ALcontrol Laboratories

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

Royal Haskoning
Rightwell House
Bretton
Bretton
Peterborough
Cambridgeshire
PE3 8DW

Attention: Declan Fives

CERTIFICATE OF ANALYSIS

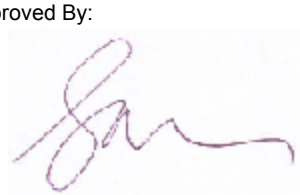
Date:	20 May 2014
Customer:	H_RHASKON_PTB
Sample Delivery Group (SDG):	140509-102
Your Reference:	9Y0074 103 100
Location:	Cole Green
Report No:	270594

We received 6 samples on Friday May 09, 2014 and 6 of these samples were scheduled for analysis which was completed on Tuesday May 20, 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

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
9260798	CGBH01		0.50	07/05/2014
9260800	CGBH01		1.00	07/05/2014
9260807	CGBH02		0.50	07/05/2014
9260808	CGBH02		1.50	07/05/2014
9260796	CGBH24		0.50	06/05/2014
9260797	CGBH24		2.00	06/05/2014

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

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

SOLID

Results Legend

X **Test**

N **No Determination Possible**

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
			9260798	CGBH01		0.50	1kg TUB
							250g Amber Jar (AL
							60g VOC (ALE215)
			9260800	CGBH01		1.00	1kg TUB
							250g Amber Jar (AL
			9260807	CGBH02		0.50	250g Amber Jar (AL
							60g VOC (ALE215)
			9260808	CGBH02		1.50	1kg TUB
							250g Amber Jar (AL
			9260796	CGBH24		0.50	1kg TUB
							250g Amber Jar (AL
							60g VOC (ALE215)
			9260797	CGBH24		2.00	1kg TUB
							250g Amber Jar (AL
							60g VOC (ALE215)
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X				
Boron Water Soluble	All	NDPs: 0 Tests: 6		X		X	X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4		X		X	X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4		X		X	X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 6		X		X	X
PAH by GCMS	All	NDPs: 0 Tests: 6		X		X	X
pH	All	NDPs: 0 Tests: 4			X		
Sample description	All	NDPs: 0 Tests: 6		X		X	X
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 4		X		X	X
Total Organic Carbon	All	NDPs: 0 Tests: 4		X		X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 4		X		X	X
VOC MS (S)	All	NDPs: 0 Tests: 4			X		X

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**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
9260798	CGBH01	0.50	Dark Brown	Silty Clay	0.063 - 0.1 mm	None	None
9260800	CGBH01	1.00	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	None	None
9260807	CGBH02	0.50	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	None	None
9260808	CGBH02	1.50	Dark Brown	Sandy Clay	0.1 - 2 mm	Vegetation	Stones
9260796	CGBH24	0.50	Light Brown	Sandy Clay Loam	0.1 - 2 mm	None	None
9260797	CGBH24	2.00	Light Brown	Sandy Clay Loam	0.1 - 2 mm	None	None

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.

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

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 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 R	CGBH01	CGBH01	CGBH02	CGBH02	CGBH24	CGBH24
			Depth (m)	0.50	1.00	0.50	1.50	0.50	2.00
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	07/05/2014	07/05/2014	07/05/2014	07/05/2014	06/05/2014	06/05/2014
			Sampled Time	.	.	.	.	.	.
			Date Received	09/05/2014	09/05/2014	09/05/2014	09/05/2014	09/05/2014	09/05/2014
			SDG Ref	140509-102	140509-102	140509-102	140509-102	140509-102	140509-102
			Lab Sample No.(s)	9260798	9260800	9260807	9260808	9260796	9260797
			AGS Reference						
Moisture Content Ratio	%	PM024		13	14	13	16	15	18
Organic Carbon, Total	<0.2 %	TM132			0.263 M		0.457 M	0.22 M	<0.2 M
pH	1 pH Units	TM133			7.34 M		8.3 M	7.26 M	8.42 M
Arsenic	<0.6 mg/kg	TM181		13.2 M	15.1 M	14.6 M	25.4 M	14.5 M	7.18 M
Barium	<0.6 mg/kg	TM181		39 #	34.5 #	62.3 #	87.2 #	36.5 #	20 #
Beryllium	<0.01 mg/kg	TM181		1.39 M	0.909 M	0.652 M	0.942 M	0.804 M	0.524 M
Cadmium	<0.02 mg/kg	TM181		0.173 M	0.357 M	0.673 M	0.489 M	0.285 M	0.222 M
Chromium	<0.9 mg/kg	TM181		32.2 M	27.7 M	23.8 M	27.1 M	25.3 M	14.4 M
Copper	<1.4 mg/kg	TM181		22.2 M	16.3 M	18.1 M	12.6 M	13.8 M	9.46 M
Lead	<0.7 mg/kg	TM181		22.1 M	18.1 M	16.7 M	17.7 M	14.5 M	9.43 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		50 M	37.6 M	20.2 M	29.6 M	25.4 M	16.3 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		48 #	48.7 #	37.2 #	48.1 #	45.1 #	25.8 #
Zinc	<1.9 mg/kg	TM181		88.9 M	87.9 M	123 M	84.3 M	70.4 M	40.4 M
Boron, water soluble	<1 mg/kg	TM222		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M

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SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

PAH by GCMS

Results Legend

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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 R	CGBH01	CGBH01	CGBH02	CGBH02	CGBH24	CGBH24
			Depth (m)	0.50	1.00	0.50	1.50	0.50	2.00
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	07/05/2014	07/05/2014	07/05/2014	07/05/2014	06/05/2014	06/05/2014
			Sampled Time	.	.	.	.	.	.
			Date Received	09/05/2014	09/05/2014	09/05/2014	09/05/2014	09/05/2014	09/05/2014
			SDG Ref	140509-102	140509-102	140509-102	140509-102	140509-102	140509-102
			Lab Sample No.(s)	9260798	9260800	9260807	9260808	9260796	9260797
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		96.2	102	103	102	93.7	97
Acenaphthene-d10 % recovery**	%	TM218		93.4	101	102	102	88.6	92.5
Phenanthrene-d10 % recovery**	%	TM218		90.4	99.6	101	101	87.1	90.6
Chrysene-d12 % recovery**	%	TM218		83.6	89.3	94.8	93.1	83.4	89.1
Perylene-d12 % recovery**	%	TM218		94.7	82.3	93.1	91.7	69.1	76.3
Naphthalene	<9 µg/kg	TM218		<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	<8 M	<8 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218		<15 M	<15 M	<15 M	<15 M	<15 M	<15 M
Anthracene	<16 µg/kg	TM218		<16 M	<16 M	<16 M	<16 M	<16 M	<16 M
Fluoranthene	<17 µg/kg	TM218		<17 M	<17 M	<17 M	<17 M	<17 M	<17 M
Pyrene	<15 µg/kg	TM218		<15 M	<15 M	<15 M	<15 M	<15 M	<15 M
Benz(a)anthracene	<14 µg/kg	TM218		<14 M	<14 M	<14 M	<14 M	<14 M	<14 M
Chrysene	<10 µg/kg	TM218		<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		<15 M	<15 M	<15 M	<15 M	<15 M	<15 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<14 M	<14 M	<14 M	<14 M	<14 M	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218		<15 M	<15 M	<15 M	<15 M	<15 M	<15 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<18 M	<18 M	<18 M	<18 M	<18 M	<18 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	<23 M	<23 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<24 M	<24 M	<24 M	<24 M	<24 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		<118	<118	<118	<118	<118	<118

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Semi Volatile Organic Compounds

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 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 R	CGBH01	CGBH02	CGBH24	CGBH24		
			Depth (m)	0.50	0.50	0.50	2.00		
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
			Date Sampled	07/05/2014	07/05/2014	06/05/2014	06/05/2014		
			Sampled Time	.	.	.	.		
			Date Received	09/05/2014	09/05/2014	09/05/2014	09/05/2014		
			SDG Ref	140509-102	140509-102	140509-102	140509-102		
			Lab Sample No.(s)	9260798	9260807	9260796	9260797		
			AGS Reference						
Phenol	<100 µg/kg	TM157		<100	<100	<100	<100		
Pentachlorophenol	<100 µg/kg	TM157		<100	<100	<100	<100		
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157		<100	<100	<100	<100		
Nitrobenzene	<100 µg/kg	TM157		<100	<100	<100	<100		
Isophorone	<100 µg/kg	TM157		<100	<100	<100	<100		
Hexachloroethane	<100 µg/kg	TM157		<100	<100	<100	<100		
Hexachlorocyclopentadiene	<100 µg/kg	TM157		<100	<100	<100	<100		
Hexachlorobutadiene	<100 µg/kg	TM157		<100	<100	<100	<100		
Hexachlorobenzene	<100 µg/kg	TM157		<100	<100	<100	<100		
n-Dioctyl phthalate	<100 µg/kg	TM157		<100	<100	<100	<100		
Dimethyl phthalate	<100 µg/kg	TM157		<100	<100	<100	<100		
Diethyl phthalate	<100 µg/kg	TM157		<100	<100	<100	<100		
n-Dibutyl phthalate	<100 µg/kg	TM157		<100	<100	<100	<100		
Dibenzofuran	<100 µg/kg	TM157		<100	<100	<100	<100		
Carbazole	<100 µg/kg	TM157		<100	<100	<100	<100		
Butylbenzyl phthalate	<100 µg/kg	TM157		<100	<100	<100	<100		
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157		<100	<100	<100	<100		
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157		<100	<100	<100	<100		
bis(2-Chloroethyl)ether	<100 µg/kg	TM157		<100	<100	<100	<100		
Azobenzene	<100 µg/kg	TM157		<100	<100	<100	<100		
4-Nitrophenol	<100 µg/kg	TM157		<100	<100	<100	<100		
4-Nitroaniline	<100 µg/kg	TM157		<100	<100	<100	<100		
4-Methylphenol	<100 µg/kg	TM157		<100	<100	<100	<100		
4-Chlorophenylphenylether	<100 µg/kg	TM157		<100	<100	<100	<100		
4-Chloroaniline	<100 µg/kg	TM157		<100	<100	<100	<100		
4-Chloro-3-methylphenol	<100 µg/kg	TM157		<100	<100	<100	<100		
4-Bromophenylphenylether	<100 µg/kg	TM157		<100	<100	<100	<100		
3-Nitroaniline	<100 µg/kg	TM157		<100	<100	<100	<100		
2-Nitrophenol	<100 µg/kg	TM157		<100	<100	<100	<100		
2-Nitroaniline	<100 µg/kg	TM157		<100	<100	<100	<100		
2-Methylphenol	<100 µg/kg	TM157		<100	<100	<100	<100		
1,2,4-Trichlorobenzene	<100 µg/kg	TM157		<100	<100	<100	<100		

