



Royal Haskoning  
Rightwell House  
Bretton  
Bretton  
Peterborough  
Cambridgeshire  
PE3 8DW

**Attention:** Declan Fives

## CERTIFICATE OF ANALYSIS

**Date:** 18 June 2014  
**Customer:** H\_RHASKON\_PTB  
**Sample Delivery Group (SDG):** 140607-61  
**Your Reference:** 9Y0074 103 100  
**Location:** Cole Green  
**Report No:** 273992

We received 7 samples on Saturday June 07, 2014 and 7 of these samples were scheduled for analysis which was completed on Wednesday June 18, 2014. 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.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

**Sonia McWhan**

Operations Manager





**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

### Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
9409524	CGBH01			05/06/2014
9409529	CGBH07			05/06/2014
9409530	CGBH24			05/06/2014
9409525	CGSW01			05/06/2014
9409526	CGSW02			05/06/2014
9409527	CGSW03			05/06/2014
9409528	CGSW04			05/06/2014

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



SDG: 140607-61  
 Job: H\_RHASKON\_PT8-82  
 Client Reference: 9Y0074 103 100

Location: Cole Green  
 Customer: Royal Haskoning  
 Attention: Declan Fives

Order Number: 9Y0074 003 100  
 Report Number: 273992  
 Superseded Report:

<b>LIQUID</b> <b>Results Legend</b> Test No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
	9409524	CGBH01			Vial (ALE297) H2SO4 (ALE244) Dissolved Metals Pr 200 ml Glass Bottle 11plastic (ALE221) Vial (ALE297)
	9409529	CGBH07			H2SO4 (ALE244) Dissolved Metals Pr 200 ml Glass Bottle 11plastic (ALE221) Vial (ALE297)
	9409530	CGBH24			H2SO4 (ALE244) Dissolved Metals Pr 200 ml Glass Bottle 11plastic (ALE221) Vial (ALE297)
	9409525	CGSW01			H2SO4 (ALE244) Dissolved Metals Pr 200 ml Glass Bottle 11plastic (ALE221) Vial (ALE297)
9409526	CGSW02			H2SO4 (ALE244) Dissolved Metals Pr 200 ml Glass Bottle 11plastic (ALE221) Vial (ALE297)	
9409527	CGSW03			H2SO4 (ALE244) Dissolved Metals Pr 200 ml Glass Bottle 11plastic (ALE221) Vial (ALE297)	
9409528	CGSW04			H2SO4 (ALE244) Dissolved Metals Pr 200 ml Glass Bottle 11plastic (ALE221) Vial (ALE297)	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7			
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7			
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7			
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7			
Mercury Dissolved	All	NDPs: 0 Tests: 7			
Metals by iCap-OES Unfiltered (W)	All	NDPs: 0 Tests: 3			
OC, OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 7			
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 7			
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 7			
pH Value	All	NDPs: 0 Tests: 4			
Phenols by HPLC (W)	All	NDPs: 0 Tests: 7			
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 7			
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 7			





## CERTIFICATE OF ANALYSIS

**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

Results Legend		Customer Sample R	CGBH01	CGBH07	CGBH24	CGSW01	CGSW02	CGSW03
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.		05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014
aq	Aqueous / settled sample.		07/06/2014	07/06/2014	07/06/2014	07/06/2014	07/06/2014	07/06/2014
diss.filt	Dissolved / filtered sample.		140607-61	140607-61	140607-61	140607-61	140607-61	140607-61
tot.unfilt	Total / unfiltered sample.		9409524	9409529	9409530	9409525	9409526	9409527
-	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					
Carbon, Organic (diss.filt)	<3 mg/l	TM090	<3	3.4	<3	48.8	43.9	37.8
Organic Carbon, Total	<3 mg/l	TM090	<3	<3	<3	48.4	43.3	38.5
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	<0.2	<0.2	131	63.1	59.3
Arsenic (diss.filt)	<0.12 µg/l	TM152	0.406	0.538	0.46	4.95	6.84	10.8
Barium (diss.filt)	<0.03 µg/l	TM152	49.7	96.9	82.9	277	327	195
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Boron (diss.filt)	<9.4 µg/l	TM152	43.9	37.8	143	3210	2130	1820
Cadmium (diss.filt)	<0.1 µg/l	TM152	<0.1	0.107	<0.1	<0.1	<0.1	0.774
Chromium (diss.filt)	<0.22 µg/l	TM152	3.38	3.54	4.43	11.7	8.67	10.3
Copper (diss.filt)	<0.85 µg/l	TM152	<0.85	0.93	<0.85	6.02	3.04	2.43
Lead (diss.filt)	<0.02 µg/l	TM152	<0.02	0.329	<0.02	0.114	<0.02	1.39
Nickel (diss.filt)	<0.15 µg/l	TM152	4.43	4.73	5.6	99.3	28.7	37.5
Selenium (diss.filt)	<0.39 µg/l	TM152	2.55	1.26	2.29	9.03	5.26	9.65
Vanadium (diss.filt)	<0.24 µg/l	TM152	1.01	0.756	1.09	2.46	1.18	2.23
Zinc (diss.filt)	<0.41 µg/l	TM152	3.44	1.24	1.91	6.37	1.68	3.18
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM228	335			394		
pH	<1 pH Units	TM256	7.73			8.12	8.29	
Phenol	<0.002 mg/l	TM259	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cresols	<0.006 mg/l	TM259	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Xylenols	<0.008 mg/l	TM259	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
2,3,5-Trimethylphenol	<0.003 mg/l	TM259	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
2-Isopropylphenol	<0.006 mg/l	TM259	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025



**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

Results Legend		Customer Sample R		CGSW04						
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 05/06/2014  07/06/2014 140607-61 9409528							
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&#x26;	Sample deviation (see appendix)									
Component	LOD/Units			Method						
Carbon, Organic (diss.filt)	<3 mg/l	TM090	47.9							
Organic Carbon, Total	<3 mg/l	TM090	56	#						
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	115	#						
Arsenic (diss.filt)	<0.12 µg/l	TM152	12.9	#						
Barium (diss.filt)	<0.03 µg/l	TM152	228	#						
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	#						
Boron (diss.filt)	<9.4 µg/l	TM152	2410	#						
Cadmium (diss.filt)	<0.1 µg/l	TM152	<0.1	#						
Chromium (diss.filt)	<0.22 µg/l	TM152	12.8	#						
Copper (diss.filt)	<0.85 µg/l	TM152	1.72	#						
Lead (diss.filt)	<0.02 µg/l	TM152	0.358	#						
Nickel (diss.filt)	<0.15 µg/l	TM152	52.3	#						
Selenium (diss.filt)	<0.39 µg/l	TM152	11.1	#						
Vanadium (diss.filt)	<0.24 µg/l	TM152	2.41	#						
Zinc (diss.filt)	<0.41 µg/l	TM152	2.97	#						
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	#						
PCB congener 28	<0.015 µg/l	TM197	<0.015							
PCB congener 52	<0.015 µg/l	TM197	<0.015							
PCB congener 101	<0.015 µg/l	TM197	<0.015							
PCB congener 118	<0.015 µg/l	TM197	<0.015							
PCB congener 138	<0.015 µg/l	TM197	<0.015							
PCB congener 153	<0.015 µg/l	TM197	<0.015							
PCB congener 180	<0.015 µg/l	TM197	<0.015							
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105							
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM228	519							
pH	<1 pH Units	TM256	8.21	#						
Phenol	<0.002 mg/l	TM259	<0.002	#						
Cresols	<0.006 mg/l	TM259	<0.006	#						
Xylenols	<0.008 mg/l	TM259	<0.008	#						
2,3,5-Trimethylphenol	<0.003 mg/l	TM259	<0.003	#						
2-Isopropylphenol	<0.006 mg/l	TM259	<0.006	#						
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259	<0.025							



## CERTIFICATE OF ANALYSIS

**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## OC, OP Pesticides and Triazine Herb

Results Legend			Customer Sample R							
#	ISO17025 accredited.		CGBH01	CGBH07	CGBH24	CGSW01	CGSW02	CGSW03		
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	Depth (m)	Sample Type	Date Sampled	Sampled Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
Dichlorvos	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409524	
Mevinphos	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409529	
alpha-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409530	
Diazinon	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409525	
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409526	
Heptachlor	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409527	
Aldrin	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409528	
beta-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409529	
Methyl parathion	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409530	
Malathion	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409531	
Fenitrothion	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409532	
Heptachlor epoxide	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409533	
Parathion	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409534	
o,p-DDE	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409535	
Endosulphan I	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409536	
p,p-DDE	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409537	
Dieldrin	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409538	
o,p-TDE (DDD)	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409539	
Endrin	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409540	
o,p-DDT	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409541	
p,p-TDE (DDD)	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409542	
Ethion	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409543	
Endosulphan II	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409544	
p,p-DDT	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409545	
o,p-Methoxychlor	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409546	
p,p-Methoxychlor	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409547	
Endosulphan sulphate	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409548	
Azinphos-methyl	<0.01 µg/l	TM231		Water(GW/SW)	05/06/2014		07/06/2014	140607-61	9409549	







SDG: 140607-61  
 Job: H\_RHASKON\_PTB-82  
 Client Reference: 9Y0074 103 100

Location: Cole Green  
 Customer: Royal Haskoning  
 Attention: Declan Fives

Order Number: 9Y0074 003 100  
 Report Number: 273992  
 Superseded Report:

## PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample R	CGBH01	CGBH07	CGBH24	CGSW01	CGSW02	CGSW03
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
aq	Aqueous / settled sample.		05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014
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		07/06/2014	07/06/2014	07/06/2014	07/06/2014	07/06/2014	07/06/2014
(F)	Trigger breach confirmed		140607-61	140607-61	140607-61	140607-61	140607-61	140607-61
1-5&*\$@	Sample deviation (see appendix)		9409524	9409529	9409530	9409525	9409526	9409527
Component	LOD/Units		Method					
Naphthalene (aq)	<0.1 µg/l	TM178	<0.1 #	<0.1 #	<0.1 #	<0.2 #	<0.1 #	<0.1 #
Acenaphthene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.015 #	<0.015 #	<0.03 #	0.0175 #	<0.015 #
Acenaphthylene (aq)	<0.011 µg/l	TM178	<0.011 #	<0.011 #	<0.011 #	<0.022 #	0.0197 #	<0.011 #
Fluoranthene (aq)	<0.017 µg/l	TM178	<0.017 #	<0.017 #	<0.017 #	<0.034 #	<0.017 #	<0.017 #
Anthracene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.015 #	<0.015 #	<0.03 #	0.0185 #	<0.015 #
Phenanthrene (aq)	<0.022 µg/l	TM178	<0.022 #	<0.022 #	<0.022 #	<0.044 #	<0.022 #	<0.022 #
Fluorene (aq)	<0.014 µg/l	TM178	<0.014 #	<0.014 #	<0.014 #	<0.028 #	0.0232 #	<0.014 #
Chrysene (aq)	<0.013 µg/l	TM178	<0.013 #	<0.013 #	<0.013 #	<0.026 #	<0.013 #	<0.013 #
Pyrene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.015 #	<0.015 #	<0.03 #	<0.015 #	<0.015 #
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178	<0.017 #	<0.017 #	<0.017 #	<0.034 #	<0.017 #	<0.017 #
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178	<0.023 #	<0.023 #	<0.023 #	<0.046 #	<0.023 #	<0.023 #
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178	<0.027 #	<0.027 #	<0.027 #	<0.054 #	<0.027 #	<0.027 #
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178	<0.009 #	<0.009 #	<0.009 #	<0.018 #	<0.009 #	<0.009 #
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178	<0.016 #	<0.016 #	<0.016 #	<0.032 #	<0.016 #	<0.016 #
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178	<0.016 #	<0.016 #	<0.016 #	<0.032 #	<0.016 #	<0.016 #
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178	<0.014 #	<0.014 #	<0.014 #	<0.028 #	<0.014 #	<0.014 #
PAH, Total Detected USEPA 16 (aq)	<0.344 µg/l	TM178	<0.344 #	<0.344 #	<0.344 #	<0.688 #	<0.344 #	<0.344 #





**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## SVOC MS (W) - Aqueous

Results Legend		Customer Sample R	CGBH01	CGBH07	CGBH24	CGSW01	CGSW02	CGSW03
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sampled Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.		05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014
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&#x26;	Sample deviation (see appendix)							
Component	LOD/Units	Method						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Nitrophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
3-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chloroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Nitrophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Azobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2 #	<2 #	<2 #	<2 #	2.37 #	<2 #
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbazole (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibenzofuran (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #





**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## SVOC MS (W) - Aqueous

Results Legend		Customer Sample R	CGSW04				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 05/06/2014 07/06/2014 140607-61 9409528				
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			
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1	#			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	#			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	#			
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	#			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1	#			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1	#			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1	#			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1	#			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	#			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	#			
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1	#			
2-Chlorophenol (aq)	<1 µg/l	TM176	<1	#			
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1	#			
2-Methylphenol (aq)	<1 µg/l	TM176	<1	#			
2-Nitroaniline (aq)	<1 µg/l	TM176	<1	#			
2-Nitrophenol (aq)	<1 µg/l	TM176	<1	#			
3-Nitroaniline (aq)	<1 µg/l	TM176	<1	#			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<1	#			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1	#			
4-Chloroaniline (aq)	<1 µg/l	TM176	<1	#			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1	#			
4-Methylphenol (aq)	<1 µg/l	TM176	<1	#			
4-Nitroaniline (aq)	<1 µg/l	TM176	<1	#			
4-Nitrophenol (aq)	<1 µg/l	TM176	<1	#			
Azobenzene (aq)	<1 µg/l	TM176	<1	#			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1	#			
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1	#			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2	#			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1	#			
Carbazole (aq)	<1 µg/l	TM176	<1	#			
Dibenzofuran (aq)	<1 µg/l	TM176	<1	#			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1	#			



SDG: 140607-61
Job: H\_RHASKON\_PTB-82
Client Reference: 9Y0074 103 100

Location: Cole Green
Customer: Royal Haskoning
Attention: Declan Fives

Order Number: 9Y0074 003 100
Report Number: 273992
Superseded Report:

SVOC MS (W) - Aqueous

Table with columns: Component, LOD/Units, Method, and results for various SVOCs like Diethyl phthalate, Dimethyl phthalate, etc. Includes a legend for symbols like # and (F).



