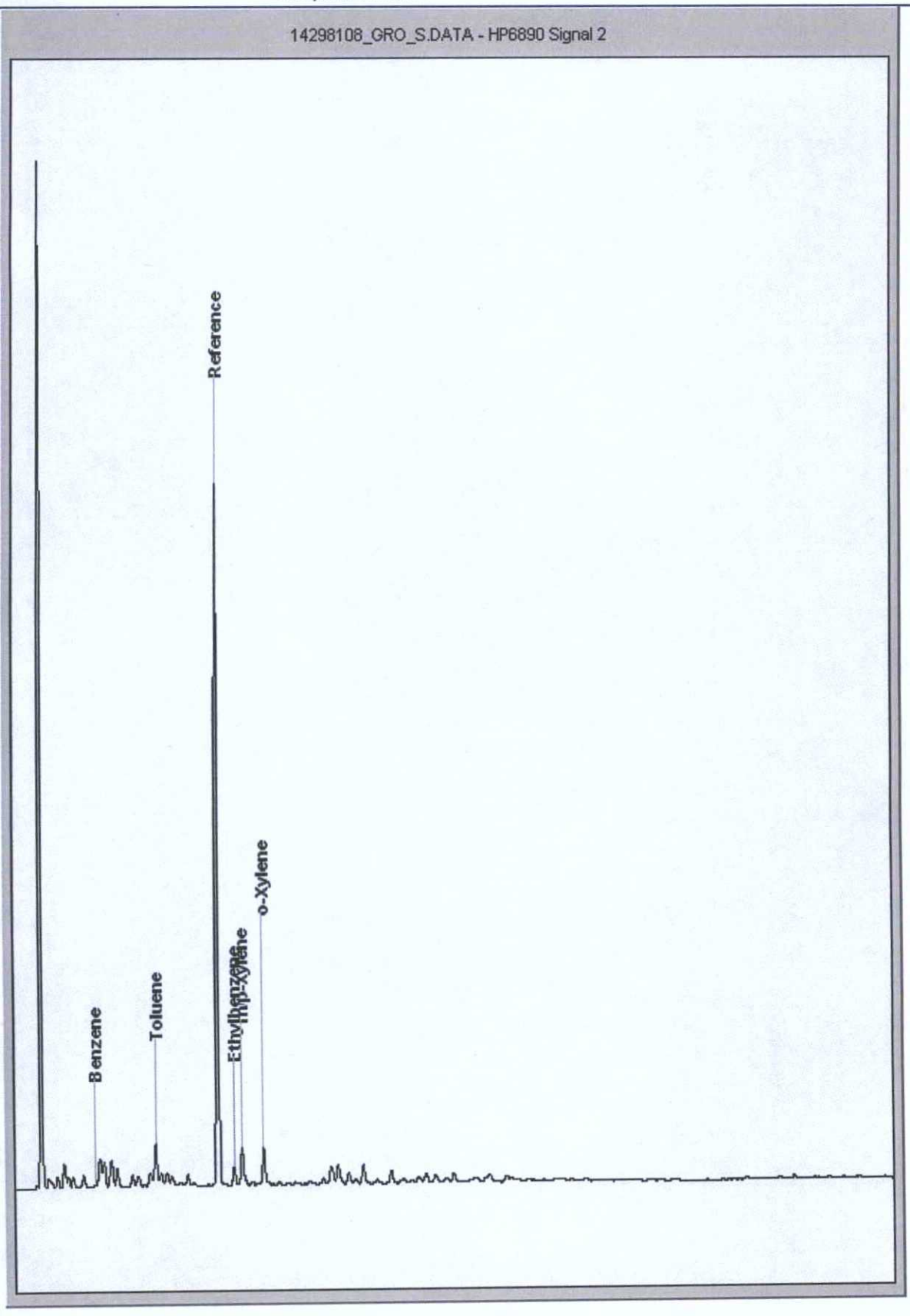
Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

Chromatogram

Analysis: GRO by GC-FID (S)
14298108

Sample No : 14,298,108 **Depth :** 1.40
Sample ID : EXA18



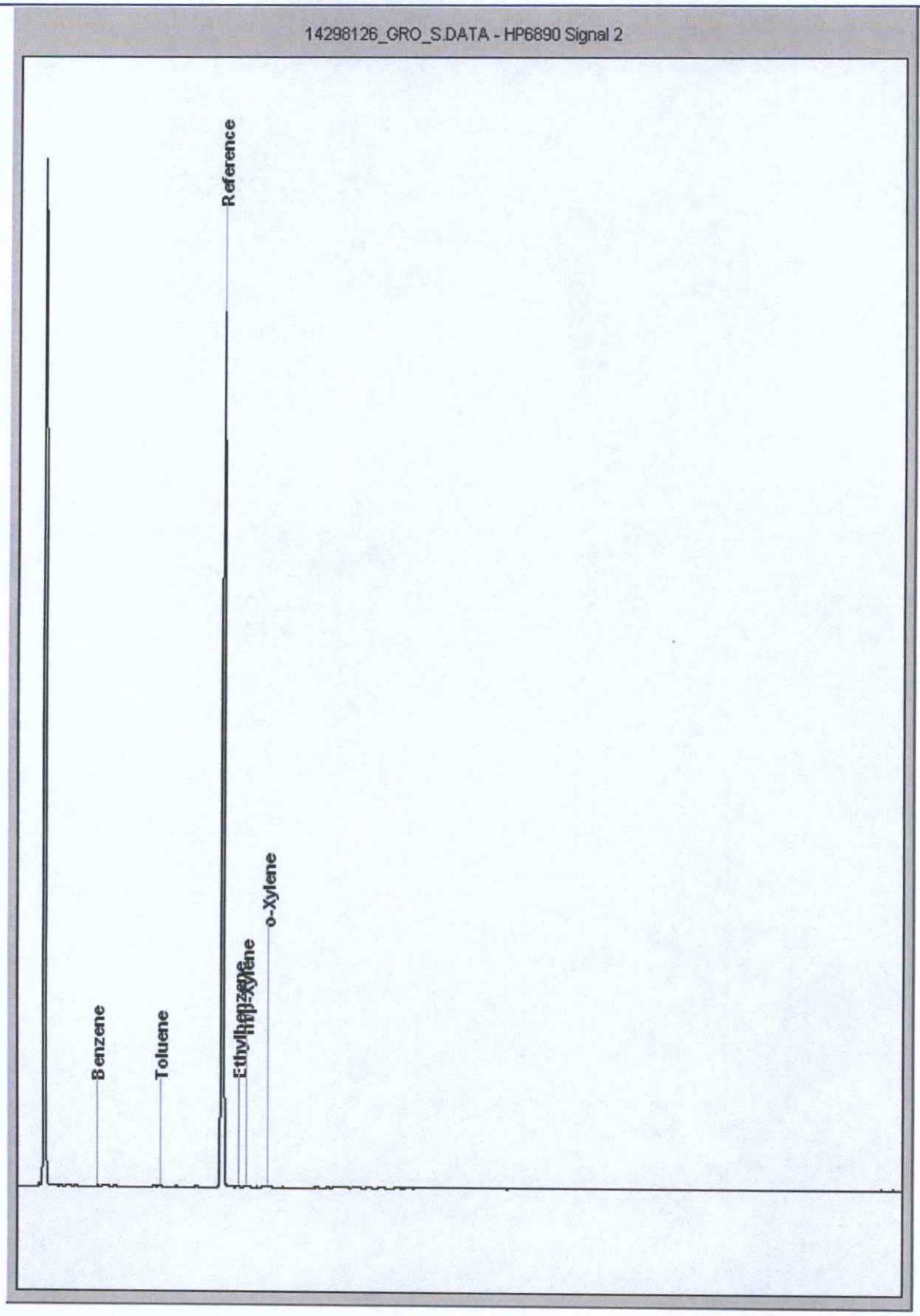
Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

