



Unit 12, Owenacurra Business Park, Midleton, Co. Cork  
T +353 21 4631600 F +353 21 4638690 E [geotechnical@priority.ie](mailto:geotechnical@priority.ie)

---

**HAULBOWLINE EAST TIP –  
EXPLORATORY GROUND INVESTIGATION  
FACTUAL REPORT  
NO. P12030  
VOL. 3**

**Employer:**

Cork County Council  
  
Environmental Directorate,  
Cork County Council,  
Inniscara,  
Co. Cork.

**Employer's Representative:**

WYG EPT Ltd.  
  
Arndale Court,  
Headingley,  
Leeds,  
United Kingdom,  
LS6 2UJ

---

# TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1	SCOPE OF WORKS.....	1
1.2	REPORTING .....	2
1.3	SITE LOCATION & DESCRIPTION .....	2
1.4	GEOLOGY .....	3
1.4.1	Solid.....	3
1.4.2	Superficial .....	3
<b>2</b>	<b>FIELDWORK.....</b>	<b>4</b>
2.1	GENERAL .....	4
2.2	EXPLORATORY HOLES .....	5
2.3	GROUNDWATER MONITORING .....	6
2.4	GROUND GAS .....	7
2.5	SAMPLING .....	7
2.6	IN-SITU TESTING .....	8
<b>3</b>	<b>LABORATORY TESTING .....</b>	<b>11</b>
3.1	ENVIRONMENTAL - SOLID .....	12
3.2	ENVIRONMENTAL - WATER .....	16
3.3	GEOTECHNICAL - SOIL .....	19
3.4	GEOTECHNICAL - ROCK .....	19
<b>4</b>	<b>GROUND CONDITIONS.....</b>	<b>20</b>
4.1	GROUNDWATER .....	21
4.2	GROUND GAS .....	24
<b>5</b>	<b>SUMMARY.....</b>	<b>25</b>

---

# APPENDICES

## VOL. 1

APPENDIX A      EXPLORATORY HOLE RECORDS AND PHOTOGRAPHIC  
RECORDS

## VOL. 2

APPENDIX B      *In situ* PERMEABILITY TEST DATA

APPENDIX C      GROUNDWATER AND GROUND GAS MONITORING DATA

## VOL. 3

APPENDIX D1     LABORATORY RESULTS- SOIL

## VOL. 4

APPENDIX D2     LABORATORY RESULTS- WATER

## VOL. 5

APPENDIX D3     LABORATORY RESULTS- WATER, PAH and GEOTECHNICAL

APPENDIX E      EXPLORATION LOCATION LAYOUT & PLANS

APPENDIX F      AGREED METHOD STATEMENTS AND PROCEDURES

---

**APPENDIX D1**

**LABORATORY RESULTS-SOIL**

---





Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

Attention: Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 13 September 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120428-54  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 194092

**This report has been revised and directly supersedes 192681 in its entirety.**

We received 37 samples on Friday April 27, 2012 and 25 of these samples were scheduled for analysis which was completed on Thursday September 13, 2012. 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:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5516218	BH306B		1.00	24/04/2012
5516219	BH306B		2.00	24/04/2012
5516220	BH306B		3.00	24/04/2012
5516221	BH306B		4.00	24/04/2012
5516222	BH306B		4.00	24/04/2012
5516223	BH306B		5.00	24/04/2012
5516224	BH306B		6.00	24/04/2012
5516226	BH306B		6.50	24/04/2012
6103694	BH306B-Repeat		6.50	24/04/2012
5516240	BH310A		1.00	24/04/2012
5516242	BH310A		1.00	24/04/2012
5516244	BH310A		2.00	24/04/2012
5516246	BH310A		3.00	24/04/2012
5516248	BH310A		4.00	24/04/2012
5516250	BH310A		5.00	24/04/2012
5516252	BH310A		6.00	24/04/2012
6104464	BH310A-Repeat		1.00	24/04/2012
6104548	BH310A-Repeat		3.00	24/04/2012
6104583	BH310A-Repeat		6.00	24/04/2012
5516228	BH312A		0.50	24/04/2012
5516229	BH312A		1.00 - 1.20	24/04/2012
5516231	BH312A		2.00 - 2.10	24/04/2012
5516232	BH312A		3.00 - 3.10	24/04/2012
5516234	BH312A		3.60 - 3.80	24/04/2012
5516236	BH312A		4.00 - 4.10	24/04/2012
5516237	BH312A		5.00 - 5.10	24/04/2012
5516239	BH312A		6.00 - 6.10	24/04/2012
6104608	BH312A-Repeat		2.00 - 2.10	24/04/2012
6104609	BH312A-Repeat		3.60 - 3.80	24/04/2012
6108506	BH312A-Repeat		6.00 - 6.10	24/04/2012
5516253	BH314		0.00 - 0.50	24/04/2012
5516255	BH314		1.50	24/04/2012
5516256	BH314		1.50	24/04/2012
5516258	BH314		2.20	24/04/2012
5516259	BH314		2.20	24/04/2012
6108561	BH314-Repeat		0.00 - 0.50	24/04/2012
6109754	BH314-Repeat		2.20	24/04/2012

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



SDG: 120428-54  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 194092  
 Superseded Report: 192681

SOLID Results Legend  Test No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5516258	BH314		2.20	400g Tub (ALE214)
		5516253	BH314		0.00 - 0.50	250g Amber Jar (AL)
		6108506	BH312A-Repeat		6.00 - 6.10	400g Tub (ALE214)
		6104609	BH312A-Repeat		3.60 - 3.80	400g Tub (ALE214)
	6104608	BH312A-Repeat		2.00 - 2.10	400g Tub (ALE214)	
	5516239	BH312A		6.00 - 6.10	400g Tub (ALE214)	
	5516237	BH312A		5.00 - 5.10	250g Amber Jar (AL)	
	5516236	BH312A		4.00 - 4.10	400g Tub (ALE214)	
	5516234	BH312A		3.60 - 3.80	250g Amber Jar (AL)	
	5516231	BH312A		2.00 - 2.10	60g VOC (ALE215)	
	5516228	BH312A		0.50	400g Tub (ALE214)	
	6104583	BH310A-Repeat		6.00	250g Amber Jar (AL)	
	6104464	BH310A-Repeat		3.00	400g Tub (ALE214)	
	5516252	BH310A		6.00	400g Tub (ALE214)	
	5516248	BH310A		4.00	250g Amber Jar (AL)	
	5516246	BH310A		3.00	60g VOC (ALE215)	
	6103694	BH306B-Repeat		6.50	250g Amber Jar (AL)	
	5516226	BH306B		6.50	400g Tub (ALE214)	
	5516221	BH306B		4.00	250g Amber Jar (AL)	
	5516219	BH306B		2.00	400g Tub (ALE214)	
	5516218	BH306B		1.00	400g Tub (ALE214)	
					250g Amber Jar (AL)	
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 12			X X X X X X X X X X X X	
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 3			X X X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 3			X X X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 12			X X X X X X X X X X X X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 12			X X X X X X X X X X X X	
Anions by Kone (w)	All	NDPs: 0 Tests: 3			X X X	
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 21			X X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2			X X	
Boron Water Soluble	All	NDPs: 0 Tests: 12			X X X X X X X X X X X X X X X X	
COD Unfiltered	All	NDPs: 0 Tests: 3			X X X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 3			X X X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 14			X X X X X X X X X X X X X X X X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3			X X X	
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 3			X X X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 12			X X X X X X X X X X X X	



CERTIFICATE OF ANALYSIS

SDG: 120428-54
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 194092
Superseded Report: 192681

Table with columns: Lab Sample No(s), Customer Sample Reference, AGS Reference, Depth (m), Container, and various test results (e.g., EPH CWG, Fluoride, Free Sulphur, GRO by GC-FID, Hexavalent Chromium, Mercury Dissolved, Metals by iCap-OES).

SDG: 120428-54  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 194092  
 Superseded Report: 192681

SOLID			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
Results Legend			5516258	BH314		2.20	400g Tub (ALE214)
<div style="display: flex; gap: 10px;"> <div style="border: 1px solid black; background-color: yellow; padding: 2px;">X</div> Test           </div> <div style="display: flex; gap: 10px;"> <div style="border: 1px solid black; background-color: red; padding: 2px;">N</div> No Determination Possible           </div>			5516253	BH314		0.00 - 0.50	250g Amber Jar (AL)
			6108506	BH312A-Repeat		6.00 - 6.10	400g Tub (ALE214)
			6104609	BH312A-Repeat		3.60 - 3.80	400g Tub (ALE214)
			6104608	BH312A-Repeat		2.00 - 2.10	400g Tub (ALE214)
			5516239	BH312A		6.00 - 6.10	400g Tub (ALE214)
			5516237	BH312A		5.00 - 5.10	250g Amber Jar (AL)
			5516236	BH312A		4.00 - 4.10	400g Tub (ALE214)
			5516234	BH312A		3.60 - 3.80	250g Amber Jar (AL)
			5516231	BH312A		2.00 - 2.10	60g VOC (ALE215)
			5516228	BH312A		0.50	400g Tub (ALE214)
			6104583	BH310A-Repeat		6.00	400g Tub (ALE214)
			6104464	BH310A-Repeat		3.00	400g Tub (ALE214)
			5516252	BH310A		6.00	400g Tub (ALE214)
			5516248	BH310A		4.00	250g Amber Jar (AL)
			5516246	BH310A		3.00	250g Amber Jar (AL)
			5516240	BH310A		1.00	400g Tub (ALE214)
			6103694	BH306B-Repeat		6.50	250g Amber Jar (AL)
			5516226	BH306B		6.50	400g Tub (ALE214)
			5516221	BH306B		4.00	250g Amber Jar (AL)
			5516219	BH306B		2.00	400g Tub (ALE214)
			5516218	BH306B		1.00	400g Tub (ALE214)

Metals by iCap-OES (Soil)	Metals	NDPs: 0 Tests: 12	5516258	5516253	6108506	6104609	6104608	5516239	5516237	5516236	5516234	5516231	5516228	6104583	6104464	5516252	5516248	5516246	5516240	6103694	5516226	5516221	5516219	5516218	
Copper	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lead	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Manganese	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mercury	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nickel	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Selenium	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vanadium	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Zinc	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 3		X					X																
Mineral Oil	All	NDPs: 0 Tests: 3								X															
NRA Leachate	All	NDPs: 0 Tests: 3		X																					
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 3		X																					
PAH Value of soil	All	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 3		X																					
pH	All	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X



SDG: 120428-54  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 194092  
 Superseded Report: 192681

SOLID Results Legend  Test No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5516258	BH314		2.20	400g Tub (ALE214)
		5516253	BH314		0.00 - 0.50	250g Amber Jar (AL)
		6108506	BH312A-Repeat		6.00 - 6.10	400g Tub (ALE214)
		6104609	BH312A-Repeat		3.60 - 3.80	400g Tub (ALE214)
	6104608	BH312A-Repeat		2.00 - 2.10	400g Tub (ALE214)	
	5516239	BH312A		6.00 - 6.10	400g Tub (ALE214)	
	5516237	BH312A		5.00 - 5.10	250g Amber Jar (AL)	
	5516236	BH312A		4.00 - 4.10	60g VOC (ALE215)	
	5516234	BH312A		3.60 - 3.80	400g Tub (ALE214)	
	5516231	BH312A		2.00 - 2.10	250g Amber Jar (AL)	
	5516228	BH312A		0.50	400g Tub (ALE214)	
	6104583	BH310A-Repeat		6.00	400g Tub (ALE214)	
	6104548	BH310A-Repeat		3.00	400g Tub (ALE214)	
	6104464	BH310A-Repeat		1.00	400g Tub (ALE214)	
	5516252	BH310A		6.00	400g Tub (ALE214)	
	5516248	BH310A		4.00	250g Amber Jar (AL)	
	5516246	BH310A		3.00	60g VOC (ALE215)	
	6103694	BH306B-Repeat		6.50	250g Amber Jar (AL)	
	5516226	BH306B		6.50	400g Tub (ALE214)	
	5516221	BH306B		4.00	400g Tub (ALE214)	
	5516219	BH306B		2.00	250g Amber Jar (AL)	
	5516218	BH306B		1.00	400g Tub (ALE214)	
					250g Amber Jar (AL)	
pH Value	All	NDPs: 0 Tests: 3				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 12				
Phenols by HPLC (W)	All	NDPs: 0 Tests: 3				
Sample description	All	NDPs: 0 Tests: 16				
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 3				
Sulphide	All	NDPs: 0 Tests: 3				
Toluene extractable matter*	All	NDPs: 10 Tests: 1				
Total Dissolved Solids (Grav)	All	NDPs: 1 Tests: 2				
Total Dissolved Solids on Leachates	All	NDPs: 0 Tests: 1				
Total Organic Carbon	All	NDPs: 1 Tests: 0				
Total Organic Carbon (Asb)	All	NDPs: 0 Tests: 1				
Total Sulphate	All	NDPs: 0 Tests: 12				
Total Sulphur	All	NDPs: 10 Tests: 1				
TPH by IR Oils and Greases	All	NDPs: 0 Tests: 3				
TPH CWG GC (S)	All	NDPs: 0 Tests: 3				



## CERTIFICATE OF ANALYSIS

SDG: 120428-54  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 194092  
 Superseded Report: 192681

SOLID Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	VOC MS (S)
	Test	No Determination Possible				
	5516258	BH314		2.20	400g Tub (ALE214)	
	5516253	BH314		0.00 - 0.50	250g Amber Jar (AL)	
	6108506	BH312A-Repeat		6.00 - 6.10	400g Tub (ALE214)	
	6104609	BH312A-Repeat		3.60 - 3.80	400g Tub (ALE214)	
	6104608	BH312A-Repeat		2.00 - 2.10	400g Tub (ALE214)	
	5516239	BH312A		6.00 - 6.10	400g Tub (ALE214)	
	5516237	BH312A		5.00 - 5.10	250g Amber Jar (AL)	
	5516236	BH312A		4.00 - 4.10	60g VOC (ALE215)	X
	5516234	BH312A		3.60 - 3.80	400g Tub (ALE214)	
	5516231	BH312A		2.00 - 2.10	250g Amber Jar (AL)	
	5516228	BH312A		0.50	400g Tub (ALE214)	
	6104583	BH310A-Repeat		6.00	250g Amber Jar (AL)	
	6104548	BH310A-Repeat		3.00	400g Tub (ALE214)	
	6104464	BH310A-Repeat		1.00	400g Tub (ALE214)	
	5516252	BH310A		6.00	250g Amber Jar (AL)	
	5516248	BH310A		4.00	60g VOC (ALE215)	X
	5516246	BH310A		3.00	400g Tub (ALE214)	
	5516240	BH310A		1.00	250g Amber Jar (AL)	
	6103694	BH306B-Repeat		6.50	400g Tub (ALE214)	
	5516226	BH306B		6.50	400g Tub (ALE214)	
	5516221	BH306B		4.00	250g Amber Jar (AL)	
	5516219	BH306B		2.00	400g Tub (ALE214)	
	5516218	BH306B		1.00	250g Amber Jar (AL)	
	All					
		NDPs: 0 Tests: 3				



CERTIFICATE OF ANALYSIS

Validated

SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

SOLID

Results Legend

**X** Test

**N** No Determination Possible

Lab Sample No(s)

6109754  
6108561

Customer Sample Reference

BH314-Repeat  
BH314-Repeat

AGS Reference

Depth (m)

2.20  
0.00 - 0.50

Container

400g Tub (ALE214)  
400g Tub (ALE214)

Asbestos Identification (Soil)

All

NDPs: 0  
Tests: 21

**X X**





**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

## 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
5516253	BH314	0.00 - 0.50	Dark Brown	Sand	0.1 - 2 mm	Stones	None
5516258	BH314	2.20	Dark Brown	Loamy Sand	0.1 - 2 mm	Stones	None
5516240	BH310A	1.00	Dark Brown	Loamy Sand	0.1 - 2 mm	Stones	Fibres
5516246	BH310A	3.00	Dark Brown	Sand	0.1 - 2 mm	Stones	None
5516248	BH310A	4.00	Grey	Gravel	0.063 - 0.1 mm	Stones	Stones
5516252	BH310A	6.00	Dark Brown	Loamy Sand	0.1 - 2 mm	Stones	None
5516228	BH312A	0.50	Dark Brown	Loamy Sand	0.1 - 2 mm	Stones	None
5516231	BH312A	2.00 - 2.10	Grey	Sand	0.1 - 2 mm	Stones	None
5516234	BH312A	3.60 - 3.80	Black	Sandy Loam	0.1 - 2 mm	Stones	None
5516236	BH312A	4.00 - 4.10	Dark Brown	Sand	0.1 - 2 mm	Stones	None
5516237	BH312A	5.00 - 5.10	Dark Brown	Gravel	2 - 10 mm	Stones	None
5516239	BH312A	6.00 - 6.10	Grey	Loamy Sand	0.1 - 2 mm	None	None
5516218	BH306B	1.00	Dark Brown	Sand	0.1 - 2 mm	Stones	None
5516219	BH306B	2.00	Light Brown	Gravel	2 - 10 mm	Stones	N/A
5516221	BH306B	4.00	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones	None
5516226	BH306B	6.50	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones	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 occurring 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.



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

Results Legend		Customer Sample R	BH314	BH314	BH310A	BH310A	BH310A	BH310A
#	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>	BH314	BH314	BH310A	BH310A	BH310A	BH310A
M	mCERTS accredited.		0.00 - 0.50	2.20	1.00	3.00	4.00	6.00
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012
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		27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012
(F)	Trigger breach confirmed		120428-54	120428-54	120428-54	120428-54	120428-54	120428-54
			5516253	5516258	5516240	5516246	5516248	5516252
		E3	E10	E3	E10	E13	E19	
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	5.7	15	8.9	6.9		15
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15	<15	<15		<15
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043			40			
Mineral oil >C10-C40	<1 mg/kg	TM061					23.6	
Surrogate Value	-	TM061					39.7	
Mineral Oil Surrogate % recovery**	%	TM061					79.4	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 § M	<0.01 § M	<0.01 § M	<0.01 § M		<0.01 § M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 § M	<0.01 § M	<0.01 § M	<0.01 § M		<0.01 § M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 § M	<0.015 § M	<0.015 § M	<0.015 § M		<0.015 § M
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01 § M	<0.01 § M	<0.01 § M	<0.01 § M		<0.01 § M
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015 § M	<0.015 § M	<0.015 § M	<0.015 § M		<0.015 § M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 § M	<0.035 § M	<0.035 § M	<0.035 § M		<0.035 § M
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06 § M	<0.06 § M	<0.06 § M	<0.06 § M		<0.06 § M
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090			<3			
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099			<0.2			
Sulphide NRA leach	<0.01 mg/l	TM101			<0.01			
Fluoride NRA leach	<0.5 mg/l	TM104			<0.5			
COD, unfiltered NRA leach	<7 mg/l	TM107			<7			
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120			1.18			
Dissolved solids, Total (meter) NRA leach	<10 mg/l	TM123			938			
pH	1 pH Units	TM133	12.6 M	9.17 M	11.9 M	12.4 M		11.2 M
Chromium, Hexavalent	<0.6 mg/kg	TM151	1.91 #	3.48 #	9.32 #	3.89 #		<0.6 #
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152			1220			
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152			2.29			
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152			0.428			
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152			478			
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152			38			
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152			<0.1			
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152			429			
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152			0.171			
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152			3.53			
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152			6.93			
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152			0.187			
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152			44.2			
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152			0.566			



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

Results Legend			Customer Sample R						
#	ISO17025 accredited.	Customer Sample R  Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH314	BH314	BH310A	BH310A	BH310A	BH310A	
M	mCERTS accredited.		0.00 - 0.50	2.20	1.00	3.00	4.00	6.00	
§	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
aq	Aqueous / settled sample.		24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012	
diss.filt	Dissolved / filtered sample.		27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012	
tot.unfilt	Total / unfiltered sample.		120428-54	120428-54	120428-54	120428-54	120428-54	120428-54	
**	Subcontracted test.		5516253	5516258	5516240	5516246	5516248	5516252	
*	% 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		E3	E10	E3	E10	E13	E19	
(F)	Trigger breach confirmed								
Component	LOD/Units		Method						
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152			<6.3				
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152			1.97				
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152			1.72				
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152			<0.36				
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152			11.8				
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152			5.3				
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1	
			§ M	§ M	§ M	§ M	§ M	§ M	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1	
			§ M	§ M	§ M	§ M	§ M	§ M	
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1	
			§	§	§	§	§	§	
Thiocyanate	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1	
			§ M	§ M	§ M	§ M	§ M	§ M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	<15	<15	<15	<15	
			§ #	§ #	§ #	§ #	§ #	§ #	
Aluminium	<11 mg/kg	TM181	22800	8480	15000	21800		18800	
Antimony	<0.6 mg/kg	TM181	20.7	50.6	76.3	31		104	
			#	#	#	#		#	
Arsenic	<0.6 mg/kg	TM181	9.65	90.5	19.2	6.06		18.1	
			M	M	M	M		M	
Barium	<0.6 mg/kg	TM181	712	271	558	813		722	
			#	#	#	#		#	
Beryllium	<0.01 mg/kg	TM181	<0.1	<0.1	0.232	<0.1		0.106	
			M	M	M	M		M	
Cadmium	<0.02 mg/kg	TM181	2.68	5	1.51	2.08		<0.2	
			M	M	M	M		M	
Chromium	<0.9 mg/kg	TM181	3240	5100	2830	5880		4110	
			M	M	M	M		M	
Copper	<1.4 mg/kg	TM181	347	4020	592	274		552	
			M	M	M	M		M	
Lead	<0.7 mg/kg	TM181	188	497	504	42.7		277	
			M	M	M	M		M	
Manganese	<0.13 mg/kg	TM181	3310	10400	28900	3680		39500	
			M	M	M	M		M	
Mercury	<0.14 mg/kg	TM181	<0.14	<0.14	<0.14	<0.14		<0.14	
			M	M	M	M		M	
Nickel	<0.2 mg/kg	TM181	91.2	2860	217	56.3		146	
			M	M	M	M		M	
Selenium	<1 mg/kg	TM181	18.9	<10	12.8	19.5		16.2	
			#	#	#	#		#	
Vanadium	<0.2 mg/kg	TM181	356	121	244	438		332	
			#	#	#	#		#	
Zinc	<1.9 mg/kg	TM181	1500	879	2160	204		784	
			M	M	M	M		M	
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183			<0.01				
Sulphate NRA leach	<2 mg/l	TM184			10.2				
Chloride NRA leach	<2 mg/l	TM184			3.6				
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184			0.379				
PCB congener 28 NRA leach	<0.015 µg/l	TM197			<0.015				
PCB congener 52 NRA leach	<0.015 µg/l	TM197			<0.015				
PCB congener 101 NRA leach	<0.015 µg/l	TM197			<0.015				
PCB congener 118 NRA leach	<0.015 µg/l	TM197			<0.015				
PCB congener 138 NRA leach	<0.015 µg/l	TM197			<0.015				