## CERTIFICATE OF ANALYSIS

**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## TPH CWG (W)

Results Legend		Customer Sample R	CGBH01	CGBH07	CGBH24	CGSW01	CGSW02	CGSW03	
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	
M	mCERTS accredited.		05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014
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						
GRO Surrogate % recovery**	%	TM245	85	87	84	81	82	81	
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	<50	<50	<50	
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3	
Benzene	<7 µg/l	TM245	<7	<7	<7	<7	<7	<7	
Toluene	<4 µg/l	TM245	<4	<4	<4	<4	<4	<4	
Ethylbenzene	<5 µg/l	TM245	<5	<5	<5	<5	<5	<5	
m,p-Xylene	<8 µg/l	TM245	<8	<8	<8	<8	<8	<8	
o-Xylene	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3	
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11	<11	<11	<11	<11	
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28	<28	<28	
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	22	<10	<10	<10	<10	
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	22	<10	<10	<10	<10	
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	22	<10	<10	<10	<10	



**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## TPH CWG (W)

Results Legend		Customer Sample R						
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	CGSW04  Water(GW/SW) 05/06/2014  07/06/2014 140607-61 9409528					
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				
GRO Surrogate % recovery**	%	TM245	82					
GRO >C5-C12	<50 µg/l	TM245	<50	#				
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	#				
Benzene	<7 µg/l	TM245	<7	#				
Toluene	<4 µg/l	TM245	<4	#				
Ethylbenzene	<5 µg/l	TM245	<5	#				
m,p-Xylene	<8 µg/l	TM245	<8	#				
o-Xylene	<3 µg/l	TM245	<3	#				
Sum of detected Xylenes	<11 µg/l	TM245	<11					
Sum of detected BTEX	<28 µg/l	TM245	<28					
Aliphatics >C5-C6	<10 µg/l	TM245	<10					
Aliphatics >C6-C8	<10 µg/l	TM245	<10					
Aliphatics >C8-C10	<10 µg/l	TM245	<10					
Aliphatics >C10-C12	<10 µg/l	TM245	<10					
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10					
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10					
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10					
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10					
Aromatics >EC5-EC7	<10 µg/l	TM245	<10					
Aromatics >EC7-EC8	<10 µg/l	TM245	<10					
Aromatics >EC8-EC10	<10 µg/l	TM245	<10					
Aromatics >EC10-EC12	<10 µg/l	TM245	<10					
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10					
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10					
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10					
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10					
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10					





**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## VOC MS (W)

Results Legend		Customer Sample R	CGBH01	CGBH07	CGBH24	CGSW01	CGSW02	CGSW03
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sampled Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	Water (GW/SW)	Water (GW/SW)	Water (GW/SW)	Water (GW/SW)	Water (GW/SW)	Water (GW/SW)
M	mCERTS accredited.		05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014
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					
Dibromofluoromethane**	%	TM208	113	115	114	112	112	113
Toluene-d8**	%	TM208	100	98.9	99.7	100	99.7	99.5
4-Bromofluorobenzene**	%	TM208	99.4	99.5	97.8	101	97.9	101
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Vinyl chloride	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Bromomethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Chloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Carbon disulphide	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Dichloromethane	<3 µg/l	TM208	<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Chloroform	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Carbontetrachloride	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Toluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1



## CERTIFICATE OF ANALYSIS

**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## VOC MS (W)

Results Legend		Customer Sample R	CGBH01	CGBH07	CGBH24	CGSW01	CGSW02	CGSW03
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.		05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014	05/06/2014
aq	Aqueous / settled sample.		07/06/2014	07/06/2014	07/06/2014	07/06/2014	07/06/2014	07/06/2014
diss.filt	Dissolved / filtered sample.		140607-61	140607-61	140607-61	140607-61	140607-61	140607-61
tot.unfilt	Total / unfiltered sample.		9409524	9409529	9409530	9409525	9409526	9409527
*	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&#x26;	Sample deviation (see appendix)							
Component	LOD/Units		Method					
1,3-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Tetrachloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #



CERTIFICATE OF ANALYSIS

SDG: 140607-61
Job: H\_RHASKON\_PTB-82
Client Reference: 9Y0074 103 100

Location: Cole Green
Customer: Royal Haskoning
Attention: Declan Fives

Order Number: 9Y0074 003 100
Report Number: 273992
Superseded Report:

VOC MS (W)

Table with columns for Component, LOD/Units, Method, and sample identifiers (CGBH01, CGBH07, CGBH24, CGSW01, CGSW02, CGSW03). Rows include 1,2,3-Trichlorobenzene, 1,3,5-Trichlorobenzene, VOC TIC, and Sum of detected Xylenes.



**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## VOC MS (W)

Results Legend		Customer Sample R	CGSW04				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 05/06/2014 07/06/2014 140607-61 9409528				
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					
Dibromofluoromethane**	%	TM208	111				
Toluene-d8**	%	TM208	100				
4-Bromofluorobenzene**	%	TM208	102				
Dichlorodifluoromethane	<1 µg/l	TM208	<1				
Chloromethane	<1 µg/l	TM208	<1	#			
Vinyl chloride	<1 µg/l	TM208	<1	#			
Bromomethane	<1 µg/l	TM208	<1	#			
Chloroethane	<1 µg/l	TM208	<1	#			
Trichlorofluoromethane	<1 µg/l	TM208	<1	#			
1,1-Dichloroethene	<1 µg/l	TM208	<1	#			
Carbon disulphide	<1 µg/l	TM208	<1	#			
Dichloromethane	<3 µg/l	TM208	<3	#			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	#			
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	#			
1,1-Dichloroethane	<1 µg/l	TM208	<1	#			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	#			
2,2-Dichloropropane	<1 µg/l	TM208	<1	#			
Bromochloromethane	<1 µg/l	TM208	<1	#			
Chloroform	<1 µg/l	TM208	<1	#			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	#			
1,1-Dichloropropene	<1 µg/l	TM208	<1	#			
Carbontetrachloride	<1 µg/l	TM208	<1	#			
1,2-Dichloroethane	<1 µg/l	TM208	<1	#			
Benzene	<1 µg/l	TM208	<1	#			
Trichloroethene	<1 µg/l	TM208	<1	#			
1,2-Dichloropropane	<1 µg/l	TM208	<1	#			
Dibromomethane	<1 µg/l	TM208	<1	#			
Bromodichloromethane	<1 µg/l	TM208	<1	#			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	#			
Toluene	<1 µg/l	TM208	<1	#			
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	#			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	#			



**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## VOC MS (W)

Results Legend		Customer Sample R	CGSW04				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 05/06/2014 07/06/2014 140607-61 9409528				
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&#pound;	Sample deviation (see appendix)						
Component	LOD/Units			Method			
1,3-Dichloropropane	<1 µg/l	TM208	<1	#			
Tetrachloroethene	<1 µg/l	TM208	<1	#			
Dibromochloromethane	<1 µg/l	TM208	<1	#			
1,2-Dibromoethane	<1 µg/l	TM208	<1	#			
Chlorobenzene	<1 µg/l	TM208	<1	#			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	#			
Ethylbenzene	<1 µg/l	TM208	<1	#			
m,p-Xylene	<1 µg/l	TM208	<1	#			
o-Xylene	<1 µg/l	TM208	<1	#			
Styrene	<1 µg/l	TM208	<1	#			
Bromoform	<1 µg/l	TM208	<1	#			
Isopropylbenzene	<1 µg/l	TM208	<1	#			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	#			
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	#			
Bromobenzene	<1 µg/l	TM208	<1	#			
Propylbenzene	<1 µg/l	TM208	<1	#			
2-Chlorotoluene	<1 µg/l	TM208	<1	#			
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	#			
4-Chlorotoluene	<1 µg/l	TM208	<1	#			
tert-Butylbenzene	<1 µg/l	TM208	<1	#			
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	#			
sec-Butylbenzene	<1 µg/l	TM208	<1	#			
4-iso-Propyltoluene	<1 µg/l	TM208	<1	#			
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	#			
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	#			
n-Butylbenzene	<1 µg/l	TM208	<1	#			
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	#			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	#			
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	#			
Hexachlorobutadiene	<1 µg/l	TM208	<1	#			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	#			
Naphthalene	<1 µg/l	TM208	<1	#			



SDG: 140607-61
Job: H\_RHASKON\_PT B-82
Client Reference: 9Y0074 103 100

Location: Cole Green
Customer: Royal Haskoning
Attention: Declan Fives

Order Number: 9Y0074 003 100
Report Number: 273992
Superseded Report:

VOC MS (W)

Table with columns: Component, LOD/Units, Method, and results for VOC MS (W). Includes a Results Legend and Customer Sample R details.



## CERTIFICATE OF ANALYSIS

**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: Part 2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM191	Standard Methods for the examination of waters and wastewaters 16th Edition, ALPHA, Washington DC, USA. ISBN 0-87553-131-8.	Determination of Unfiltered Metals in Water Matrices by ICP-MS		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM231	Agilent 6890 Gas Chromatograph system using an Agilent 5973 Mass Selective Detector (MSD)	Determination of Organochlorine and Organophosphorus Pesticides and Triazine Herbicides by GCMS		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC		

<sup>1</sup> Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



**SDG:** 140607-61  
**Job:** H\_RHASKON\_PT8-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

### Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	9409524	9409529	9409530	9409525	9409526	9409527	9409528
	CGBH01	CGBH07	CGBH24	CGSW01	CGSW02	CGSW03	CGSW04
AGS Ref.							
Depth							
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014
Dissolved Metals by ICP-MS	12-Jun-2014	12-Jun-2014	12-Jun-2014	12-Jun-2014	12-Jun-2014	12-Jun-2014	12-Jun-2014
Dissolved Organic/Inorganic Carbon	12-Jun-2014	12-Jun-2014	10-Jun-2014	13-Jun-2014	13-Jun-2014	11-Jun-2014	13-Jun-2014
EPH CWG (Aliphatic) Aqueous GC (W)	18-Jun-2014	17-Jun-2014	18-Jun-2014	18-Jun-2014	18-Jun-2014	18-Jun-2014	17-Jun-2014
EPH CWG (Aromatic) Aqueous GC (W)	18-Jun-2014	17-Jun-2014	18-Jun-2014	18-Jun-2014	18-Jun-2014	18-Jun-2014	17-Jun-2014
GRO by GC-FID (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014
Mercury Dissolved	10-Jun-2014	10-Jun-2014	11-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014
Metals by iCap-OES Unfiltered (W)	13-Jun-2014			13-Jun-2014			13-Jun-2014
OC, OP Pesticides and Triazine Herb	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014
PAH Spec MS - Aqueous (W)	18-Jun-2014	18-Jun-2014	18-Jun-2014	18-Jun-2014	18-Jun-2014	18-Jun-2014	17-Jun-2014
PCB Congeners - Aqueous (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014
pH Value	12-Jun-2014			12-Jun-2014	12-Jun-2014		12-Jun-2014
Phenols by HPLC (W)	11-Jun-2014	12-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	12-Jun-2014	11-Jun-2014
SVOC MS (W) - Aqueous	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014
Total Organic and Inorganic Carbon	11-Jun-2014	11-Jun-2014	10-Jun-2014	11-Jun-2014	10-Jun-2014	10-Jun-2014	13-Jun-2014
TPH CWG (W)	18-Jun-2014	17-Jun-2014	18-Jun-2014	18-Jun-2014	18-Jun-2014	18-Jun-2014	17-Jun-2014
VOC MS (W)	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