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Semi Volatile Organic Compounds

Results Legend

#	ISO17025 accredited.
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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 R	CGBH01	CGBH02	CGBH24	CGBH24		
			Depth (m)	0.50	0.50	0.50	2.00		
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
			Date Sampled	07/05/2014	07/05/2014	06/05/2014	06/05/2014		
			Sampled Time	.	.	.	.		
			Date Received	09/05/2014	09/05/2014	09/05/2014	09/05/2014		
			SDG Ref	140509-102	140509-102	140509-102	140509-102		
			Lab Sample No.(s)	9260798	9260807	9260796	9260797		
			AGS Reference						
2-Chlorophenol	<100 µg/kg	TM157		<100	<100	<100	<100		
2,6-Dinitrotoluene	<100 µg/kg	TM157		<100	<100	<100	<100		
2,4-Dinitrotoluene	<100 µg/kg	TM157		<100	<100	<100	<100		
2,4-Dimethylphenol	<100 µg/kg	TM157		<100	<100	<100	<100		
2,4-Dichlorophenol	<100 µg/kg	TM157		<100	<100	<100	<100		
2,4,6-Trichlorophenol	<100 µg/kg	TM157		<100	<100	<100	<100		
2,4,5-Trichlorophenol	<100 µg/kg	TM157		<100	<100	<100	<100		
1,4-Dichlorobenzene	<100 µg/kg	TM157		<100	<100	<100	<100		
1,3-Dichlorobenzene	<100 µg/kg	TM157		<100	<100	<100	<100		
1,2-Dichlorobenzene	<100 µg/kg	TM157		<100	<100	<100	<100		
2-Chloronaphthalene	<100 µg/kg	TM157		<100	<100	<100	<100		
2-Methylnaphthalene	<100 µg/kg	TM157		<100	<100	<100	<100		
Benzo(a)anthracene	<100 µg/kg	TM157		<100	<100	<100	<100		
Chrysene	<100 µg/kg	TM157		<100	<100	<100	<100		
Naphthalene	<100 µg/kg	TM157		<100	<100	<100	<100		

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

TPH CWG (S)

Results Legend

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Component	LOD/Units	Method	Customer Sample R	CGBH01	CGBH02	CGBH24	CGBH24		
			Depth (m)	0.50	0.50	0.50	2.00		
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
			Date Sampled	07/05/2014	07/05/2014	06/05/2014	06/05/2014		
			Sampled Time	.	.	.	.		
			Date Received	09/05/2014	09/05/2014	09/05/2014	09/05/2014		
			SDG Ref	140509-102	140509-102	140509-102	140509-102		
			Lab Sample No.(s)	9260798	9260807	9260796	9260797		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		120	116	114	123		
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089		<44 M	<44 M	<44 M	<44 M		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089		<5 M	<5 M	<5 M	<5 M		
Benzene	<10 µg/kg	TM089		<10 M	<10 M	<10 M	<10 M		
Toluene	<2 µg/kg	TM089		<2 M	<2 M	<2 M	<2 M		
Ethylbenzene	<3 µg/kg	TM089		<3 M	<3 M	<3 M	<3 M		
m,p-Xylene	<6 µg/kg	TM089		<6 M	<6 M	<6 M	<6 M		
o-Xylene	<3 µg/kg	TM089		<3 M	<3 M	<3 M	<3 M		
sum of detected mpo xylene by GC	<9 µg/kg	TM089		<9	<9	<9	<9		
sum of detected BTEX by GC	<24 µg/kg	TM089		<24	<24	<24	<24		
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10		
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10		
Aliphatics >C10-C12	<10 µg/kg	TM089		<10	<10	<10	<10		
Aliphatics >C12-C16	<100 µg/kg	TM173		<100	<100	640	215		
Aliphatics >C16-C21	<100 µg/kg	TM173		<100	<100	825	<100		
Aliphatics >C21-C35	<100 µg/kg	TM173		<100	<100	780	1910		
Aliphatics >C35-C44	<100 µg/kg	TM173		<100	<100	6120	13700		
Total Aliphatics >C12-C44	<100 µg/kg	TM173		<100	<100	8360	15900		
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10		
Aromatics >EC10-EC12	<10 µg/kg	TM089		<10	<10	<10	<10		
Aromatics >EC12-EC16	<100 µg/kg	TM173		<100	<100	179000	249		
Aromatics >EC16-EC21	<100 µg/kg	TM173		<100	<100	<100	<100		
Aromatics >EC21-EC35	<100 µg/kg	TM173		<100	<100	<100	1030		
Aromatics >EC35-EC44	<100 µg/kg	TM173		<100	<100	4390	11000		
Aromatics >EC40-EC44	<100 µg/kg	TM173		<100	<100	2820	6200		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173		<100	<100	184000	12300		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173		<100	<100	192000	28100		

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

VOC MS (S)

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 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 R	CGBH01	CGBH02	CGBH24	CGBH24		
			Depth (m)	0.50	0.50	0.50	2.00		
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
			Date Sampled	07/05/2014	07/05/2014	06/05/2014	06/05/2014		
			Sampled Time	.	.	.	.		
			Date Received	09/05/2014	09/05/2014	09/05/2014	09/05/2014		
			SDG Ref	140509-102	140509-102	140509-102	140509-102		
			Lab Sample No.(s)	9260798	9260807	9260796	9260797		
			AGS Reference						
Dibromofluoromethane**	%	TM116		100	99.2	97.1	25.5		
Toluene-d8**	%	TM116		101	101	99.4	99.6		
4-Bromofluorobenzene**	%	TM116		99.6	102	101	97.6		
Dichlorodifluoromethane	<13 µg/kg	TM116		<4 #	<4 #	<4 #	<4 #		
Chloromethane	<12 µg/kg	TM116		<7	<7	<7	<7		
Vinyl Chloride	<10 µg/kg	TM116		<10	<10	<10	<10		
Bromomethane	<9 µg/kg	TM116		<13 #	<13 #	<13 #	<13 #		
Chloroethane	<12 µg/kg	TM116		<14 M	<14 M	<14 M	<14 M		
Trichlorofluorormethane	<7 µg/kg	TM116		<6 #	<6 #	<6 #	<6 #		
1,1-Dichloroethene	<9 µg/kg	TM116		<10 M	<10 M	<10 M	<10 M		
Carbon Disulphide	<9 µg/kg	TM116		<7 M	<7 M	<7 M	<7 M		
Dichloromethane	<10 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #		
Methyl Tertiary Butyl Ether	<9 µg/kg	TM116		<11	<11	<11	<11		
trans-1,2-Dichloroethene	<12 µg/kg	TM116		<11 #	<11 #	<11 #	<11 #		
1,1-Dichloroethane	<8 µg/kg	TM116		<8 M	<8 M	<8 M	<8 M		
cis-1,2-Dichloroethene	<9 µg/kg	TM116		<5 M	<5 M	<5 M	<5 M		
2,2-Dichloropropane	<10 µg/kg	TM116		<12	<12	<12	<12		
Bromochloromethane	<10 µg/kg	TM116		<14 #	<14 #	<14 #	<14 #		
Chloroform	<10 µg/kg	TM116		<8 M	<8 M	<8 M	<8 M		
1,1,1-Trichloroethane	<12 µg/kg	TM116		<7 M	<7 M	<7 M	<7 M		
1,1-Dichloropropene	<13 µg/kg	TM116		<11 M	<11 M	<11 M	<11 M		
Carbontetrachloride	<11 µg/kg	TM116		<14 M	<14 M	<14 M	<14 M		
1,2-Dichloroethane	<10 µg/kg	TM116		<5 #	<5 #	<5 #	<5 #		
Benzene	<9 µg/kg	TM116		<9 M	<9 M	<9 M	<9 M		
Trichloroethene	<9 µg/kg	TM116		<9 M	<9 M	<9 M	<9 M		
1,2-Dichloropropane	<10 µg/kg	TM116		<12 M	<12 M	<12 M	<12 M		
Dibromomethane	<12 µg/kg	TM116		<9 #	<9 #	<9 #	<9 #		
Bromodichloromethane	<11 µg/kg	TM116		<7 M	<7 M	<7 M	<7 M		
cis-1,3-Dichloropropene	<25 µg/kg	TM116		<14	<14	<14	<14		
Toluene	<6 µg/kg	TM116		<5 M	<5 M	<5 M	<5 M		
trans-1,3-Dichloropropene	<27 µg/kg	TM116		<100	<100	<100	<100		
1,1,2-Trichloroethane	<9 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #		