Chromatogram

Analysis: GRO by GC-FID (S)
14298126

Sample No : 14,298,126 **Depth :** 1.90
Sample ID : EXA06



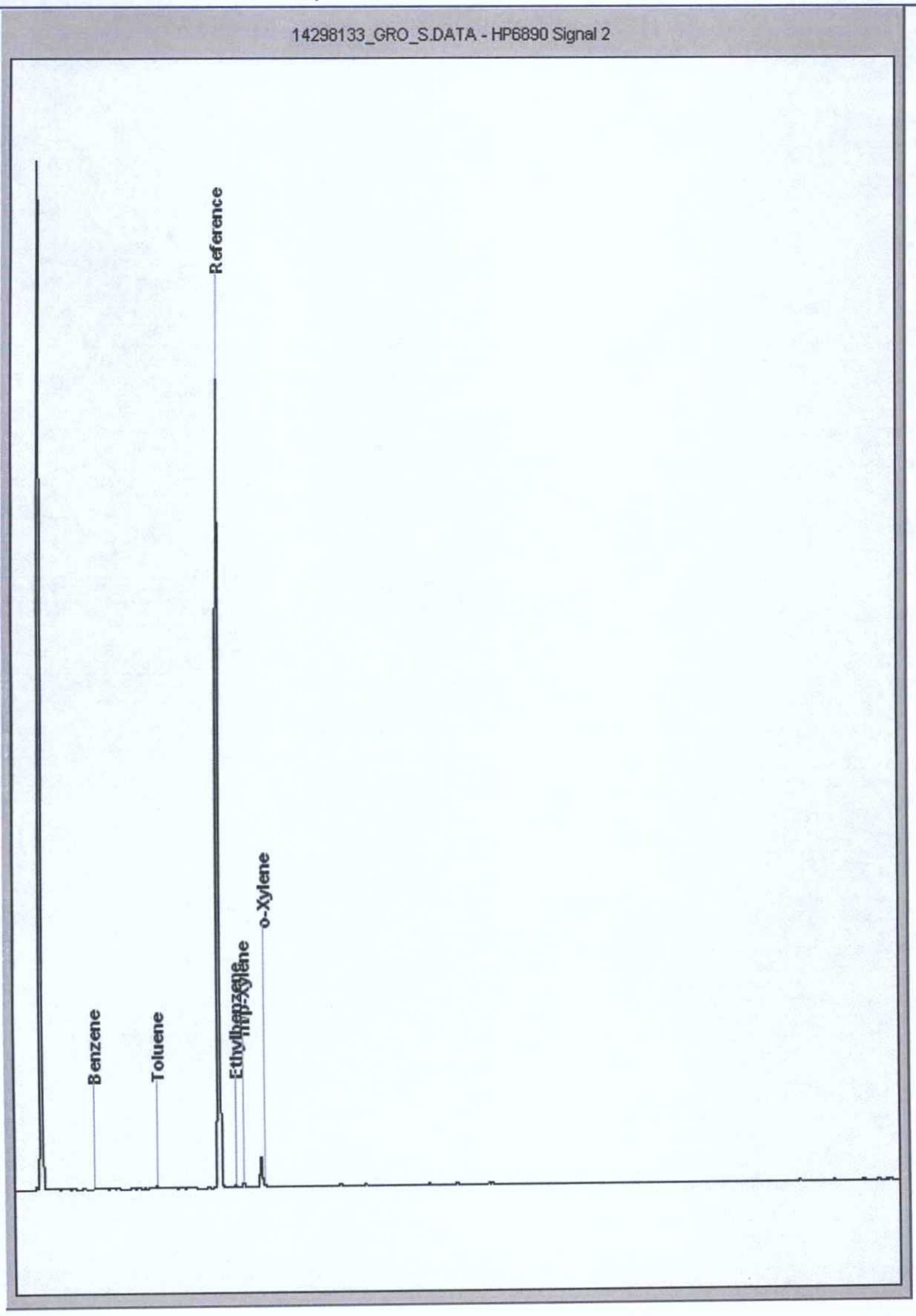
Post Certification Report

Customer : H_URS_WIM
Client Reference : 60491154
Location : SHELL SHOREHAM

Chromatogram

Analysis: GRO by GC-FID (S)
14298133

Sample No : 14,298,133 **Depth :** 2.10
Sample ID : EXA24



Appendix

General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than:
- Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

APPENDIX F IMPORTED FILL DOCUMENTATION

Southern Testing
Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8LU
ST Consult