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

Results Legend			Customer Sample R						
#	ISO17025 accredited.		BH314	BH314	BH310A	BH310A	BH310A	BH310A	
M	mCERTS accredited.								
S	Deviating sample.								
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								
			Depth (m)	0.00 - 0.50	2.20	1.00	3.00	4.00	6.00
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012
			Date Received	27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012
			SDG Ref	120428-54	120428-54	120428-54	120428-54	120428-54	120428-54
			Lab Sample No.(s)	5516253	5516258	5516240	5516246	5516248	5516252
			AGS Reference	E3	E10	E3	E10	E13	E19
Component	LOD/Units	Method							
PCB congener 153 NRA leach	<0.015 µg/l	TM197			<0.015				
PCB congener 180 NRA leach	<0.015 µg/l	TM197			<0.015				
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197			<0.105				
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	<10	<10			<10
Sulphate, Total	<48 mg/kg	TM221	2060	1980	2700	5490			6050
Total sulphur	<0.0016 %	TM221	0.0688	0.066	0.09	0.183			0.202
Boron, water soluble	<1 mg/kg	TM222	3.33	2.05	6.39	1.66			9.58
Calcium	<21 mg/kg	TM224	201000	53500	152000	249000			156000
Magnesium	<8 mg/kg	TM224	20200	5350	78700	31400			48900
Cyanide, Total NRA leach	<0.05 mg/l	TM227			<0.05				
Cyanide, Free NRA leach	<0.05 mg/l	TM227			<0.05				
Cyanide, Complex NRA leach	<0.05 mg/l	TM227			<0.05				
Thiocyanate NRA leach	<0.05 mg/l	TM227			<0.05				
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228			106				
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228			0.734				
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228			<0.036				
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228			<2.34				
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228			<0.019				
TPH / Oil & Greases NRA leach	<1 mg/l	TM235			<1				
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241			0.457				
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	<0.008	0.153	0.126	0.0493			0.586
Chloride (soluble)	<5 mg/kg	TM243	111	400	202	293			4180
pH NRA leach	<1 pH Units	TM256			11.8				
Phenol NRA leach	<0.002 mg/l	TM259			<0.002				
Cresols NRA leach	<0.006 mg/l	TM259			<0.006				
Xylenols NRA leach	<0.008 mg/l	TM259			<0.008				
2,3,5-Trimethylphenol NRA leach	<0.003 mg/l	TM259			<0.003				
2-Isopropylphenol NRA leach	<0.006 mg/l	TM259			<0.006				
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259			<0.016				
Phenols, Total Detected 5 speciated NRA leach	<0.025 mg/l	TM259			<0.025				
Sulphur, Free NRA leach	<0.05 mg/l	TM294			<0.05				



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

Results Legend			Customer Sample R					
#	ISO17025 accredited.		BH312A	BH312A	BH312A	BH312A	BH312A	BH312A
M	mCERTS accredited.							
S	Deviating sample.							
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							
		Depth (m)	0.50	2.00 - 2.10	3.60 - 3.80	4.00 - 4.10	5.00 - 5.10	6.00 - 6.10
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012
		Sampled Time						
		Date Received	27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012
		SDG Ref	120428-54	120428-54	120428-54	120428-54	120428-54	120428-54
		Lab Sample No.(s)	5516228	5516231	5516234	5516236	5516237	5516239
		AGS Reference	E1	E7	E11	E14	E17	E20
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	10	14	41			24
Tolulene Extractable Matter	<500 mg/kg	SUB	<500					
Dissolved solids, Total (gravimetric) NRA leach	<10 mg/l	TM021				703		
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15	<15			<15
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043				<2		
Mineral oil >C10-C40	<1 mg/kg	TM061			1730		2380	
Surrogate Value	-	TM061			44.4		42.3	
Mineral Oil Surrogate % recovery**	%	TM061			88.7		84.7	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01			<0.01
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01			<0.01
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015			<0.015
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01			<0.01
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015			<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035			<0.035
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06	<0.06			<0.06
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090				<3		
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099				<0.2		
Sulphide NRA leach	<0.01 mg/l	TM101				<0.01		
Fluoride NRA leach	<0.5 mg/l	TM104				<0.5		
COD, unfiltered NRA leach	<7 mg/l	TM107				9.69		
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120				0.995		
Sulphur, Total	<0.02 %	TM132	0.109					
pH	1 pH Units	TM133	8.96	11.6	9.12			8.29
Chromium, Hexavalent	<0.6 mg/kg	TM151	1.08	<0.6	<0.6			<0.6
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152				<2.9		
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152				3.45		
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152				1.36		
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152				119		
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152				524		
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152				<0.1		
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152				0.538		
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152				<0.06		
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152				<0.85		
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152				1.94		
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152				1.15		



SDG: 120428-54  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 194092  
 Superseded Report: 192681

Results Legend			Customer Sample R		BH312A	BH312A	BH312A	BH312A	BH312A	BH312A
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference							
M	mCERTS accredited.			0.50	2.00 - 2.10	3.60 - 3.80	4.00 - 4.10	5.00 - 5.10	6.00 - 6.10	
\$	Deviating sample.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
aq	Aqueous / settled sample.			24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012	
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
**	Subcontracted test.			27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012	
	% 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			120428-54	120428-54	120428-54	120428-54	120428-54	120428-54	
(F)	Trigger breach confirmed			5516228	5516231	5516234	5516236	5516237	5516239	
				E1	E7	E11	E14	E17	E20	
Component	LOD/Units	Method								
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152					14.1			
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152					0.427			
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152					<6.3			
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152					1.24			
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152					6.81			
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152					<0.36			
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152					1.03			
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152					0.848			
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1				<1	
			§ M	§ M	§ M				§ M	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1				<1	
			§ M	§ M	§ M				§ M	
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1				<1	
			§	§	§				§	
Thiocyanate	<1 mg/kg	TM153	<1	<1	<1				<1	
			§ M	§ M	§ M				§ M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	11800				41.5	
			§ #	§ #	§ #				§ #	
Aluminium	<11 mg/kg	TM181	9030	10100	5400				6530	
Antimony	<0.6 mg/kg	TM181	35.1	36.8	37.9				<0.6	
			#	#	#				#	
Arsenic	<0.6 mg/kg	TM181	26.5	16.8	95.6				3.02	
			M	M	M				M	
Barium	<0.6 mg/kg	TM181	405	587	87.9				21.9	
			#	#	#				#	
Beryllium	<0.01 mg/kg	TM181	1.98	0.26	0.946				0.2	
			M	M	M				M	
Cadmium	<0.02 mg/kg	TM181	5.75	5.39	21.6				0.292	
			M	M	M				M	
Chromium	<0.9 mg/kg	TM181	801	1040	415				19.1	
			M	M	M				M	
Copper	<1.4 mg/kg	TM181	735	417	718				7.2	
			M	M	M				M	
Lead	<0.7 mg/kg	TM181	1140	1250	3090				23.5	
			M	M	M				M	
Manganese	<0.13 mg/kg	TM181	16700	13200	2540				258	
			M	M	M				M	
Mercury	<0.14 mg/kg	TM181	<1.4	<0.14	<1.4				<0.14	
			M	M	M				M	
Nickel	<0.2 mg/kg	TM181	199	131	211				14.2	
			M	M	M				M	
Selenium	<1 mg/kg	TM181	<10	10.5	<10				<1	
			#	#	#				#	
Vanadium	<0.2 mg/kg	TM181	70.6	118	46.6				11.7	
			#	#	#				#	
Zinc	<1.9 mg/kg	TM181	4670	2770	12300				73.9	
			M	M	M				M	
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183					<0.01			
Sulphate NRA leach	<2 mg/l	TM184					72			
Chloride NRA leach	<2 mg/l	TM184					279			
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184					<0.3			
PCB congener 28 NRA leach	<0.015 µg/l	TM197					<0.015			
PCB congener 52 NRA leach	<0.015 µg/l	TM197					<0.015			
PCB congener 101 NRA leach	<0.015 µg/l	TM197					<0.015			



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

Results Legend			Customer Sample R						
#	ISO17025 accredited.		BH312A	BH312A	BH312A	BH312A	BH312A	BH312A	
M	mCERTS accredited.								
S	Deviating sample.								
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								
			Depth (m)	0.50	2.00 - 2.10	3.60 - 3.80	4.00 - 4.10	5.00 - 5.10	6.00 - 6.10
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012	24/04/2012
			Sampled Time						
			Date Received	27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012	27/04/2012
			SDG Ref	120428-54	120428-54	120428-54	120428-54	120428-54	120428-54
			Lab Sample No.(s)	5516228	5516231	5516234	5516236	5516237	5516239
			AGS Reference	E1	E7	E11	E14	E17	E20
Component	LOD/Units	Method							
PCB congener 118 NRA leach	<0.015 µg/l	TM197					<0.015		
PCB congener 138 NRA leach	<0.015 µg/l	TM197					<0.015		
PCB congener 153 NRA leach	<0.015 µg/l	TM197					<0.015		
PCB congener 180 NRA leach	<0.015 µg/l	TM197					<0.015		
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197					<0.105		
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	70				<10
Sulphate, Total	<48 mg/kg	TM221	1260	11400	22100				1450
			M	M	M				M
Total sulphur	<0.0016 %	TM221	0.042	0.381	0.737				0.0484
Boron, water soluble	<1 mg/kg	TM222	1.23	10.9	11.5				2.73
			M	M	M				M
Calcium	<21 mg/kg	TM224	75100	103000	80900				22900
Magnesium	<8 mg/kg	TM224	13000	158000	30200				2970
Cyanide, Total NRA leach	<0.05 mg/l	TM227					<0.05		
Cyanide, Free NRA leach	<0.05 mg/l	TM227					<0.05		
Cyanide, Complex NRA leach	<0.05 mg/l	TM227					<0.05		
Thiocyanate NRA leach	<0.05 mg/l	TM227					<0.05		
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228					48.3		
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228					163		
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228					6.47		
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228					8.63		
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228					<0.019		
TPH / Oil & Greases NRA leach	<1 mg/l	TM235					<1		
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241					<0.03		
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.0389	0.462	3.97				0.147
Chloride (soluble)	<5 mg/kg	TM243	164	168	19300				5490
			M	M	M				M
pH NRA leach	<1 pH Units	TM256					7.52		
Phenol NRA leach	<0.002 mg/l	TM259					<0.002		
Cresols NRA leach	<0.006 mg/l	TM259					<0.006		
Xylenols NRA leach	<0.008 mg/l	TM259					<0.008		
2,3,5-Trimethylphenol NRA leach	<0.003 mg/l	TM259					<0.003		
2-Isopropylphenol NRA leach	<0.006 mg/l	TM259					<0.006		
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259					<0.016		
Phenols, Total Detected 5 speciated NRA leach	<0.025 mg/l	TM259					<0.025		
Sulphur, Free NRA leach	<0.05 mg/l	TM294					<0.05		
Fraction Organic Carbon (FOC)	<0.1	TM321		<0.1					
				#					



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

Results Legend		Customer Sample R	BH306B	BH306B	BH306B	BH306B
#	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>	BH306B	BH306B	BH306B	BH306B
M	mCERTS accredited.		1.00	2.00	4.00	6.50
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		24/04/2012	24/04/2012	24/04/2012	24/04/2012
diss.filt	Dissolved / filtered sample.		.	.	.	.
tot.unfilt	Total / unfiltered sample.		27/04/2012	27/04/2012	27/04/2012	27/04/2012
*	Subcontracted test.		120428-54	120428-54	120428-54	120428-54
**	% 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		5516218	5516219	5516221	5516226
(F)	Trigger breach confirmed		E3	E6	E12	E21
Component	LOD/Units	Method				
Moisture content ratio	%	PM024	9		8.5	1.4
Dissolved solids, Total (gravimetric) NRA leach	<10 mg/l	TM021		541		
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15		<15	<15
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043		<2		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01	<0.01
			§ M		§ M	§ M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01		<0.01	<0.01
			§ M		§ M	§ M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015		<0.015	<0.015
			§ M		§ M	§ M
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01	<0.01
			§ M		§ M	§ M
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015		<0.015	<0.015
			§ M		§ M	§ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035		<0.035	<0.035
			§ M		§ M	§ M
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06		<0.06	<0.06
			§ M		§ M	§ M
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090		<3		
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099		<0.2		
Sulphide NRA leach	<0.01 mg/l	TM101		<0.01		
Fluoride NRA leach	<0.5 mg/l	TM104		<0.5		
COD, unfiltered NRA leach	<7 mg/l	TM107		<7		
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120		0.64		
pH	1 pH Units	TM133	10.2		10.4	10.8
			M		M	M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6		<0.6	<0.6
			#		#	#
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152		<2.9		
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152		0.613		
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152		0.412		
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152		273		
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152		755		
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152		<0.1		
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152		1.45		
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152		<0.06		
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152		<0.85		
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152		0.56		
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152		0.148		
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152		0.678		
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152		0.319		
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152		<6.3		
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152		0.799		
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152		6.93		





## CERTIFICATE OF ANALYSIS

**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

Results Legend			Customer Sample R			
#	ISO17025 accredited.		BH306B	BH306B	BH306B	BH306B
M	mCERTS accredited.					
S	Deviating sample.					
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					
		<b>Depth (m)</b>	1.00	2.00	4.00	6.50
		<b>Sample Type</b>	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		<b>Date Sampled</b>	24/04/2012	24/04/2012	24/04/2012	24/04/2012
		<b>Sampled Time</b>				
		<b>Date Received</b>	27/04/2012	27/04/2012	27/04/2012	27/04/2012
		<b>SDG Ref</b>	120428-54	120428-54	120428-54	120428-54
		<b>Lab Sample No.(s)</b>	5516218	5516219	5516221	5516226
		<b>AGS Reference</b>	E3	E6	E12	E21
Component	LOD/Units	Method				
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152		<0.36		
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152		0.837		
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152		<0.41		
Cyanide, Total	<1 mg/kg	TM153	<1		<1	<1
			§ M		§ M	§ M
Cyanide, Free	<1 mg/kg	TM153	<1		<1	<1
			§ M		§ M	§ M
Cyanide, Complex	<1 mg/kg	TM153	<1		<1	<1
			§		§	§
Thiocyanate	<1 mg/kg	TM153	<1		<1	<1
			§ M		§ M	§ M
Sulphide, Easily liberated	<15 mg/kg	TM180	<15		<15	<15
			§ #		§ #	§ #
Aluminium	<11 mg/kg	TM181	20600		20000	23100
Antimony	<0.6 mg/kg	TM181	151		147	153
			#		#	#
Arsenic	<0.6 mg/kg	TM181	<6		<6	<6
			M		M	M
Barium	<0.6 mg/kg	TM181	770		658	678
			#		#	#
Beryllium	<0.01 mg/kg	TM181	<0.1		<0.1	<0.1
			M		M	M
Cadmium	<0.02 mg/kg	TM181	<0.2		<0.2	<0.2
			M		M	M
Chromium	<0.9 mg/kg	TM181	6480		6220	6380
			M		M	M
Copper	<1.4 mg/kg	TM181	349		320	290
			M		M	M
Lead	<0.7 mg/kg	TM181	98.7		53.6	72.1
			M		M	M
Manganese	<0.13 mg/kg	TM181	31000		32600	38000
			M		M	M
Mercury	<0.14 mg/kg	TM181	<0.14		<1.4	<0.14
			M		M	M
Nickel	<0.2 mg/kg	TM181	74.7		81.1	65.9
			M		M	M
Selenium	<1 mg/kg	TM181	20.8		22.3	26.6
			#		#	#
Vanadium	<0.2 mg/kg	TM181	350		385	470
			#		#	#
Zinc	<1.9 mg/kg	TM181	468		395	779
			M		M	M
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183		<0.01		
Sulphate NRA leach	<2 mg/l	TM184		35.5		
Chloride NRA leach	<2 mg/l	TM184		188		
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184		<0.3		
PCB congener 28 NRA leach	<0.015 µg/l	TM197		<0.015		
PCB congener 52 NRA leach	<0.015 µg/l	TM197		<0.015		
PCB congener 101 NRA leach	<0.015 µg/l	TM197		<0.015		
PCB congener 118 NRA leach	<0.015 µg/l	TM197		<0.015		
PCB congener 138 NRA leach	<0.015 µg/l	TM197		<0.015		
PCB congener 153 NRA leach	<0.015 µg/l	TM197		<0.015		
PCB congener 180 NRA leach	<0.015 µg/l	TM197		<0.015		
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197		<0.105		



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

Results Legend		Customer Sample R	BH306B	BH306B	BH306B	BH306B
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH306B	BH306B	BH306B	BH306B
M	mCERTS accredited.		1.00	2.00	4.00	6.50
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		24/04/2012	24/04/2012	24/04/2012	24/04/2012
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		27/04/2012	27/04/2012	27/04/2012	27/04/2012
(F)	Trigger breach confirmed		120428-54	120428-54	120428-54	120428-54
			5516218	5516219	5516221	5516226
		E3	E6	E12	E21	
Component	LOD/Units	Method				
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10		<10	<10
Sulphate, Total	<48 mg/kg	TM221	6470	M	7080	4140 M
Total sulphur	<0.0016 %	TM221	0.216		0.236	0.138
Boron, water soluble	<1 mg/kg	TM222	11.9	M	11.4	4.62 M
Calcium	<21 mg/kg	TM224	4380		214000	242000
Magnesium	<8 mg/kg	TM224	5740		45400	41000
Cyanide, Total NRA leach	<0.05 mg/l	TM227		<0.05		
Cyanide, Free NRA leach	<0.05 mg/l	TM227		<0.05		
Cyanide, Complex NRA leach	<0.05 mg/l	TM227		<0.05		
Thiocyanate NRA leach	<0.05 mg/l	TM227		<0.05		
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228		46.3		
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228		80		
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228		6.49		
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228		4.66		
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228		<0.019		
TPH / Oil & Greases NRA leach	<1 mg/l	TM235		<1		
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241		<0.03		
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.532	M	0.532	0.056 M
Chloride (soluble)	<5 mg/kg	TM243	2600	M	2750	1440 M
pH NRA leach	<1 pH Units	TM256		8.99		
Phenol NRA leach	<0.002 mg/l	TM259		<0.002		
Cresols NRA leach	<0.006 mg/l	TM259		<0.006		
Xylenols NRA leach	<0.008 mg/l	TM259		<0.008		
2,3,5-Trimethylphenol NRA leach	<0.003 mg/l	TM259		<0.003		
2-Isopropylphenol NRA leach	<0.006 mg/l	TM259		<0.006		
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259		<0.016		
Phenols, Total Detected 5 speciated NRA leach	<0.025 mg/l	TM259		<0.025		
Sulphur, Free NRA leach	<0.05 mg/l	TM294		<0.05		



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

**PAH Spec MS - Aqueous (W)**

Results Legend		Customer Sample R	BH310A	BH312A	BH306B			
#	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>						
M	mCERTS accredited.		1.00	4.00 - 4.10	2.00			
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		24/04/2012	24/04/2012	24/04/2012			
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		27/04/2012	27/04/2012	27/04/2012			
(F)	Trigger breach confirmed		120428-54	120428-54	120428-54			
			5516240	5516236	5516219			
		E3	E14	E6				
Component	LOD/Units	Method						
Naphthalene (aq) NRA leach	<0.1 µg/l	TM178	0.224	0.395	0.26			
Acenaphthene (aq) NRA leach	<0.015 µg/l	TM178	0.035	0.113	0.0802			
Acenaphthylene (aq) NRA leach	<0.011 µg/l	TM178	<0.011	0.0142	0.0184			
Fluoranthene (aq) NRA leach	<0.017 µg/l	TM178	0.0841	0.127	0.0251			
Anthracene (aq) NRA leach	<0.015 µg/l	TM178	0.0248	0.0797	0.0259			
Phenanthrene (aq) NRA leach	<0.022 µg/l	TM178	0.217	0.189	0.146			
Fluorene (aq) NRA leach	<0.014 µg/l	TM178	0.0253	0.0937	0.0581			
Chrysene (aq) NRA leach	<0.013 µg/l	TM178	<0.013	<0.013	<0.013			
Pyrene (aq) NRA leach	<0.015 µg/l	TM178	0.0649	0.0885	<0.015			
Benzo(a)anthracene (aq) NRA leach	<0.017 µg/l	TM178	<0.017	<0.017	<0.017			
Benzo(b)fluoranthene (aq) NRA leach	<0.023 µg/l	TM178	<0.023	<0.023	<0.023			
Benzo(k)fluoranthene (aq) NRA leach	<0.027 µg/l	TM178	<0.027	<0.027	<0.027			
Benzo(a)pyrene (aq) NRA leach	<0.009 µg/l	TM178	<0.009	<0.009	<0.009			
Dibenzo(a,h)anthracene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016	<0.016			
Benzo(g,h,i)perylene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016	<0.016			
Indeno(1,2,3-cd)pyrene (aq) NRA leach	<0.014 µg/l	TM178	<0.014	<0.014	<0.014			
PAH, Total Detected USEPA 16 (aq) NRA leach	<0.247 µg/l	TM178	0.676	1.1	0.613			



## CERTIFICATE OF ANALYSIS

**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

## Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH310A	BH312A	BH312A			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		4.00	3.60 - 3.80	5.00 - 5.10			
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		24/04/2012	24/04/2012	24/04/2012			
diss.filt	Dissolved / filtered sample.		.	.	.			
tot.unfilt	Total / unfiltered sample.		27/04/2012	27/04/2012	27/04/2012			
*	Subcontracted test.		120428-54	120428-54	120428-54			
**	% 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		5516248	5516234	5516237			
(F)	Trigger breach confirmed		E13	E11	E17			
Component	LOD/Units	Method						
Phenol	<100 µg/kg	TM157	<100	<100	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100			
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100			
Isophorone	<100 µg/kg	TM157	<100	<100	<100			
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Dibenzofuran	<100 µg/kg	TM157	<100	200	156			
Carbazole	<100 µg/kg	TM157	<100	247	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	1260	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100			
Azobenzene	<100 µg/kg	TM157	<100	<100	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100			
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100			
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100			





**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

## TPH CWG (S)

Results Legend		Customer Sample R	BH310A	BH312A	BH312A		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.		4.00	3.60 - 3.80	5.00 - 5.10		
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		24/04/2012	24/04/2012	24/04/2012		
diss.filt	Dissolved / filtered sample.		.	.	.		
tot.unfilt	Total / unfiltered sample.		27/04/2012	27/04/2012	27/04/2012		
*	Subcontracted test.		120428-54	120428-54	120428-54		
**	% 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		5516248	5516234	5516237		
(F)	Trigger breach confirmed		E13	E11	E17		
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	121	57	21		
GRO >C5-C12	<44 µg/kg	TM089	<44	2130	7930		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 #	<5 #	<5 #		
Benzene	<10 µg/kg	TM089	<10 #	<10 M	<10 #		
Toluene	<2 µg/kg	TM089	<2 #	<2 M	19.7 #		
Ethylbenzene	<3 µg/kg	TM089	<3 #	<3 M	39.4 #		
m,p-Xylene	<6 µg/kg	TM089	<6 #	<6 M	<6 #		
o-Xylene	<3 µg/kg	TM089	<3 #	<3 M	<3 #		
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9		
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	59.1		
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	10.9	84.7		
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	63.4	578		
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	496	2120		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	737	2200		
Aliphatics >C12-C16	<100 µg/kg	TM173	5540	46600	93100		
Aliphatics >C16-C21	<100 µg/kg	TM173	20900	231000	372000		
Aliphatics >C21-C35	<100 µg/kg	TM173	52400	1250000	1060000		
Aliphatics >C35-C44	<100 µg/kg	TM173	18200	478000	313000		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	97000	2010000	1840000		
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	19.7		
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	329	1450		
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	491	1470		
Aromatics >EC12-EC16	<100 µg/kg	TM173	8950	26700	75900		
Aromatics >EC16-EC21	<100 µg/kg	TM173	3080	150000	207000		
Aromatics >EC21-EC35	<100 µg/kg	TM173	<100	663000	683000		
Aromatics >EC35-EC44	<100 µg/kg	TM173	<100	313000	358000		
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	132000	155000		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	12000	1150000	1320000		
Total Aliphatics >C5-35	<100 µg/kg	TM173	78800	1530000	1530000		
Total Aromatics >C5-35	<100 µg/kg	TM173	12000	841000	969000		
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	90800	2370000	2500000		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	109000	3160000	3170000		