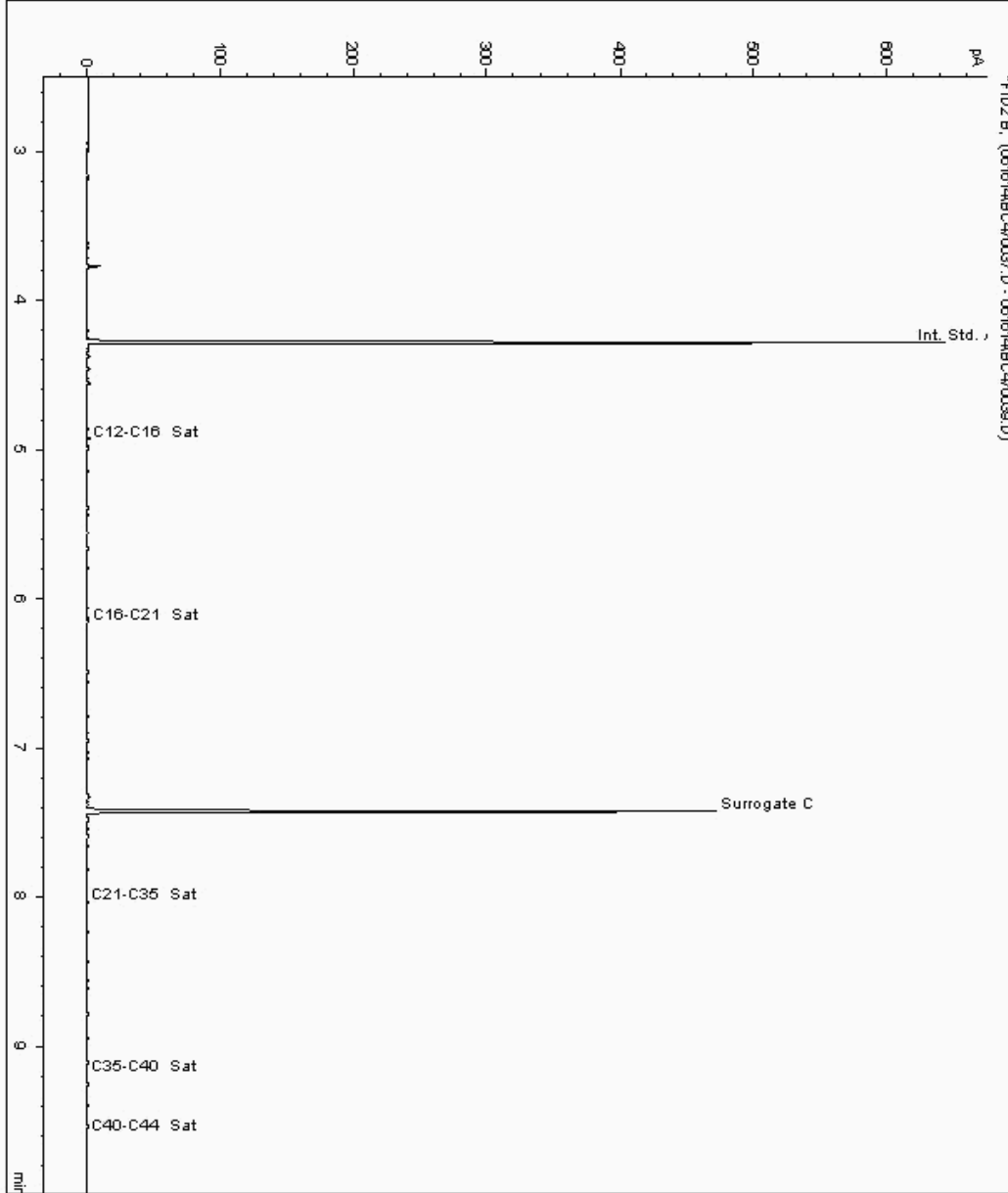
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9413635  
Sample ID : CGBH07

Depth :

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

Sample Identity: 8938927-9413635  
Date Acquired : 17/06/14 03:12:36 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

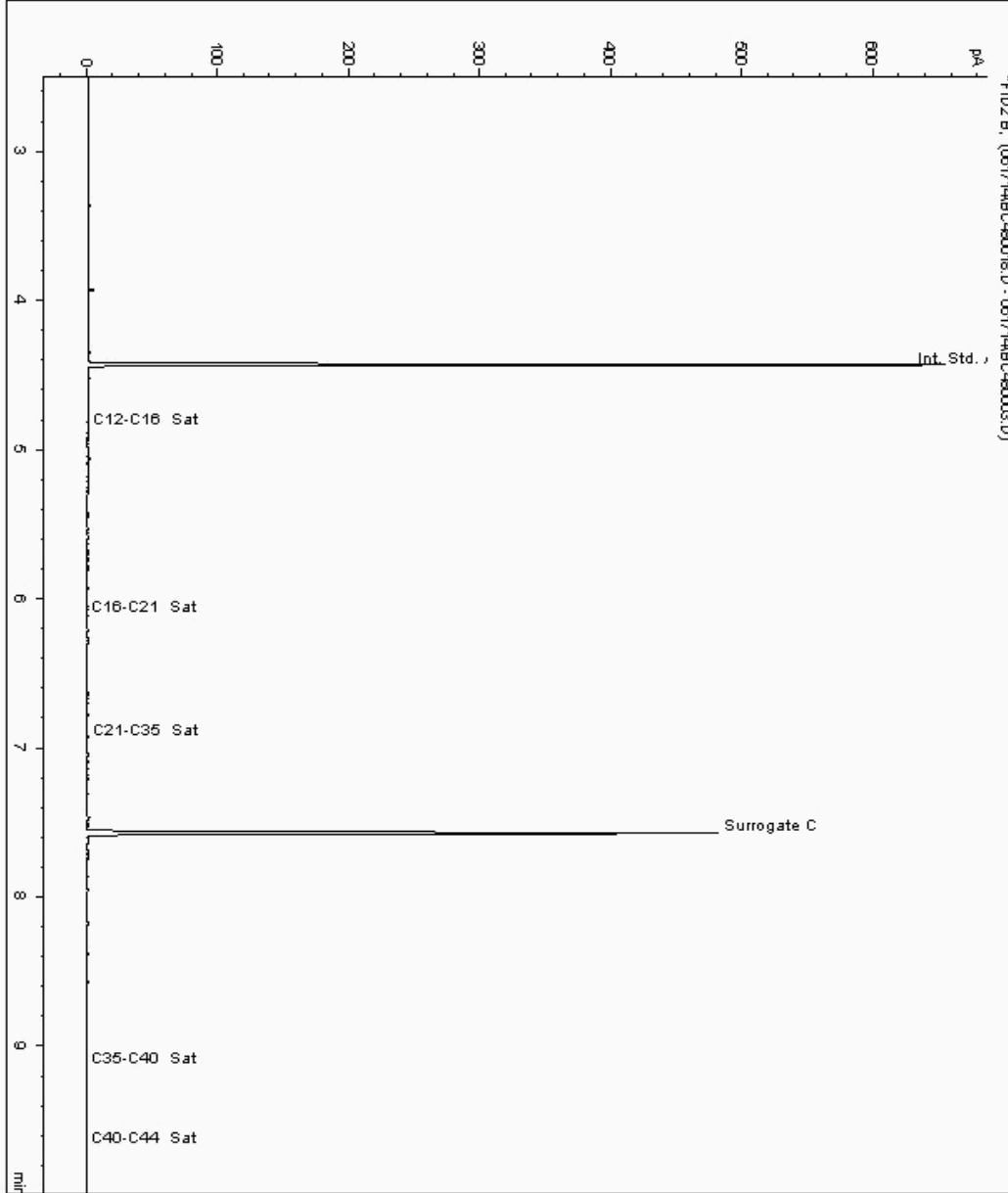
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9413667  
Sample ID : CGSW03

Depth :

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

Sample Identity: 8938885-9413667  
Date Acquired : 17/06/2014 22:05:41 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

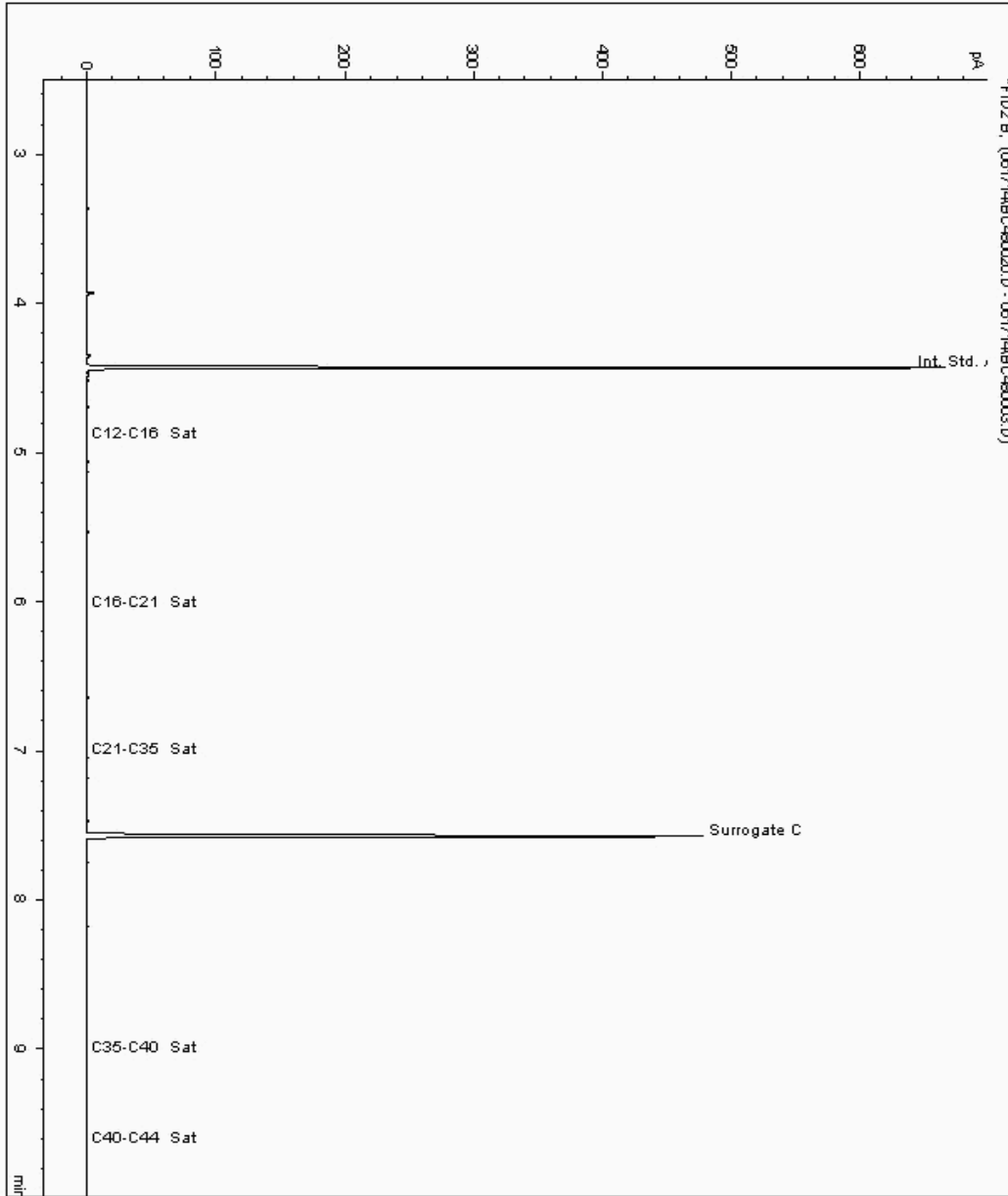
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9413717  
Sample ID : CGSW01

Depth :

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

Sample Identity: 8938843-9413717  
Date Acquired : 17/06/2014 22:43:55 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.019





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

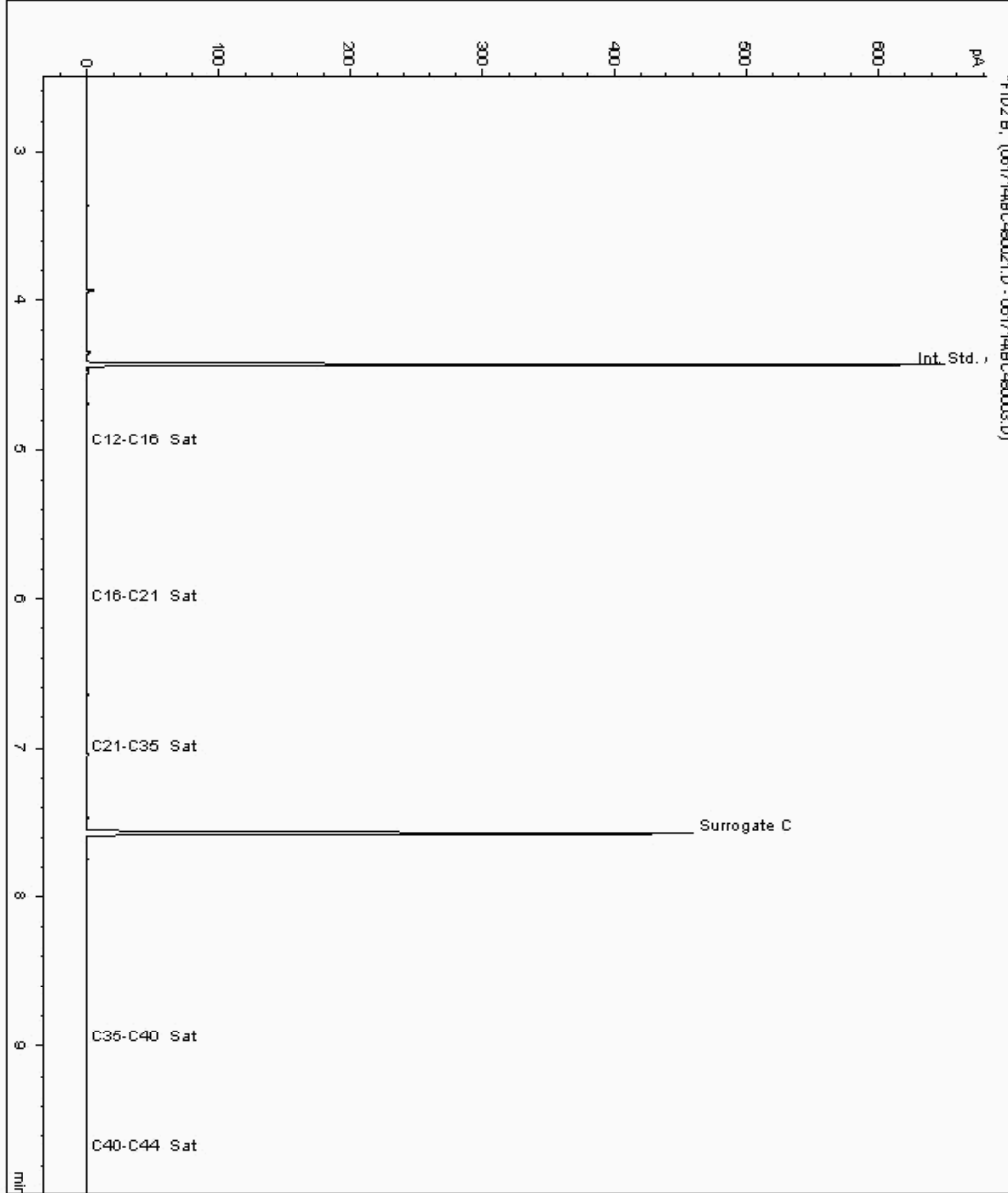
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9413741  
Sample ID : CGBH24