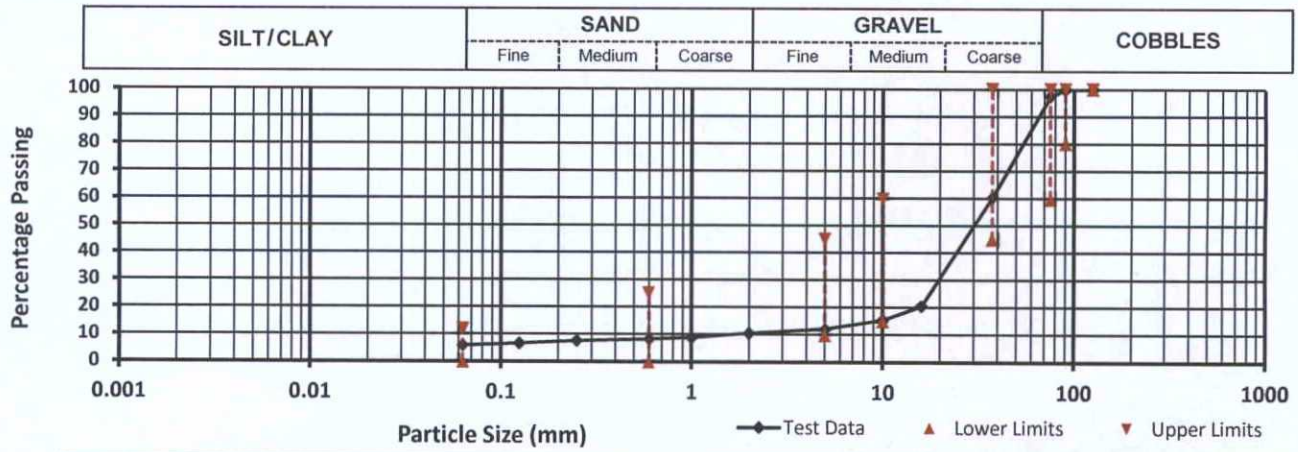
Particle Size Distribution - Materials

Method based on BS EN 933-1 & BS1377-2

F.A.O. : Helen Robins
Client: Robins of Herstmonceux
Address: Head Office
Chilsham Lane
Hailsham
East Sussex
BN27 4QG

Project Name: Pyecombe Quarry, Hassocks BN6 9BS
Project No.: GL4076
Operator: AS
Date Issued: 10 Oct 16
Tel: 01323 833 181
Fax:
email: helen@robinsofherstmonceux.co.uk

Name of Source (If known)	Pyecombe Quarry, Hassocks BN6 9BS (RA)			**Sample Location**	Pyecombe Quarry, Hassocks BN6 9BS		
Material Reference	12706	**Sampled By**	SS	**Time of Sampling**	10:30	**Sampling Date**	28 Sep 16
Method of Sampling: BS EN932-1		**Class**	**6F2**: Selected granular material - coarse grading				
Visual Description	Masonry and concrete GRAVEL.						



Particle Size	% Passing	Grading Limits %	Pass / Fail
125mm	100	100	PASS
90mm	100	80 - 100	PASS
75mm	97	60 - 100	PASS
37.5mm	60	45 - 100	PASS
16mm	20	-	-
10mm	15	15 - 60	PASS
5mm	12	10 - 45	PASS
2mm	10	-	-
1mm	9	-	-
600µ	8	0 - 25	PASS
250µ	8	-	-
125µ	7	-	-
63µ	6	0 - 12	PASS

Coefficient of Uniformity D60/D10	**22.5**
Limits: N/A	

Comment:

Test Method: Wet & Dry Grading
BS1377-2: 1990 (2003) cl. 9.2 & 9.5

Checked: [redacted]

Name: Timon Greenwood

Southern Testing
Environmental & Geotechnical

Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8LU

ST Consult
Environmental & Geotechnical

Particle Identification

Specification for Highway Works; Clause 710 Testing Constituent Materials

Project Name	***Pyecombe Quarry, Hassocks BN6 9BS***					**Project No.**	***GL4076***
Client	***Robins of Herstmonceux***			**Project Engineer**	***TG***	**Date Issued**	10 Oct 16
Name of Source (if known)	Pyecombe Quarry, Hassocks BN6 9BS (RA)			**Sampling Location**	Pyecombe Quarry, Hassocks BN6 9BS		
Material Reference	**12706**	**Sampled By**	SS	**Time of Sampling**	10:30	**Sampling Date**	28 Sep 16
Method of Sampling: BS EN 932-1							
Visual Description	Masonry and concrete GRAVEL.						
Date of Test	7 Oct 16			**Tested By**	GB	**Checked By**	TG

Category	Mass of Duplicate 1 (g)	Mass of Duplicate 2 (g)	Percentage Duplicate 1	Percentage Duplicate 2	Mean Percentage
Asphalt (Class A)	0.0	0.0	0	0	**0**
Masonry (Class B)	1509.7	1657.5	55	55	**55**
Concrete & Concrete Products (Class C)	826.9	712.8	30	24	**27**
Glass (Class G)	15.8	42.1	1	1	**1**
Lightweight Particles (Class L)	7.2	9.7	0	0	**0**
Unbound Aggregate (Class U)	359.4	573.5	13	19	**16**
Other Particles (Class X)	15.5	14.2	1	0	**1**
Total Mass	2734.5	3009.8			

Compliance of Common Materials Classes

Component Identified by Clause 710	Type 1 & Type 2: Maximum permitted content (% by mass)	Actual %	PASS/FAIL
Asphalt (Class A)	50	0	PASS
Glass (Class G)	25	1	PASS
Other Materials (Class X)	1	1	PASS
Component Identified by Clause 710	**Type 4: Maximum permitted content (% by mass)**	**Actual %**	**PASS/FAIL**
Glass (Class G)	25	1	PASS
Other Materials (Class X)	1	1	PASS
Component Identified by Clause 710	**Classes 6F1 & 6F2: Maximum permitted content (% by mass)**	**Actual %**	**PASS/FAIL**
Asphalt (Class A)	50	0	PASS
Other Materials (Class X)	1	1	PASS

Southern Testing Laboratories Limited, East Grinstead is registered under BS EN ISO 9001:2008 BSI ref: FS29280