## CERTIFICATE OF ANALYSIS

**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

## VOC MS (S)

Results Legend		Customer Sample R	BH310A	BH312A	BH312A			
#	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>	BH310A	BH312A	BH312A			
M	mCERTS accredited.		4.00	3.60 - 3.80	5.00 - 5.10			
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		24/04/2012	24/04/2012	24/04/2012			
diss.filt	Dissolved / filtered sample.		.	.	.			
tot.unfilt	Total / unfiltered sample.		27/04/2012	27/04/2012	27/04/2012			
*	Subcontracted test.		120428-54	120428-54	120428-54			
**	% 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		5516248	5516234	5516237			
(F)	Trigger breach confirmed		E13	E11	E17			
Component	LOD/Units		Method					
Dibromofluoromethane**	%	TM116	11.2	100	86.7			
Toluene-d8**	%	TM116	100	98.1	93.5			
4-Bromofluorobenzene**	%	TM116	99.2	107	122			
Dichlorodifluoromethane	<4 µg/kg	TM116	<4	<80	<8	#	M	#
Chloromethane	<7 µg/kg	TM116	<7	562	<14			
Vinyl Chloride	<10 µg/kg	TM116	<10	<200	<20			
Bromomethane	<13 µg/kg	TM116	<13	<260	<26	#	M	#
Chloroethane	<14 µg/kg	TM116	<14	<280	<28	#	M	#
Trichlorofluoromethane	<6 µg/kg	TM116	<6	<120	<12	#	M	#
1.1-Dichloroethene	<10 µg/kg	TM116	<10	<200	<20	#	#	#
Carbon Disulphide	<7 µg/kg	TM116	<7	2050	121	#	M	#
Dichloromethane	<10 µg/kg	TM116	<10	<200	<20	#	#	#
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	<220	<22	#	M	#
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11	<220	<22	#	M	#
1.1-Dichloroethane	<8 µg/kg	TM116	<8	<160	<16	#	M	#
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5	<100	<10	#	M	#
2.2-Dichloropropane	<12 µg/kg	TM116	<12	<240	<24	#	M	#
Bromochloromethane	<14 µg/kg	TM116	<14	<280	<28	#	M	#
Chloroform	<8 µg/kg	TM116	<8	<160	<16	#	M	#
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7	<140	<14	#	M	#
1.1-Dichloropropene	<11 µg/kg	TM116	<11	<220	<22	#	M	#
Carbontetrachloride	<14 µg/kg	TM116	<14	<280	<28	#	M	#
1.2-Dichloroethane	<5 µg/kg	TM116	<5	<100	<10	#	M	#
Benzene	<9 µg/kg	TM116	<9	<180	<18	#	M	#
Trichloroethene	<9 µg/kg	TM116	<9	<180	<18	#	M	#
1.2-Dichloropropane	<12 µg/kg	TM116	<12	<240	<24	#	M	#
Dibromomethane	<9 µg/kg	TM116	<9	<180	<18	#	M	#
Bromodichloromethane	<7 µg/kg	TM116	<7	<140	<14	#	M	#
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<280	<28	#	M	#
Toluene	<5 µg/kg	TM116	<5	<100	<10	#	M	#
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<280	<28	#	M	#
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	<200	<20	#	M	#
1.3-Dichloropropane	<7 µg/kg	TM116	<7	<140	<14	#	#	#
Tetrachloroethene	<5 µg/kg	TM116	<5	<100	<10	#	M	#
Dibromochloromethane	<13 µg/kg	TM116	<13	<260	<26	#	M	#



## CERTIFICATE OF ANALYSIS

SDG: 120428-54  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 194092  
 Superseded Report: 192681

## VOC MS (S)

Results Legend			Customer Sample R	BH310A	BH312A	BH312A		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.			4.00	3.60 - 3.80	5.00 - 5.10		
S	Deviating sample.			Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.			24/04/2012	24/04/2012	24/04/2012		
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			27/04/2012	27/04/2012	27/04/2012		
(F)	Trigger breach confirmed			120428-54	120428-54	120428-54		
				5516248	5516234	5516237		
			E13	E11	E17			
Component	LOD/Units	Method						
1,2-Dibromoethane	<12 µg/kg	TM116	<12 #	<240 M	<24 #			
Chlorobenzene	<5 µg/kg	TM116	<5 #	<100 M	<10 #			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 #	<200 M	<20 #			
Ethylbenzene	<4 µg/kg	TM116	<4 #	194 M	<8 #			
p/m-Xylene	<14 µg/kg	TM116	<14 #	<280 #	51.1 #			
o-Xylene	<10 µg/kg	TM116	<10 #	<200 M	32.2 #			
Styrene	<10 µg/kg	TM116	<10 #	<200 M	<20 #			
Bromoform	<10 µg/kg	TM116	<10 #	<200 M	<20 #			
Isopropylbenzene	<5 µg/kg	TM116	<5 #	<100 M	11.8 #			
1,1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10 #	<200 #	<20 #			
1,2,3-Trichloropropane	<17 µg/kg	TM116	<17 #	<340 M	<34 #			
Bromobenzene	<10 µg/kg	TM116	<10 #	<200 M	<20 #			
Propylbenzene	<11 µg/kg	TM116	<11 #	<220 M	<22 #			
2-Chlorotoluene	<9 µg/kg	TM116	<9 #	<180 M	<18 #			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8 #	<160 #	59.6 #			
4-Chlorotoluene	<12 µg/kg	TM116	<12 #	<240 M	<24 #			
tert-Butylbenzene	<12 µg/kg	TM116	<12 #	<240 #	<24 #			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9 #	<180 #	227 #			
sec-Butylbenzene	<10 µg/kg	TM116	<10 #	<200 M	23.9 #			
4-Isopropyltoluene	<11 µg/kg	TM116	<11 #	<220 M	<22 #			
1,3-Dichlorobenzene	<6 µg/kg	TM116	<6 #	<120 M	<12 #			
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5 #	<100 M	<10 #			
n-Butylbenzene	<10 µg/kg	TM116	<10 #	<200 M	<20 #			
1,2-Dichlorobenzene	<12 µg/kg	TM116	<12 #	<240 M	<24 #			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14 #	<280 M	<28 #			
Tert-amyl methyl ether	<15 µg/kg	TM116	<15 #	<300 #	<30 #			
1,2,4-Trichlorobenzene	<6 µg/kg	TM116	<6 #	<120 #	<12 #			
Hexachlorobutadiene	<12 µg/kg	TM116	<12 #	<240 #	<24 #			
Naphthalene	<13 µg/kg	TM116	<13 #	<260 M	1210 #			
1,2,3-Trichlorobenzene	<6 µg/kg	TM116	<6 #	<120 M	<12 #			
VOC TIC	-	TM116	No TICs identified	No TICs identified	See Attached			





**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

## 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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306B E3 1.00 SOLID 24/04/2012 00:00:00  120428-54 5516218 TM048	16/05/12	Paul Poynton	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306B E12 4.00 SOLID 24/04/2012 00:00:00  120428-54 5516221 TM048	16/05/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306B E21 6.50 SOLID 24/04/2012 00:00:00  120428-54 5516226 TM048	16/05/12	Paul Poynton	Loose fibres and ACM debris in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312A E1 0.50 SOLID 24/04/2012 00:00:00  120428-54 5516228 TM048	16/05/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312A E7 2.00 - 2.10 SOLID 24/04/2012 00:00:00  120428-54 5516231 TM048	16/05/12	Chris Swindells	ACM debris in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312A E11 3.60 - 3.80 SOLID 24/04/2012 00:00:00  120428-54 5516234 TM048	16/05/12	Paul Poynton	Loose fibre and ACM debris in soil	Detected (#)	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312A E20 6.00 - 6.10 SOLID 24/04/2012 00:00:00  120428-54 5516239 TM048	16/05/12	Paul Poynton	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310A E3 1.00 SOLID 24/04/2012 00:00:00  120428-54 5516240 TM048	16/05/12	Chris Swindells	Loose fibre in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310A E10 3.00 SOLID 24/04/2012 00:00:00  120428-54 5516246 TM048	16/05/12	Paul Poynton	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310A E19 6.00 SOLID 24/04/2012 00:00:00  120428-54 5516252 TM048	16/05/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314 E3 0.00 - 0.50 SOLID 24/04/2012 00:00:00  120428-54 5516253 TM048	16/05/12	Chris Swindells	Material typical of asbestos cement in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314 E10 2.20 SOLID 24/04/2012 00:00:00 120428-54 5516258 TM048	16/05/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310A-Repeat E3 1.00 SOLID 24/04/2012 00:00:00 30/08/2012 14:34:03 120428-54 6104464 TM048	02/08/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310A-Repeat E10 3.00 SOLID 24/04/2012 00:00:00 30/08/2012 14:34:45 120428-54 6104548 TM048	02/08/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310A-Repeat E19 6.00 SOLID 24/04/2012 00:00:00 30/08/2012 14:34:59 120428-54 6104583 TM048	02/08/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314-Repeat E3 0.00 - 0.50 SOLID 24/04/2012 00:00:00 30/08/2012 14:39:36 120428-54 6108561 TM048	02/08/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314-Repeat E10 2.20 SOLID 24/04/2012 00:00:00 30/08/2012 14:39:49 120428-54 6109754 TM048	02/08/12	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306B-Repeat E21 6.50 SOLID 24/04/2012 00:00:00 30/08/2012 14:33:43 120428-54 6103694 TM048	20/08/12	Kevin Bowron	Soil Containing Loose Fibres & ACM Debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312A-Repeat E7 2.00 - 2.10 SOLID 24/04/2012 00:00:00 30/08/2012 14:35:16 120428-54 6104608 TM048	20/08/12	Martin Cotterell	Soil Containing Loose Fibres & ACM Debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312A-Repeat E11 3.60 - 3.80 SOLID 24/04/2012 00:00:00 30/08/2012 14:35:30 120428-54 6104609 TM048	20/08/12	Kevin Bowron	Soil Containing Loose Fibres & ACM Debris	Detected (#)	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312A-Repeat E20 6.00 - 6.10 SOLID 24/04/2012 00:00:00 30/08/2012 14:39:22 120428-54 6108506 TM048	20/08/12	Kevin Bowron	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306B E3 1.00 SOLID 24/04/2012 00:00:00 120428-54 5516218 TM048	13/9/12	Martin Cotterell	Soil containing loose fibres & ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306B E12 4.00 SOLID 24/04/2012 00:00:00 120428-54 5516221 TM048	13/9/12	Martin Cotterell	Soil containing loose fibres & ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH3068 E12 4.00 SOLID 24/04/2012 00:00:00  120428-54 5516221 TM 304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314 E3 0.00 - 0.50 SOLID 24/04/2012 00:00:00  120428-54 5516253 TM 304	- (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5574090	BH306B	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574090	BH306B	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5574090	BH306B	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574090	BH306B	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5574131	BH306B	1.00	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5574131	BH306B	1.00	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5574131	BH306B	1.00	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5574131	BH306B	1.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5574131	BH306B	1.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5574131	BH306B	1.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574131	BH306B	1.00	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5574142	BH306B	1.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5574161	BH306B	1.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574266	BH314	2.20	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574339	BH314	0.00 - 0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574339	BH314	0.00 - 0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5574339	BH314	0.00 - 0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574339	BH314	0.00 - 0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5574395	BH314	0.00 - 0.50	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5574395	BH314	0.00 - 0.50	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5574395	BH314	0.00 - 0.50	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5574395	BH314	0.00 - 0.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5574395	BH314	0.00 - 0.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5574395	BH314	0.00 - 0.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574395	BH314	0.00 - 0.50	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5574406	BH314	0.00 - 0.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5574440	BH314	0.00 - 0.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574463	BH314	2.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574463	BH314	2.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5574463	BH314	2.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574463	BH314	2.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5574502	BH314	2.20	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5574502	BH314	2.20	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5574502	BH314	2.20	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5574502	BH314	2.20	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5574502	BH314	2.20	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5574502	BH314	2.20	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574502	BH314	2.20	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5574527	BH314	2.20	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5574538	BH312A	2.00 - 2.10	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574539	BH312A	2.00 - 2.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574539	BH312A	2.00 - 2.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5574539	BH312A	2.00 - 2.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574539	BH312A	2.00 - 2.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5574541	BH306B	4.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574541	BH306B	4.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5574541	BH306B	4.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574541	BH306B	4.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5574552	BH306B	4.00	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5574552	BH306B	4.00	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5574552	BH306B	4.00	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5574552	BH306B	4.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded



## CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120428-54	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	194092
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	192681

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5574552	BH306B	4.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5574552	BH306B	4.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574552	BH306B	4.00	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5574561	BH312A	2.00 - 2.10	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5574561	BH312A	2.00 - 2.10	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5574561	BH312A	2.00 - 2.10	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5574561	BH312A	2.00 - 2.10	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5574561	BH312A	2.00 - 2.10	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5574561	BH312A	2.00 - 2.10	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574561	BH312A	2.00 - 2.10	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5574575	BH306B	4.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5574576	BH312A	2.00 - 2.10	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5574608	BH306B	4.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574614	BH306B	6.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574614	BH306B	6.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5574614	BH306B	6.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574614	BH306B	6.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5574618	BH312A	3.60 - 3.80	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574618	BH312A	3.60 - 3.80	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5574618	BH312A	3.60 - 3.80	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574618	BH312A	3.60 - 3.80	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5574637	BH306B	6.50	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5574637	BH306B	6.50	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5574637	BH306B	6.50	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5574637	BH306B	6.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5574637	BH306B	6.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5574637	BH306B	6.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574637	BH306B	6.50	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5574650	BH306B	6.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5574652	BH312A	3.60 - 3.80	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5574652	BH312A	3.60 - 3.80	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5574652	BH312A	3.60 - 3.80	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5574652	BH312A	3.60 - 3.80	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5574652	BH312A	3.60 - 3.80	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5574652	BH312A	3.60 - 3.80	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574652	BH312A	3.60 - 3.80	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5574667	BH312A	3.60 - 3.80	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5574674	BH306B	6.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574681	BH312A	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574681	BH312A	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5574681	BH312A	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574681	BH312A	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5574696	BH312A	3.60 - 3.80	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574698	BH312A	0.50	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5574698	BH312A	0.50	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5574698	BH312A	0.50	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5574698	BH312A	0.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5574698	BH312A	0.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5574698	BH312A	0.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574698	BH312A	0.50	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5574705	BH312A	0.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5574720	BH312A	6.00 - 6.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574720	BH312A	6.00 - 6.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded



## CERTIFICATE OF ANALYSIS

**SDG:** 120428-54      **Location:** Haulbowline      **Order Number:** 4559  
**Job:** D\_PRIORGEOT\_CRK-44      **Customer:** Priority Geotechnical Ltd      **Report Number:** 194092  
**Client Reference:** P12030      **Attention:** Colette Kelly      **Superseded Report:** 192681

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5574720	BH312A	6.00 - 6.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574720	BH312A	6.00 - 6.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5574722	BH312A	0.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574740	BH312A	6.00 - 6.10	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5574740	BH312A	6.00 - 6.10	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5574740	BH312A	6.00 - 6.10	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5574740	BH312A	6.00 - 6.10	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5574740	BH312A	6.00 - 6.10	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5574740	BH312A	6.00 - 6.10	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574740	BH312A	6.00 - 6.10	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5574743	BH312A	6.00 - 6.10	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5574782	BH312A	6.00 - 6.10	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574851	BH310A	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574851	BH310A	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5574851	BH310A	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574851	BH310A	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5574897	BH310A	1.00	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5574897	BH310A	1.00	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5574897	BH310A	1.00	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5574897	BH310A	1.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5574897	BH310A	1.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5574897	BH310A	1.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574897	BH310A	1.00	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5574915	BH310A	1.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5574940	BH310A	1.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5574993	BH310A	3.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5574993	BH310A	3.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5574993	BH310A	3.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5574993	BH310A	3.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5575030	BH310A	3.00	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5575030	BH310A	3.00	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5575030	BH310A	3.00	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5575030	BH310A	3.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5575030	BH310A	3.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5575030	BH310A	3.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5575030	BH310A	3.00	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5575046	BH310A	3.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5575096	BH310A	3.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5575143	BH310A	6.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5575143	BH310A	6.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5575143	BH310A	6.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5575143	BH310A	6.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5575170	BH310A	6.00	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5575170	BH310A	6.00	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5575170	BH310A	6.00	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5575170	BH310A	6.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5575170	BH310A	6.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5575170	BH310A	6.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5575170	BH310A	6.00	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5575180	BH310A	6.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5575188	BH310A	6.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded

Note : Test results may be compromised





**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

### Notification of NDPs (No determination possible)

Date Received : 28/04/2012 15:35:42

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5516218	BH306B	1.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5516218	BH306B	1.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5516221	BH306B	4.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5516221	BH306B	4.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5516226	BH306B	6.50	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5516226	BH306B	6.50	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5516231	BH312A	2.00 - 2.10	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5516231	BH312A	2.00 - 2.10	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5516234	BH312A	3.60 - 3.80	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5516234	BH312A	3.60 - 3.80	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5516239	BH312A	6.00 - 6.10	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5516239	BH312A	6.00 - 6.10	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5516240	BH310A	1.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5516240	BH310A	1.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5516252	BH310A	6.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5516252	BH310A	6.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5516253	BH314	0.00 - 0.50	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5516253	BH314	0.00 - 0.50	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5516258	BH314	2.20	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5516258	BH314	2.20	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5516231	BH312A	2.00 - 2.10	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5516240	BH310A	1.00	Total Dissolved Solids (Grav)	Unsuitable for analysis due to potential Asbestos



<b>SDG:</b>	120428-54	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	194092
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	192681

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM 304				
TM021	Method 2540C, AWWA/APHA, 20th Ed., 1999	Determination of total dissolved solids in waters by gravimetry.		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
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		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		



## CERTIFICATE OF ANALYSIS

<b>SDG:</b> 120428-54	<b>Location:</b> Haulbowline	<b>Order Number:</b> 4559
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 194092
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b> 192681

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		
TM243		Mixed Anions In Soils By Kone		
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		
TM294		Determination of Free Sulphur in liquids by HPLC		
TM321		Organic matter Content of Soil By Titration		

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



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

### Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	5516253	5516258	5516240	5516246	5516248	5516252	5516228	5516231	5516234	5516236
AGS Ref.										
Depth	0.00 - 0.50	2.20	1.00	3.00	4.00	6.00	0.50	2.00 - 2.10	3.60 - 3.80	4.00 - 4.10
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	15-May-2012	15-May-2012	15-May-2012	15-May-2012		15-May-2012	16-May-2012	15-May-2012	16-May-2012	
Alkalinity Filtered as CaCO3			22-May-2012							23-May-2012
Ammoniacal Nitrogen			23-May-2012							23-May-2012
Ammonium Soil by Titration	15-May-2012	15-May-2012	15-May-2012	15-May-2012		15-May-2012	15-May-2012	15-May-2012	15-May-2012	
Anions by Kone (soil)	14-May-2012	14-May-2012	16-May-2012	14-May-2012		16-May-2012	16-May-2012	16-May-2012	16-May-2012	
Anions by Kone (w)			23-May-2012							24-May-2012
Asbestos Identification (Soil)	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012	16-May-2012	16-May-2012	16-May-2012	
Asbestos Quantification - Full	19-Jun-2012									
Boron Water Soluble	15-May-2012	15-May-2012	16-May-2012	15-May-2012		16-May-2012	16-May-2012	16-May-2012	16-May-2012	
COD Unfiltered			23-May-2012							22-May-2012
Conductivity (at 20 deg.C)			23-May-2012							21-May-2012
Cyanide Comp/Free/Total/Thiocyanate	15-May-2012	15-May-2012	23-May-2012	15-May-2012		15-May-2012	16-May-2012	15-May-2012	15-May-2012	23-May-2012
Dissolved Metals by ICP-MS			23-May-2012							23-May-2012
Dissolved Organic/Inorganic Carbon			23-May-2012							22-May-2012
Easily Liberated Sulphide	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012	15-May-2012	16-May-2012	16-May-2012	
EPH CWG (Aliphatic) GC (S)					03-May-2012				04-May-2012	
EPH CWG (Aromatic) GC (S)					03-May-2012				04-May-2012	
Fluoride			22-May-2012							22-May-2012
Free Sulphur			24-May-2012							23-May-2012
GRO by GC-FID (S)					03-May-2012				04-May-2012	
Hexavalent Chromium (s)	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012	16-May-2012	16-May-2012	16-May-2012	
Hexavalent Chromium (w)			23-May-2012							22-May-2012
Mercury Dissolved			23-May-2012							22-May-2012
Metals by iCap-OES (Soil)	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012	16-May-2012	16-May-2012	16-May-2012	
Metals by iCap-OES Dissolved (W)			23-May-2012							23-May-2012
Mineral Oil					17-May-2012				22-May-2012	
Nitrite by Kone (w)			23-May-2012							22-May-2012
NRA Leachate			08-Jun-2012							07-Jun-2012
PAH Spec MS - Aqueous (W)			24-May-2012							23-May-2012
PAH Value of soil	16-May-2012	15-May-2012	15-May-2012	16-May-2012		15-May-2012	15-May-2012	15-May-2012	15-May-2012	
PCB Congeners - Aqueous (W)			23-May-2012							23-May-2012
pH	16-May-2012	16-May-2012	16-May-2012	15-May-2012		15-May-2012	16-May-2012	16-May-2012	16-May-2012	
pH Value			22-May-2012							22-May-2012
Phenols by HPLC (S)	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012	16-May-2012	16-May-2012	16-May-2012	
Phenols by HPLC (W)			23-May-2012							24-May-2012
Sample description	12-May-2012	12-May-2012	12-May-2012	12-May-2012	30-Apr-2012	12-May-2012	12-May-2012	12-May-2012	30-Apr-2012	17-May-2012
Semi Volatile Organic Compounds					02-May-2012				06-May-2012	
Sulphide			22-May-2012							22-May-2012
Toluene extractable matter*							29-May-2012			
Total Dissolved Solids (Grav)										23-May-2012
Total Dissolved Solids on Leachates			22-May-2012							
Total Organic Carbon (Asb)								16-May-2012		
Total Sulphate	15-May-2012	15-May-2012	16-May-2012	15-May-2012		16-May-2012	16-May-2012	16-May-2012	16-May-2012	
Total Sulphur							16-May-2012			
TPH by IR Oils and Greases			13-Jun-2012							13-Jun-2012
TPH CWG GC (S)					03-May-2012				04-May-2012	
VOC MS (S)					04-May-2012				08-May-2012	



**SDG:** 120428-54      **Location:** Haulbowline      **Order Number:** 4559  
**Job:** D\_PRIORGEOT\_CRK-44      **Customer:** Priority Geotechnical Ltd      **Report Number:** 194092  
**Client Reference:** P12030      **Attention:** Colette Kelly      **Superseded Report:** 192681

Lab Sample No(s) Customer Sample Ref. AGS Ref. Depth Type	5516237	5516239	6104464	6104548	6104583	6104608	6104609	6108506	5516218	5516219
	BH312A	BH312A	BH310A-Repeat	BH310A-Repeat	BH310A-Repeat	BH312A-Repeat	BH312A-Repeat	BH312A-Repeat	BH306B	BH306B
	5.00 - 5.10	6.00 - 6.10	1.00	3.00	6.00	2.00 - 2.10	3.60 - 3.80	6.00 - 6.10	1.00	2.00
	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)		15-May-2012							15-May-2012	
Alkalinity Filtered as CaCO3										23-May-2012
Ammoniacal Nitrogen										23-May-2012
Ammonium Soil by Titration		15-May-2012							15-May-2012	
Anions by Kone (soil)		16-May-2012							15-May-2012	
Anions by Kone (w)										24-May-2012
Asbestos Identification (Soil)		16-May-2012	02-Aug-2012	02-Aug-2012	02-Aug-2012	20-Aug-2012	20-Aug-2012	21-Aug-2012	13-Sep-2012	
Boron Water Soluble		16-May-2012							16-May-2012	
COD Unfiltered										22-May-2012
Conductivity (at 20 deg.C)										21-May-2012
Cyanide Comp/Free/Total/Thiocyanate		15-May-2012							15-May-2012	23-May-2012
Dissolved Metals by ICP-MS										23-May-2012
Dissolved Organic/Inorganic Carbon										22-May-2012
Easily Liberated Sulphide		16-May-2012							14-May-2012	
EPH CWG (Aliphatic) GC (S)	04-May-2012									
EPH CWG (Aromatic) GC (S)	04-May-2012									
Fluoride										22-May-2012
Free Sulphur										24-May-2012
GRO by GC-FID (S)	04-May-2012									
Hexavalent Chromium (s)		16-May-2012							16-May-2012	
Hexavalent Chromium (w)										22-May-2012
Mercury Dissolved										22-May-2012
Metals by iCap-OES (Soil)		16-May-2012							16-May-2012	
Metals by iCap-OES Dissolved (W)										23-May-2012
Mineral Oil	22-May-2012									
Nitrite by Kone (w)										22-May-2012
NRA Leachate										07-Jun-2012
PAH Spec MS - Aqueous (W)										23-May-2012
PAH Value of soil		15-May-2012							15-May-2012	
PCB Congeners - Aqueous (W)										23-May-2012
pH		16-May-2012							16-May-2012	
pH Value										22-May-2012
Phenols by HPLC (S)		16-May-2012							16-May-2012	
Phenols by HPLC (W)										24-May-2012
Sample description		12-May-2012							12-May-2012	18-May-2012
Semi Volatile Organic Compounds	06-May-2012									
Sulphide										22-May-2012
Total Dissolved Solids (Grav)										23-May-2012
Total Sulphate		16-May-2012							16-May-2012	
TPH by IR Oils and Greases										13-Jun-2012
VOC MS (S)	08-May-2012									