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

VOC MS (S)

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 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 R	CGBH01	CGBH02	CGBH24	CGBH24		
			Depth (m)	0.50	0.50	0.50	2.00		
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
			Date Sampled	07/05/2014	07/05/2014	06/05/2014	06/05/2014		
			Sampled Time	.	.	.	.		
			Date Received	09/05/2014	09/05/2014	09/05/2014	09/05/2014		
			SDG Ref	140509-102	140509-102	140509-102	140509-102		
			Lab Sample No.(s)	9260798	9260807	9260796	9260797		
			AGS Reference						
1,3-Dichloropropane	<7 µg/kg	TM116		<7 #	<7 #	<7 #	<7 #		
Tetrachloroethene	<9 µg/kg	TM116		<5 #	<5 #	<5 #	<5 #		
Dibromochloromethane	<9 µg/kg	TM116		<13 #	<13 #	<13 #	<13 #		
1,2-Dibromoethane	<14 µg/kg	TM116		<12 #	<12 #	<12 #	<12 #		
Chlorobenzene	<7 µg/kg	TM116		<5 M	<5 M	<5 M	<5 M		
1,1,1,2-Tetrachloroethane	<11 µg/kg	TM116		<10 M	<10 M	<10 M	<10 M		
Ethylbenzene	<9 µg/kg	TM116		<4 #	<4 #	<4 #	<4 #		
p/m-Xylene	<13 µg/kg	TM116		<14 #	<14 #	<14 #	<14 #		
o-Xylene	<11 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #		
Styrene	<11 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #		
Bromoform	<12 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #		
Isopropylbenzene	<9 µg/kg	TM116		<5 #	<5 #	<5 #	<5 #		
1,1,2,2-Tetrachloroethane	<15 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #		
1,2,3-Trichloropropane	<13 µg/kg	TM116		<17 #	<17 #	<17 #	<17 #		
Bromobenzene	<14 µg/kg	TM116		<10 M	<10 M	<10 M	<10 M		
Propylbenzene	<6 µg/kg	TM116		<11 #	<11 #	<11 #	<11 #		
2-Chlorotoluene	<14 µg/kg	TM116		<9 #	<9 #	<9 #	<9 #		
1,3,5-Trimethylbenzene	<8 µg/kg	TM116		<8 #	<8 #	<8 #	<8 #		
4-Chlorotoluene	<9 µg/kg	TM116		<12 #	<12 #	<12 #	<12 #		
tert-Butylbenzene	<12 µg/kg	TM116		<12 #	<12 #	<12 #	<12 #		
1,2,4-Trimethylbenzene	<10 µg/kg	TM116		<9 #	<9 #	<9 #	<9 #		
sec-Butylbenzene	<8 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #		
4-Isopropyltoluene	<8 µg/kg	TM116		<11 #	<11 #	<11 #	<11 #		
1,3-Dichlorobenzene	<8 µg/kg	TM116		<6 #	<6 #	<6 #	<6 #		
1,4-Dichlorobenzene	<11 µg/kg	TM116		<5 M	<5 M	<5 M	<5 M		
n-Butylbenzene	<7 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #		
1,2-Dichlorobenzene	<8 µg/kg	TM116		<12 M	<12 M	<12 M	<12 M		
1,2-Dibromo-3-chloropropane	<11 µg/kg	TM116		<14 #	<14 #	<14 #	<14 #		
Tert-amyl methyl ether	<7 µg/kg	TM116		<15	<15	<15	<15		
1,2,4-Trichlorobenzene	<9 µg/kg	TM116		<6 #	<6 #	<6 #	<6 #		
Hexachlorobutadiene	<15 µg/kg	TM116		<12	<12	<12	<12		
Naphthalene	<7 µg/kg	TM116		<13 #	<13 #	<13 #	<13 #		

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

VOC MS (S)

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 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 R	CGBH01	CGBH02	CGBH24	CGBH24		
			Depth (m)	0.50	0.50	0.50	2.00		
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
			Date Sampled	07/05/2014	07/05/2014	06/05/2014	06/05/2014		
			Sampled Time	.	.	.	.		
			Date Received	09/05/2014	09/05/2014	09/05/2014	09/05/2014		
			SDG Ref	140509-102	140509-102	140509-102	140509-102		
			Lab Sample No.(s)	9260798	9260807	9260796	9260797		
			AGS Reference						
1,2,3-Trichlorobenzene	<12 µg/kg	TM116		<6 #	<6 #	<6 #	<6 #		

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**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	CGBH01 0.50 SOLID 07/05/2014 00:00:00 140509-102 9260798 TM048	15/05/14	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
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		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		

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

CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	9260798	9260800	9260807	9260808	9260796	9260797
Customer Sample Ref.	CGBH01	CGBH01	CGBH02	CGBH02	CGBH24	CGBH24
AGS Ref.						
Depth	0.50	1.00	0.50	1.50	0.50	2.00
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	15-May-2014					
Boron Water Soluble	15-May-2014	14-May-2014	14-May-2014	14-May-2014	15-May-2014	15-May-2014
EPH CWG (Aliphatic) GC (S)	14-May-2014		15-May-2014		14-May-2014	14-May-2014
EPH CWG (Aromatic) GC (S)	14-May-2014		15-May-2014		14-May-2014	14-May-2014
GRO by GC-FID (S)	14-May-2014		14-May-2014		14-May-2014	14-May-2014
Metals in solid samples by OES	20-May-2014	14-May-2014	14-May-2014	14-May-2014	15-May-2014	15-May-2014
PAH by GCMS	14-May-2014	14-May-2014	14-May-2014	14-May-2014	14-May-2014	14-May-2014
pH		13-May-2014		13-May-2014	13-May-2014	13-May-2014
Sample description	12-May-2014	12-May-2014	12-May-2014	12-May-2014	12-May-2014	12-May-2014
Semi Volatile Organic Compounds	16-May-2014		16-May-2014		16-May-2014	16-May-2014
Total Organic Carbon		15-May-2014		15-May-2014	15-May-2014	15-May-2014
TPH CWG GC (S)	14-May-2014		15-May-2014		14-May-2014	14-May-2014
VOC MS (S)	14-May-2014		14-May-2014		14-May-2014	15-May-2014

CERTIFICATE OF ANALYSIS

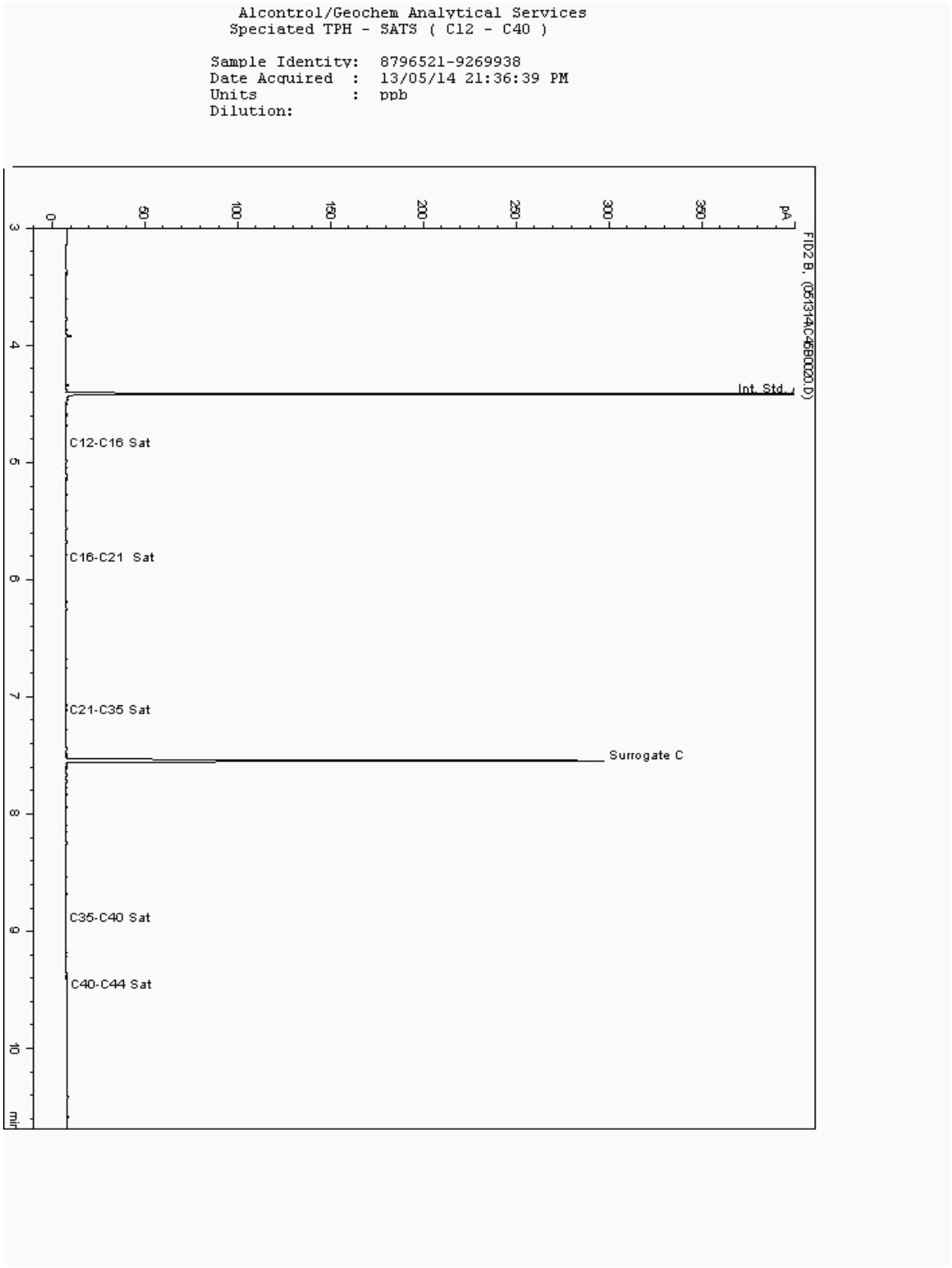
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 9269938
Sample ID : CGBH01