SCIENTIFIC ANALYSIS LABORATORIES
DELIVERING SCIENCE

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

3 Crittall Drive
Springwood Industrial Estate
Braintree
Essex
CM7 2RT
Tel : 01376 560120
Fax : 01376 552923

Report Number: 603561-1

Date of Report: 03-Oct-2016

Customer: Southern Testing Laboratories
Keeble House
Stuart Way
East Grinstead
West Sussex
RH19 4QA

Customer Contact: Mr Timon Greenwood

Customer Job Reference: GL4076
Customer Purchase Order: GL4076_1 Timon
Customer Site Reference: Pyecombe Quarry (Hassocks BN6 9BS)
Date Job Received at SAL: 29-Sep-2016
Date Analysis Started: 30-Sep-2016
Date Analysis Completed: 03-Oct-2016

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

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

Report checked
and authorised by :
Claire Brown Crociquia
Customer Service Manager

Issued by :
Claire Brown Crociquia
Customer Service Manag[redacted]

This document has been printed from a digitally signed master copy

SAL Reference: 603561
Project Site: Pyecombe Quarry (Hassocks BN6 9BS)
Customer Reference: GL4076

Soil Analysed as Soil
Miscellaneous

SAL Reference	**603561 001**
Customer Sample Reference	**12706**
Date Sampled	**28-SEP-2016**

Determinand	Method	Test Sample	LOD	Units	
Asbestos ID	T27	A40			Asbestos not detected

Index to symbols used in 603561-1

Value	Description
A40	Assisted dried < 40C
S	Analysis was subcontracted
U	Analysis is UKAS accredited

Notes

Asbestos subcontracted to REC Limited

Method Index

Value	Description
T27	PLM

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Asbestos ID	T27	A40			SU	001

ALcontrol Laboratories

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: customerservices@alcontrol.com
Website: www.alcontrol.com

AECOM
St. George's House
2nd Floor
5 St. George's Road
Wimbledon
Greater London
SW19 4DR

Attention: Tim Rolfe

CERTIFICATE OF ANALYSIS

Date:	27 September 2016
Customer:	H_URS_WIM
Sample Delivery Group (SDG):	160921-98
Your Reference:	
Location:	Shell Shoreham Airport
Report No:	379718

We received 1 sample on Wednesday September 21, 2016 and 1 of these samples were scheduled for analysis which was completed on Monday September 26, 2016. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALcontrol Laboratories Hawarden (Method codes TM) or ALcontrol Laboratories Aberdeen (Method codes S).

Approved By:

[redacted]

Sonia McWhan
Operations Manager

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Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
14190435	BACKFILL			20/09/2016

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

SOLID

Results Legend

X Test

N No Determination Possible

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
			14190435	BACKFILL			250g Amber Jar (ALE21	400g Tub (ALE214)	60g VOC (ALE215)
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1						X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 1					X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 1					X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1							X
Oxygenates (S)	All	NDPs: 0 Tests: 1							X
PAH by GCMS	All	NDPs: 0 Tests: 1					X		
Sample description	All	NDPs: 0 Tests: 1					X		
VOC MS (S)	All	NDPs: 0 Tests: 1							X

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
14190435	BACKFILL		Orange	Stone/Soil	2.00 - 60.00 mm	Stones	N/A

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sampled Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			BACKFILL	-	Soil/Solid	20/09/2016	-	21/09/2016	160921-98	14190435	
Moisture Content Ratio (% of as received sample)	%	PM024	0.8								
Bromofluorobenzene**	%	TM288	127								
Ethanol	<50 µg/kg	TM288	<50								
tert Butanol	<10 µg/kg	TM288	<10								
Diisopropyl ether	<1 µg/kg	TM288	<1								
tert-butyl ethyl ether	<1 µg/kg	TM288	<1								

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

EPH CWG (Aliphatic) GC (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BACKFILL
			Depth (m)	-
			Sample Type	Soil/Solid
			Date Sampled	20/09/2016
			Sampled Time	-
			Date Received	21/09/2016
			SDG Ref	160921-98
			Lab Sample No.(s)	14190435
			AGS Reference	
Aliphatics >C12-C16	<100 µg/kg	TM173		<100
Aliphatics >C16-C21	<100 µg/kg	TM173		<100
Aliphatics >C21-C35	<100 µg/kg	TM173		<100
Aliphatics >C35-C44	<100 µg/kg	TM173		<100

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CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

EPH CWG (Aromatic) GC (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sampled Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			BACKFILL	-	Soil/Solid	20/09/2016	-	21/09/2016	160921-98	14190435	
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100								
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100								
Aromatics >EC21-EC35	<100 µg/kg	TM173	<100								

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CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	BACKFILL
#	ISO17025 accredited.		
M	mCERTS accredited.		
aq	Aqueous / settled sample.		
diss.filt	Dissolved / filtered sample.	Depth (m)	-
tot.unfilt	Total / unfiltered sample.	Sample Type	Soil/Solid
*	Subcontracted test.	Date Sampled	20/09/2016
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sampled Time	-
		Date Received	21/09/2016
		SDG Ref	160921-98
(F)	Trigger breach confirmed	Lab Sample No.(s)	14190435
1-5&+§@	Sample deviation (see appendix)	AGS Reference	

Component	LOD/Units	Method	
GRO Surrogate % recovery**	%	TM089	115
Aliphatics >C5-C6	<10 µg/kg	TM089	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10

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CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sampled Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			BACKFILL	-	Soil/Solid	20/09/2016	-	21/09/2016	160921-98	14190435	
Naphthalene-d8 % recovery**	%	TM218	104								
Acenaphthene-d10 % recovery**	%	TM218	101								
Phenanthrene-d10 % recovery**	%	TM218	97								
Chrysene-d12 % recovery**	%	TM218	86.1								
Perylene-d12 % recovery**	%	TM218	91.8								
Naphthalene	<9 µg/kg	TM218	<9 #								
Acenaphthylene	<12 µg/kg	TM218	<12 #								
Acenaphthene	<8 µg/kg	TM218	<8 #								
Fluorene	<10 µg/kg	TM218	<10 #								
Phenanthrene	<15 µg/kg	TM218	<15 #								
Anthracene	<16 µg/kg	TM218	<16 #								
Fluoranthene	<17 µg/kg	TM218	<17 #								
Pyrene	<15 µg/kg	TM218	<15 #								
Benz(a)anthracene	<14 µg/kg	TM218	<14 #								
Chrysene	<10 µg/kg	TM218	<10 #								
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15 #								
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14 #								
Benzo(a)pyrene	<15 µg/kg	TM218	<15 #								
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18 #								
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 #								
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24 #								
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118								