Depth :

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

Sample Identity: 8938943-9413741  
Date Acquired : 17/06/2014 23:03:06 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

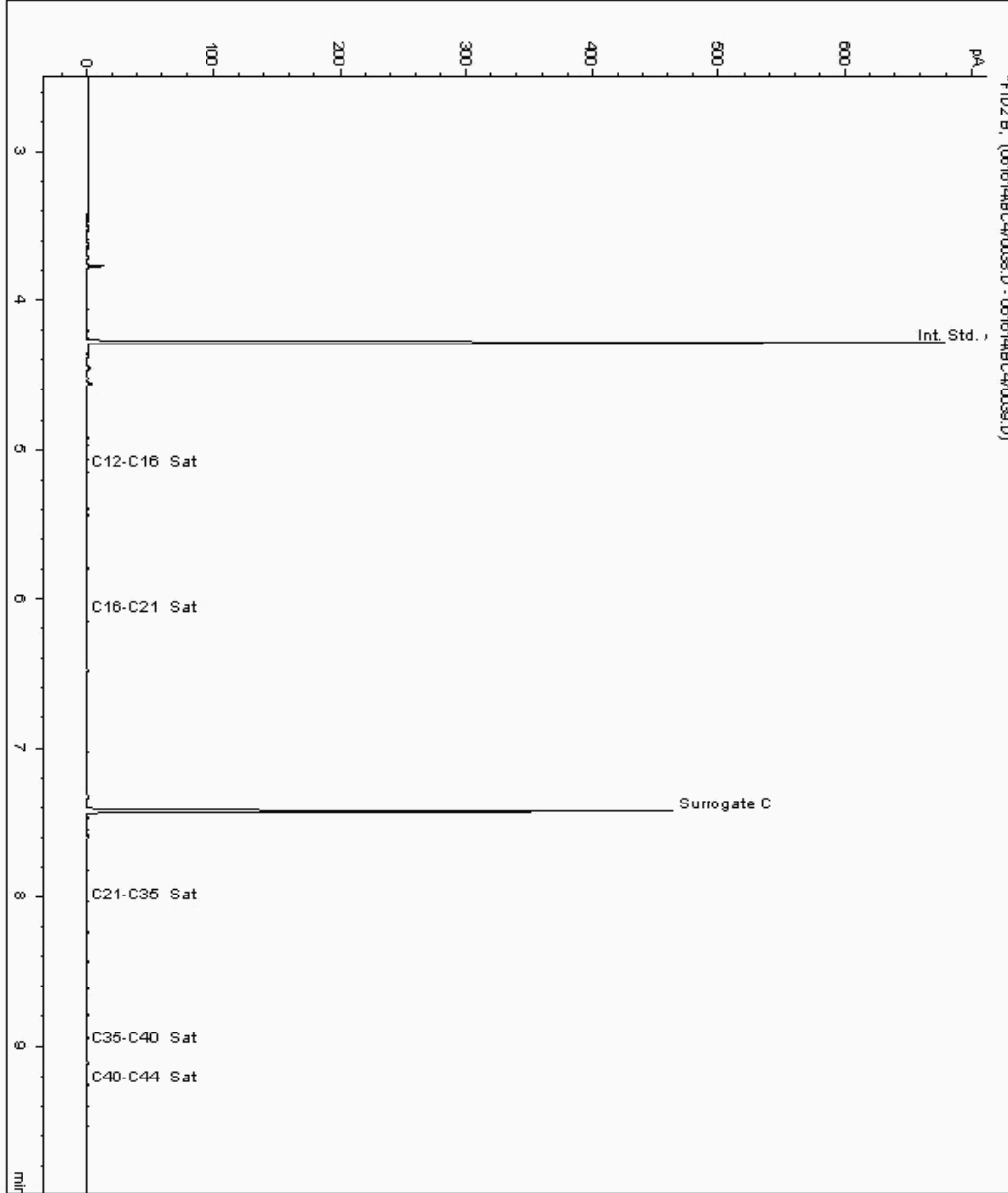
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9413768  
Sample ID : CGSW04

Depth :

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

Sample Identity: 8938904-9413768  
Date Acquired : 17/06/14 03:31:49 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

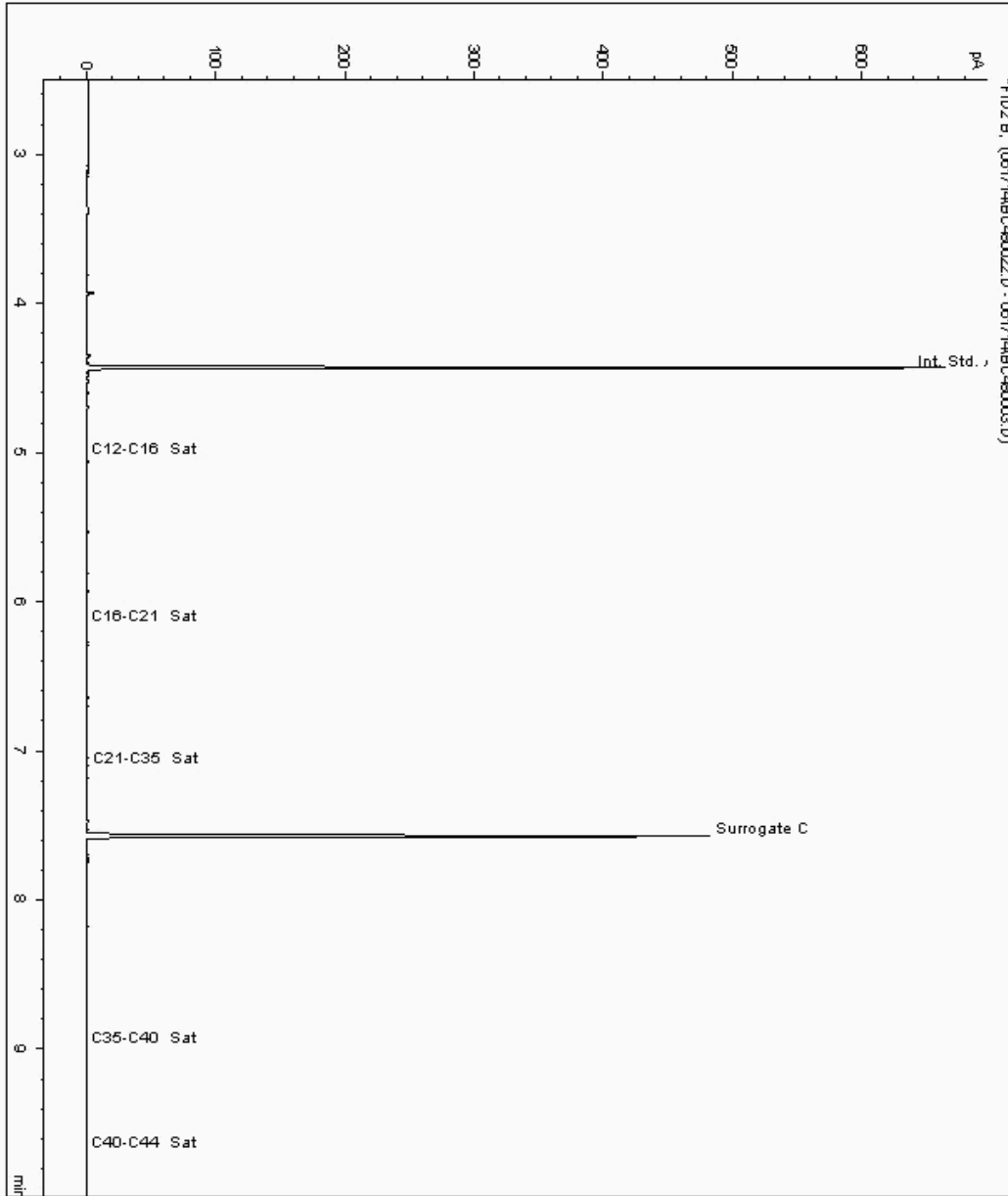
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9413777  
Sample ID : CGBH01

Depth :

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

Sample Identity: 8938821-9413777  
Date Acquired : 17/06/2014 23:22:19 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

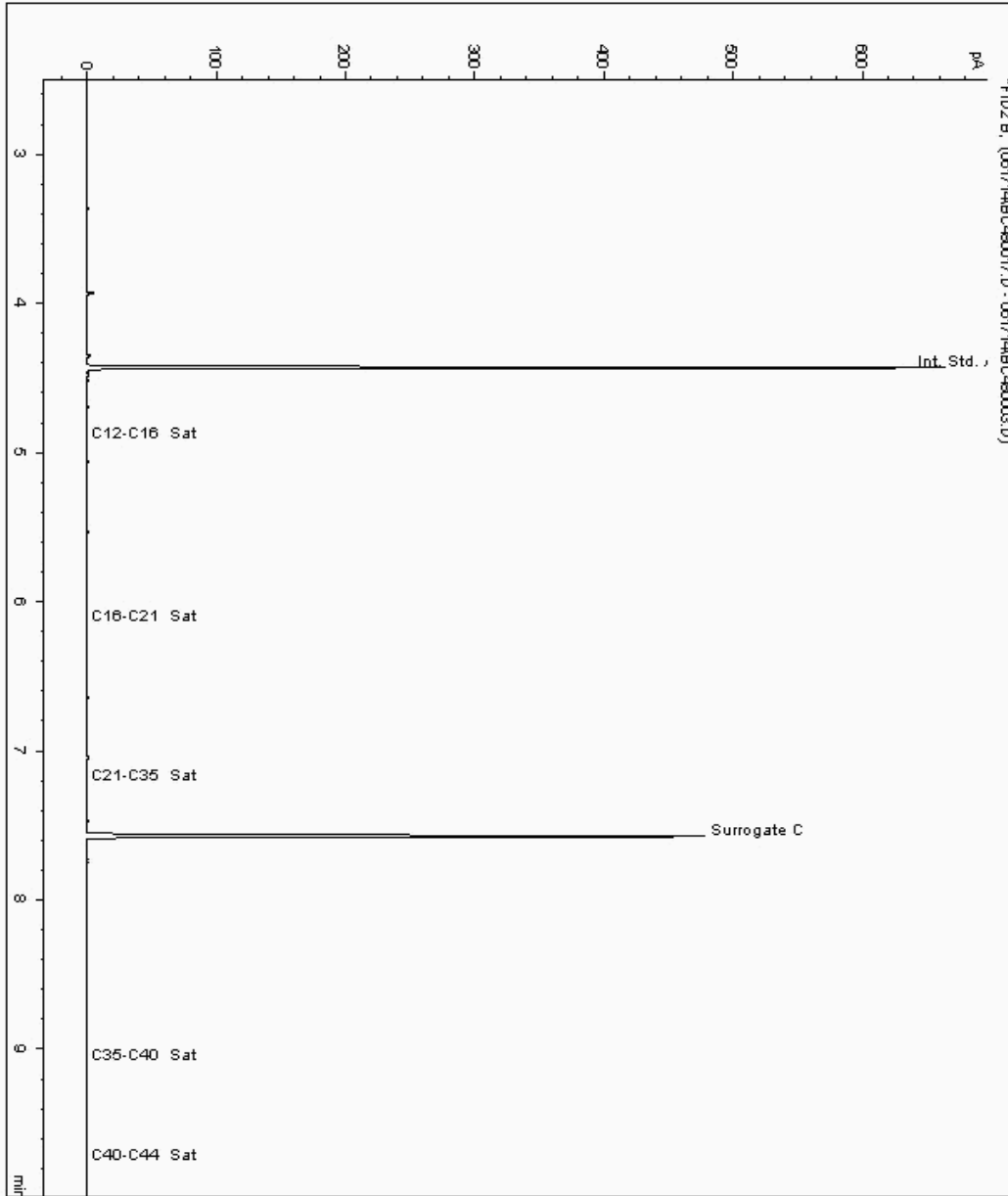
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9413881  
Sample ID : CGSW02

Depth :

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

Sample Identity: 8938866-9413881  
Date Acquired : 17/06/2014 21:46:30 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140607-61  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