Depth : 0.50



CERTIFICATE OF ANALYSIS

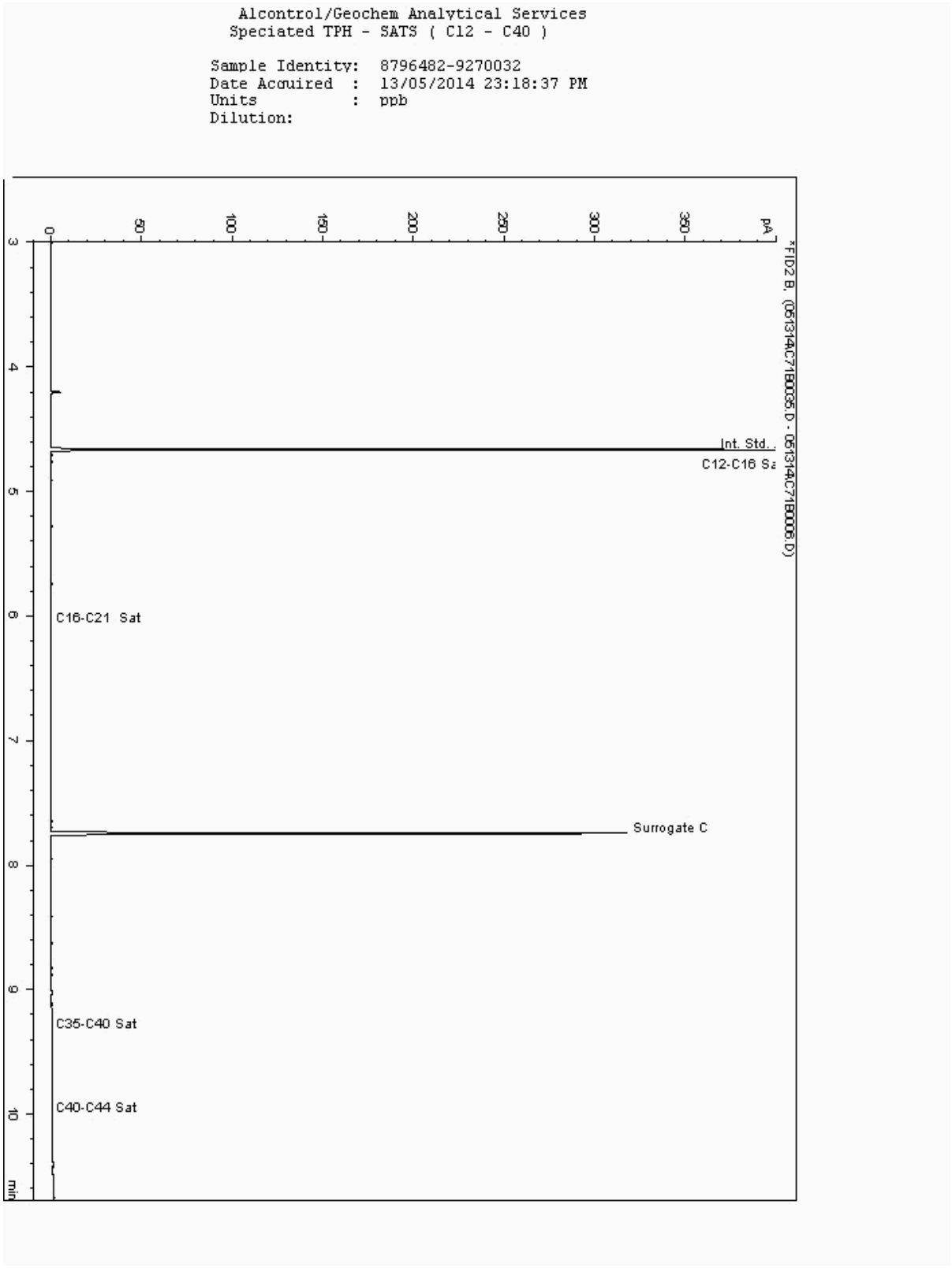
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 9270032
Sample ID : CGBH24

Depth : 2.00



CERTIFICATE OF ANALYSIS

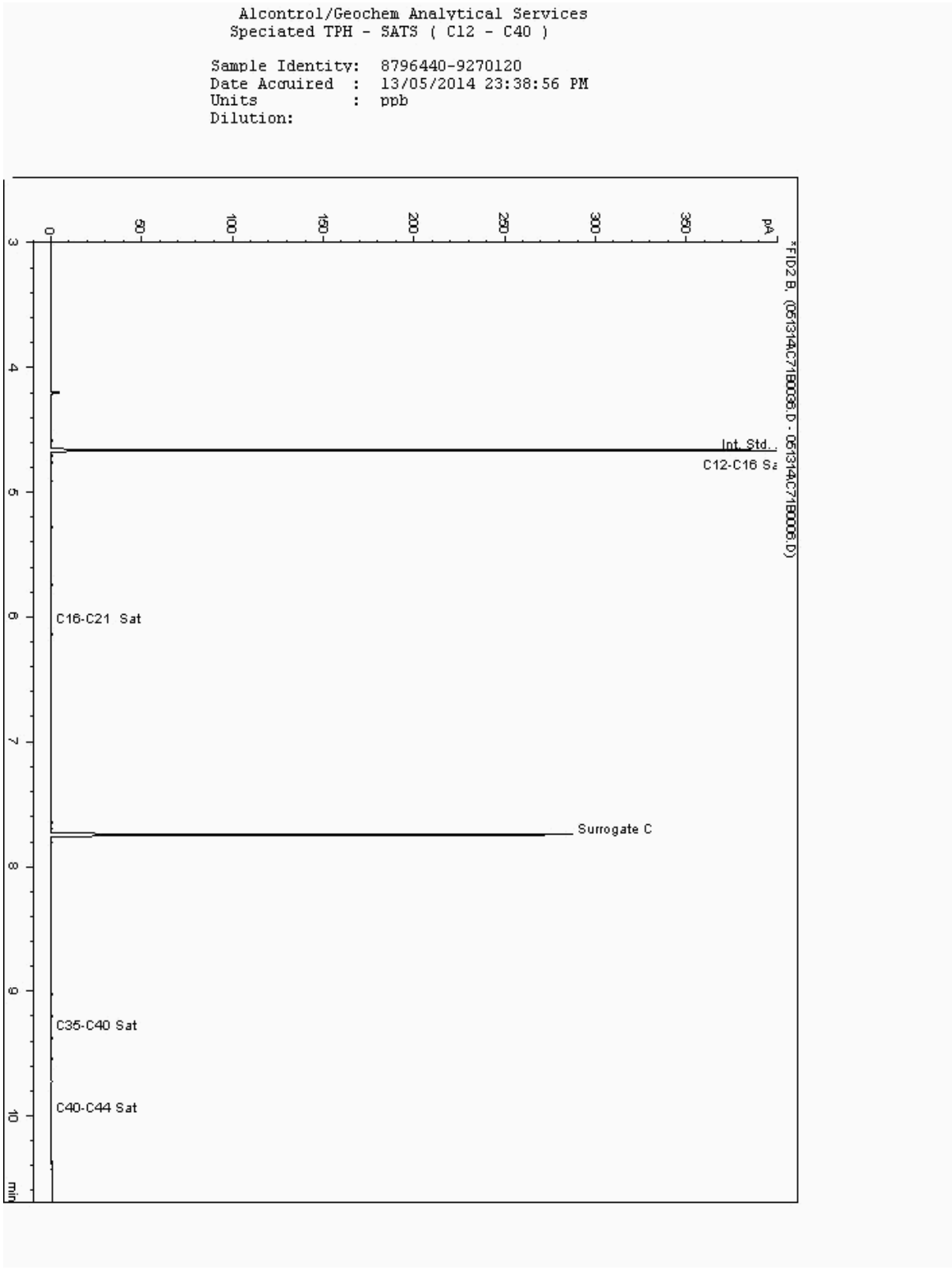
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 9270120
Sample ID : CGBH24