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CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sampled Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			BACKFILL	-	Soil/Solid	20/09/2016	-	21/09/2016	160921-98	14190435	
Toluene-d8**	%	TM116	99.8								
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10 #								
Benzene	<9 µg/kg	TM116	<9 #								
Toluene	<7 µg/kg	TM116	<7 #								
Ethylbenzene	<4 µg/kg	TM116	<4 #								
p/m-Xylene	<10 µg/kg	TM116	<10 #								
o-Xylene	<10 µg/kg	TM116	<10 #								
Tert-amyl methyl ether	<10 µg/kg	TM116	<10 #								

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CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BACKFILL SOLID 20/09/2016 00:00:00 22/09/2016 06:31:13 160921-98 14190435 TM048	26/09/16	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM218	Microwave extraction – EPA method 3546	The determination of PAH in soil samples by microwave extraction and GC-MS		
TM288		Determination of Oxygenates in Soils by Headspace/GC-MS		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Chemical testing (unless subcontracted) performed at ALcontrol Laboratories Hawarden (Method codes TM) or ALcontrol Laboratories Aberdeen (Method codes S).

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CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	14190435
Customer Sample Ref.	BACKFILL
AGS Ref.	
Depth	
Type	SOLID
Asbestos ID in Solid Samples	26-Sep-2016
EPH CWG (Aliphatic) GC (S)	26-Sep-2016
EPH CWG (Aromatic) GC (S)	26-Sep-2016
GRO by GC-FID (S)	26-Sep-2016
Oxygenates (S)	26-Sep-2016
PAH by GCMS	26-Sep-2016
Sample description	22-Sep-2016
VOC MS (S)	26-Sep-2016

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

ASSOCIATED AQC DATA

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1485
Total Aliphatics >C12-C35	TM173	**89.58** 62.50 : 112.50

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1485
Total Aromatics >EC12-EC35	TM173	**79.33** 60.62 : 126.95

GRO by GC-FID (S)

Component	Method Code	QC 1473
Benzene by GC (Moisture Corrected)	TM089	**92.0** 76.23 : 120.71
Ethylbenzene by GC (Moisture Corrected)	TM089	**92.5** 73.32 : 122.02
m & p Xylene by GC (Moisture Corrected)	TM089	**94.0** 72.90 : 122.64
MTBE GC-FID (Moisture Corrected)	TM089	**94.5** 72.17 : 124.81
o Xylene by GC (Moisture Corrected)	TM089	**96.0** 71.65 : 124.40
QC	TM089	**85.98** 68.17 : 113.61
Toluene by GC (Moisture Corrected)	TM089	**92.5** 74.60 : 120.38

Oxygenates (S)

Component	Method Code	QC 1477	QC 1401
Diisopropyl ether raw	TM288	**80.75** 75.85 : 124.81	**92.25** 75.85 : 124.81
Ethanol raw	TM288	**85.9** 20.18 : 141.28	**98.6** 20.18 : 141.28
tert Butanol raw	TM288	**85.5** 27.29 : 165.57	**93.5** 27.29 : 165.57
tert-amyl methyl ether raw	TM288	**86.75** 78.96 : 124.84	**93.5** 78.96 : 124.84
tert-butyl ethyl ether raw	TM288	**88.5** 76.41 : 125.42	**92.0** 76.41 : 125.42
tert-butyl methyl ether raw	TM288	**83.25** 78.20 : 126.30	**93.25** 78.20 : 126.30

PAH by GCMS

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CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

PAH by GCMS

Component	Method Code	QC 1446
Acenaphthene	TM218	**100.5** 78.84 : 114.36
Acenaphthylene	TM218	**95.5** 72.95 : 108.95
Anthracene	TM218	**95.0** 75.54 : 110.88
Benz(a)anthracene	TM218	**96.5** 78.02 : 127.38
Benzo(a)pyrene	TM218	**99.5** 79.21 : 128.01
Benzo(b)fluoranthene	TM218	**99.5** 80.00 : 125.00
Benzo(ghi)perylene	TM218	**95.5** 77.90 : 118.70
Benzo(k)fluoranthene	TM218	**97.0** 78.77 : 120.72
Chrysene	TM218	**94.5** 78.77 : 118.99
Dibenzo(ah)anthracene	TM218	**97.5** 76.39 : 122.63
Fluoranthene	TM218	**101.5** 77.25 : 117.75
Fluorene	TM218	**102.5** 79.28 : 117.35
Indeno(123cd)pyrene	TM218	**98.0** 78.87 : 122.50
Naphthalene	TM218	**107.0** 74.75 : 118.25
Phenanthrene	TM218	**100.5** 78.61 : 113.98
Pyrene	TM218	**99.0** 76.15 : 115.26

VOC MS (S)

Component	Method Code	QC 1461
1,1,1,2-tetrachloroethane	TM116	**90.0** 76.60 : 121.00
1,1,1-Trichloroethane	TM116	**99.2** 77.80 : 123.40
1,1,2-Trichloroethane	TM116	**83.6** 75.40 : 119.80
1,1-Dichloroethane	TM116	**97.2** 74.46 : 129.15
1,2-Dichloroethane	TM116	**105.0** 86.62 : 136.90
1,4-Dichlorobenzene	TM116	**100.6** 72.76 : 126.34
2-Chlorotoluene	TM116	**96.4** 74.00 : 117.20
4-Chlorotoluene	TM116	**96.2** 71.20 : 113.20
Benzene	TM116	**98.6** 79.60 : 125.20

CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

VOC MS (S)