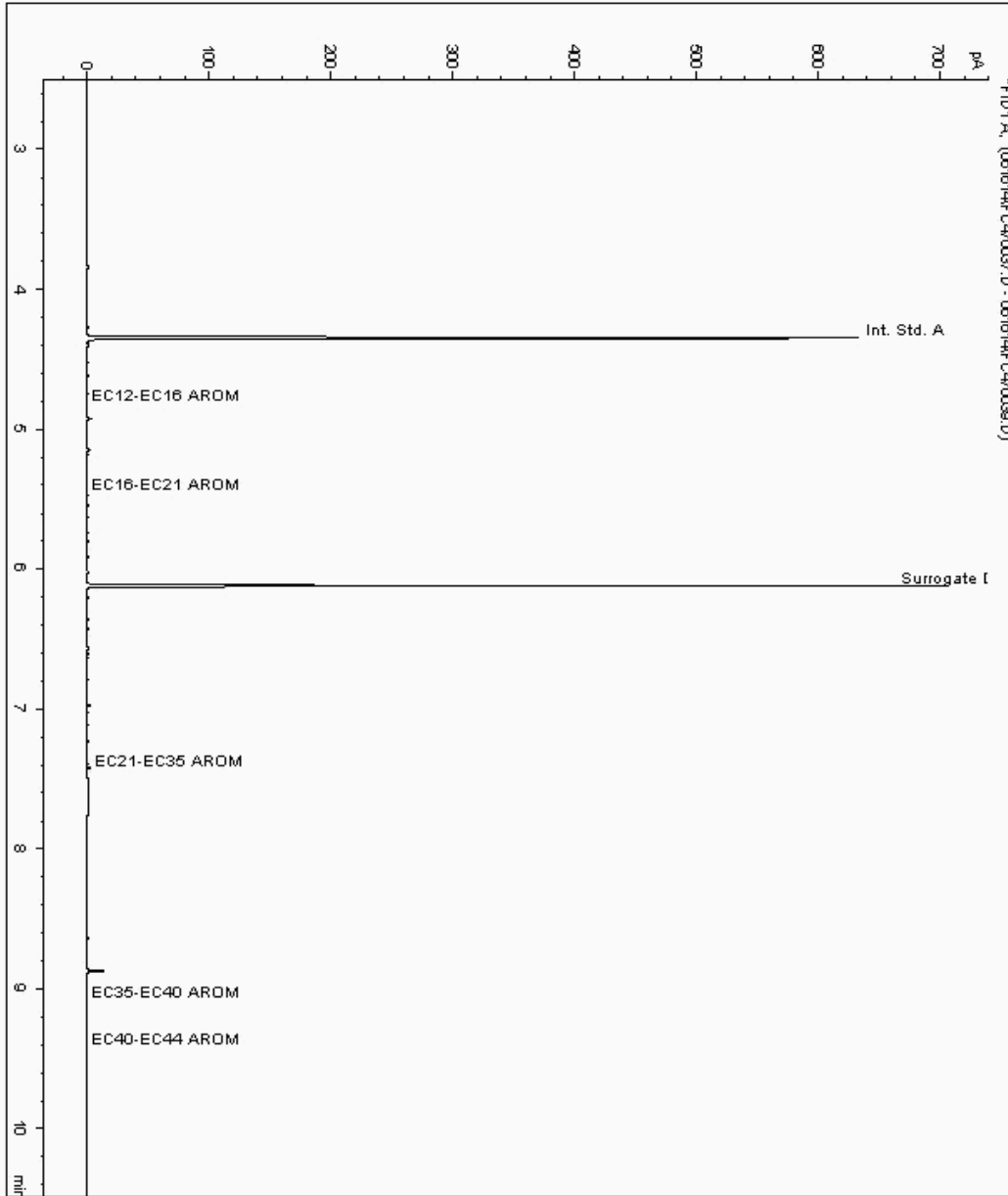
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9413635  
Sample ID : CGBH07

Depth :

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

Sample Identity: 8938928-9413635  
Date Acquired : 17/06/14 03:12:36 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017







SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

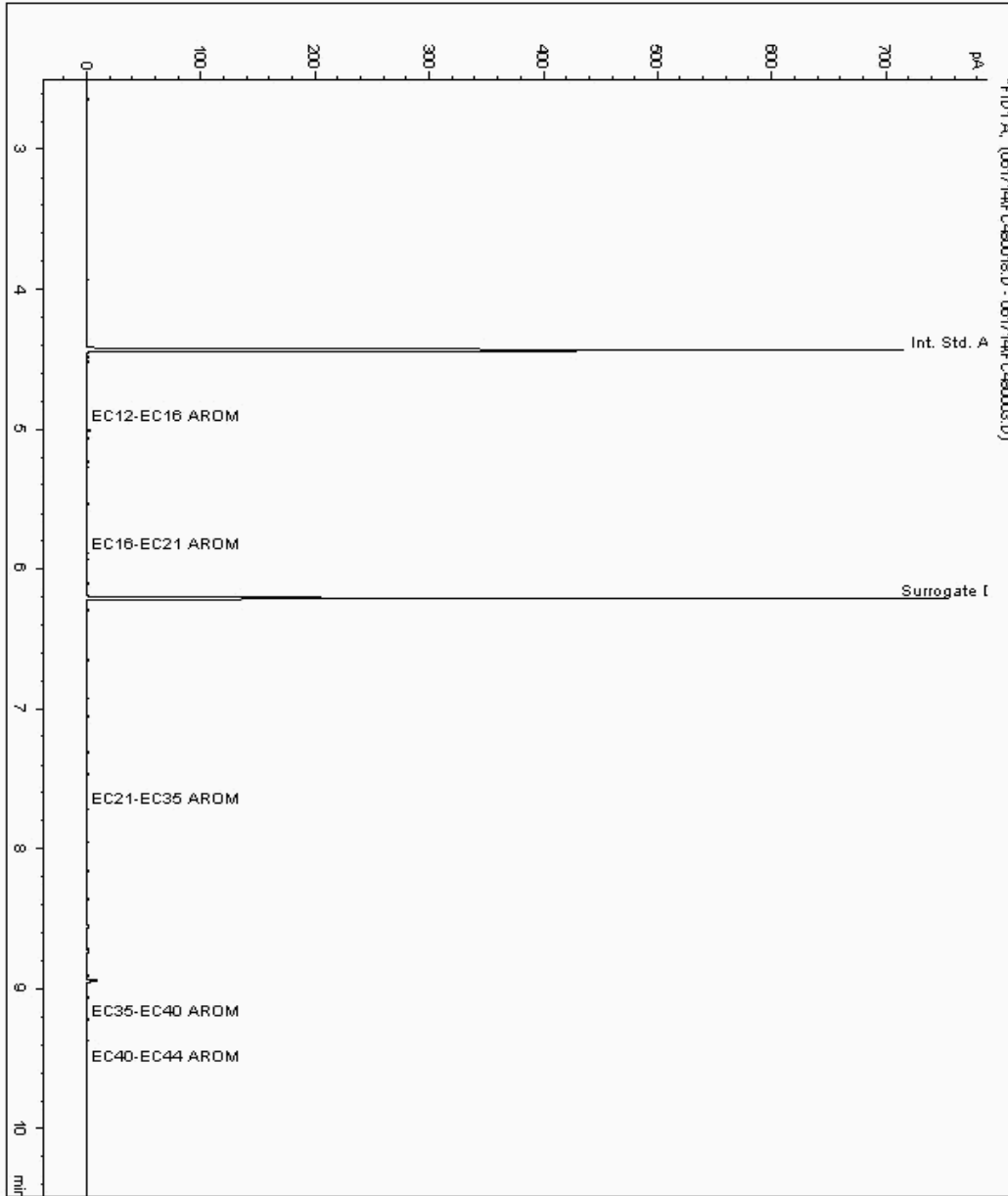
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9413667  
Sample ID : CGSW03

Depth :

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

Sample Identity: 8938886-9413667  
Date Acquired : 17/06/2014 22:05:42 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

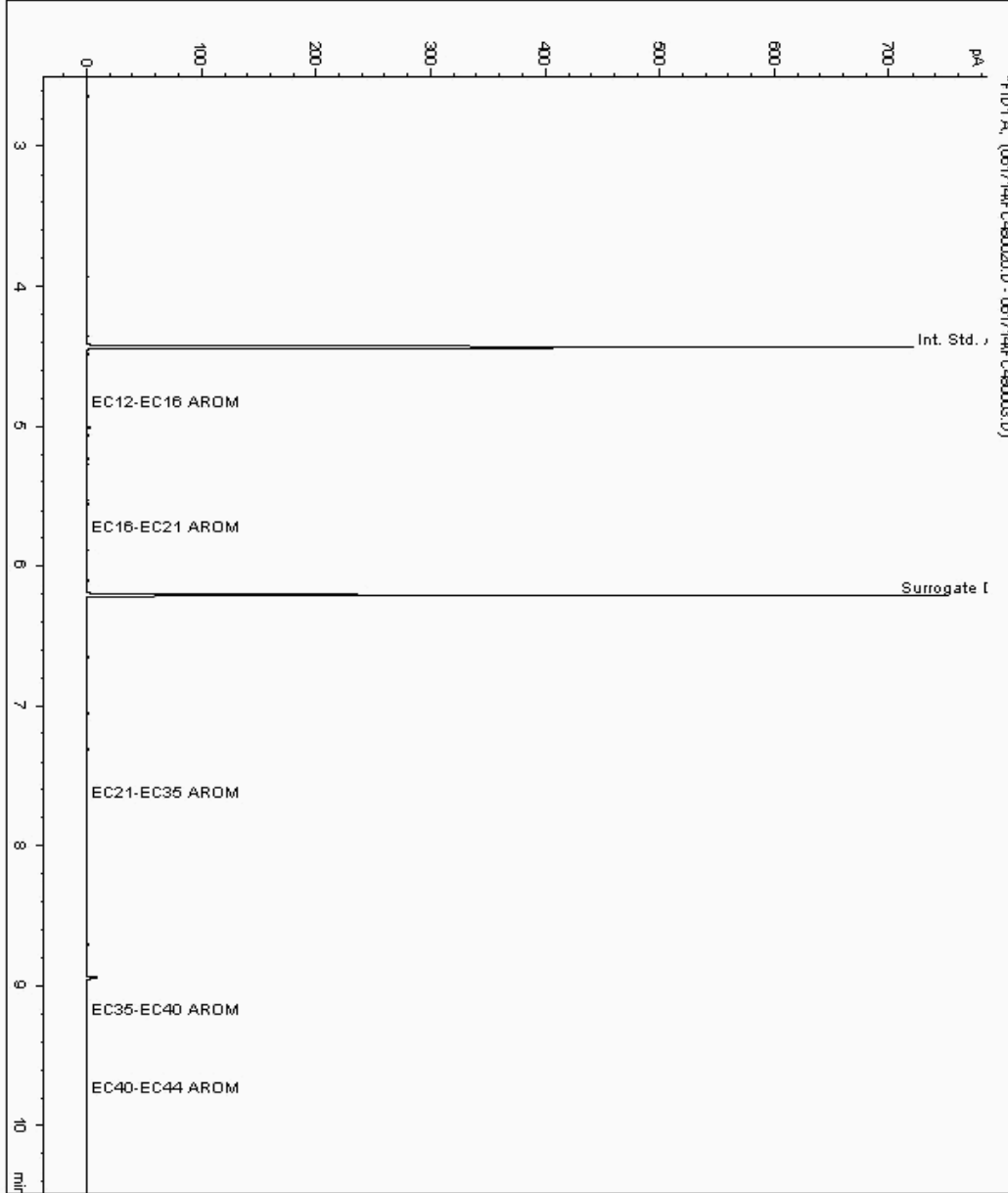
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9413717  
Sample ID : CGSW01

Depth :

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

Sample Identity: 8938844-9413717  
Date Acquired : 17/06/2014 22:43:55 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.019





SDG: 140607-61  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

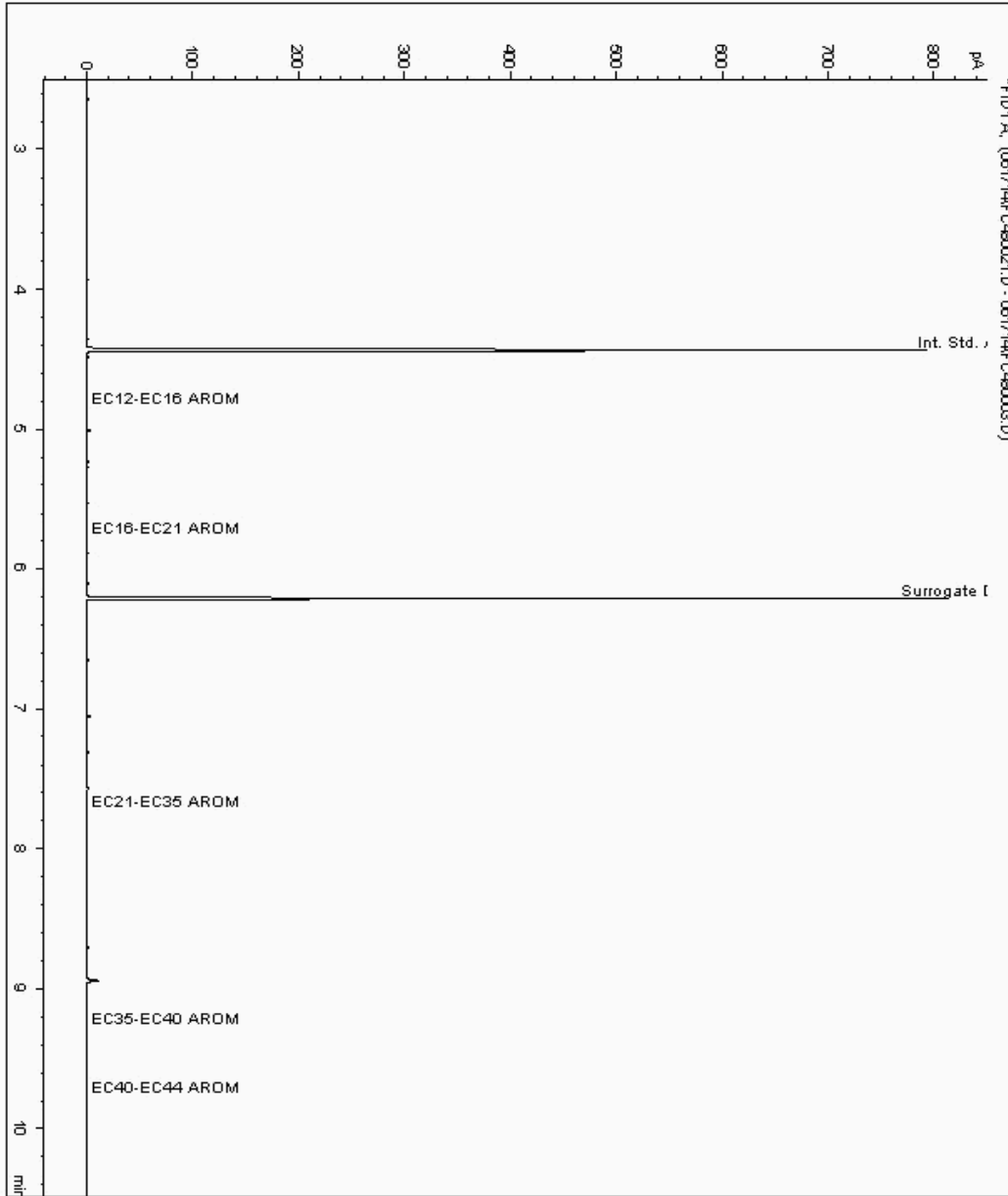
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9413741  
Sample ID : CGBH24