Depth : 0.50



CERTIFICATE OF ANALYSIS

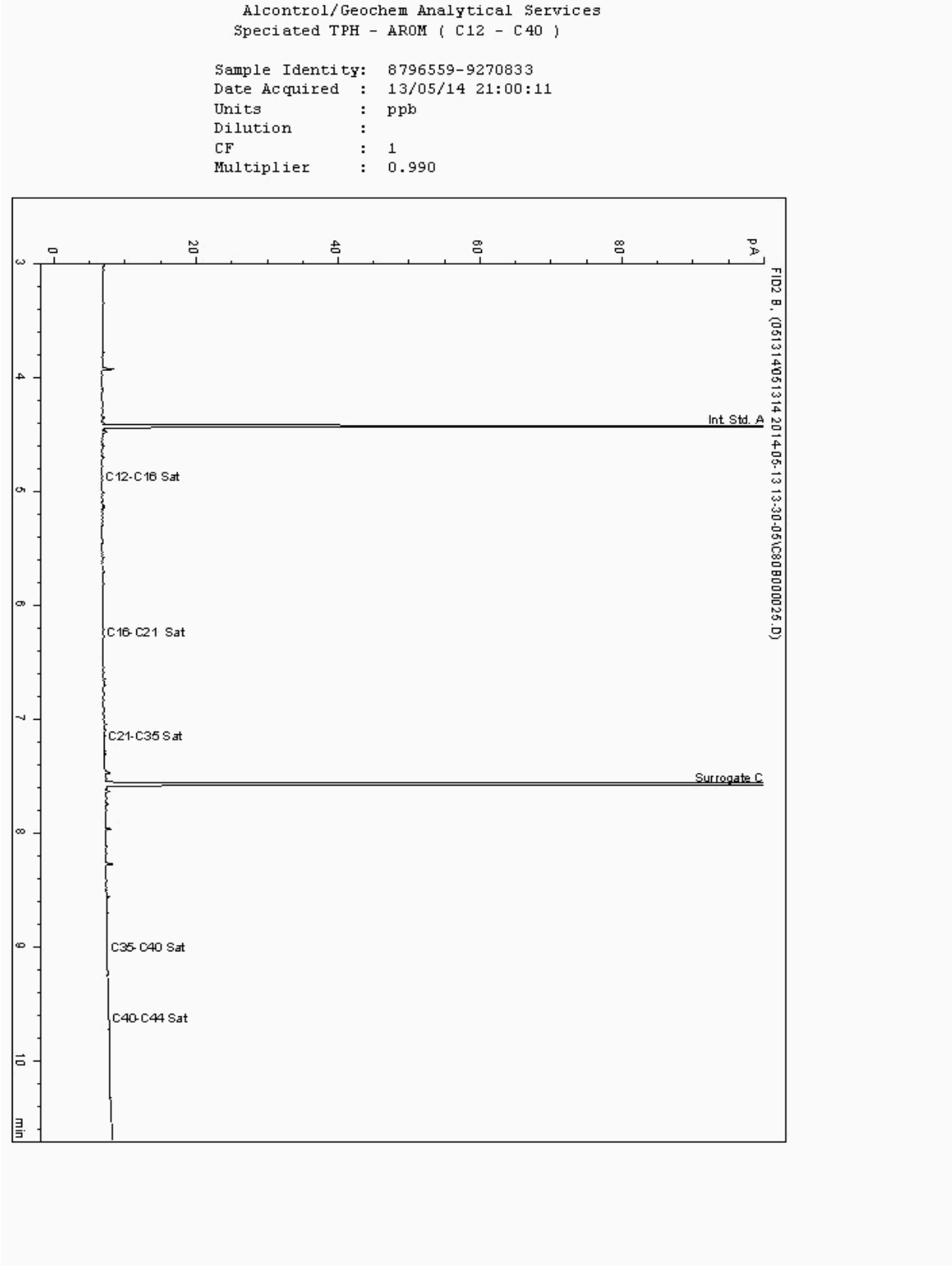
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 9270833
Sample ID : CGBH02

Depth : 0.50



CERTIFICATE OF ANALYSIS

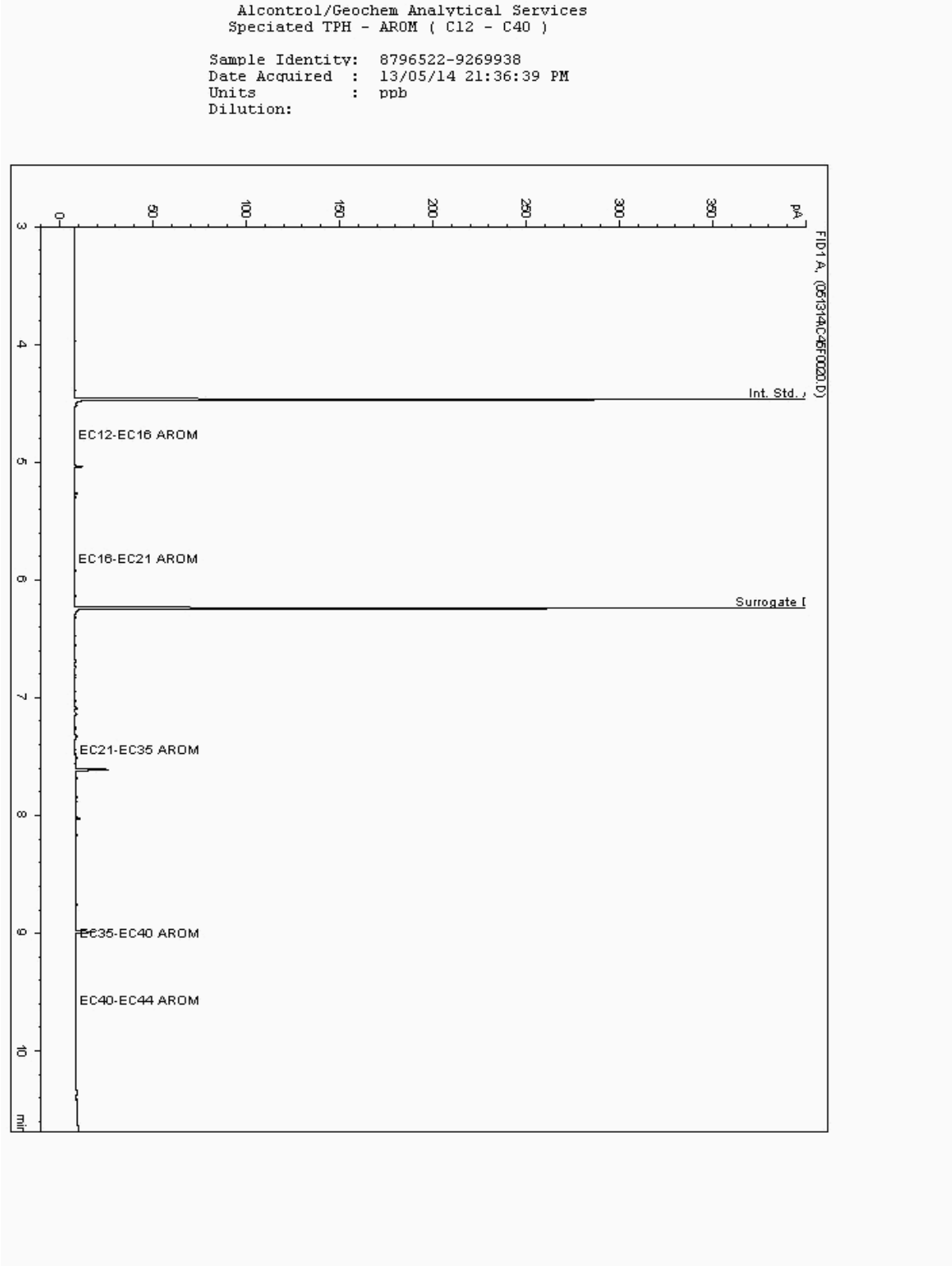
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 9269938
Sample ID : CGBH01