		QC 1461
Carbon Disulphide	TM116	**97.4** 74.91 : 122.14
Carbontetrachloride	TM116	**111.6** 87.07 : 120.37
Chlorobenzene	TM116	**87.4** 75.00 : 115.53
Chloroform	TM116	**98.8** 82.00 : 128.80
Chloromethane	TM116	**98.6** 68.36 : 154.01
Cis-1,2-Dichloroethene	TM116	**90.8** 57.23 : 143.96
Dibromomethane	TM116	**95.0** 73.40 : 116.60
Dichloromethane	TM116	**97.2** 86.60 : 137.00
Ethylbenzene	TM116	**97.8** 73.60 : 115.60
Hexachlorobutadiene	TM116	**121.6** 42.69 : 142.65
Isopropylbenzene	TM116	**107.4** 64.24 : 119.40
Naphthalene	TM116	**102.0** 77.06 : 119.98
o-Xylene	TM116	**81.6** 51.65 : 118.61
p/m-Xylene	TM116	**89.5** 71.30 : 112.70
Sec-Butylbenzene	TM116	**125.2** 54.99 : 144.98
Tetrachloroethene	TM116	**107.0** 83.42 : 123.69
Toluene	TM116	**91.8** 76.08 : 110.17
Trichloroethene	TM116	**94.6** 78.17 : 121.37
Trichlorofluoromethane	TM116	**101.2** 75.01 : 124.99
Vinyl Chloride	TM116	**107.0** 66.81 : 138.46

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.
The figure detailed is the percentage recovery result for the AQC.
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

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CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

Chromatogram

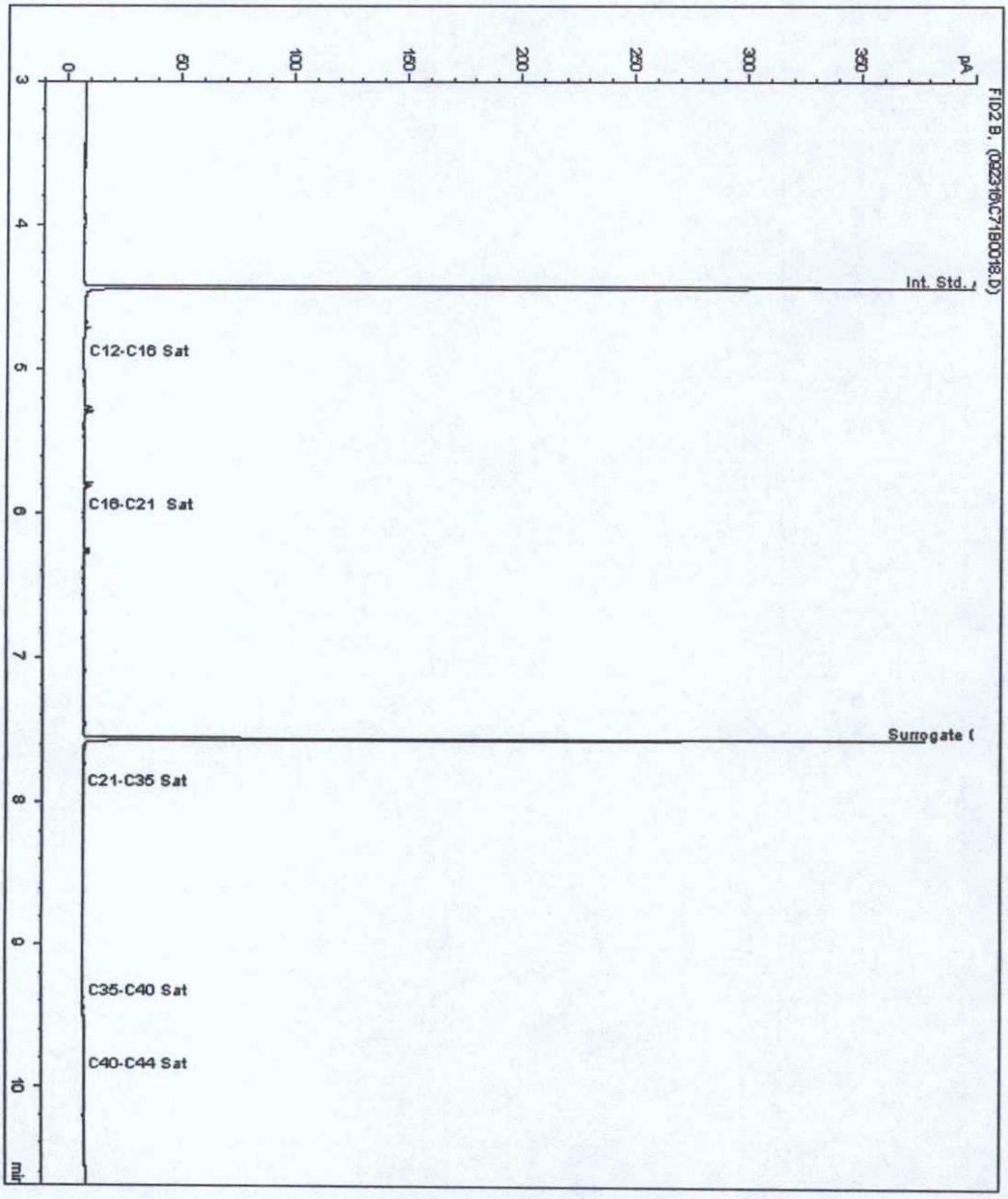
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 14191450
Sample ID : BACKFILL

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 13328842-
Date Acquired : 23/09/2016 14:24:34 PM
Units : ppb
Dilution: BACKFILL[] ->