Lab Sample No(s) Customer Sample Ref. AGS Ref. Depth Type	5516221	5516226	6103694	6108561	6109754
	BH306B	BH306B	BH306B-Repeat	BH314-Repeat	BH314-Repeat
	4.00	6.50	6.50	0.00 - 0.50	2.20
	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	16-May-2012	15-May-2012			
Ammonium Soil by Titration	15-May-2012	15-May-2012			
Anions by Kone (soil)	16-May-2012	16-May-2012			
Asbestos Identification (Soil)	13-Sep-2012	16-May-2012	20-Aug-2012	02-Aug-2012	02-Aug-2012
Asbestos Quantification - Full	20-Jun-2012				
Boron Water Soluble	16-May-2012	16-May-2012			
Cyanide Comp/Free/Total/Thiocyanate	15-May-2012	16-May-2012			
Easily Liberated Sulphide	15-May-2012	15-May-2012			
Hexavalent Chromium (s)	16-May-2012	16-May-2012			
Metals by iCap-OES (Soil)	16-May-2012	16-May-2012			
PAH Value of soil	16-May-2012	15-May-2012			
pH	16-May-2012	16-May-2012			
Phenols by HPLC (S)	16-May-2012	16-May-2012			
Sample description	12-May-2012	12-May-2012			
Total Sulphate	16-May-2012	16-May-2012			



SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Chromatogram

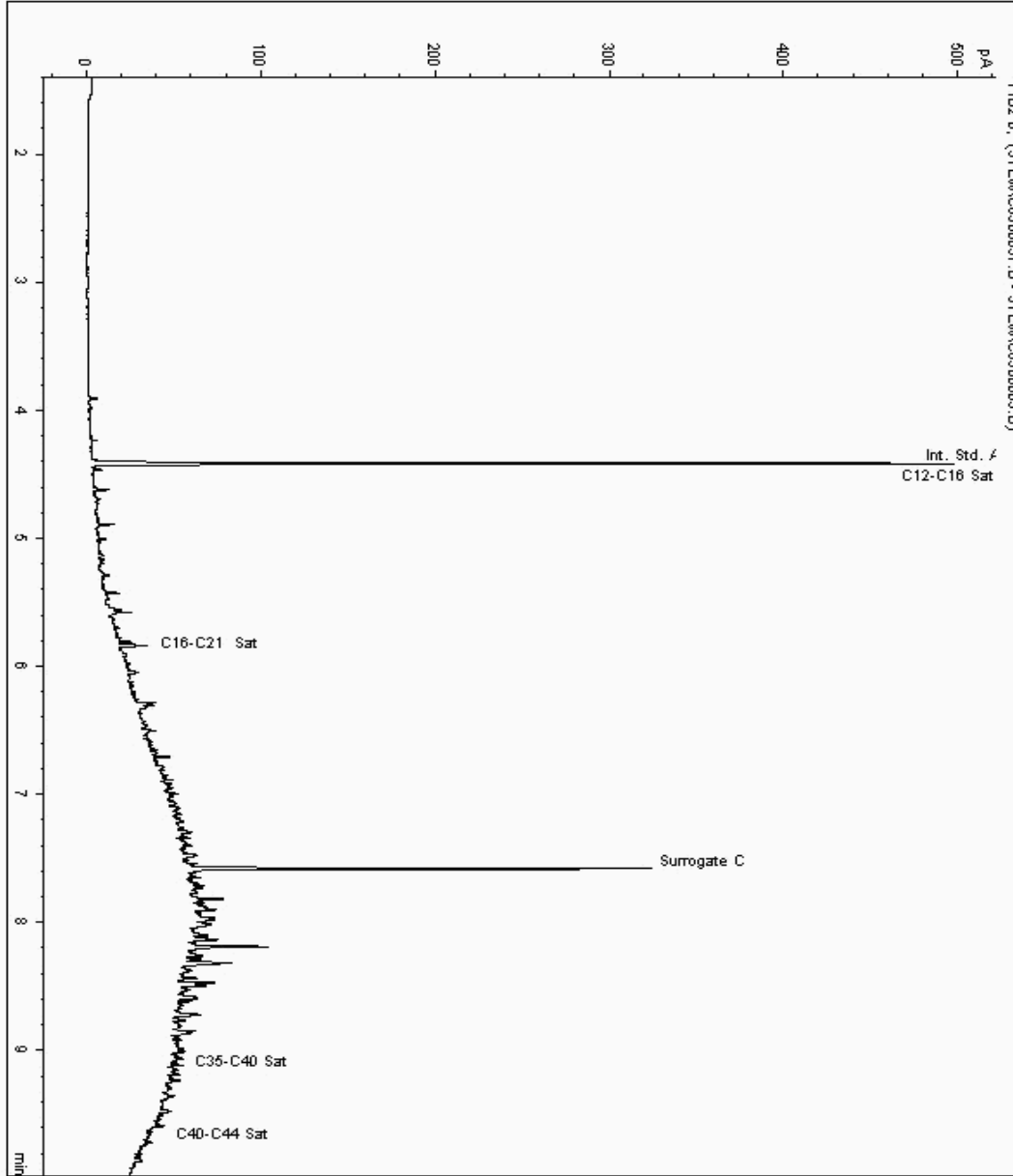
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5524762  
Sample ID : BH312A

Depth : 3.60 - 3.80

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

Sample Identity: 5399454-5524762  
Date Acquired : 02/05/12 22:19:52 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.980





SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Chromatogram

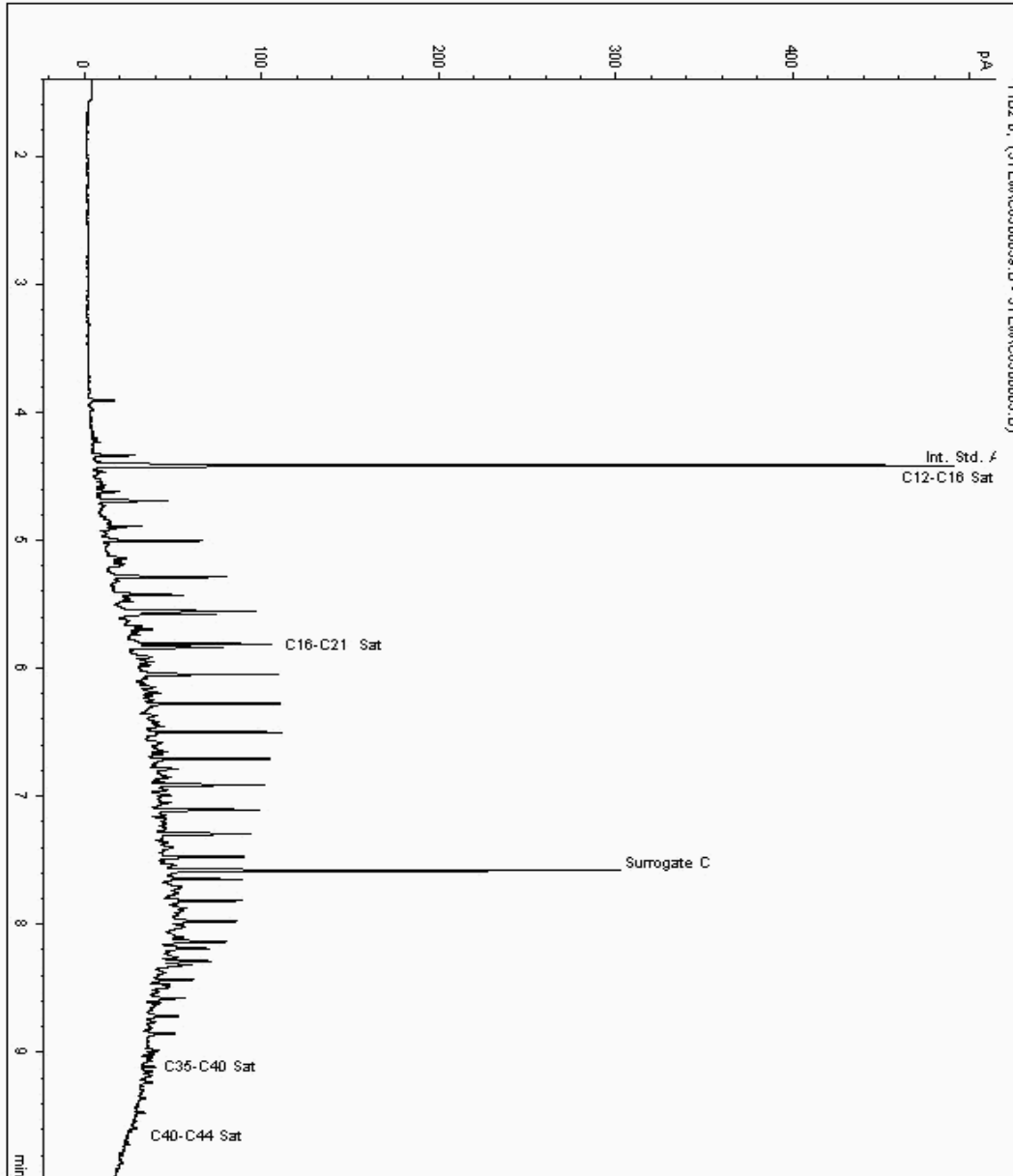
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5524765  
Sample ID : BH312A

Depth : 5.00 - 5.10

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

Sample Identity: 5399468-5524765  
Date Acquired : 02/05/12 22:52:03 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.970





SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Chromatogram

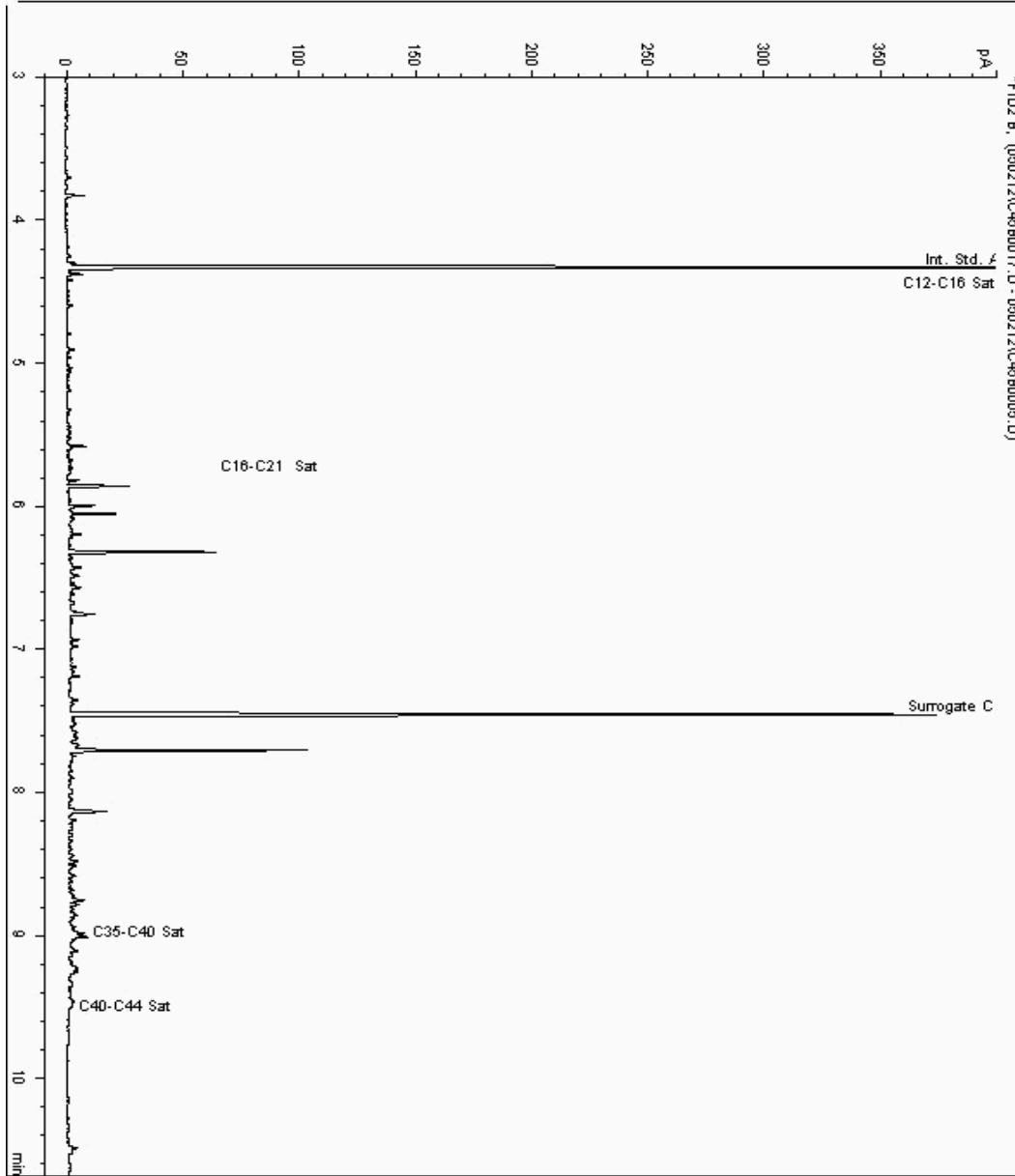
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5525803  
Sample ID : BH310A

Depth : 4.00

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

Sample Identity: 5399478-5525803  
Date Acquired : 02/05/12 17:17:26 PM  
Units : ppb  
Dilution:







SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Chromatogram

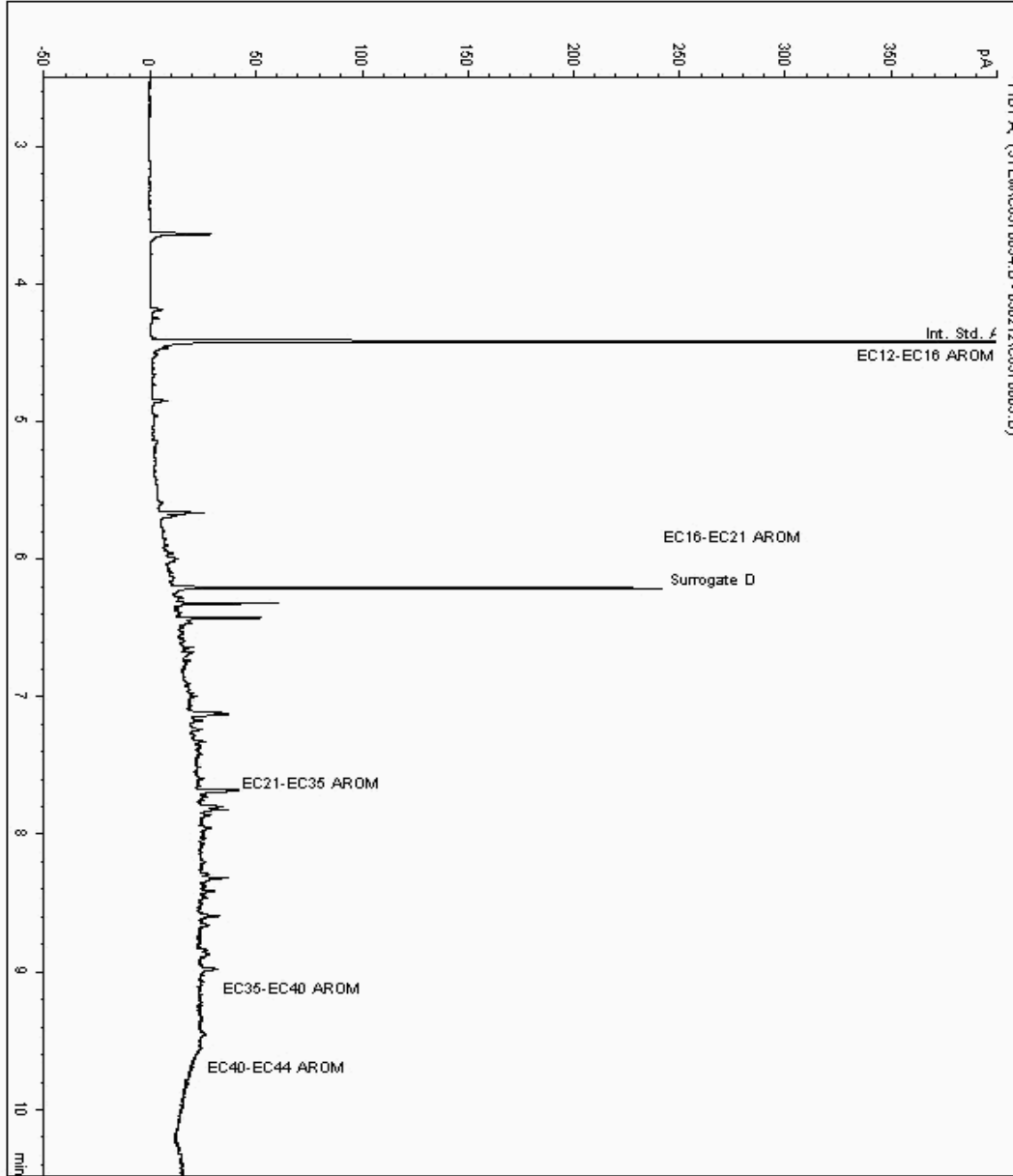
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5524762  
Sample ID : BH312A

Depth : 3.60 - 3.80

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

Sample Identity: 5399455-5524762  
Date Acquired : 03/05/12 16:56:16 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 1.970





SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Chromatogram

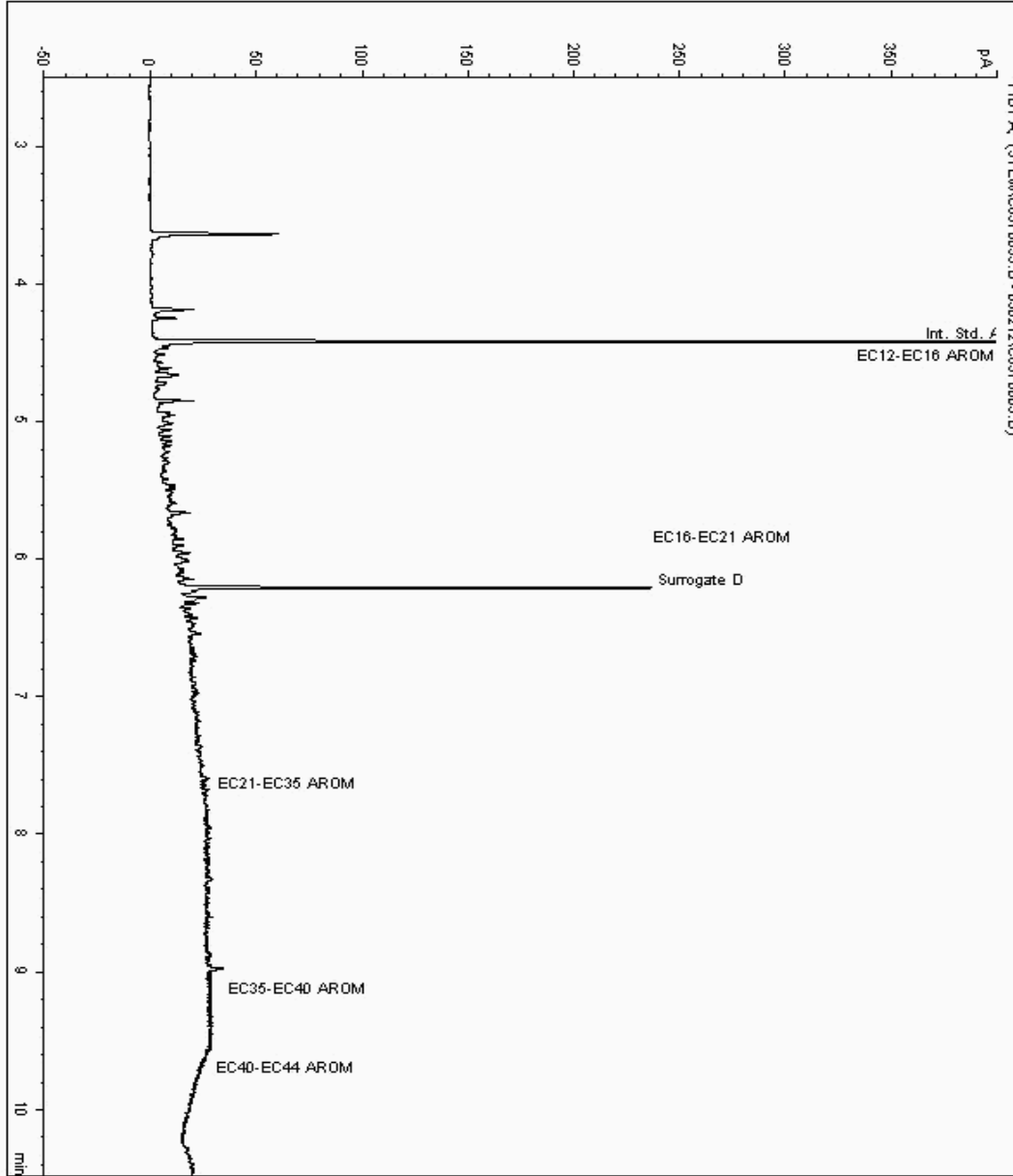
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5524765  
Sample ID : BH312A

Depth : 5.00 - 5.10

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

Sample Identity: 5399469-5524765  
Date Acquired : 03/05/12 17:16:52 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 1.930





SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Chromatogram

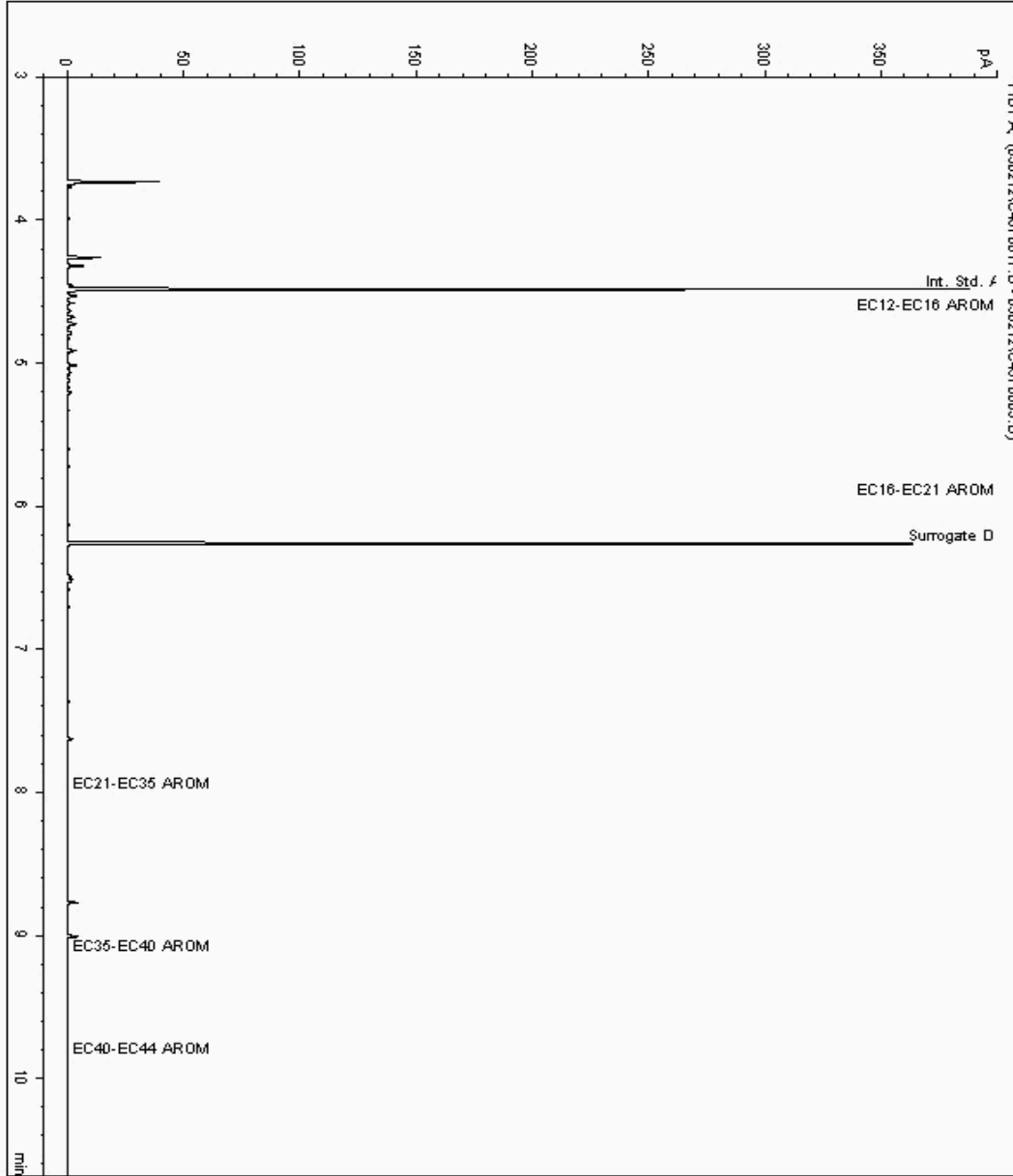
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5525803  
Sample ID : BH310A

Depth : 4.00

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

Sample Identity: 5399479-5525803  
Date Acquired : 02/05/12 17:17:26 PM  
Units : ppb  
Dilution:





SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Chromatogram

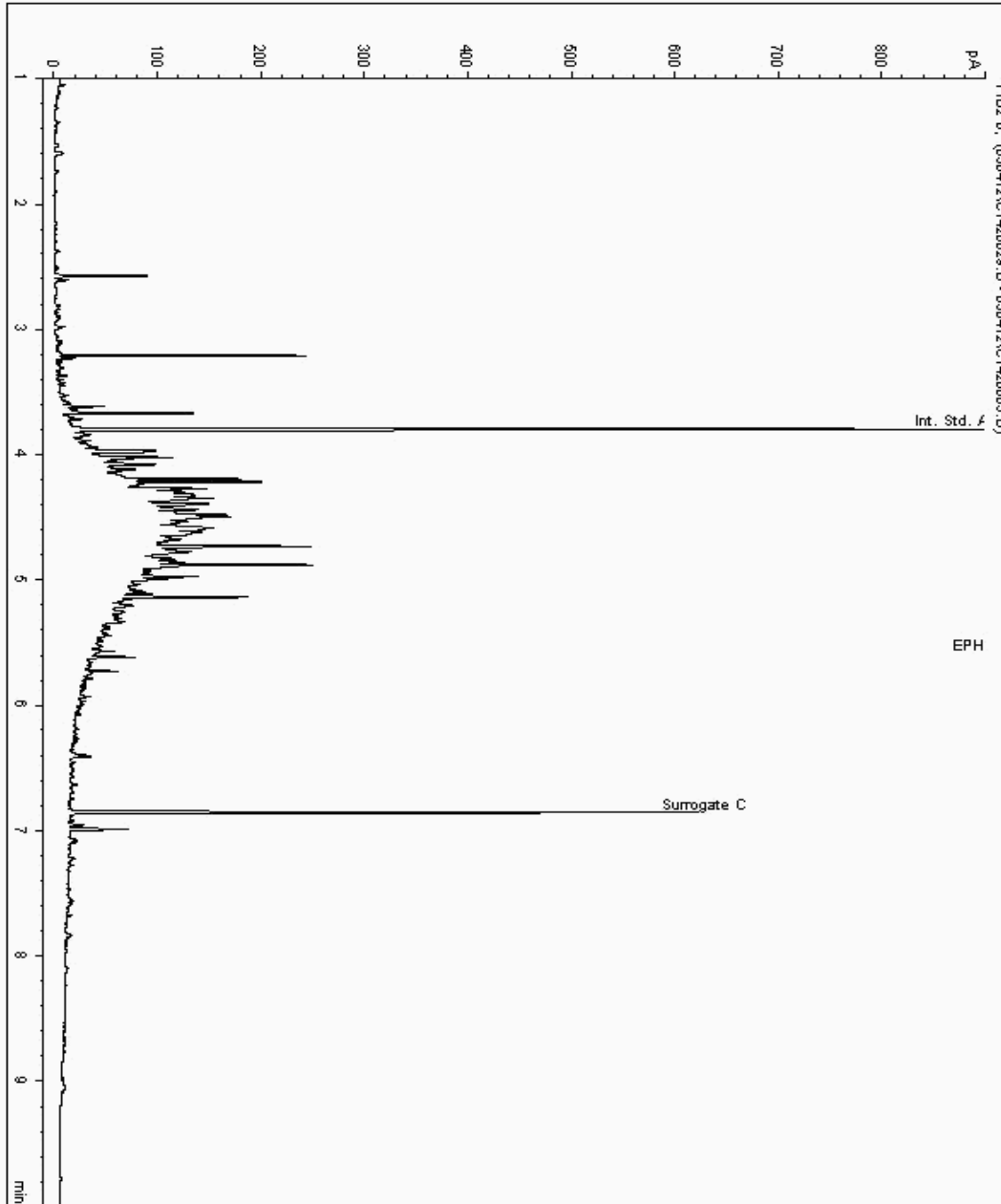
Analysis: Mineral Oil

Sample No : 5571394  
Sample ID : BH310A

Depth : 4.00

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5407560-5531796  
Date Acquired : 04/05/12 18:48:48 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Chromatogram

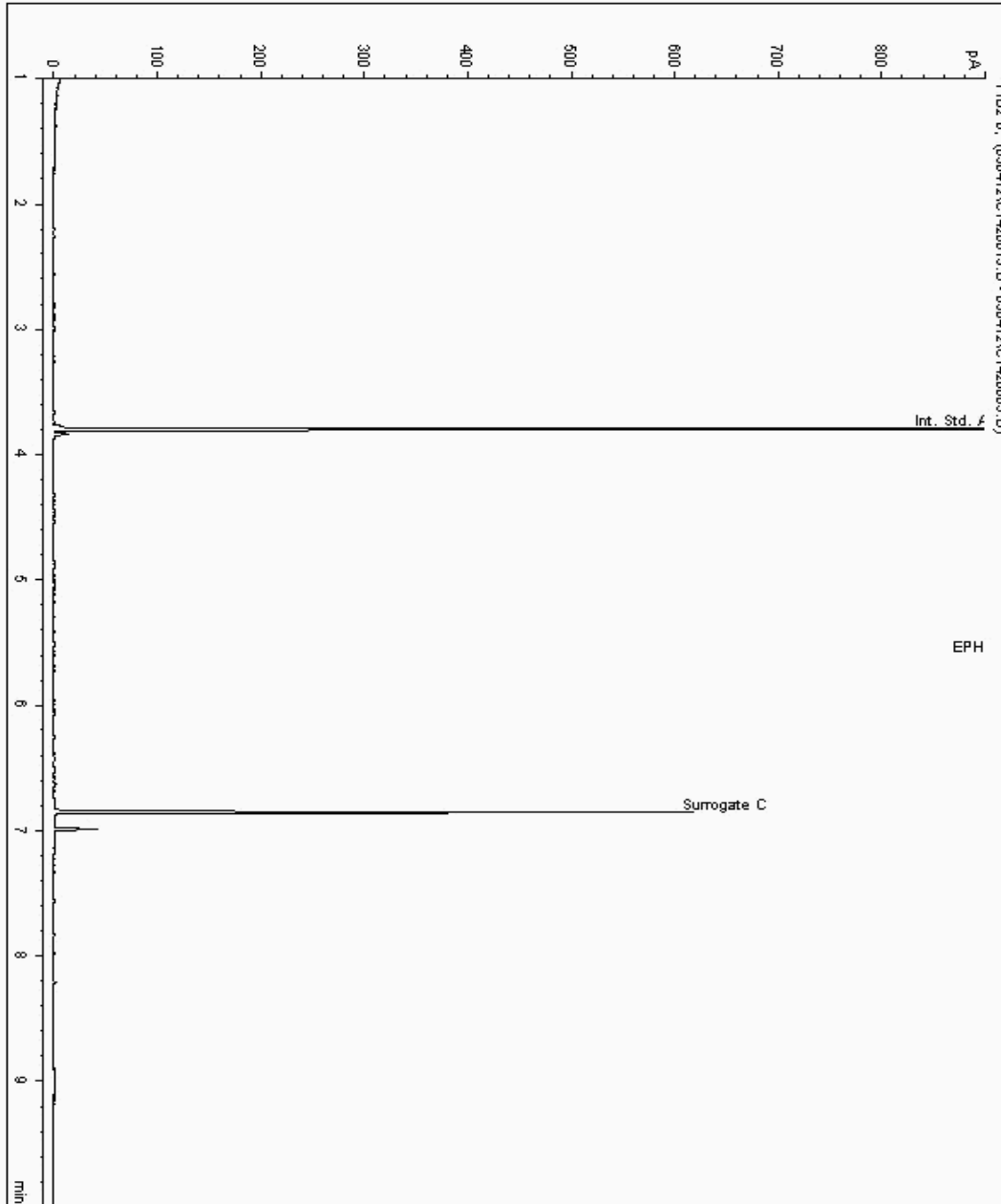
Analysis: Mineral Oil

Sample No : 5607627  
Sample ID : BH312A

Depth : 3.60 - 3.80

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5424947-5538228  
Date Acquired : 04/05/12 13:18:31 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





CERTIFICATE OF ANALYSIS

SDG: 120428-54
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 194092
Superseded Report: 192681

Chromatogram

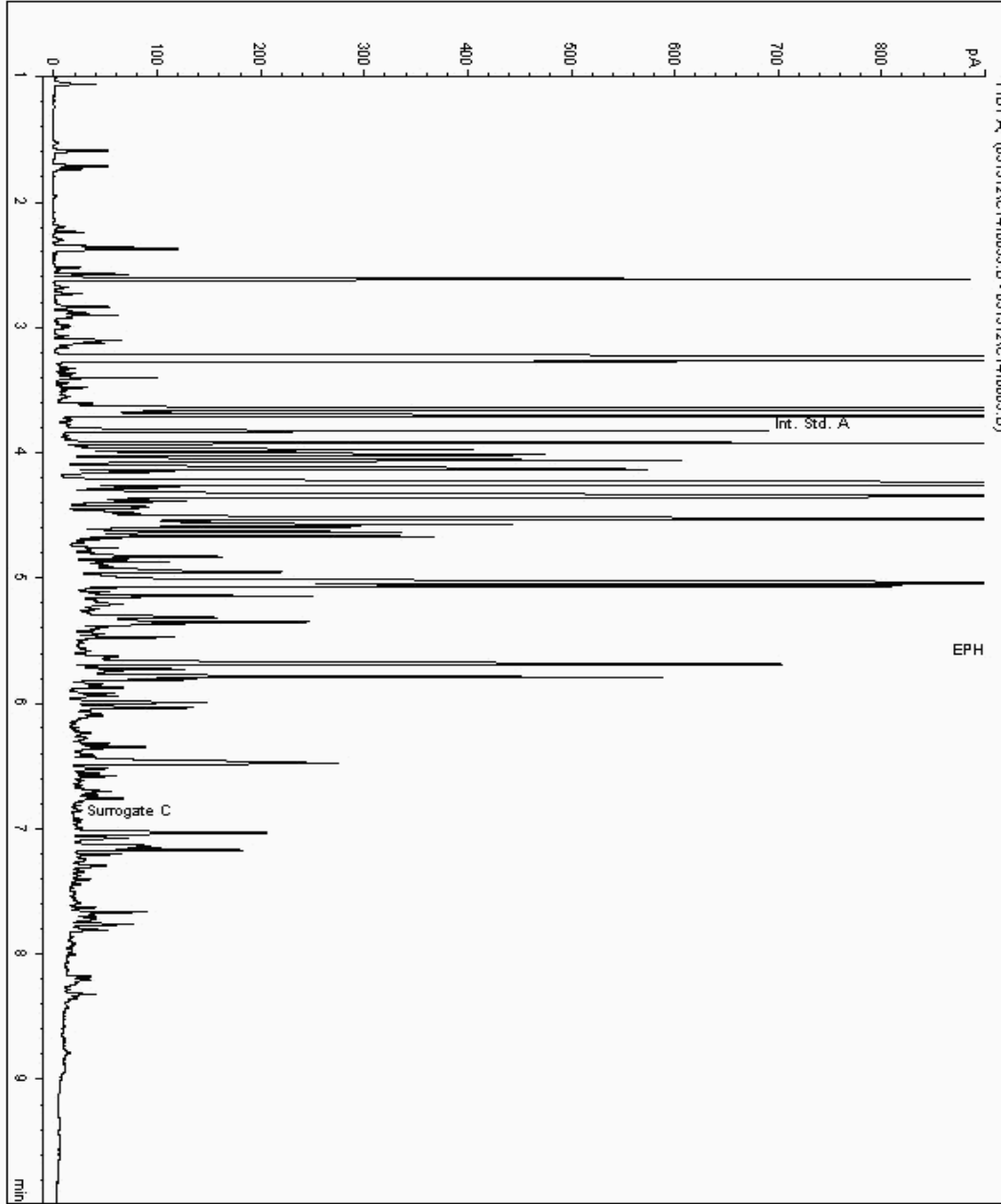
Analysis: Mineral Oil

Sample No : 5607806
Sample ID : BH312A

Depth : 5.00 - 5.10

Alcontrol/Geochem Analytical Services
EPH Range Organics ( C10 - C40 )

Sample Identity : 5431730-5570613
Date Acquired : 16/05/12 13:34:47 PM
Units : mc/kg
Sample Multiplier : 0.000
Dilution :





SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

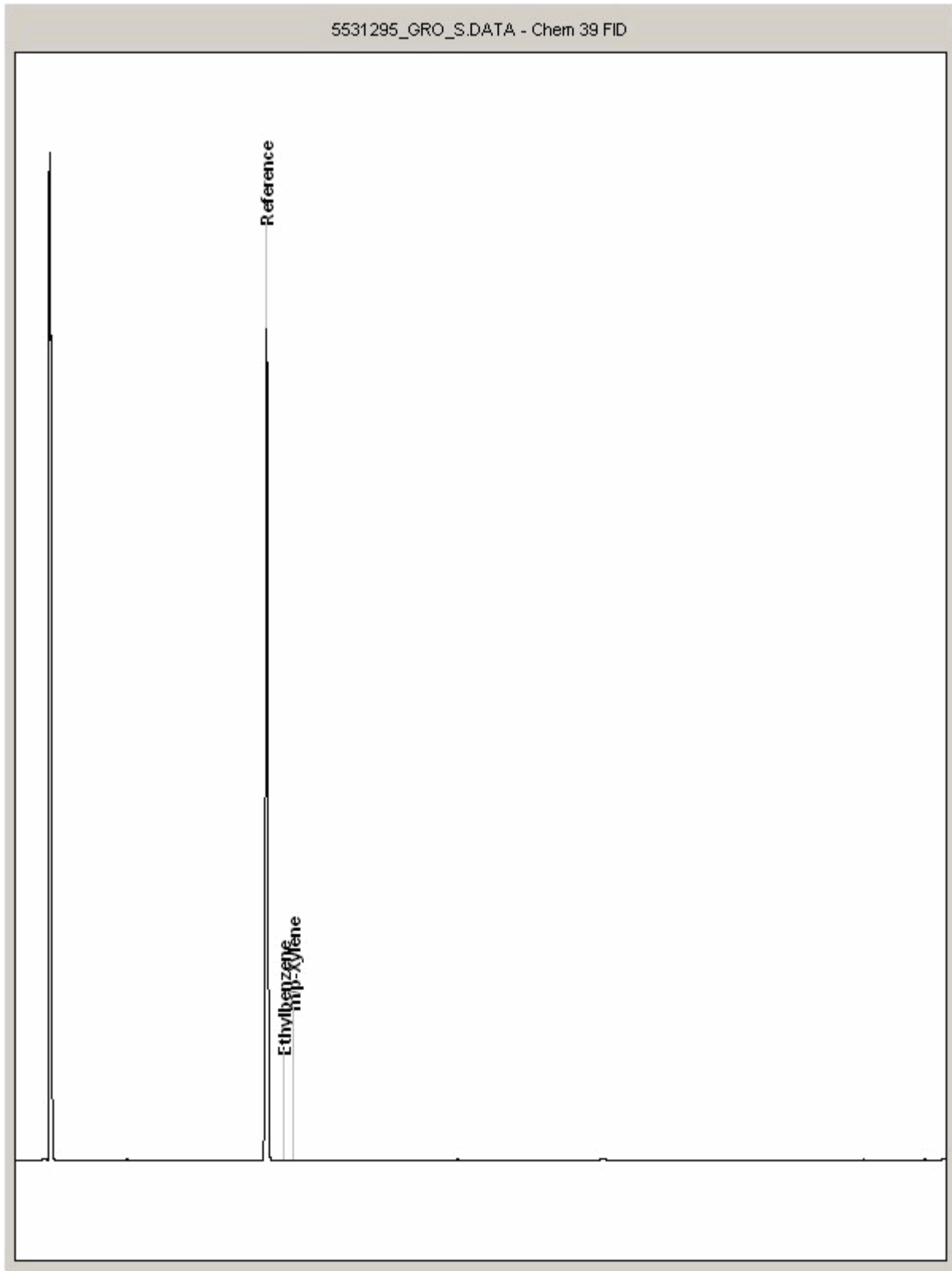
Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5531295  
Sample ID : BH310A

Depth : 4.00





CERTIFICATE OF ANALYSIS

SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

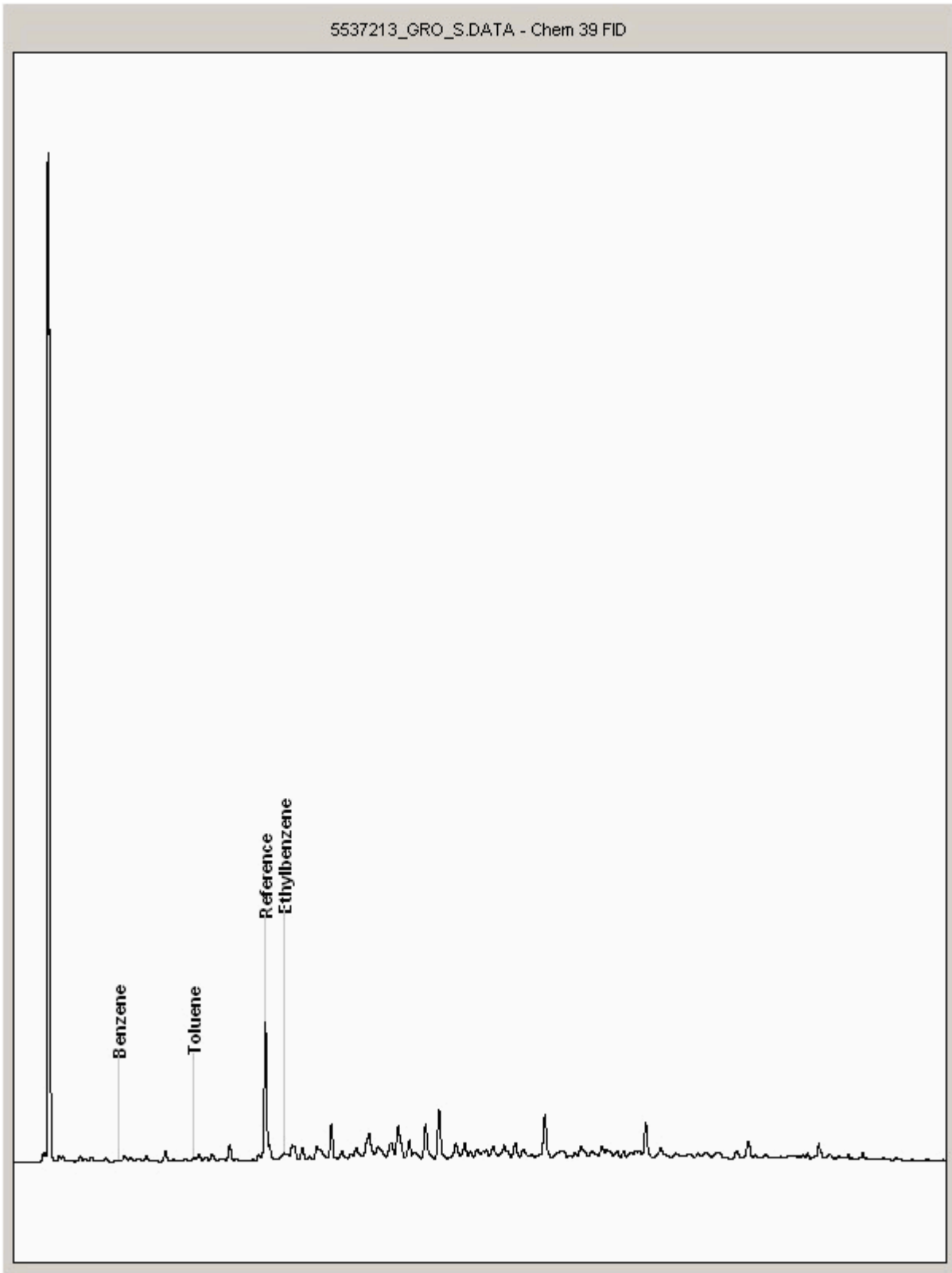
Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5537213  
Sample ID : BH312A