Depth : 0.50



CERTIFICATE OF ANALYSIS

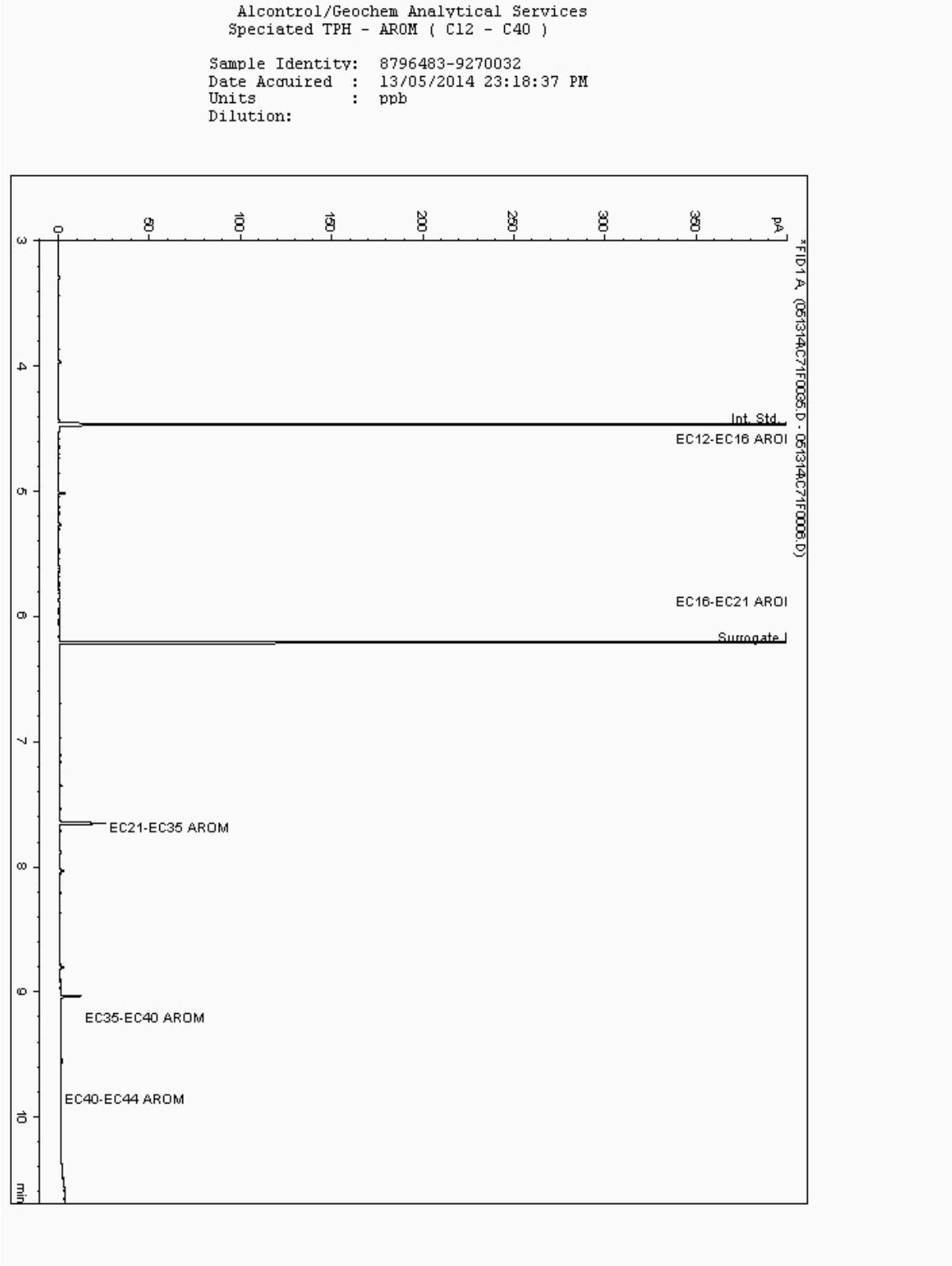
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 9270032
Sample ID : CGBH24

Depth : 2.00



CERTIFICATE OF ANALYSIS

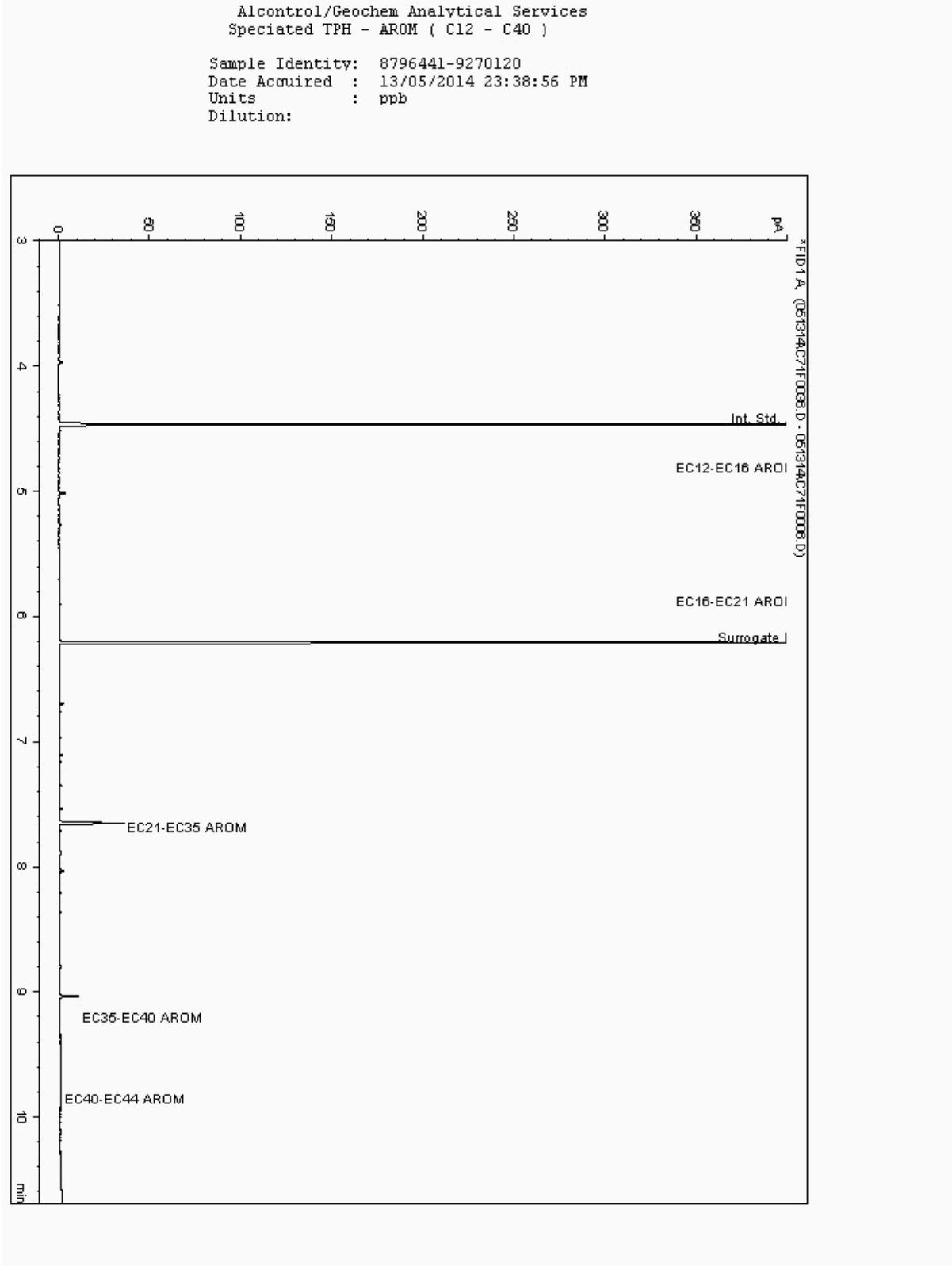
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 9270120
Sample ID : CGBH24

Depth : 0.50



CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

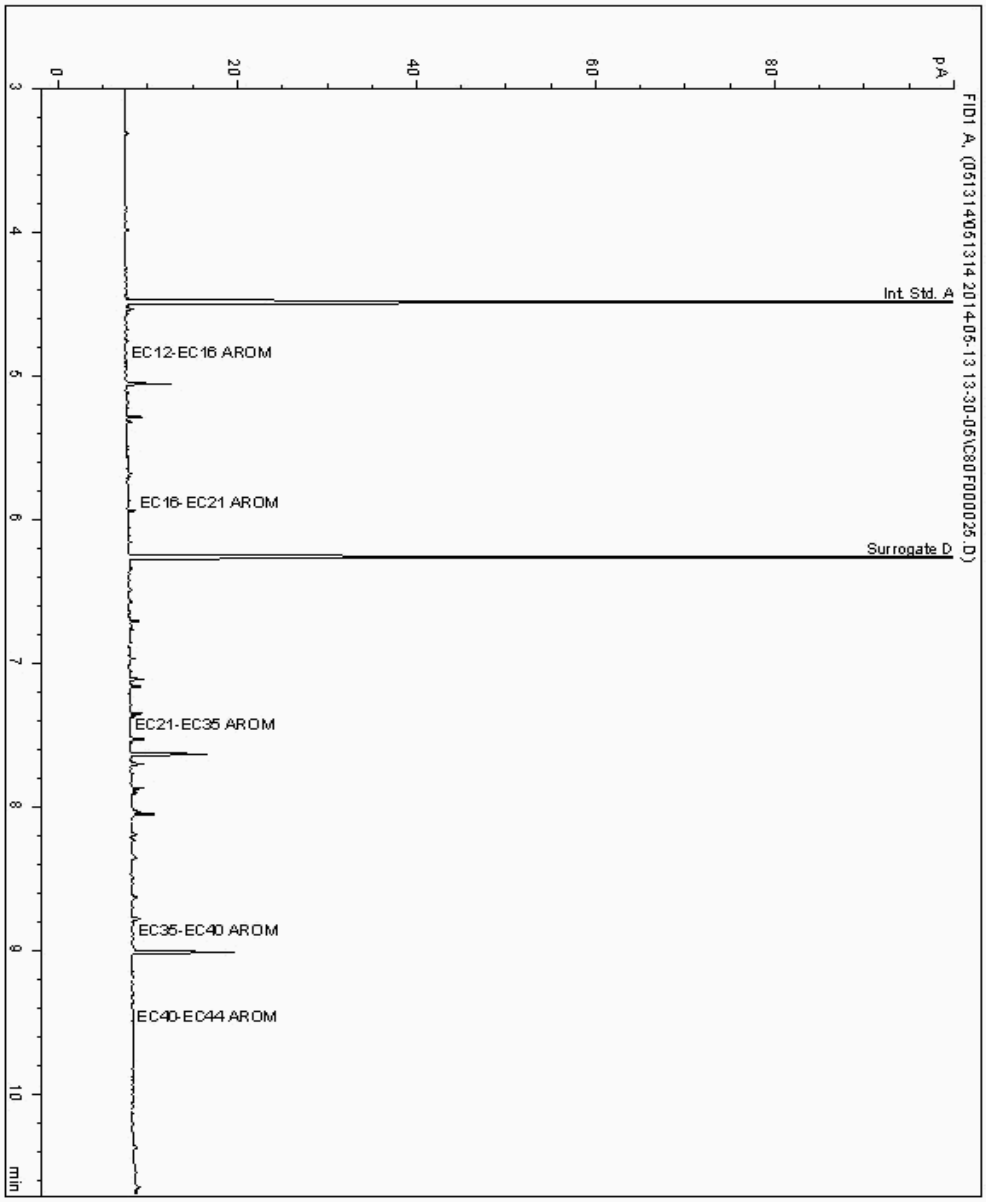
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 9270833
Sample ID : CGBH02