Depth :

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

Sample Identity: 8938944-9413741  
Date Acquired : 17/06/2014 23:03:06 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140607-61  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

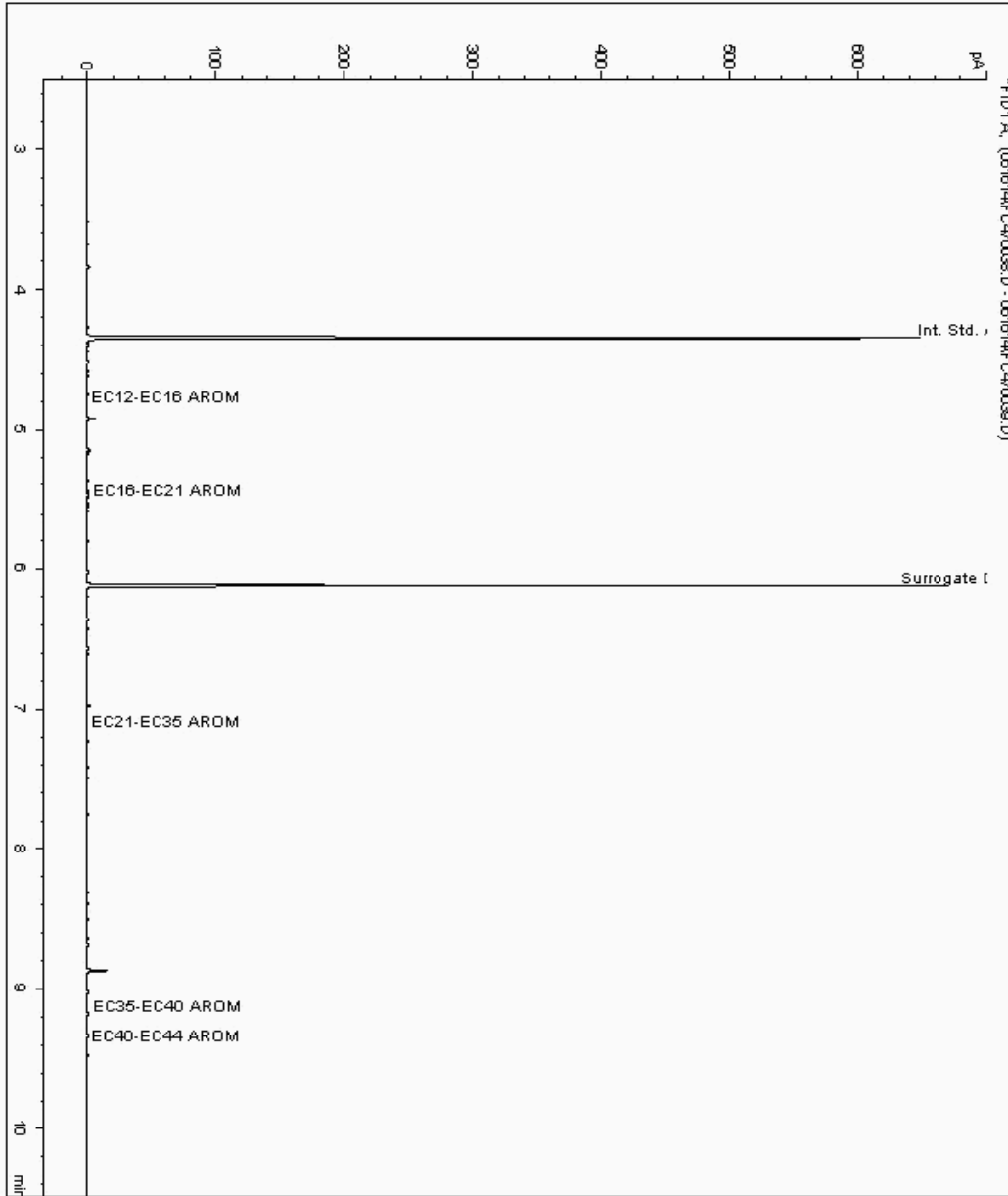
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9413768  
Sample ID : CGSW04

Depth :

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

Sample Identity: 8938905-9413768  
Date Acquired : 17/06/14 03:31:49 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

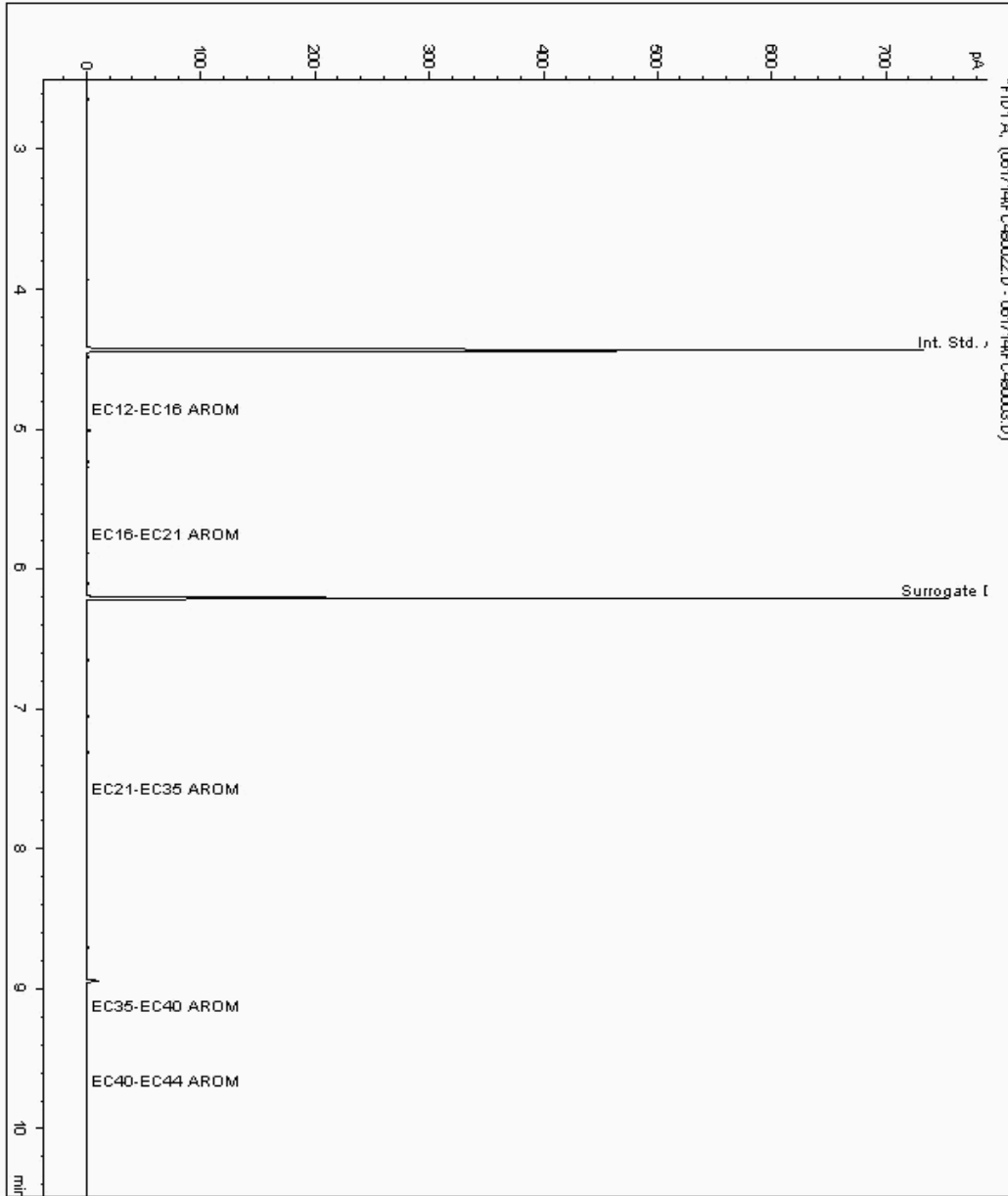
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9413777  
Sample ID : CGBH01

Depth :

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

Sample Identity: 8938822-9413777  
Date Acquired : 17/06/2014 23:22:19 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140607-61  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

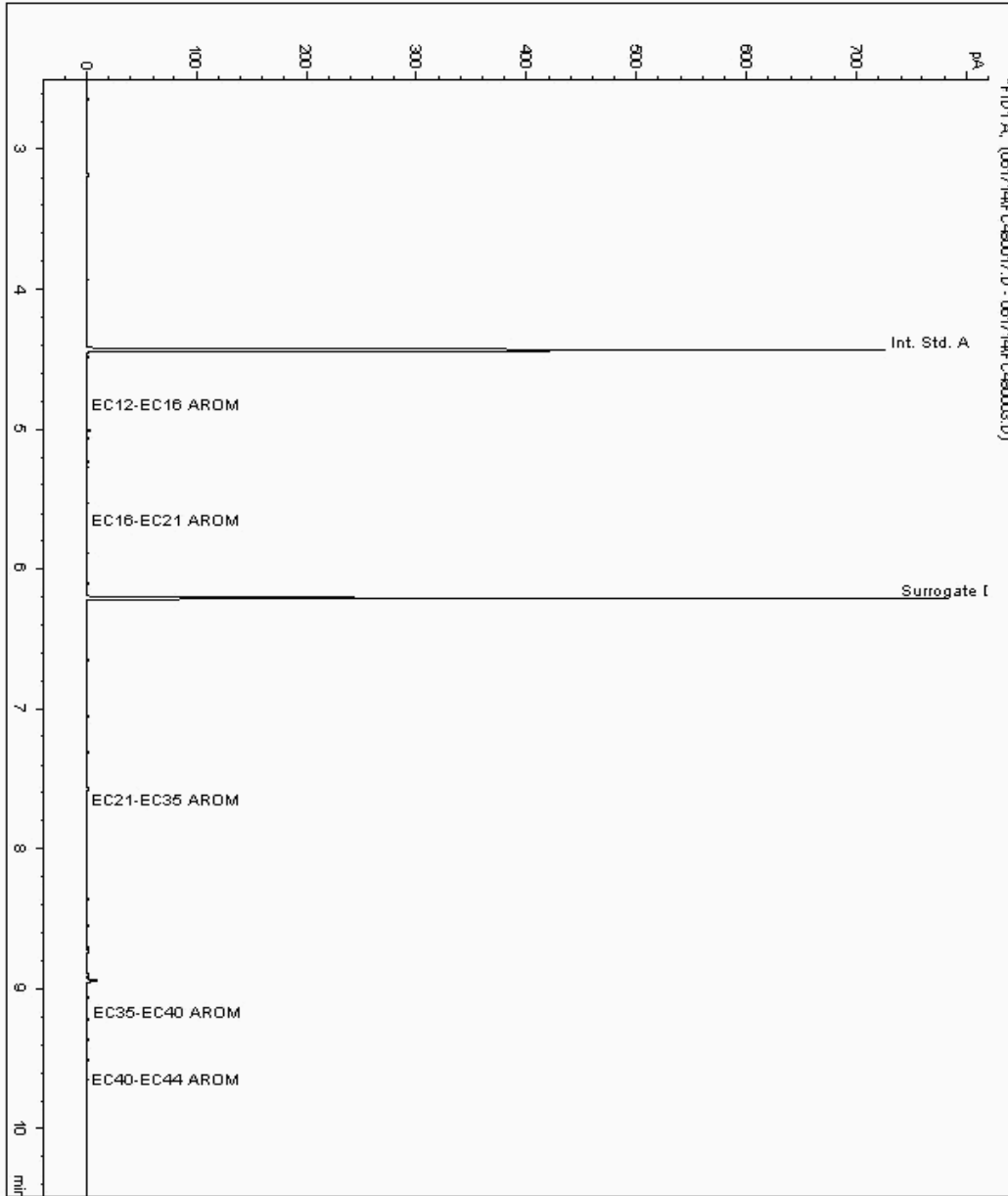
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9413881  
Sample ID : CGSW02

Depth :

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

Sample Identity: 8938867-9413881  
Date Acquired : 17/06/2014 21:46:29 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140607-61  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