Depth : 5.00 - 5.10







SDG: 120428-54  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

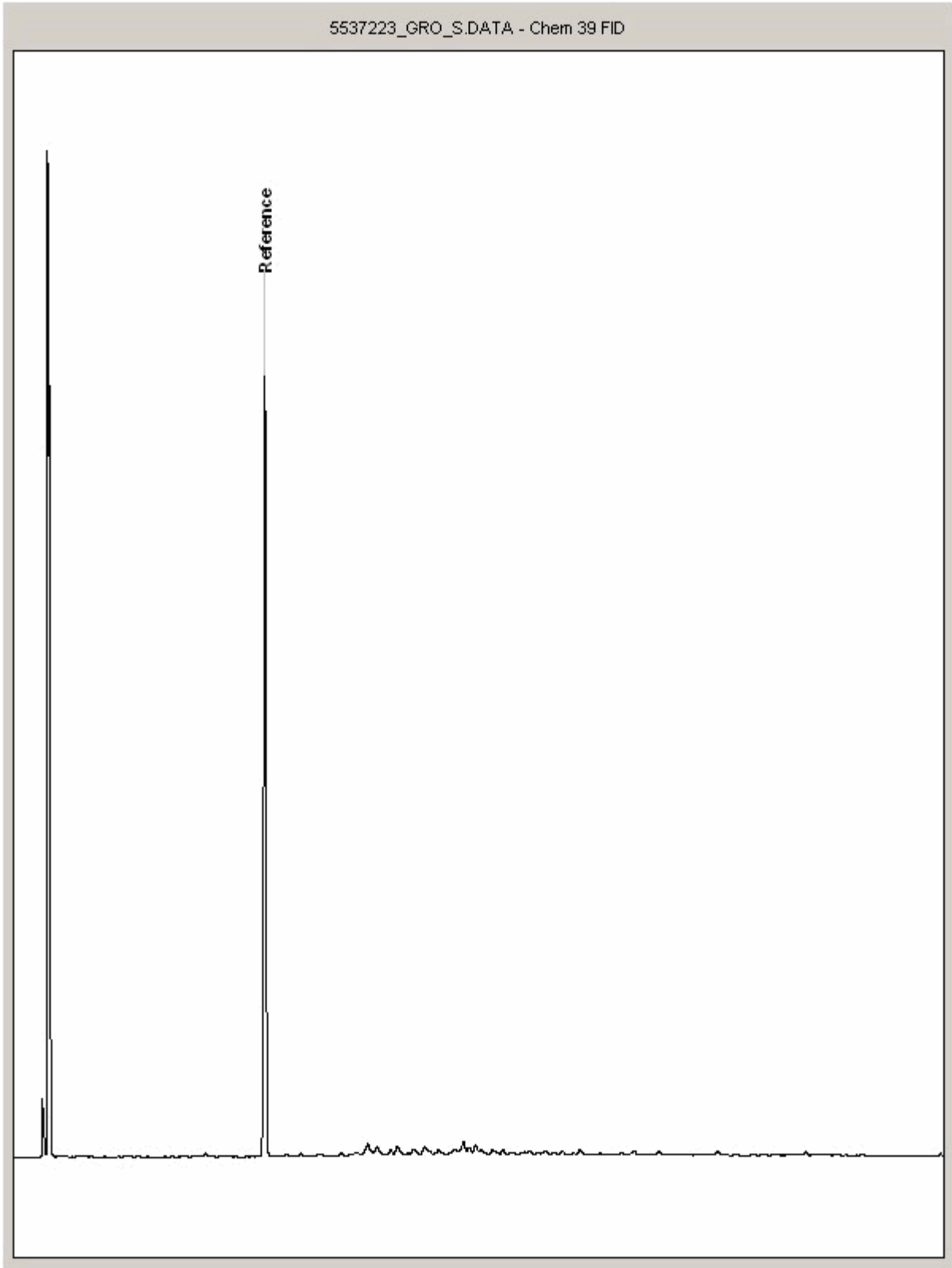
Order Number: 4559  
Report Number: 194092  
Superseded Report: 192681

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5537223  
Sample ID : BH312A

Depth : 3.60 - 3.80



## ALcontrol Laboratories

### VOC Tentatively Identified Compounds

**Job Number** - 120428-54  
**Customer** - D PRIORGEOT-CDT  
**Sample Identity** - 5538063-5420147-BH312A[5.00 - 5.10]-SOIL  
**Sample Type [Units]** - Soil - µg/kg  
**Date Acquired** - 04/05/2012  
**Date Reported** - 04/05/2012  
**Analyst** - Claire Byrne

Tentative Compound Identification	Retention Time min	Concentration µg/kg
C5-C12 Hydrocarbons	-	5451

TIC RESULTS ARE REPORTED ON AN AS RECEIVED BASIS AND ARE NOT MOISTURE CORRECTED  
 MAY INCLUDE PREVIOUSLY QUANTIFIED RESULT:

Please Note: the identification and semi-quantification of these tentatively identified compounds is outside the scope of the UKAS accreditation for this method

# Alcontrol Laboratories

## SVOC Tentatively Identified Compounds

**SDG** - 120428-54  
**Client** - D PRIORGEOT CRK  
**Sample Identity** - 5519264 /5399452-BH312A[3.60 - 3.80]  
**Sample Type [Units]** - Soil - µg/kg  
**Date Acquired** - 03/05/12  
**Date Reported** - 06/05/12  
**Analyst** - A. Haider

Tentative Compound Identification	Time min	Concentration µg/kg
Hydrocarbon C10-C36 20% aromatic	-	794218.67

TIC RESULTS ARE REPORTED ON AN AS RECEIVED BASIS AND ARE NOT MOISTURE  
CORRECTED  
MAY INCLUDE PREVIOUSLY QUANTIFIED RESULTS

# Alcontrol Laboratories

## SVOC Tentatively Identified Compounds

**SDG** - 120428-54  
**Client** - D PRIORGEOT CRK  
**Sample Identity** - 5519300 /5399466-BH312A[5.00 - 5.10]  
**Sample Type [Units]** - Soil - µg/kg  
**Date Acquired** - 03/05/12  
**Date Reported** - 06/05/12  
**Analyst** - A. Haider

Tentative Compound Identification	Time min	Concentration µg/kg
Hydrocarbon C6-C36 10% aromatic	-	1057644.03

TIC RESULTS ARE REPORTED ON AN AS RECEIVED BASIS AND ARE NOT MOISTURE CORRECTED  
MAY INCLUDE PREVIOUSLY QUANTIFIED RESULTS



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

# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Combrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

**Report Number:** 279478-1

**Date of Report:** 28-May-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120428-54

**Customer Purchase Order:** 147683

**Date Job Received at SAL:** 17-May-2012

**Date Analysis Started:** 18-May-2012

**Date Analysis Completed:** 25-May-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Mr Ross Walker  
Customer Services Manager  
(Land)

Issued by :  
Mr Ross Walker  
Customer Services Manager  
(Land)



**SDG:** 120428-54  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 194092  
**Superseded Report:** 192681

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

## SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GC-MS
HERBICIDES	D&C	HEXANE/ACETONE	SOX THERM	GC-MS
PESTICIDES	D&C	HEXANE/ACETONE	SOX THERM	GC-MS
EPH (DFO)	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 CWGBY GC	D&C	HEXANE/ACETONE	END OVER END	GC-FID
PCBAROCLOR 1254 / PCB CON	D&C	HEXANE/ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE/ACETONE	MICROWAVE TM218.	GC-MS
>C6-C40	WET	HEXANE/ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE/ACETONE	SHAKER	GC-FID
SEMIVOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	SONICATE	GC-MS

## LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
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
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
SVCC	DCM	LIQUID/LIQUID SHAKE	GC-MS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPOPP	DCM	LIQUID/LIQUID SHAKE	GC-MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC-MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC-MS
THYBYINFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL BY R	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC-FID

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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).

### 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.

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



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

**Attention:** Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 02 August 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120503-70  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 189655

We received 14 samples on Tuesday May 01, 2012 and 7 of these samples were scheduled for analysis which was completed on Thursday August 02, 2012. 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:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5534955	BH310 (A) E21		7.00	30/04/2012
5534954	BH310 (A) E21		8.00	30/04/2012
5534943	BH312B E10		2.50	30/04/2012
5534946	BH312B E13		4.00	30/04/2012
5534945	BH312B E14		4.50	30/04/2012
5534947	BH312B E17		5.00	30/04/2012
5534939	BH312B E3		1.00	30/04/2012
5534941	BH312B E6		2.00	30/04/2012
5534942	BH312B E9		2.50	30/04/2012
5534948	BH314 E14		3.20	27/04/2012
5534949	BH314 E15		3.20	27/04/2012
5534951	BH314 E18		4.20	27/04/2012
5534952	BH314 E21		5.30	27/04/2012
5534953	BH314 E22		5.30	27/04/2012

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



**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

<b>SOLID</b> Results Legend  <b>X</b> Test  <b>N</b> No Determination Possible	<b>Lab Sample No(s)</b>						
	<b>Customer Sample Reference</b>						
	<b>AGS Reference</b>						
	<b>Depth (m)</b>						
	<b>Container</b>						
	5534939	5534942	5534945	5534947	5534948	5534949	5534953
	BH312B E3	BH312B E9	BH312B E14	BH312B E17	BH314 E14	BH314 E15	BH314 E22
	1.00	2.50	4.50	5.00	3.20	3.20	5.30
	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)
	400g Tub (ALE214)	400g Tub (ALE214)	60g VOC (ALE215)	400g Tub (ALE214)	60g VOC (ALE215)	400g Tub (ALE214)	400g Tub (ALE214)
	250g Amber Jar (AL)	400g Tub (ALE214)	400g Tub (ALE214)	60g VOC (ALE215)	400g Tub (ALE214)	250g Amber Jar (AL)	250g Amber Jar (AL)
Alkali Metals by iCap-OES (Soil)	All	NDPs: 6 Tests: 6	N	N	N	N	N
			X	X	X	X	X
Ammonium Soil by Titration	All	NDPs: 6 Tests: 6	N	N	N	N	N
			X	X	X	X	X
Anions by Kone (soil)	All	NDPs: 6 Tests: 6	N	N	N	N	N
			X	X	X	X	X
Asbestos Identification (Soil)	All	NDPs: 6 Tests: 11	N	N	N	N	N
			X	X	X	X	X
Boron Water Soluble	All	NDPs: 6 Tests: 6	N	N	N	N	N
			X	X	X	X	X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 6 Tests: 6	N	N	N	N	N
			X	X	X	X	X
Easily Liberated Sulphide	All	NDPs: 6 Tests: 6	N	N	N	N	N
			X	X	X	X	X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 3 Tests: 3		N	N		N
				X	X		X
EPH CWG (Aromatic) GC (S)	All	NDPs: 3 Tests: 3		N	N		N
				X	X		X
GRO by GC-FID (S)	All	NDPs: 2 Tests: 3		N	N		
				X	X		X
Hexavalent Chromium (s)	All	NDPs: 6 Tests: 6	N	N	N	N	N
			X	X	X	X	X
Metals by iCap-OES (Soil)	Aluminium	NDPs: 6 Tests: 6	N	N	N	N	N
			X	X	X	X	X
	Antimony	NDPs: 6 Tests: 6	N	N	N	N	N
			X	X	X	X	X
Arsenic	NDPs: 6 Tests: 6	N	N	N	N	N	
		X	X	X	X	X	
Barium	NDPs: 6 Tests: 6	N	N	N	N	N	
		X	X	X	X	X	



SDG: 120503-70  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189655  
 Superseded Report:

SOLID Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	5534939		BH312B E3				1.00		250g Amber Jar (AL)	
	5534942		BH312B E9				2.50		250g Amber Jar (AL)	
	5534945		BH312B E14				4.50		250g Amber Jar (AL)	
	5534947		BH312B E17				5.00		250g Amber Jar (AL)	
5534948		BH314 E14				3.20		250g Amber Jar (AL)		
5534949		BH314 E15				3.20		250g Amber Jar (AL)		
5534953		BH314 E22				5.30		250g Amber Jar (AL)		
Metals by iCap-OES (Soil)	Beryllium	NDPs: 6	N	N	N	N	N	N	N	N
		Tests: 6	X	X		X	X	X	X	X
	Cadmium	NDPs: 6	N	N	N	N	N	N	N	N
		Tests: 6	X	X		X	X	X	X	X
	Chromium	NDPs: 6	N	N	N	N	N	N	N	N
		Tests: 6	X	X		X	X	X	X	X
	Copper	NDPs: 6	N	N	N	N	N	N	N	N
		Tests: 6	X	X		X	X	X	X	X
	Lead	NDPs: 6	N	N	N	N	N	N	N	N
		Tests: 6	X	X		X	X	X	X	X
	Manganese	NDPs: 6	N	N	N	N	N	N	N	N
		Tests: 6	X	X		X	X	X	X	X
Mercury	NDPs: 6	N	N	N	N	N	N	N	N	
	Tests: 6	X	X		X	X	X	X	X	
Nickel	NDPs: 6	N	N	N	N	N	N	N	N	
	Tests: 6	X	X		X	X	X	X	X	
Selenium	NDPs: 6	N	N	N	N	N	N	N	N	
	Tests: 6	X	X		X	X	X	X	X	
Vanadium	NDPs: 6	N	N	N	N	N	N	N	N	
	Tests: 6	X	X		X	X	X	X	X	
Zinc	NDPs: 6	N	N	N	N	N	N	N	N	
	Tests: 6	X	X		X	X	X	X	X	
Mineral Oil	All	NDPs: 3			N	N			N	
		Tests: 3				X	X		X	
PAH Value of soil	All	NDPs: 6	N	N	N	N	N	N	N	
		Tests: 6	X	X		X	X	X	X	
pH	All	NDPs: 6	N	N	N	N	N	N	N	
		Tests: 6	X	X		X	X	X	X	
Phenols by HPLC (S)	All	NDPs: 6	N	N	N	N	N	N	N	
		Tests: 6	X	X		X	X	X	X	



SDG: 120503-70  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189655  
 Superseded Report:

SOLID Results Legend  Test No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5534939	BH312B E3		1.00	250g Amber Jar (AL)
		5534942	BH312B E9		2.50	250g Amber Jar (AL)
		5534945	BH312B E14		4.50	250g Amber Jar (AL)
		5534947	BH312B E17		5.00	250g Amber Jar (AL)
	5534948	BH314 E14		3.20	250g Amber Jar (AL)	
	5534949	BH314 E15		3.20	250g Amber Jar (AL)	
	5534953	BH314 E22		5.30	250g Amber Jar (AL)	
Sample description	All	NDPs: 0 Tests: 7				
Semi Volatile Organic Compounds	All	NDPs: 3 Tests: 3				
Toluene extractable matter*	All	NDPs: 6 Tests: 2				
Total Organic Carbon	All	NDPs: 7 Tests: 2				
Total Organic Carbon (Asb)	All	NDPs: 6 Tests: 4				
Total Sulphate	All	NDPs: 6 Tests: 9				
Total Sulphur	All	NDPs: 7 Tests: 2				
TPH CWG GC (S)	All	NDPs: 2 Tests: 3				
VOC MS (S)	All	NDPs: 4 Tests: 3				



**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**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
5534948	BH314 E14	3.20	Dark Brown	Loamy Sand	0.063 - 0.1 mm	Stones	Metal
5534949	BH314 E15	3.20	Dark Brown	Loamy Sand	0.063 - 0.1 mm	Stones	Tile
5534953	BH314 E22	5.30	Black	N/A	0.1 - 2 mm	Brick	Stones
5534939	BH312B E3	1.00	Dark Brown	Loamy Sand	0.063 - 0.1 mm	Metal	Stones
5534942	BH312B E9	2.50	Dark Brown	Loamy Sand	0.063 - 0.1 mm	Tile	Stones
5534945	BH312B E14	4.50	Black	N/A	<0.063 mm	Tar	N/A
5534947	BH312B E17	5.00	Dark Brown	Sand	0.1 - 2 mm	Stones	Vegetation

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 occurring 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.



**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

Results Legend			Customer Sample R		BH314 E14	BH314 E15	BH314 E22	BH312B E3	BH312B E9	BH312B E17
#	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>	3.20	3.20	5.30	1.00	2.50	5.00	
M	mCERTS accredited.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
\$	Deviating sample.			27/04/2012	27/04/2012	27/04/2012	30/04/2012	30/04/2012	30/04/2012	
aq	Aqueous / settled sample.									
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.			01/05/2012	01/05/2012	01/05/2012	01/05/2012	01/05/2012	01/05/2012	
**	% 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			120503-70	120503-70	120503-70	120503-70	120503-70	120503-70	
(F)	Trigger breach confirmed			5534948	5534949	5534953	5534939	5534942	5534947	
Component	LOD/Units	Method								
Moisture content ratio	%	PM024	9.6	8.2	15	7.8	6.6	14		
Tolulene Extractable Matter	<500 mg/kg	SUB		700		1400				
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15	<15	<15	<15	<15		
Mineral oil >C10-C40	<1 mg/kg	TM061	210	#	333	#		699		
Surrogate Value	-	TM061	38.7		43.5			36.6		
Mineral Oil Surrogate % recovery**	%	TM061	77.4		87			73.2		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06		
Sulphur, Total	<0.02 %	TM132		0.12	#	0.101	#			
Fraction Organic Carbon (FOC)	<0.002 -	TM132		0.00756	#	0.00788	#			
pH	1 pH Units	TM133	9.5	9.09	9	12.4	12.3	10.4		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6	4.68	<0.6	<0.6		
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1		
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1		
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1		
Thiocyanate	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	39.4	<15	<15	269		
Aluminium	<11 mg/kg	TM181	1920	2930	9620	7120	6860	8110		
Antimony	<0.6 mg/kg	TM181	49.2	38.9	42.5	69.4	59.8	56.2		
Arsenic	<0.6 mg/kg	TM181	119	69.6	48.5	81.2	115	47.7		
Barium	<0.6 mg/kg	TM181	36.6	66.2	253	212	148	374		
Beryllium	<0.01 mg/kg	TM181	2.64	2.31	0.888	1.12	1.78	0.905		
Cadmium	<0.02 mg/kg	TM181	<0.2	<0.2	14.3	95.9	12.1	2.2		
Chromium	<0.9 mg/kg	TM181	697	740	1080	1190	872	1630		
Copper	<1.4 mg/kg	TM181	2810	1280	931	1680	2340	916		
Lead	<0.7 mg/kg	TM181	184	137	2130	5480	1300	478		
Manganese	<0.13 mg/kg	TM181	4590	5620	13000	11700	7370	10200		
Mercury	<0.14 mg/kg	TM181	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4		
Nickel	<0.2 mg/kg	TM181	750	472	293	472	701	290		
Selenium	<1 mg/kg	TM181	<10	<10	<10	<10	<10	10.8		
Vanadium	<0.2 mg/kg	TM181	25.3	40.3	97.7	63.9	42.9	195		



CERTIFICATE OF ANALYSIS

**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

Results Legend			Customer Sample R		BH314 E14	BH314 E15	BH314 E22	BH312B E3	BH312B E9	BH312B E17
#	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>							
M	mCERTS accredited.			3.20	3.20	5.30	1.00	2.50	5.00	
S	Deviating sample.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
aq	Aqueous / settled sample.			27/04/2012	27/04/2012	27/04/2012	30/04/2012	30/04/2012	30/04/2012	
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			01/05/2012	01/05/2012	01/05/2012	01/05/2012	01/05/2012	01/05/2012	
(F)	Trigger breach confirmed			120503-70	120503-70	120503-70	120503-70	120503-70	120503-70	
				5534948	5534949	5534953	5534939	5534942	5534947	
Component	LOD/Units	Method								
Zinc	<1.9 mg/kg	TM181	801 M	563 M	9310 #	31200 M	6730 M	2200 M		
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	<10	<10	<10	<10		
Sulphate, Total	<48 mg/kg	TM221	878 M	1090 M	2590 M	2570 M	2070 M	3910 M		
Total sulphur	<0.0016 %	TM221	0.0293	0.0363	0.0864	0.0856	0.0689	0.13		
Boron, water soluble	<1 mg/kg	TM222	2.63 M	1.58 M	5.59 #	6.81 M	6.37 M	4.39 M		
Calcium	<21 mg/kg	TM224	11000	23400	85900	61400	77900	105000		
Magnesium	<8 mg/kg	TM224	2990	3490	13400	37800	39200	51900		
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.153 M	0.15 M	0.479 #	0.101 M	0.0648 M	0.409 M		
Chloride (soluble)	<5 mg/kg	TM243	1300 M	1340 M	3280 #	87.6 M	683 M	2960 M		
Fraction Organic Carbon (FOC)	<0.1 -	TM321	<0.1 #		<0.1 #		<0.1 #	<0.1 #		



SDG: 120503-70  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189655  
 Superseded Report:

## Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH314 E14	BH314 E22	BH312B E17			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		3.20	5.30	5.00			
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		27/04/2012	27/04/2012	30/04/2012			
diss.filt	Dissolved / filtered sample.		.	.	.			
tot.unfilt	Total / unfiltered sample.		01/05/2012	01/05/2012	01/05/2012			
*	Subcontracted test.		120503-70	120503-70	120503-70			
**	% 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		5534948	5534953	5534947			
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
Phenol	<100 µg/kg	TM157	<100	<100	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100			
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100			
Isophorone	<100 µg/kg	TM157	<100	<100	<100			
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	2290			
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100			
Carbazole	<100 µg/kg	TM157	<100	<100	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	294			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100			
Azobenzene	<100 µg/kg	TM157	<100	<100	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100			
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100			
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100			







SDG: 120503-70  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189655  
 Superseded Report:

## TPH CWG (S)

Results Legend		Customer Sample R	BH314 E14	BH314 E22	BH312B E17			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		3.20	5.30	5.00			
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		27/04/2012	27/04/2012	30/04/2012			
diss.filt	Dissolved / filtered sample.		.	.	.			
tot.unfilt	Total / unfiltered sample.		01/05/2012	01/05/2012	01/05/2012			
**	Subcontracted test.		120503-70	120503-70	120503-70			
.	% 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		5534948	5534953	5534947			
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
GRO Surrogate % recovery**	%	TM089	113	106	71			
GRO >C5-C12	<44 µg/kg	TM089	<44	152	830			
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5			
Benzene	<10 µg/kg	TM089	<10	<10	<10			
Toluene	<2 µg/kg	TM089	<2	<2	<2			
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3			
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6			
o-Xylene	<3 µg/kg	TM089	<3	<3	<3			
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9			
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24			
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10			
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	13.4	48.6			
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	20.7	204			
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	57.1	256			
Aliphatics >C12-C16	<100 µg/kg	TM173	5980	4430	12800			
Aliphatics >C16-C21	<100 µg/kg	TM173	25000	25500	82100			
Aliphatics >C21-C35	<100 µg/kg	TM173	132000	209000	484000			
Aliphatics >C35-C44	<100 µg/kg	TM173	36800	65500	196000			
Total Aliphatics >C12-C44	<100 µg/kg	TM173	199000	305000	775000			
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	15.8	136			
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	38.9	171			
Aromatics >EC12-EC16	<100 µg/kg	TM173	2430	<100	5660			
Aromatics >EC16-EC21	<100 µg/kg	TM173	8620	14300	37000			
Aromatics >EC21-EC35	<100 µg/kg	TM173	51700	118000	198000			
Aromatics >EC35-EC44	<100 µg/kg	TM173	24000	61400	98300			
Aromatics >EC40-EC44	<100 µg/kg	TM173	10100	26000	43000			
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	86700	193000	339000			
Total Aliphatics >C5-35	<100 µg/kg	TM173	163000	239000	580000			
Total Aromatics >C5-35	<100 µg/kg	TM173	62800	132000	241000			
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	225000	371000	820000			
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	286000	498000	1110000			



## CERTIFICATE OF ANALYSIS

SDG: 120503-70  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189655  
 Superseded Report:

## VOC MS (S)

Results Legend		Customer Sample R	BH314 E14	BH314 E22	BH312B E17			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	3.20	5.30	5.00			
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid			
S	Deviating sample.		27/04/2012	27/04/2012	30/04/2012			
aq	Aqueous / settled sample.		.	.	.			
diss.filt	Dissolved / filtered sample.		01/05/2012	01/05/2012	01/05/2012			
tot.unfilt	Total / unfiltered sample.		120503-70	120503-70	120503-70			
*	Subcontracted test.		5534948	5534953	5534947			
**	% 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							
Component	LOD/Units		Method					
Dibromofluoromethane**	%	TM116	101	107	88			
Toluene-d8**	%	TM116	98.2	98.8	95.8			
4-Bromofluorobenzene**	%	TM116	119	115	130			
Dichlorodifluoromethane	<4 µg/kg	TM116	<4	<4	<4			
Chloromethane	<7 µg/kg	TM116	<7	<7	<7			
Vinyl Chloride	<10 µg/kg	TM116	<10	<10	<10			
Bromomethane	<13 µg/kg	TM116	<13	<13	<13			
Chloroethane	<14 µg/kg	TM116	<14	<14	<14			
Trichlorofluoromethane	<6 µg/kg	TM116	<6	<6	<6			
1.1-Dichloroethene	<10 µg/kg	TM116	<10	<10	<10			
Carbon Disulphide	<7 µg/kg	TM116	<7	32.3	59.7			
Dichloromethane	<10 µg/kg	TM116	<10	<10	<10			
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	<11	<11			
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11	<11	<11			
1.1-Dichloroethane	<8 µg/kg	TM116	<8	<8	<8			
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5	<5	<5			
2.2-Dichloropropane	<12 µg/kg	TM116	<12	<12	<12			
Bromochloromethane	<14 µg/kg	TM116	<14	<14	<14			
Chloroform	<8 µg/kg	TM116	<8	<8	<8			
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7	<7	<7			
1.1-Dichloropropene	<11 µg/kg	TM116	<11	<11	<11			
Carbontetrachloride	<14 µg/kg	TM116	<14	<14	<14			
1.2-Dichloroethane	<5 µg/kg	TM116	<5	<5	<5			
Benzene	<9 µg/kg	TM116	<9	<9	<9			
Trichloroethene	<9 µg/kg	TM116	<9	<9	<9			
1.2-Dichloropropane	<12 µg/kg	TM116	<12	<12	<12			
Dibromomethane	<9 µg/kg	TM116	<9	<9	<9			
Bromodichloromethane	<7 µg/kg	TM116	<7	<7	<7			
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<14	<14			
Toluene	<5 µg/kg	TM116	<5	<5	<5			
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<14	<14			
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	<10	<10			
1.3-Dichloropropane	<7 µg/kg	TM116	<7	<7	<7			
Tetrachloroethene	<5 µg/kg	TM116	<5	<5	<5			
Dibromochloromethane	<13 µg/kg	TM116	<13	<13	<13			