Depth : 0.50

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

Sample Identity: 8796560-9270833
Date Acquired : 13/05/14 21:00:11
Units : ppb
Dilution :
CF : 1
Multiplier : 0.990



CERTIFICATE OF ANALYSIS

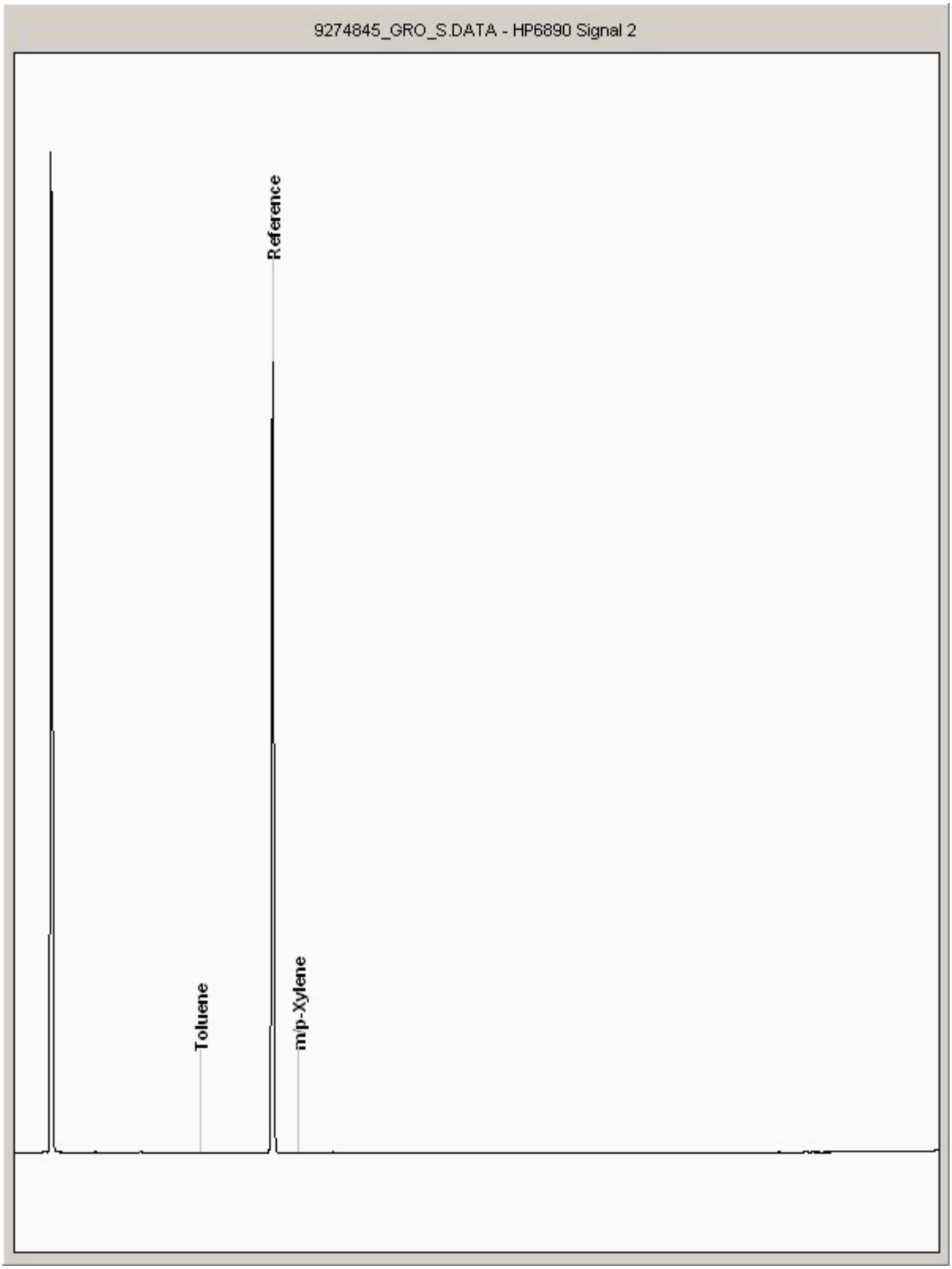
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 9274845
Sample ID : CGBH01

Depth : 0.50



CERTIFICATE OF ANALYSIS

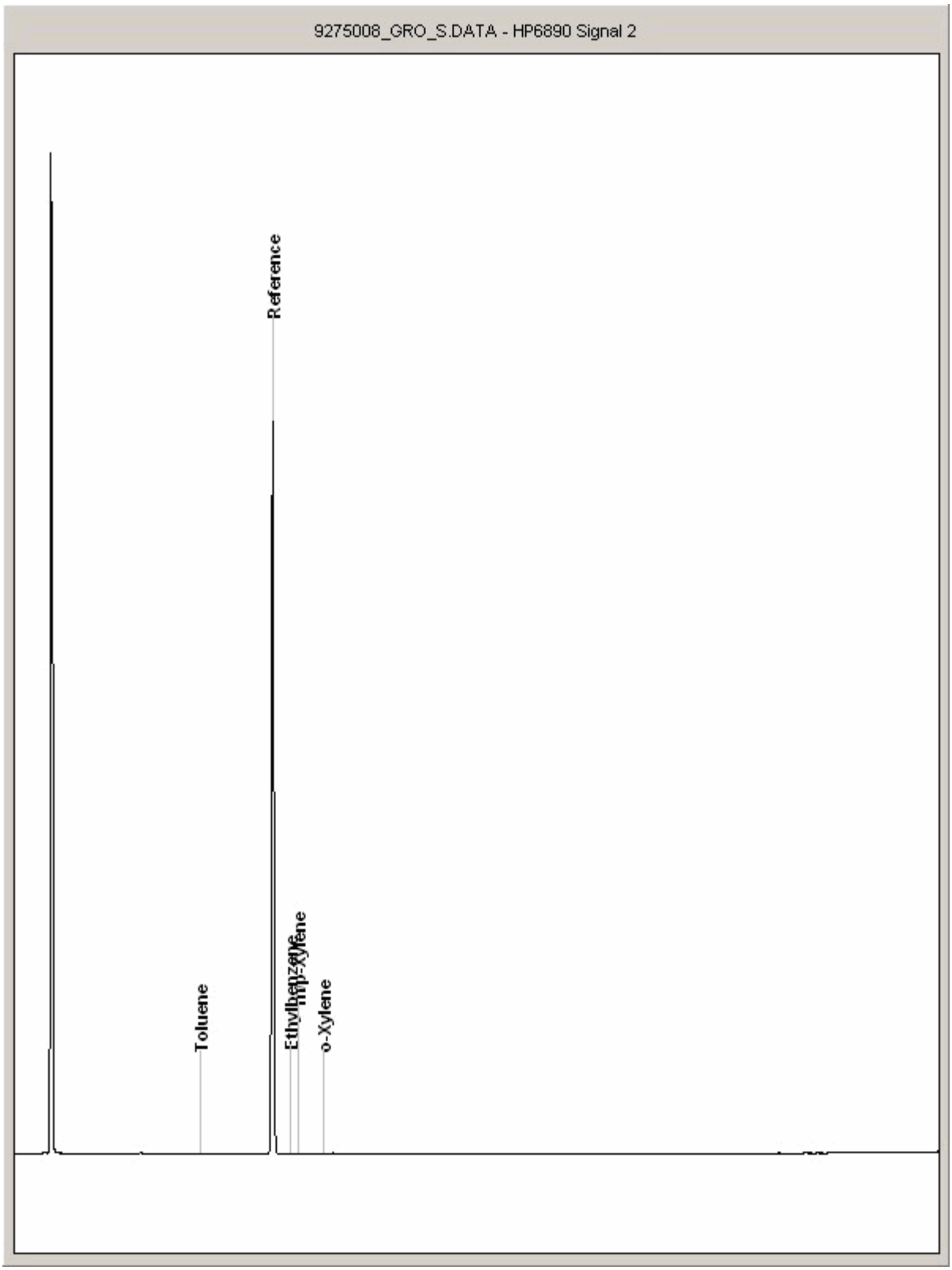
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 9275008
Sample ID : CGBH24