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CERTIFICATE OF ANALYSIS

SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

Chromatogram

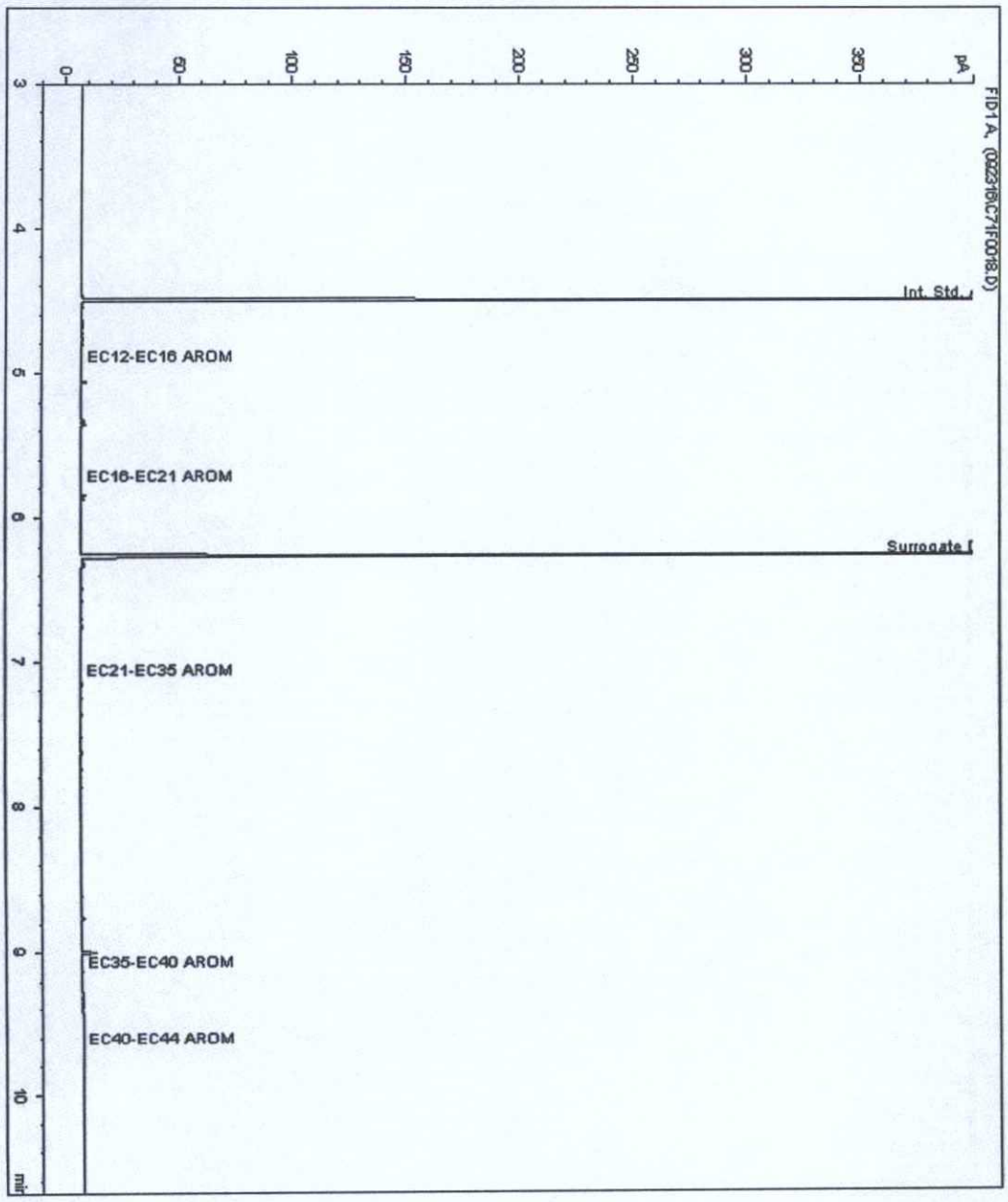
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 14191450
Sample ID : BACKFILL

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 13328843-
Date Acquired : 23/09/2016 14:24:34 PM
Units : ppb
Dilution: BACKFILL[] ->



ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

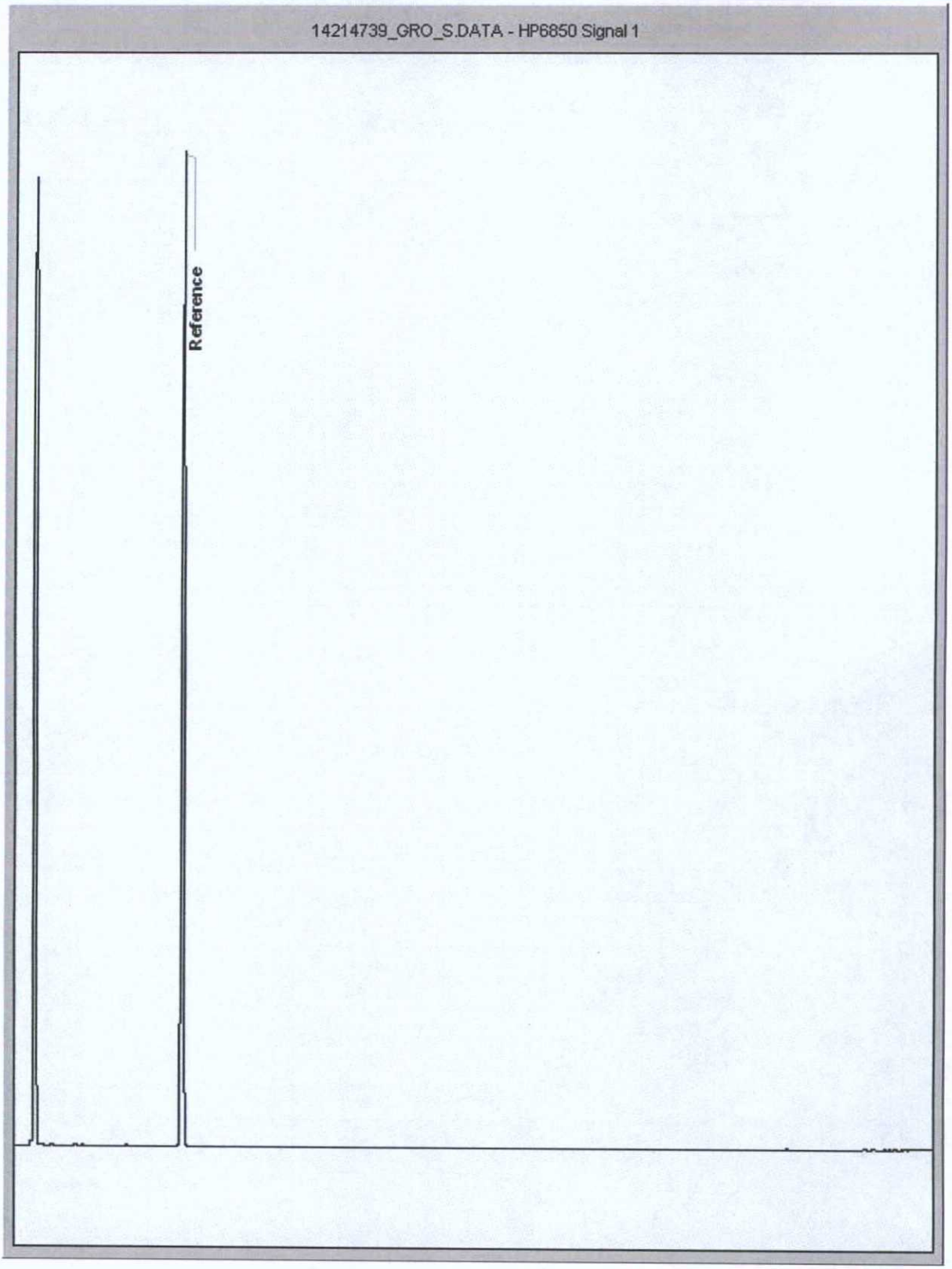
SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 14214739
Sample ID : BACKFILL