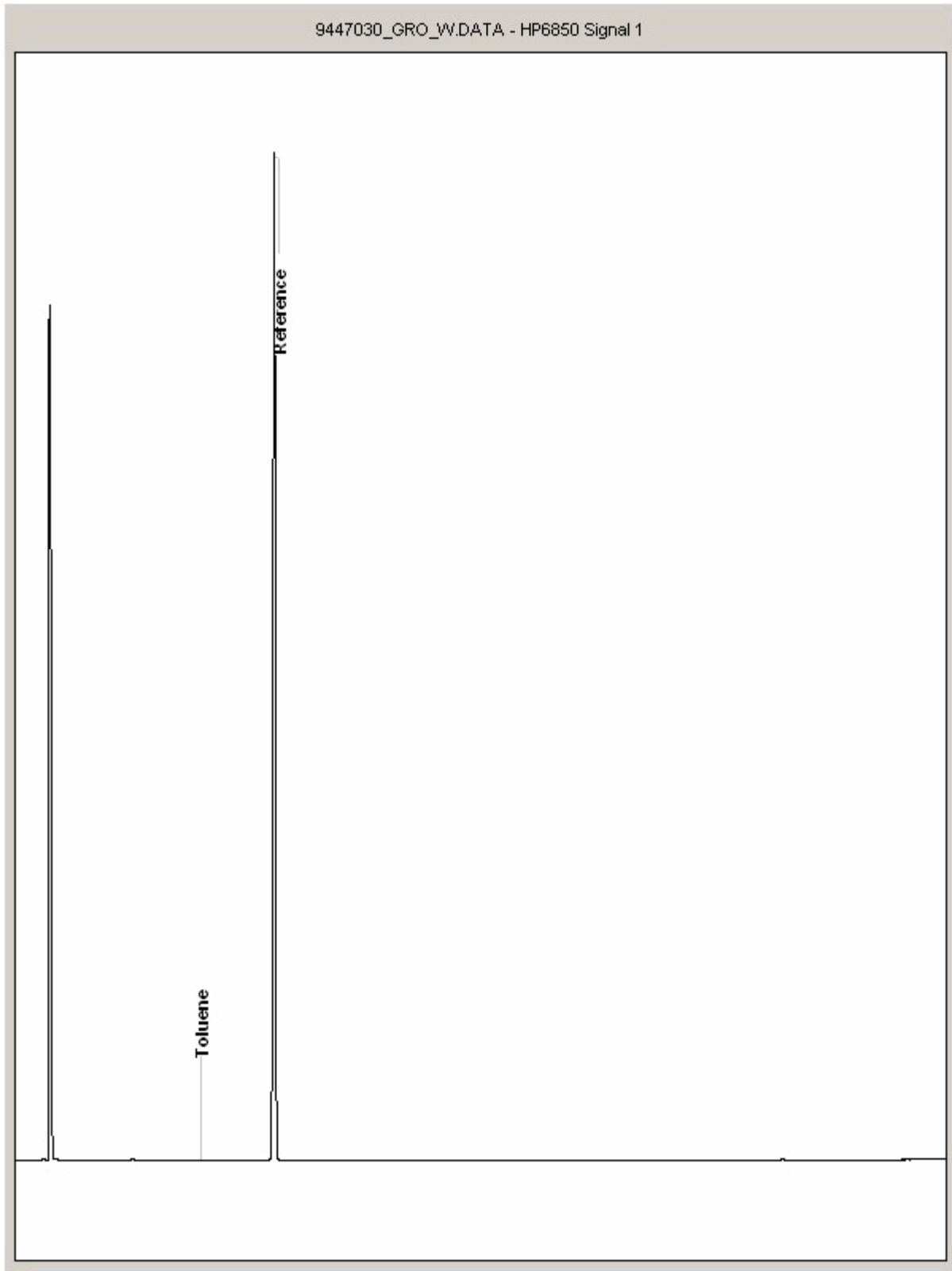
Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9447030  
Sample ID : CGBH01

Depth :





**SDG:** 140607-61  
**Job:** H\_RHASKON\_PT8-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

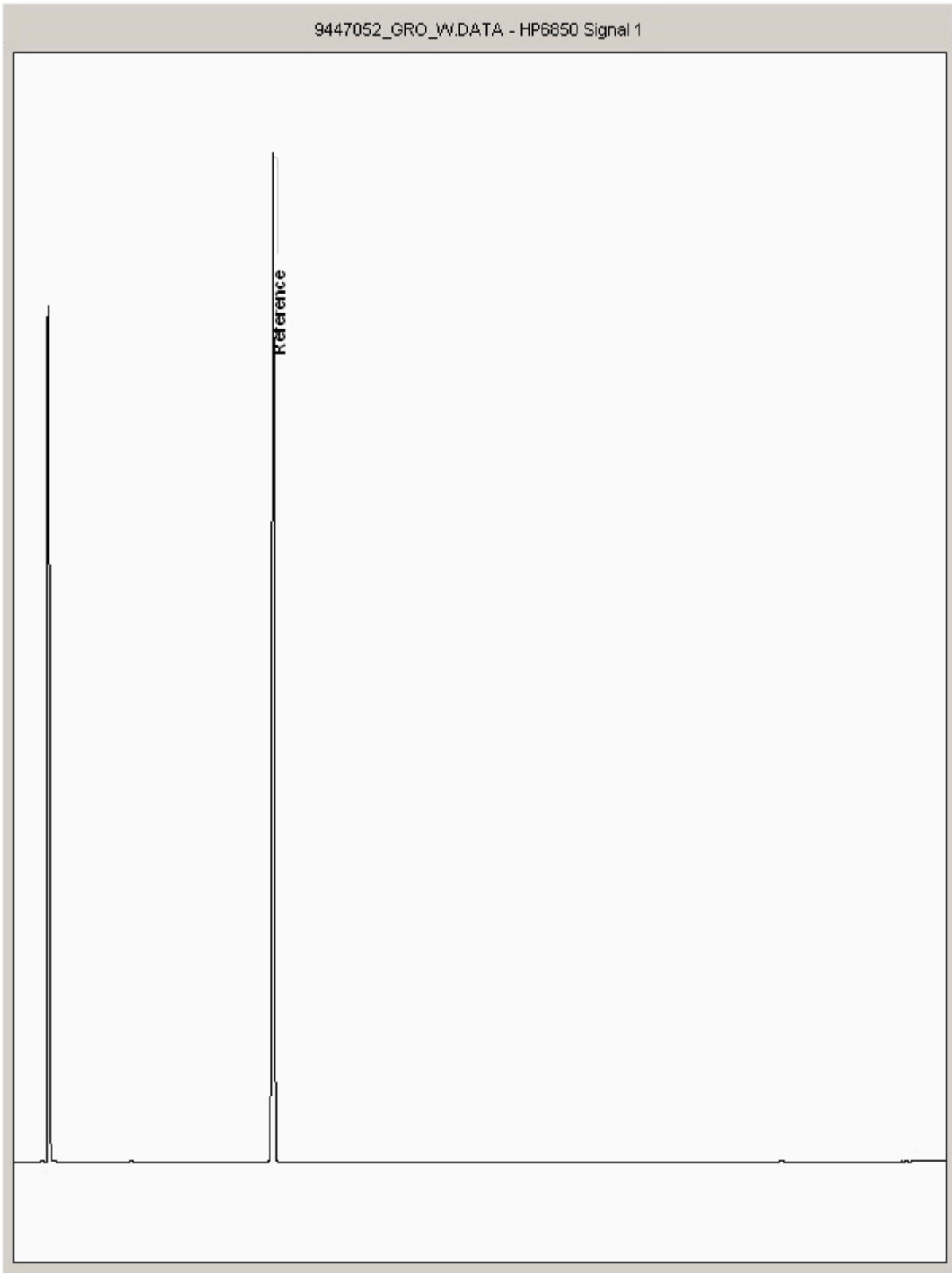
**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

### Chromatogram

**Analysis:** GRO by GC-FID (W)

**Sample No :** 9447052  
**Sample ID :** CGBH07

**Depth :**







SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

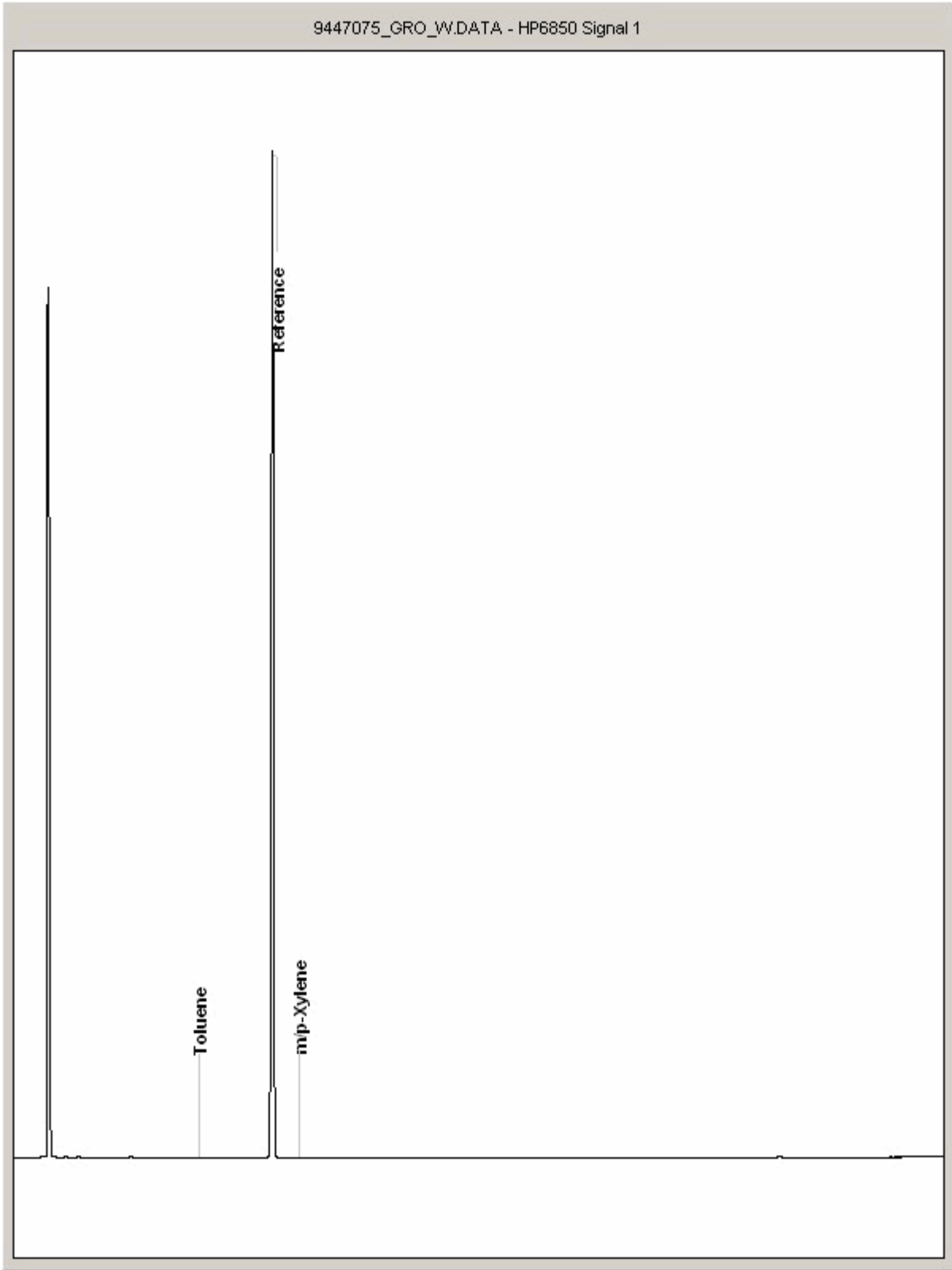
Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9447075  
Sample ID : CGSW04

Depth :





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

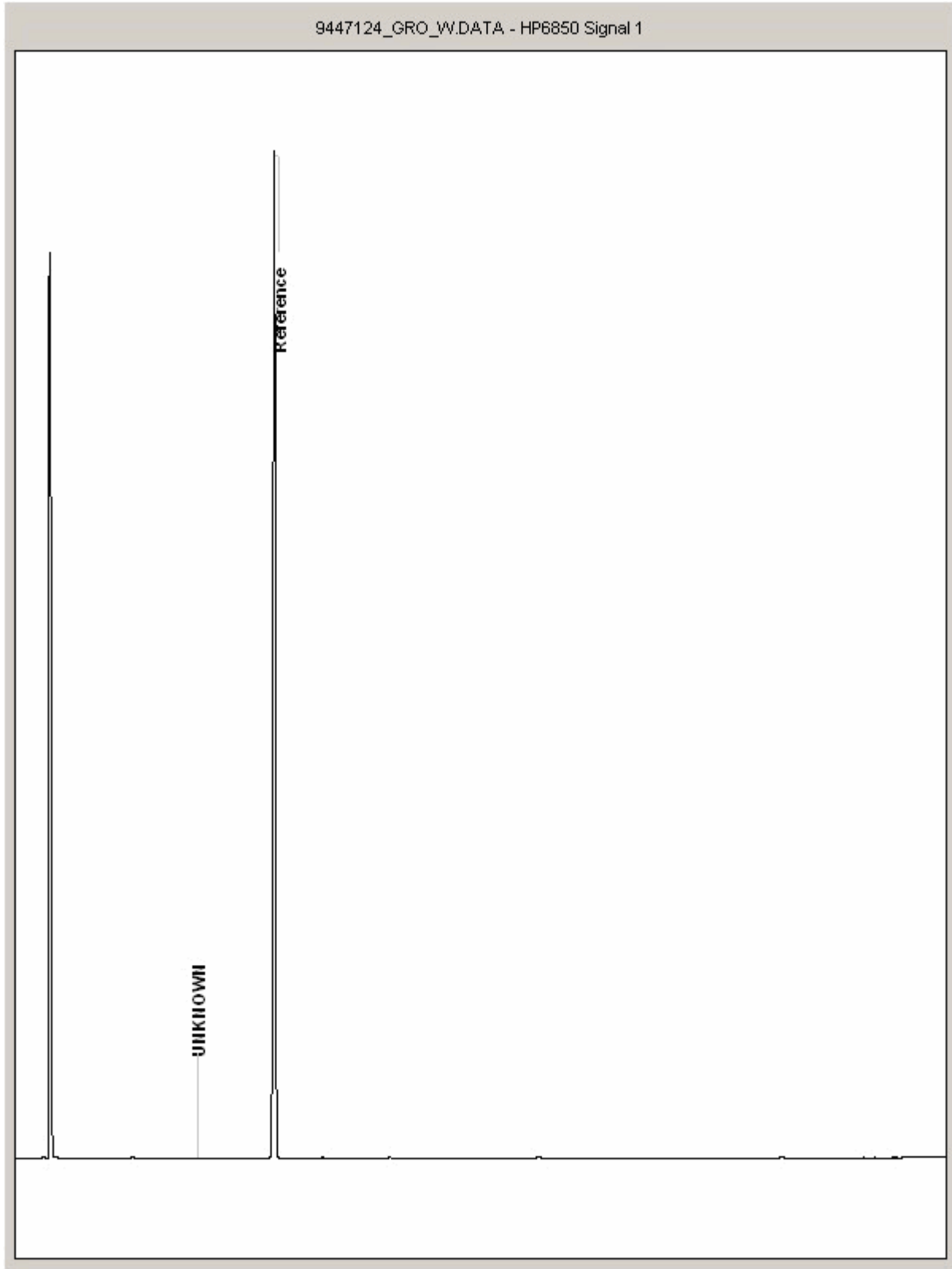
Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9447124  
Sample ID : CGSW02