Depth : 0.50



CERTIFICATE OF ANALYSIS

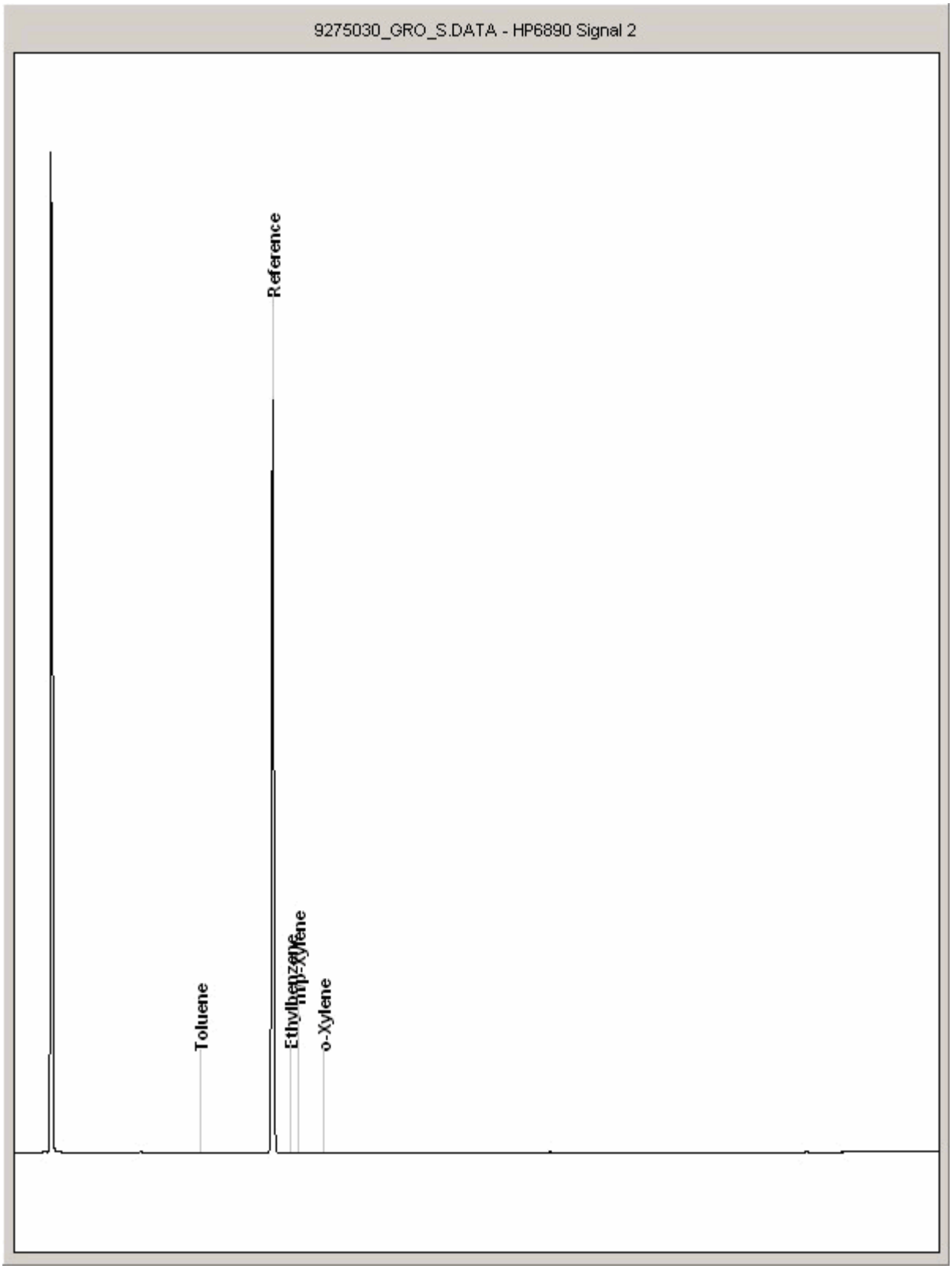
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 9275030
Sample ID : CGBH24

Depth : 2.00



CERTIFICATE OF ANALYSIS

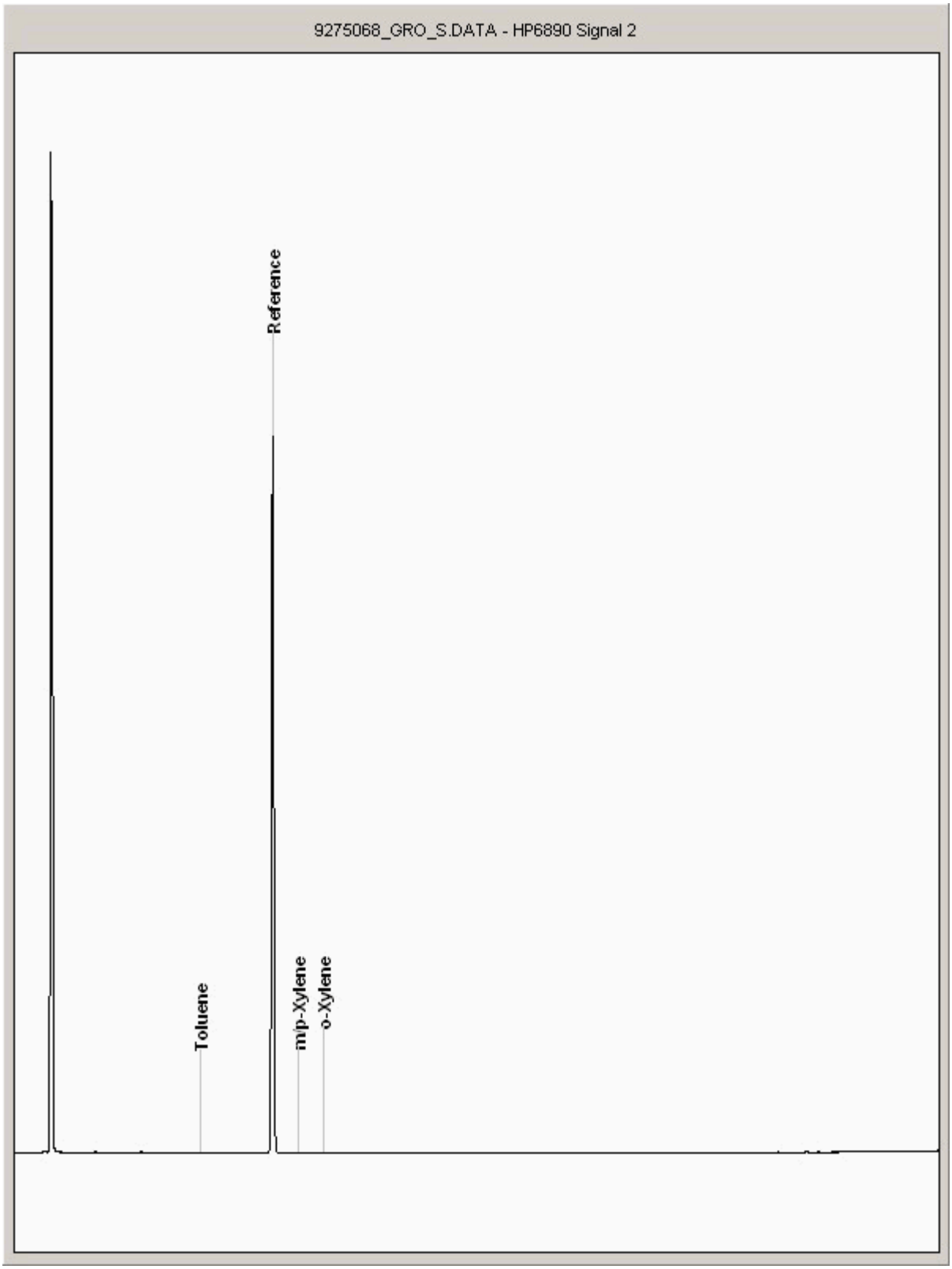
SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 9275068
Sample ID : CGBH02

Depth : 0.50



CERTIFICATE OF ANALYSIS

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 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 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 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 only is 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 themajor 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	DCM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DCM	SOXTHERM	IATROSCAN
ELEMENTAL SULPHUR	D&C	DCM	SOXTHERM	HPLC
PHENOLS BY GCMS	WET	DCM	SOXTHERM	GCMS
HERBICIDES	D&C	HEXANE/ACETONE	SOXTHERM	GCMS
PESTICIDES	D&C	HEXANE/ACETONE	SOXTHERM	GCMS
EPH (DRO)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (MIN OIL)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (CLEANED UP)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH CWG BY GC	D&C	HEXANE/ACETONE	END OVER END	GC-FID
PCB TOT / PCB CON	D&C	HEXANE/ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE/ACETONE	MICROWAVE TM218.	GCMS
C8-C40 (C9C40) EZ FLASH	WET	HEXANE/ACETONE	SHAKER	GC-EZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE/ACETONE	SHAKER	GC-EZ
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DCM/ACETONE	SONICATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH/MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS/MS	DCM	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).

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 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.

Last Updated : 2010/09/08

SDG:	140509-102	**Location:**	Cole Green	**Order Number:**	9Y0074-103-100
Job:	H_RHASKON_PTB-82	**Customer:**	Royal Haskoning	**Report Number:**	270594
Client Reference:	9Y0074 103 100	**Attention:**	Declan Fives	**Superseded Report:**	

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. 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 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 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 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.