Depth :



SDG:	160921-98	**Location:**	Shell Shoreham Airport	**Order Number:**	60491603
Job:	H_URS_WIM-237	**Customer:**	AECOM	**Report Number:**	379718
Client Reference:		**Attention:**	Tim Rolfe	**Superseded Report:**	

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

General

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
•	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

CEMEX

CEMEX UK Materials Ltd
Northern Region

GRADATION ANALYSIS TEST REPORT
for Product: 3359/ GSB Type 1
Supplier/ source: Raynes Quarry

Material type: Drystone aggregate Test method: Wash grading to BS 812: part 103: 1985: 3.1

SAMPLE INFORMATION

Sampled/ tested
Fri 27 January 2017/ 31-01-17
at 0000 hrs

Sample number 03107

Company	CEMEX UK Materials Ltd - NW	Location	Raynes Quarry
Truck Reg	-	Sampled By/Tested By	P Brewer
Sample Number	-	Aggregate type	Limestone
Aggregate Type	-	Remarks 2	-

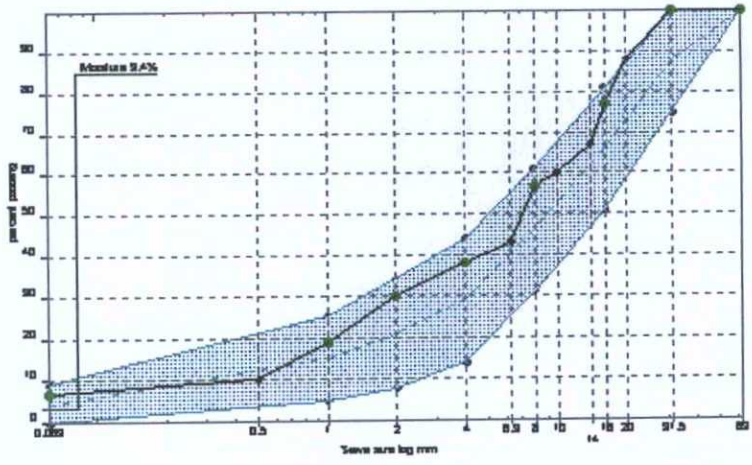
SAMPLE ANALYSIS

Sieve size	Percent passing	Specification limits	Complies ?
63mm	100	100 - 100	yes
31.5mm	100	75 - 100	yes
20mm	88	-	-
16mm	77	51 - 81	yes
14mm	67	-	-
10mm	60	-	-
8mm	57	31 - 61	yes
6.3mm	43	-	-
4mm	38	14 - 44	yes
2mm	30	8 - 34	yes
1mm	19	5 - 25	yes
500µm	10	-	-
63µm	6.7	0.0 - 9.0	yes
Moisture content %	3.4	not specified	-
Additional grading req.	Type 1 GSB table 8/5	pass or fail	yes
passing 16mm, ret 8mm	20	7 to 30	yes
passing 8mm, ret 4mm	19	7 to 30	yes

Parameters are evaluated to the accuracy of spec. limits

REMARKS

Compliance status ok
Category A of A-C includes secondary parameters



Signed _____

Date ___/___/2017

Gradlab GDS v7.14 © Hugh Lenvill www.gradlab.com. Licence#: CMXZ11 for © CEMEX, SiteUser name: Halkyn Quarry.

Material Type: (3) 10mm

4/10/ Gravel 10mm(single size) from all suppliers to all jobs

Last 7 or all ending 99999. Samples searched 11385 - 99999 (12-Dec-16 to 06-Feb-17 Last)

Sample	Seq	Date	Supplier	Job	20mm	16mm	14mm	10mm	8mm	6.3mm	4mm	2.8mm	2mm	63µm	Moisture	Flaki.	Chloride	Compliance	Category
no.	no.	sampled	name	no.	% pass	% pass	% pass	% pass	% pass	% pass	% pass	% pass	% pass	% pass	%	index	%	status	A-C inc2nd
11385	1	12 Dec 16 00:00	South East	South East_Job	100	100	100	95	68	37	8	3	2	0.2	5.6	-	-	ok	A
11391	2	19 Dec 16 00:00	South East	South East_Job	100	100	100	92	72	48	10	3	0	0	4.5	-	-	ok	A
11397	3	09 Jan 17 00:00	South East	South East_Job	100	100	100	97	76	49	14	5	3	0	7.5	16	-	ok	A
11407	4	16 Jan 17 00:00	South East	South East_Job	100	100	100	97	79	55	13	3	0	0	6.6	-	-	ok	A
11413	6	31 Jan 17 16:03	South East	South East_Job	100	100	100	96	74	46	11	5	4	0.6	5.6	-	-	ok	A
11417	7	06 Feb 17 00:00	South East	South East_Job	100	100	100	97	69	39	7	3	2	0	6.5	-	-	ok	A
					20mm	16mm	14mm	10mm	8mm	6.3mm	4mm	2.8mm	2mm	63µm	Moisture	Flaki.	Chloride		
					% pass	% pass	% pass	% pass	% pass	% pass	% pass	% pass	% pass	% pass	%	index	%		
Spec Min					100	spacer	98	85	spacer	spacer	0	spacer	0	0	0	0	0		
Spec Max					100	spacer	100	100	spacer	spacer	20	spacer	5	5	10	35	0.03		