Depth :





**SDG:** 140607-61  
**Job:** H\_RHASKON\_PT8-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

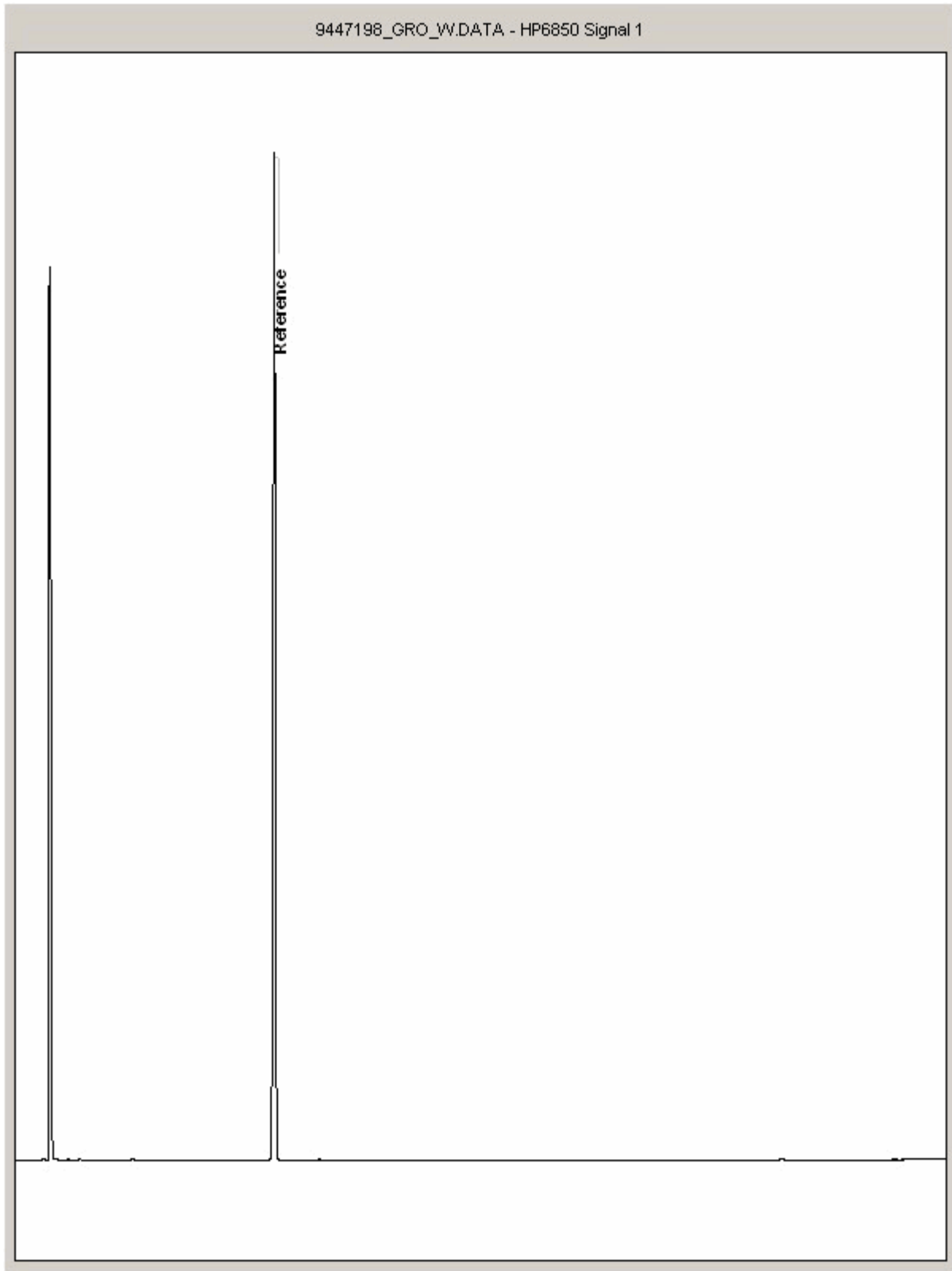
**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

### Chromatogram

**Analysis:** GRO by GC-FID (W)

**Sample No :** 9447198  
**Sample ID :** CGSW03

**Depth :**





SDG: 140607-61  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

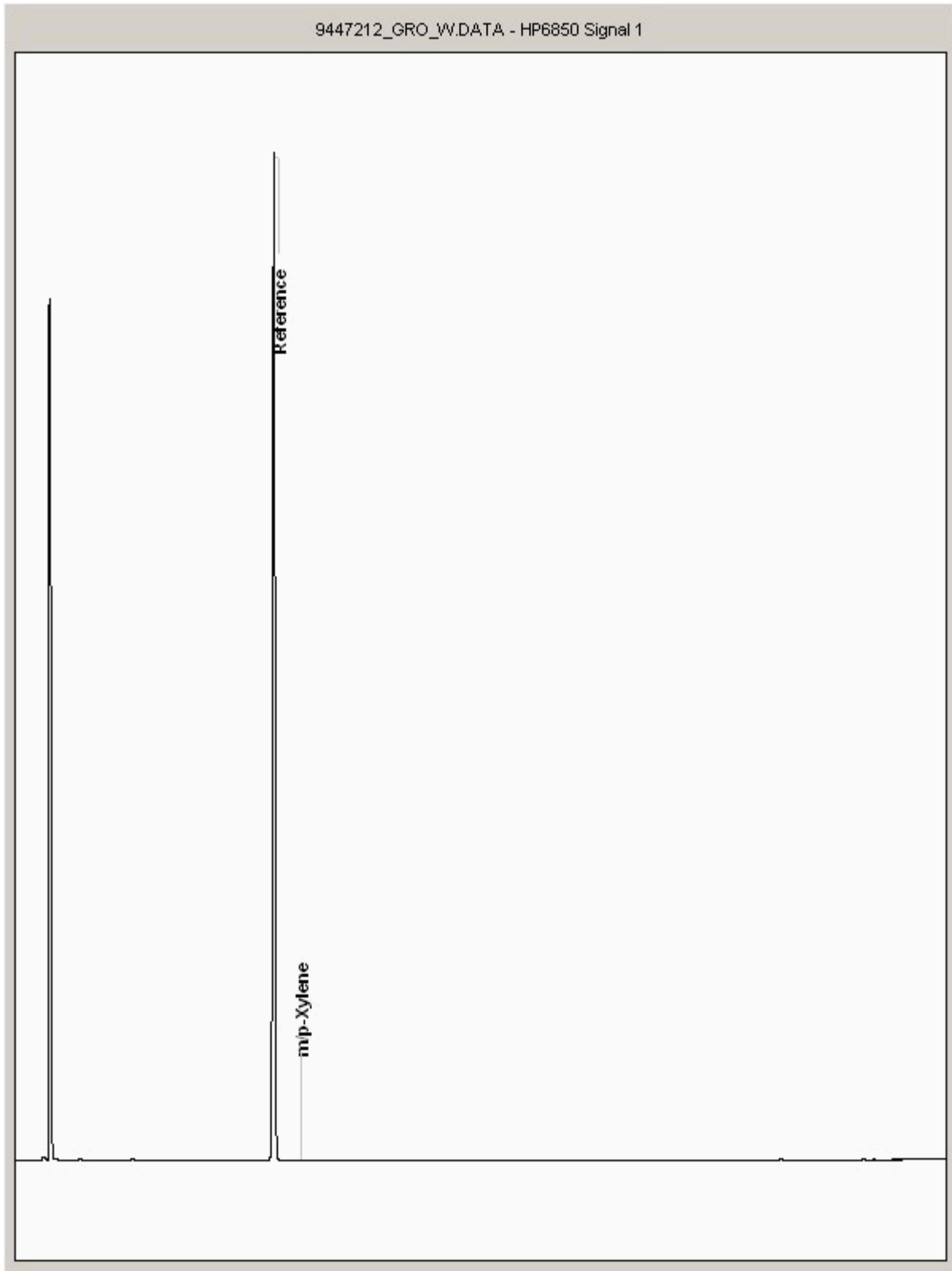
Order Number: 9Y0074 003 100  
Report Number: 273992  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9447212  
Sample ID : CGSW01

Depth :





**SDG:** 140607-61  
**Job:** H\_RHASKON\_PT8-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

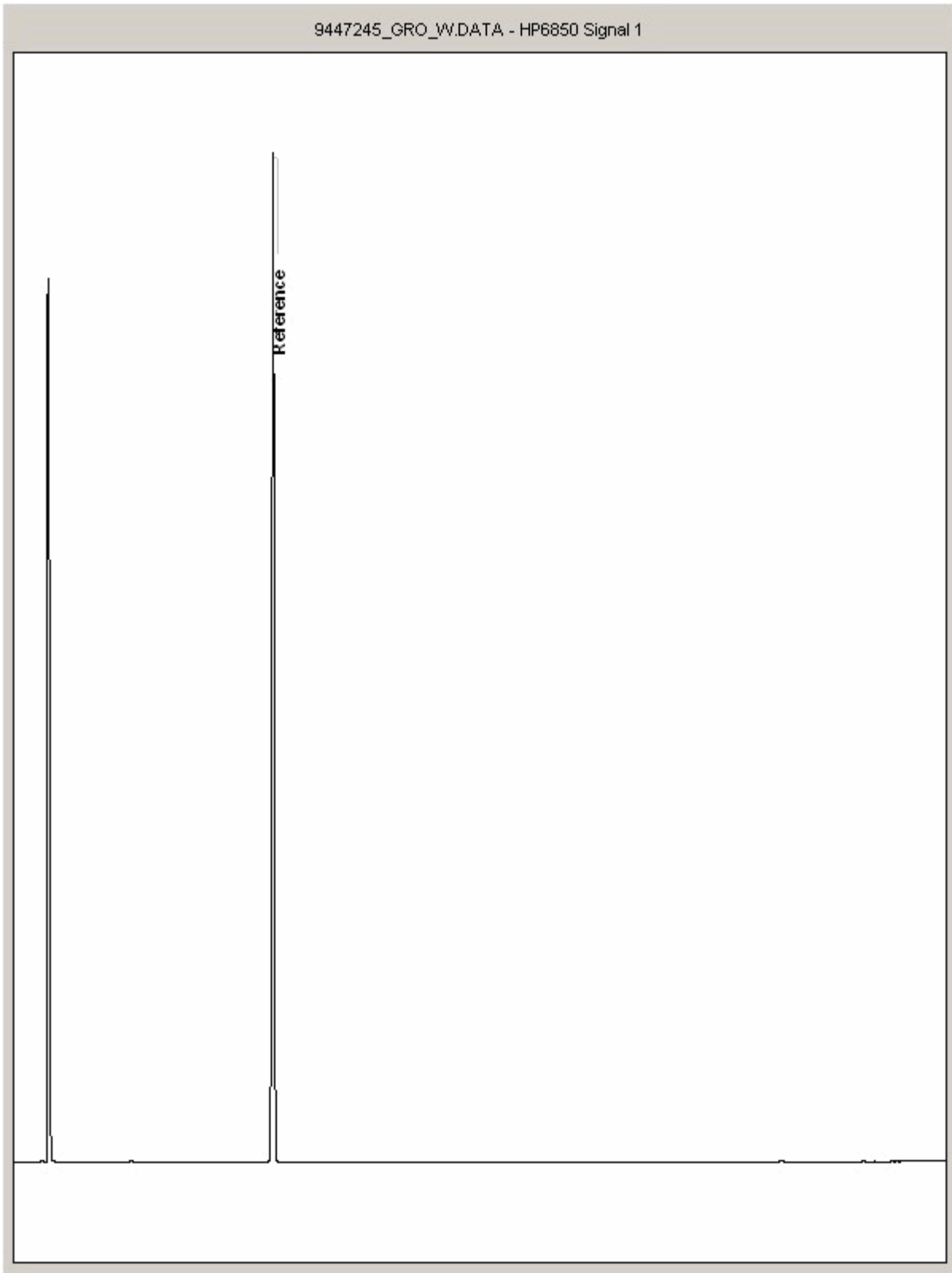
**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

### Chromatogram

**Analysis:** GRO by GC-FID (W)

**Sample No :** 9447245  
**Sample ID :** CGBH24

**Depth :**





**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**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 Leach tests, flash point, ammonium as NH<sub>4</sub> by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS 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 both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos 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 screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

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. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

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 Dimethylphenol, 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 14).

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

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene is only not accredited.

19. 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.

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

21. 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.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. 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.

24. 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 C4 -C10 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.

## SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTERM	GRAMMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTERM	GRAMMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTERM	IATROSCAN
ELEMENTAL SULPHUR	D&C	DOM	SOXTERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOXTERM	GCMS
HERBICIDES	D&C	HEXANEACETONE	SOXTERM	GCMS
PESTICIDES	D&C	HEXANEACETONE	SOXTERM	GCMS
EPH (DRO)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH (MINOL)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH (CLEANED UP)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH CWG BY GC	D&C	HEXANEACETONE	END OVEREND	GCFID
PCB TOT / PCB CON	D&C	HEXANEACETONE	END OVEREND	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM28.	GCMS
C8-C40 (C6C40) EZ FLASH	WET	HEXANEACETONE	SHAKER	GCEZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GCEZ
SEM VOLATILE ORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GCMS

## LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCFID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCFID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCFID
PCB 70 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST COPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	DOM	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

### Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing 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).

### 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 MDHS 100.

The identification of asbestos containing materials 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.

**SDG:** 140607-61  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273992  
**Superseded Report:**

## 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. 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 for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

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 Dimethylphenol, 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 all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

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.

## 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 preservation 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 Anthrophyllite	-
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.**