## CERTIFICATE OF ANALYSIS

SDG: 120503-70  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189655  
 Superseded Report:

## VOC MS (S)

Results Legend		Customer Sample R	BH314 E14	BH314 E22	BH312B E17			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	3.20	5.30	5.00			
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid			
§	Deviating sample.		27/04/2012	27/04/2012	30/04/2012			
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							
Component	LOD/Units		Method					
1,2-Dibromoethane	<12 µg/kg	TM116	<12 M	<12 § M	<12 M			
Chlorobenzene	<5 µg/kg	TM116	<5 M	<5 § M	<5 M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 § M	<10 M			
Ethylbenzene	<4 µg/kg	TM116	<4 M	<4 § M	<4 M			
p/m-Xylene	<14 µg/kg	TM116	<14 #	<14 § #	<14 #			
o-Xylene	<10 µg/kg	TM116	<10 M	<10 § M	<10 M			
Styrene	<10 µg/kg	TM116	<10 M	<10 § M	<10 M			
Bromoform	<10 µg/kg	TM116	<10 M	<10 § M	<10 M			
Isopropylbenzene	<5 µg/kg	TM116	<5 M	<5 § M	<5 M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 #	<10 § #	<10 #			
1,2,3-Trichloropropane	<17 µg/kg	TM116	<17 M	<17 § M	<17 M			
Bromobenzene	<10 µg/kg	TM116	<10 M	<10 § M	<10 M			
Propylbenzene	<11 µg/kg	TM116	<11 M	<11 § M	<11 M			
2-Chlorotoluene	<9 µg/kg	TM116	<9 M	<9 § M	<9 M			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8 #	<8 § #	<8 #			
4-Chlorotoluene	<12 µg/kg	TM116	<12 M	<12 § M	<12 M			
tert-Butylbenzene	<12 µg/kg	TM116	<12 #	<12 § #	<12 #			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9 #	<9 § #	<9 #			
sec-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 § M	<10 M			
4-Isopropyltoluene	<11 µg/kg	TM116	<11 M	<11 § M	<11 M			
1,3-Dichlorobenzene	<6 µg/kg	TM116	<6 M	<6 § M	<6 M			
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5 M	<5 § M	<5 M			
n-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 § M	<10 M			
1,2-Dichlorobenzene	<12 µg/kg	TM116	<12 M	<12 § M	<12 M			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14 M	<14 § M	<14 M			
Tert-amyl methyl ether	<15 µg/kg	TM116	<15	<15 §	<15			
1,2,4-Trichlorobenzene	<6 µg/kg	TM116	<6 #	<6 § #	<6 #			
Hexachlorobutadiene	<12 µg/kg	TM116	<12	<12 §	<12			
Naphthalene	<13 µg/kg	TM116	<13 M	<13 § M	<13 M			
1,2,3-Trichlorobenzene	<6 µg/kg	TM116	<6 M	<6 § M	<6 M			
VOC TIC	-	TM116	No TICs identified	No TICs identified §	No TICs identified			



**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312B E3 1.00 SOLID 30/04/2012 00:00:00 22/05/2012 09:13:43 120503-70 5534939 TM048	21/05/12	Martin Cotterell	-	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312B E9 2.50 SOLID 30/04/2012 00:00:00 120503-70 5534942 TM048	15/05/12	Tomasz Pawlikowski	Loose fibres in soil.	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312B E17 5.00 SOLID 30/04/2012 00:00:00 120503-70 5534947 TM048	15/05/12	Tomasz Pawlikowski	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314 E14 3.20 SOLID 27/04/2012 00:00:00 120503-70 5534948 TM048	15/05/12	Tomasz Pawlikowski	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314 E15 3.20 SOLID 27/04/2012 00:00:00 22/05/2012 09:13:59 120503-70 5534949 TM048	21/05/12	Rhodri Williams	-	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314 E22 5.30 SOLID 27/04/2012 00:00:00  120503-70 5534953 TM048	15/05/12	Tomasz Pawlikowski	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314 E3 1.00 SOLID 30/04/2012 00:00:00  120503-70 5534939 TM048	02/08/12	Kevin Bowron	Soil Containing Loose Fibres & Debris Typical of Asbestos Cement	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312B E9 2.50 SOLID 30/04/2012 00:00:00  120503-70 5534942 TM048	02/08/12	Kevin Bowron	Soil Containing Loose Fibres & ACM Debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312B E17 5.00 SOLID 30/04/2012 00:00:00  120503-70 5534947 TM048	02/08/12	Martin Cotterell	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314 E14 3.20 SOLID 27/04/2012 00:00:00  120503-70 5534948 TM048	02/08/12	Kevin Bowron	Loose Fibres in Soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314 E15 3.20 SOLID 27/04/2012 00:00:00  120503-70 5534949 TM048	02/08/12	Kevin Bowron	Soil Containing Loose Fibres & ACM Debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189655  
Superseded Report:

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH314 E22 5.30 SOLID 27/04/2012 00:00:00  120503-70 5534953 TM048	02/08/12	Kevin Bowron	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5571046	BH312B E17	5.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5571266	BH314 E14	3.20	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5571414	BH314 E15	3.20	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5571572	BH314 E22	5.30	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5571831	BH312B E9	2.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5571923	BH312B E3	1.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5588338	BH312B E3	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5588338	BH312B E3	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5588338	BH312B E3	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5588338	BH312B E3	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5588392	BH314 E15	3.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5588392	BH314 E15	3.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5588392	BH314 E15	3.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5588392	BH314 E15	3.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5589025	BH312B E9	2.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5589025	BH312B E9	2.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5589025	BH312B E9	2.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5589025	BH312B E9	2.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5589034	BH314 E22	5.30	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5589034	BH314 E22	5.30	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5589034	BH314 E22	5.30	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5589034	BH314 E22	5.30	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5589104	BH314 E14	3.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5589104	BH314 E14	3.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5589104	BH314 E14	3.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5589104	BH314 E14	3.20	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5589168	BH312B E17	5.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Complex	Sample holding time exceeded
5589168	BH312B E17	5.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5589168	BH312B E17	5.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5589168	BH312B E17	5.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Thiocyanate	Sample holding time exceeded
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Aliphatics >C10-C12	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Aliphatics >C5-C6	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Aliphatics >C6-C8	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Aliphatics >C8-C10	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Aromatics >EC10-EC12	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Aromatics >EC5-EC7	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Aromatics >EC7-EC8	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Aromatics >EC8-EC10	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Benzene	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Ethylbenzene	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	GRO >C5-C12	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	GRO Surrogate % recovery**	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	m,p-Xylene	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	o-Xylene	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	sum of detected BTEX by GC	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	sum of detected mpo xylene by GC	Volatile container not received
5586021	BH314 E22	5.30	SOLID	GRO by GC-FID (S)	Toluene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.1.1.2-Tetrachloroethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.1.1-Trichloroethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.1.2.2-Tetrachloroethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.1.2-Trichloroethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.1-Dichloroethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.1-Dichloroethene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.1-Dichloropropene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.2.3-Trichlorobenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.2.3-Trichloropropane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.2.4-Trichlorobenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1.2.4-Trimethylbenzene	Volatile container not received





## CERTIFICATE OF ANALYSIS

**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1,2-Dibromo-3-chloropropane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1,2-Dibromoethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1,2-Dichlorobenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1,2-Dichloroethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1,2-Dichloropropane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1,3,5-Trimethylbenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1,3-Dichlorobenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1,3-Dichloropropane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	1,4-Dichlorobenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	2,2-Dichloropropane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	2-Chlorotoluene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	4-Bromofluorobenzene**	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	4-Chlorotoluene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	4-Isopropyltoluene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Benzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Bromobenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Bromochloromethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Bromodichloromethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Bromoform	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Bromomethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Carbon Disulphide	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Carbontetrachloride	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Chlorobenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Chloroethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Chloroform	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Chloromethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	cis-1,2-Dichloroethene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	cis-1,3-Dichloropropene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Dibromochloromethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Dibromofluoromethane**	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Dibromomethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Dichlorodifluoromethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Dichloromethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Ethylbenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Hexachlorobutadiene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Isopropylbenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Methyl Tertiary Butyl Ether	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Naphthalene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	n-Butylbenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	o-Xylene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	p/m-Xylene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Propylbenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	sec-Butylbenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Styrene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Tert-amyl methyl ether	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	tert-Butylbenzene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Tetrachloroethene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Toluene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Toluene-d8**	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	trans-1,2-Dichloroethene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	trans-1,3-Dichloropropene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Trichloroethene	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Trichlorofluoromethane	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	Vinyl Chloride	Volatile container not received
5586023	BH314 E22	5.30	SOLID	VOC MS (S)	VOC TIC	Volatile container not received

Note : Test results may be compromised



**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowl  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

### Notification of NDPs (No determination possible)

Date Received : 03/05/2012 11:48:20

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5534939	BH312B E3	1.00	Boron Water Soluble	unsuitable for analysis'
5534939	BH312B E3	1.00	Hexavalent Chromium (s)	unsuitable for analysis'
5534939	BH312B E3	1.00	pH	unsuitable for analysis'
5534939	BH312B E3	1.00	Total Sulphur	unsuitable for analysis'
5534939	BH312B E3	1.00	Phenols by HPLC (S)	unsuitable for analysis'
5534939	BH312B E3	1.00	Toluene extractable matter*	unsuitable for analysis'
5534939	BH312B E3	1.00	Asbestos Identification (Soil)	unsuitable for analysis'
5534939	BH312B E3	1.00	Cyanide Comp/Free/Total/Thiocyanate	unsuitable for analysis'
5534939	BH312B E3	1.00	Easily Liberated Sulphide	unsuitable for analysis'
5534939	BH312B E3	1.00	Metals by iCap-OES (Soil)	unsuitable for analysis'
5534939	BH312B E3	1.00	Total Organic Carbon	unsuitable for analysis'
5534939	BH312B E3	1.00	Ammonium Soil by Titration	unsuitable for analysis'
5534939	BH312B E3	1.00	Total Sulphate	unsuitable for analysis'
5534939	BH312B E3	1.00	PAH Value of soil	unsuitable for analysis'
5534939	BH312B E3	1.00	Anions by Kone (soil)	unsuitable for analysis'
5534942	BH312B E9	2.50	Boron Water Soluble	unsuitable for analysis'
5534942	BH312B E9	2.50	Hexavalent Chromium (s)	unsuitable for analysis'
5534942	BH312B E9	2.50	pH	unsuitable for analysis'
5534942	BH312B E9	2.50	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5534942	BH312B E9	2.50	Phenols by HPLC (S)	unsuitable for analysis'
5534942	BH312B E9	2.50	Toluene extractable matter*	unsuitable for analysis'
5534942	BH312B E9	2.50	Asbestos Identification (Soil)	unsuitable for analysis'
5534942	BH312B E9	2.50	Cyanide Comp/Free/Total/Thiocyanate	unsuitable for analysis'
5534942	BH312B E9	2.50	Easily Liberated Sulphide	unsuitable for analysis'
5534942	BH312B E9	2.50	Metals by iCap-OES (Soil)	unsuitable for analysis'
5534942	BH312B E9	2.50	Total Organic Carbon	unsuitable for analysis'
5534942	BH312B E9	2.50	Ammonium Soil by Titration	unsuitable for analysis'
5534942	BH312B E9	2.50	Total Sulphate	unsuitable for analysis'
5534942	BH312B E9	2.50	PAH Value of soil	unsuitable for analysis'
5534942	BH312B E9	2.50	Anions by Kone (soil)	unsuitable for analysis'
5534945	BH312B E14	4.50	Boron Water Soluble	unsuitable for analysis'
5534945	BH312B E14	4.50	Hexavalent Chromium (s)	unsuitable for analysis'
5534945	BH312B E14	4.50	Mineral Oil	unsuitable for analysis'
5534945	BH312B E14	4.50	pH	unsuitable for analysis'
5534945	BH312B E14	4.50	Total Sulphur	unsuitable for analysis'
5534945	BH312B E14	4.50	Phenols by HPLC (S)	unsuitable for analysis'
5534945	BH312B E14	4.50	Semi Volatile Organic Compounds	unsuitable for analysis'
5534945	BH312B E14	4.50	GRO by GC-FID (S)	unsuitable for analysis'
5534945	BH312B E14	4.50	EPH CWG (Aliphatic) GC (S)	unsuitable for analysis'
5534945	BH312B E14	4.50	EPH CWG (Aromatic) GC (S)	unsuitable for analysis'
5534945	BH312B E14	4.50	TPH CWG GC (S)	unsuitable for analysis'
5534945	BH312B E14	4.50	VOC MS (S)	unsuitable for analysis'
5534945	BH312B E14	4.50	Toluene extractable matter*	unsuitable for analysis'
5534945	BH312B E14	4.50	Asbestos Identification (Soil)	unsuitable for analysis'
5534945	BH312B E14	4.50	Cyanide Comp/Free/Total/Thiocyanate	unsuitable for analysis'
5534945	BH312B E14	4.50	Easily Liberated Sulphide	unsuitable for analysis'
5534945	BH312B E14	4.50	Metals by iCap-OES (Soil)	unsuitable for analysis'
5534945	BH312B E14	4.50	Total Organic Carbon	unsuitable for analysis'
5534945	BH312B E14	4.50	Ammonium Soil by Titration	unsuitable for analysis'
5534945	BH312B E14	4.50	Total Sulphate	unsuitable for analysis'
5534945	BH312B E14	4.50	PAH Value of soil	unsuitable for analysis'
5534945	BH312B E14	4.50	Anions by Kone (soil)	unsuitable for analysis'
5534947	BH312B E17	5.00	Boron Water Soluble	unsuitable for analysis'
5534947	BH312B E17	5.00	Hexavalent Chromium (s)	unsuitable for analysis'
5534947	BH312B E17	5.00	Mineral Oil	unsuitable for analysis'
5534947	BH312B E17	5.00	pH	unsuitable for analysis'
5534947	BH312B E17	5.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5534947	BH312B E17	5.00	Phenols by HPLC (S)	unsuitable for analysis'
5534947	BH312B E17	5.00	Semi Volatile Organic Compounds	unsuitable for analysis'
5534947	BH312B E17	5.00	GRO by GC-FID (S)	unsuitable for analysis'
5534947	BH312B E17	5.00	EPH CWG (Aliphatic) GC (S)	unsuitable for analysis'
5534947	BH312B E17	5.00	EPH CWG (Aromatic) GC (S)	unsuitable for analysis'
5534947	BH312B E17	5.00	TPH CWG GC (S)	unsuitable for analysis'



## CERTIFICATE OF ANALYSIS

SDG:	120503-70	Location:	Haulbowline	Order Number:	
Job:	D_PRIORGEOT_CRK-44	Customer:	Priority Geotechnical Ltd	Report Number:	189655
Client Reference:	P12030	Attention:	Colette Kelly	Superseded Report:	
5534947	BH312B E17	5.00	VOC MS (S)	unsuitable for analysis'	
5534947	BH312B E17	5.00	Toluene extractable matter*	unsuitable for analysis'	
5534947	BH312B E17	5.00	Asbestos Identification (Soil)	unsuitable for analysis'	
5534947	BH312B E17	5.00	Cyanide Comp/Free/Total/Thiocyanate	unsuitable for analysis'	
5534947	BH312B E17	5.00	Easily Liberated Sulphide	unsuitable for analysis'	
5534947	BH312B E17	5.00	Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534947	BH312B E17	5.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos	
5534947	BH312B E17	5.00	Ammonium Soil by Titration	unsuitable for analysis'	
5534947	BH312B E17	5.00	Total Sulphate	unsuitable for analysis'	
5534947	BH312B E17	5.00	PAH Value of soil	unsuitable for analysis'	
5534947	BH312B E17	5.00	Anions by Kone (soil)	unsuitable for analysis'	
5534939	BH312B E3	1.00	Total Organic Carbon (Asb)	unsuitable for analysis'	
5534948	BH314 E14	3.20	Total Sulphur	Unsuitable for analysis due to potential Asbestos	
5534948	BH314 E14	3.20	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos	
5534942	BH312B E9	2.50	Total Organic Carbon (Asb)	unsuitable for analysis'	
5534945	BH312B E14	4.50	Total Organic Carbon (Asb)	unsuitable for analysis'	
5534949	BH314 E15	3.20	Boron Water Soluble	unsuitable for analysis'	
5534949	BH314 E15	3.20	Hexavalent Chromium (s)	unsuitable for analysis'	
5534949	BH314 E15	3.20	pH	unsuitable for analysis'	
5534949	BH314 E15	3.20	Total Sulphur	unsuitable for analysis'	
5534949	BH314 E15	3.20	Phenols by HPLC (S)	unsuitable for analysis'	
5534949	BH314 E15	3.20	Toluene extractable matter*	unsuitable for analysis'	
5534949	BH314 E15	3.20	Asbestos Identification (Soil)	unsuitable for analysis'	
5534949	BH314 E15	3.20	Cyanide Comp/Free/Total/Thiocyanate	unsuitable for analysis'	
5534949	BH314 E15	3.20	Easily Liberated Sulphide	unsuitable for analysis'	
5534949	BH314 E15	3.20	Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534949	BH314 E15	3.20	Total Organic Carbon	unsuitable for analysis'	
5534949	BH314 E15	3.20	Ammonium Soil by Titration	unsuitable for analysis'	
5534949	BH314 E15	3.20	Total Sulphate	unsuitable for analysis'	
5534949	BH314 E15	3.20	PAH Value of soil	unsuitable for analysis'	
5534949	BH314 E15	3.20	Anions by Kone (soil)	unsuitable for analysis'	
5534953	BH314 E22	5.30	Boron Water Soluble	unsuitable for analysis'	
5534953	BH314 E22	5.30	Hexavalent Chromium (s)	unsuitable for analysis'	
5534953	BH314 E22	5.30	pH	unsuitable for analysis'	
5534953	BH314 E22	5.30	Total Sulphur	Unsuitable for analysis due to potential Asbestos	
5534953	BH314 E22	5.30	Phenols by HPLC (S)	unsuitable for analysis'	
5534953	BH314 E22	5.30	Toluene extractable matter*	unsuitable for analysis'	
5534953	BH314 E22	5.30	Asbestos Identification (Soil)	unsuitable for analysis'	
5534953	BH314 E22	5.30	Cyanide Comp/Free/Total/Thiocyanate	unsuitable for analysis'	
5534953	BH314 E22	5.30	Easily Liberated Sulphide	unsuitable for analysis'	
5534953	BH314 E22	5.30	Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534953	BH314 E22	5.30	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos	
5534953	BH314 E22	5.30	Ammonium Soil by Titration	unsuitable for analysis'	
5534953	BH314 E22	5.30	Total Sulphate	unsuitable for analysis'	
5534953	BH314 E22	5.30	PAH Value of soil	unsuitable for analysis'	
5534953	BH314 E22	5.30	Anions by Kone (soil)	unsuitable for analysis'	
5534949	BH314 E15	3.20	Total Organic Carbon (Asb)	unsuitable for analysis'	
5534953	BH314 E22	5.30	Total Organic Carbon (Asb)	unsuitable for analysis'	
5534947	BH312B E17	5.00	Total Organic Carbon (Asb)	unsuitable for analysis'	
5534939	BH312B E3	1.00	Alkali Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534939	BH312B E3	1.00	Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534942	BH312B E9	2.50	Alkali Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534942	BH312B E9	2.50	Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534945	BH312B E14	4.50	Alkali Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534945	BH312B E14	4.50	Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534947	BH312B E17	5.00	Alkali Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534947	BH312B E17	5.00	Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534949	BH314 E15	3.20	Alkali Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534949	BH314 E15	3.20	Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534953	BH314 E22	5.30	Alkali Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534953	BH314 E22	5.30	Metals by iCap-OES (Soil)	unsuitable for analysis'	
5534953	BH314 E22	5.30	Mineral Oil	unsuitable for analysis'	
5534953	BH314 E22	5.30	Semi Volatile Organic Compounds	unsuitable for analysis'	
5534953	BH314 E22	5.30	EPH CWG (Aliphatic) GC (S)	unsuitable for analysis'	
5534953	BH314 E22	5.30	EPH CWG (Aromatic) GC (S)	unsuitable for analysis'	
5534953	BH314 E22	5.30	VOC MS (S)	unsuitable for analysis'	
5534945	BH312B E14	4.50	GRO by GC-FID (S)	unsuitable for analysis'	



### CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120503-70	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	189655
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	
5534945	BH312B E14	4.50	VOC MS (S)	unsuitable for analysis'	
5534947	BH312B E17	5.00	VOC MS (S)	unsuitable for analysis'	



## CERTIFICATE OF ANALYSIS

**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowlne  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
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		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM243		Mixed Anions In Soils By Kone		
TM321		Organic matter Content of Soil By Titration		

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



**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

### Test Completion Dates

Lab Sample No(s)	5534948	5534949	5534953	5534939	5534942	5534945	5534947
Customer Sample Ref.	BH314 E14	BH314 E15	BH314 E22	BH312B E3	BH312B E9	BH312B E14	BH312B E17
AGS Ref.							
Depth	3.20	3.20	5.30	1.00	2.50	4.50	5.00
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012
Ammonium Soil by Titration	17-May-2012	17-May-2012	17-May-2012	17-May-2012	17-May-2012		17-May-2012
Anions by Kone (soil)	17-May-2012	17-May-2012	17-May-2012	17-May-2012	17-May-2012		17-May-2012
Asbestos Identification (Soil)	02-Aug-2012	02-Aug-2012	02-Aug-2012	02-Aug-2012	02-Aug-2012		02-Aug-2012
Boron Water Soluble	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012
Cyanide Comp/Free/Total/Thiocyanate	17-May-2012	17-May-2012	17-May-2012	17-May-2012	17-May-2012		17-May-2012
Easily Liberated Sulphide	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012
EPH CWG (Aliphatic) GC (S)	17-May-2012		17-May-2012				17-May-2012
EPH CWG (Aromatic) GC (S)	17-May-2012		17-May-2012				17-May-2012
GRO by GC-FID (S)	15-May-2012		17-May-2012				15-May-2012
Hexavalent Chromium (s)	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012
Metals by iCap-OES (Soil)	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012
Mineral Oil	17-May-2012		17-May-2012				17-May-2012
PAH Value of soil	16-May-2012	16-May-2012	16-May-2012	15-May-2012	15-May-2012		17-May-2012
pH	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012
Phenols by HPLC (S)	17-May-2012	17-May-2012	17-May-2012	17-May-2012	17-May-2012		17-May-2012
Sample description	11-May-2012	11-May-2012	11-May-2012	11-May-2012	11-May-2012	11-May-2012	11-May-2012
Semi Volatile Organic Compounds	17-May-2012		17-May-2012				17-May-2012
Toluene extractable matter*		29-May-2012		29-May-2012			
Total Organic Carbon		16-May-2012		16-May-2012			
Total Organic Carbon (Asb)	16-May-2012		16-May-2012		17-May-2012		16-May-2012
Total Sulphate	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012		16-May-2012
Total Sulphur		16-May-2012		16-May-2012			
TPH CWG GC (S)	17-May-2012		17-May-2012				17-May-2012
VOC MS (S)	16-May-2012		16-May-2012				16-May-2012



SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

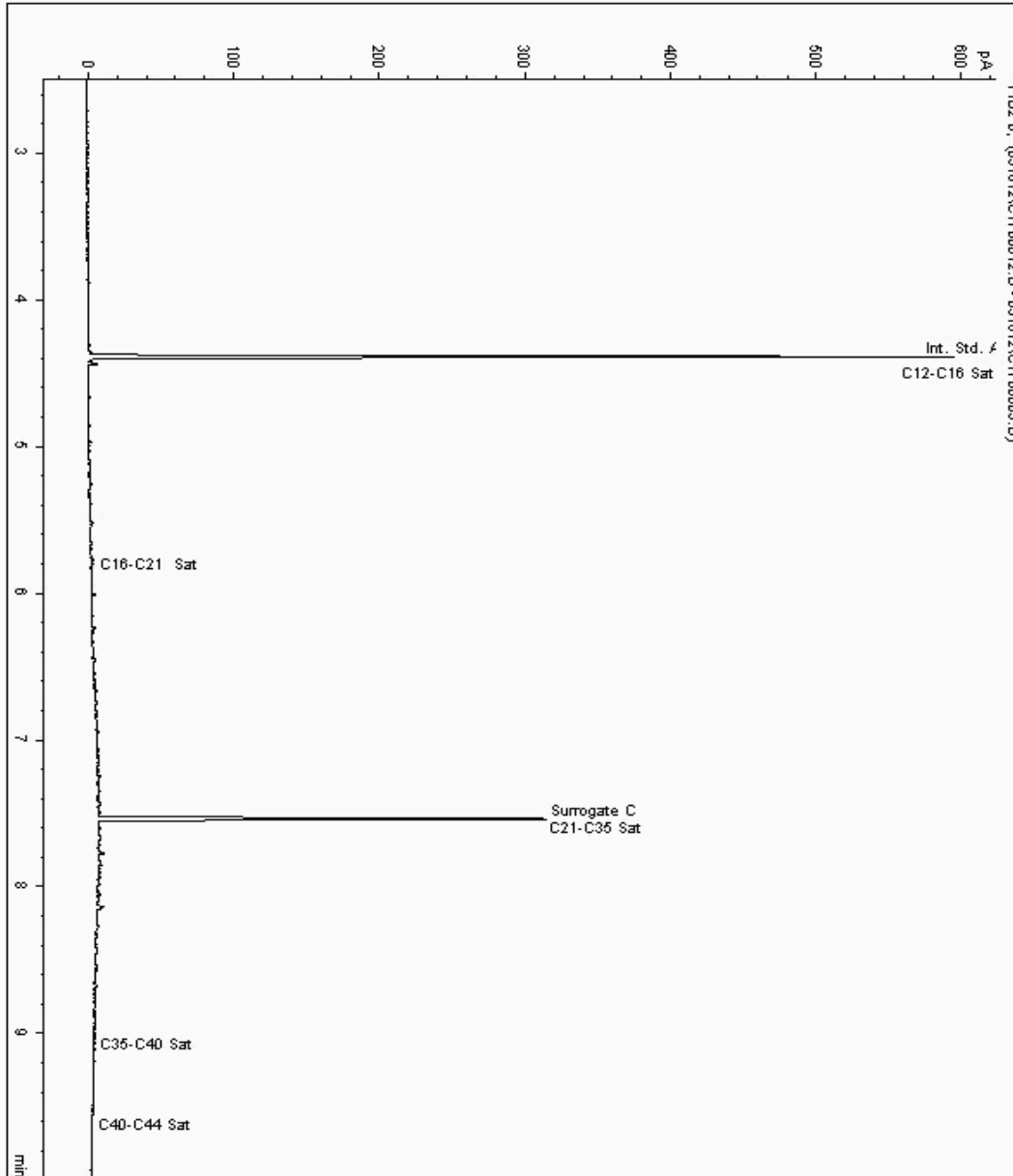
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5588735  
Sample ID : BH314 E14

Depth : 3.20

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

Sample Identity: 5463488-5588735  
Date Acquired : 16/05/2012 19:41:21 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 1.024





SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

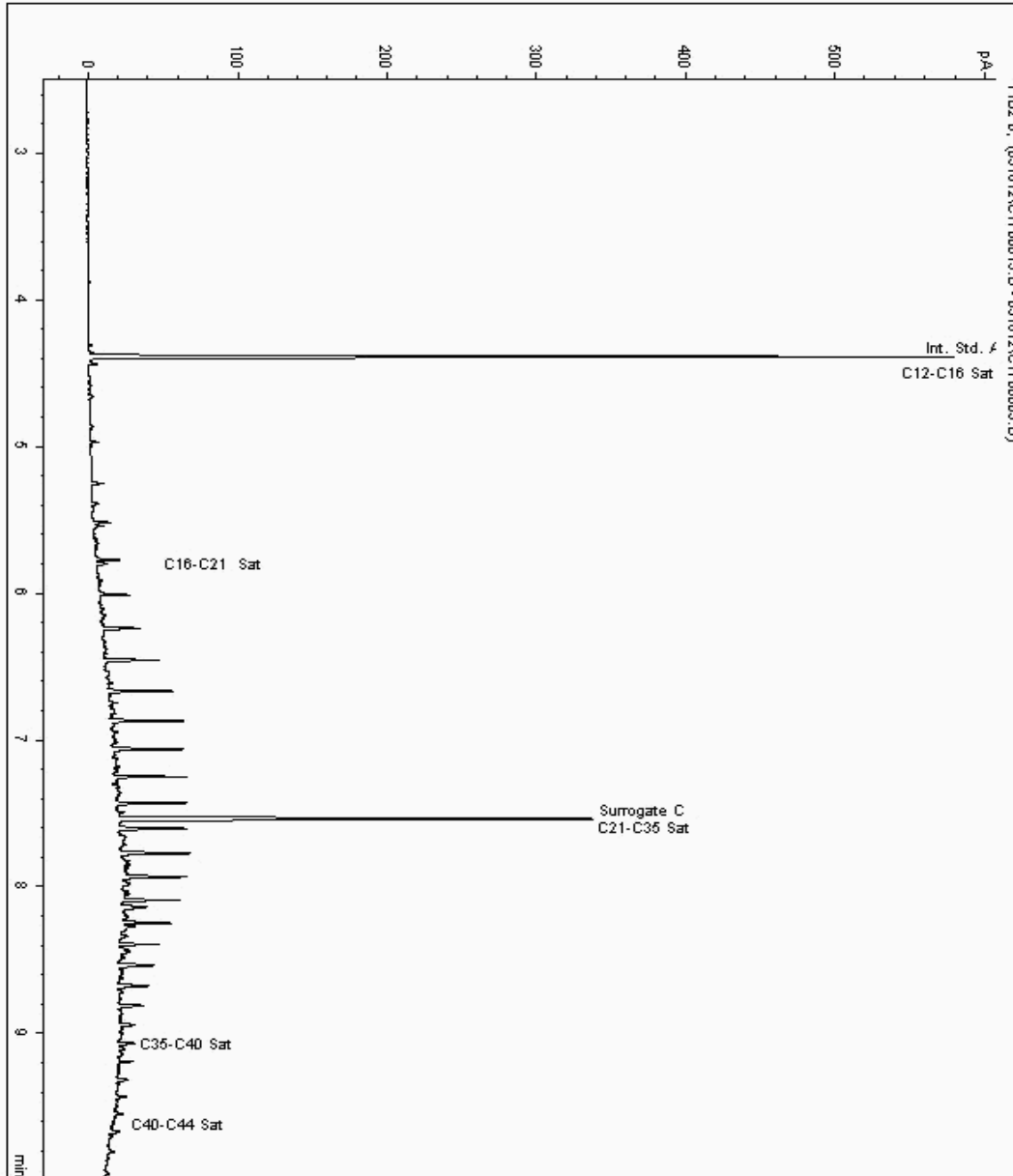
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5589056  
Sample ID : BH312B E17

Depth : 5.00

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

Sample Identity: 5463477-5589056  
Date Acquired : 16/05/2012 20:01:49 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 1.032







SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

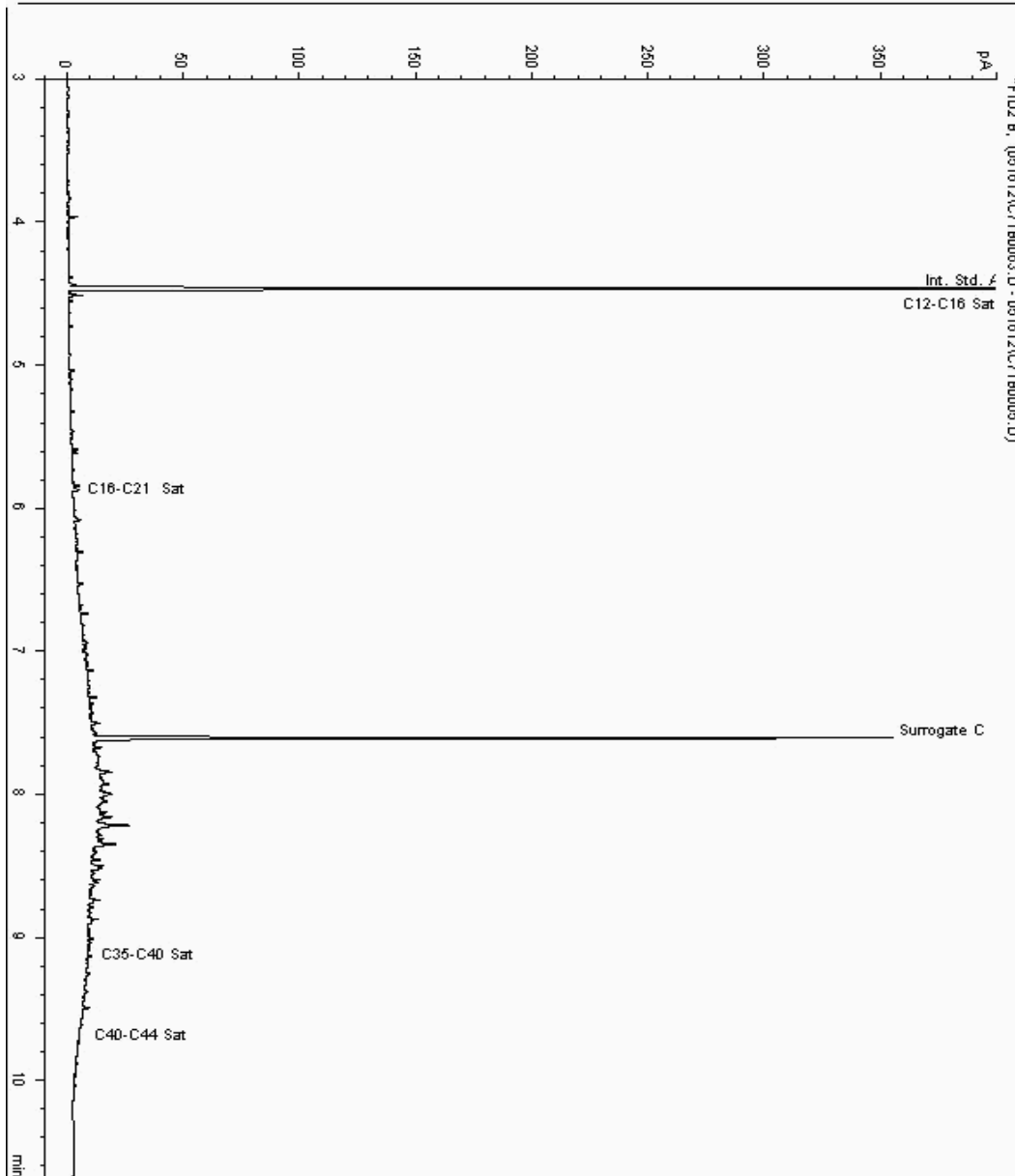
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5596642  
Sample ID : BH314 E22

Depth : 5.30

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

Sample Identity: 5471843-5596642  
Date Acquired : 17/05/2012 14:35:37 PM  
Units : ppb  
Dilution:





SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

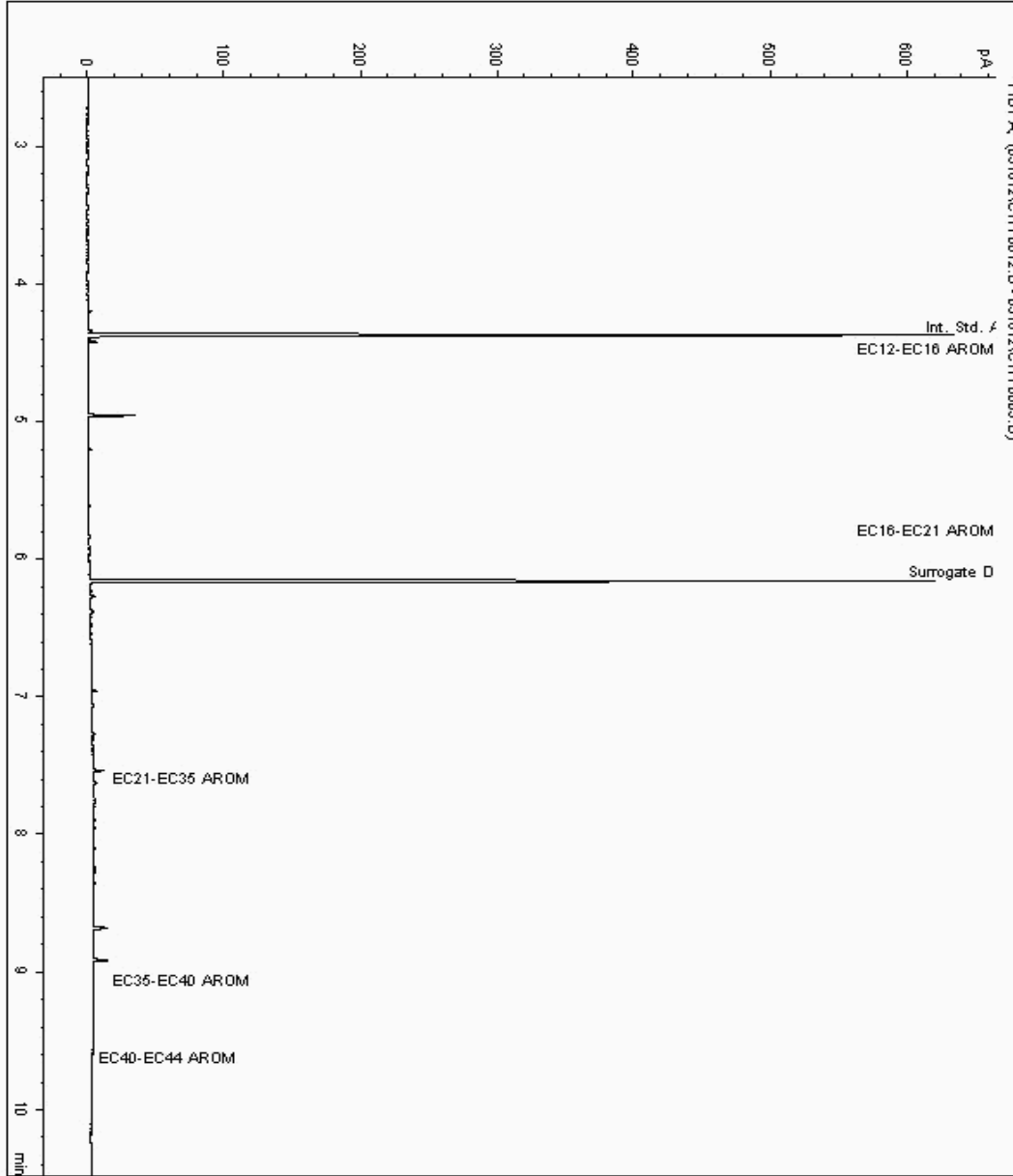
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5588735  
Sample ID : BH314 E14

Depth : 3.20

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

Sample Identity: 5463490-5588735  
Date Acquired : 16/05/2012 19:41:20 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 1.024





SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

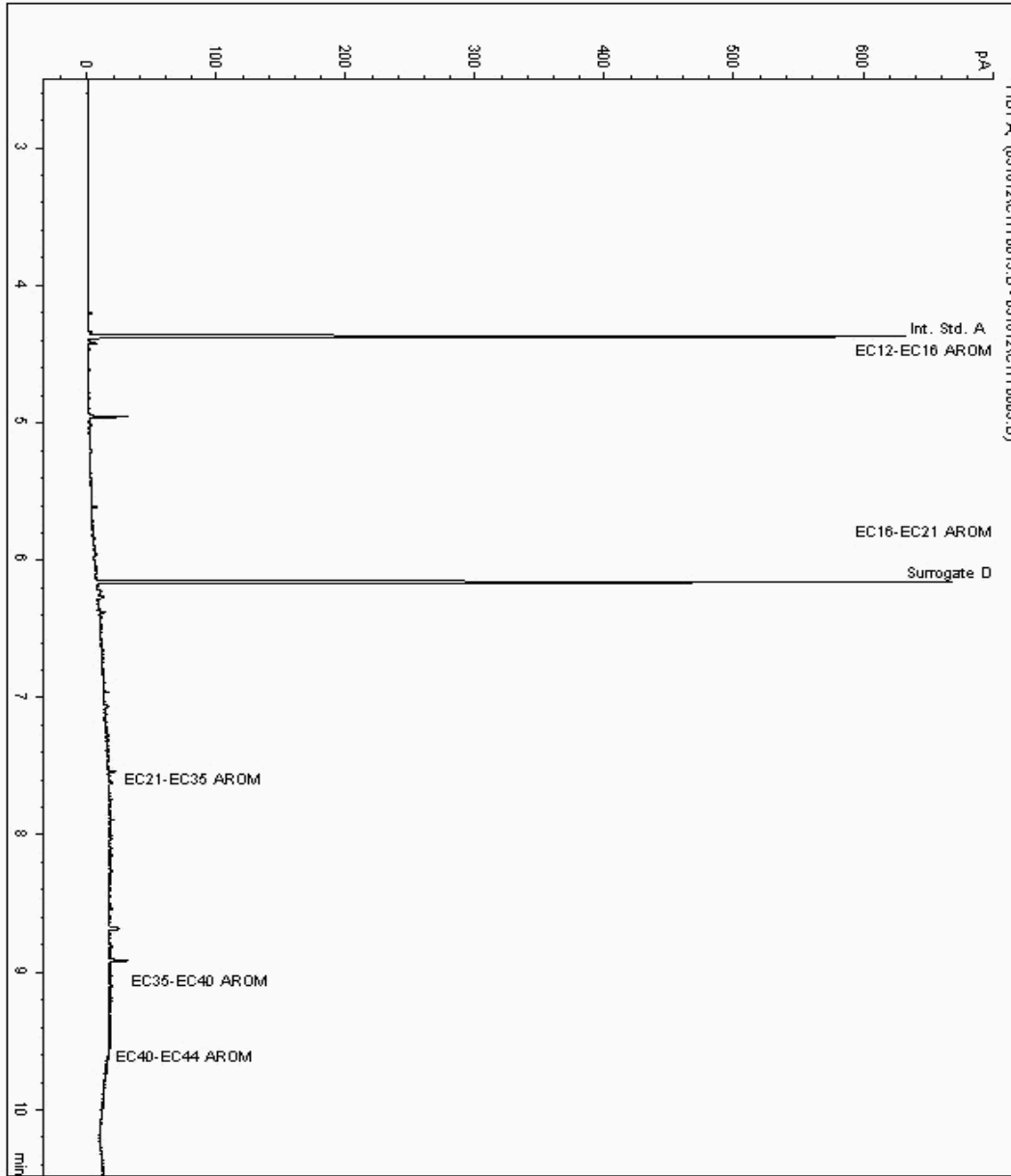
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5589056  
Sample ID : BH312B E17

Depth : 5.00

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

Sample Identity: 5463479-5589056  
Date Acquired : 16/05/2012 20:01:49 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 1.032





SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

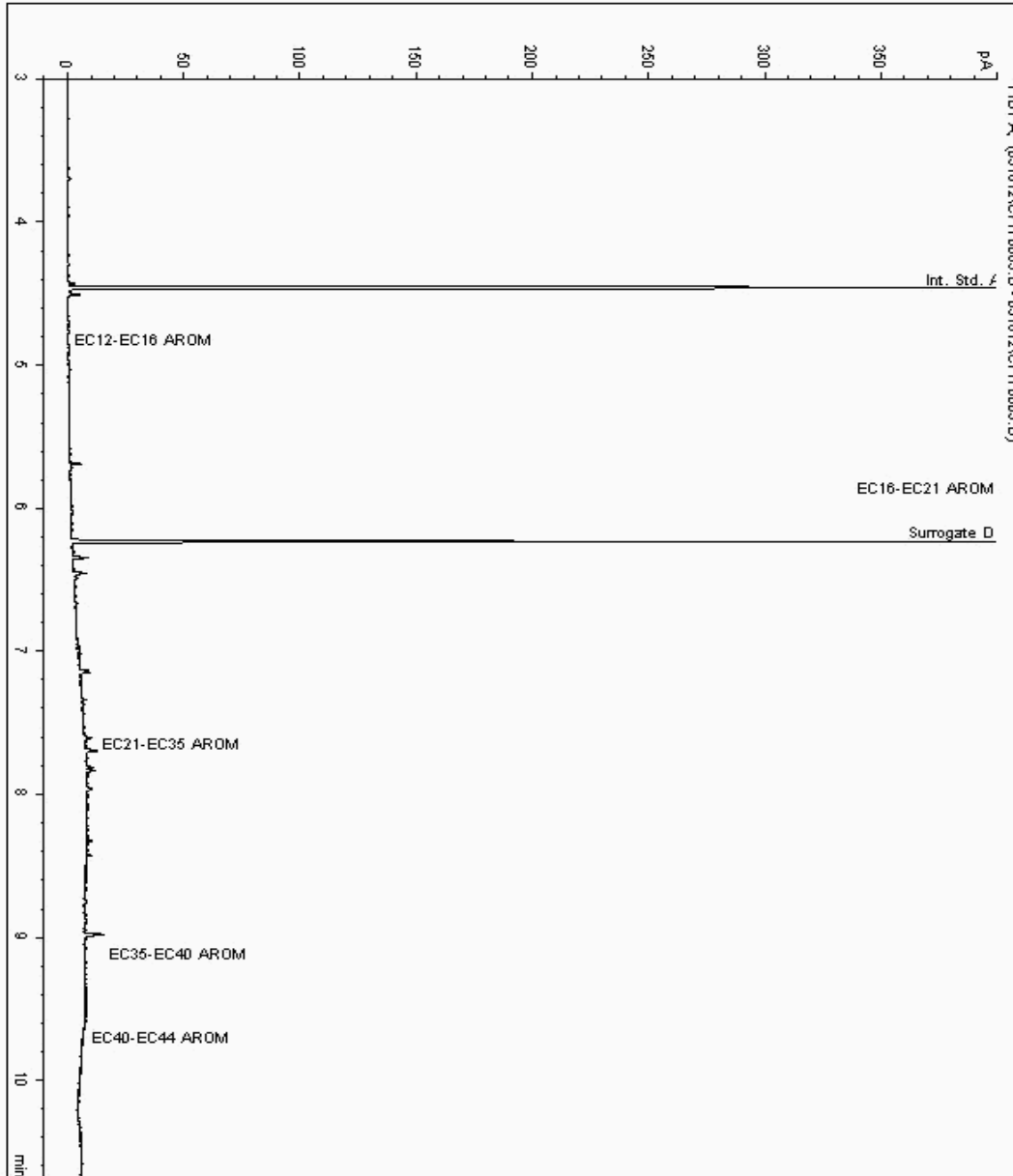
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5596642  
Sample ID : BH314 E22

Depth : 5.30

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

Sample Identity: 5471848-5596642  
Date Acquired : 17/05/2012 14:35:37 PM  
Units : ppb  
Dilution:





SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

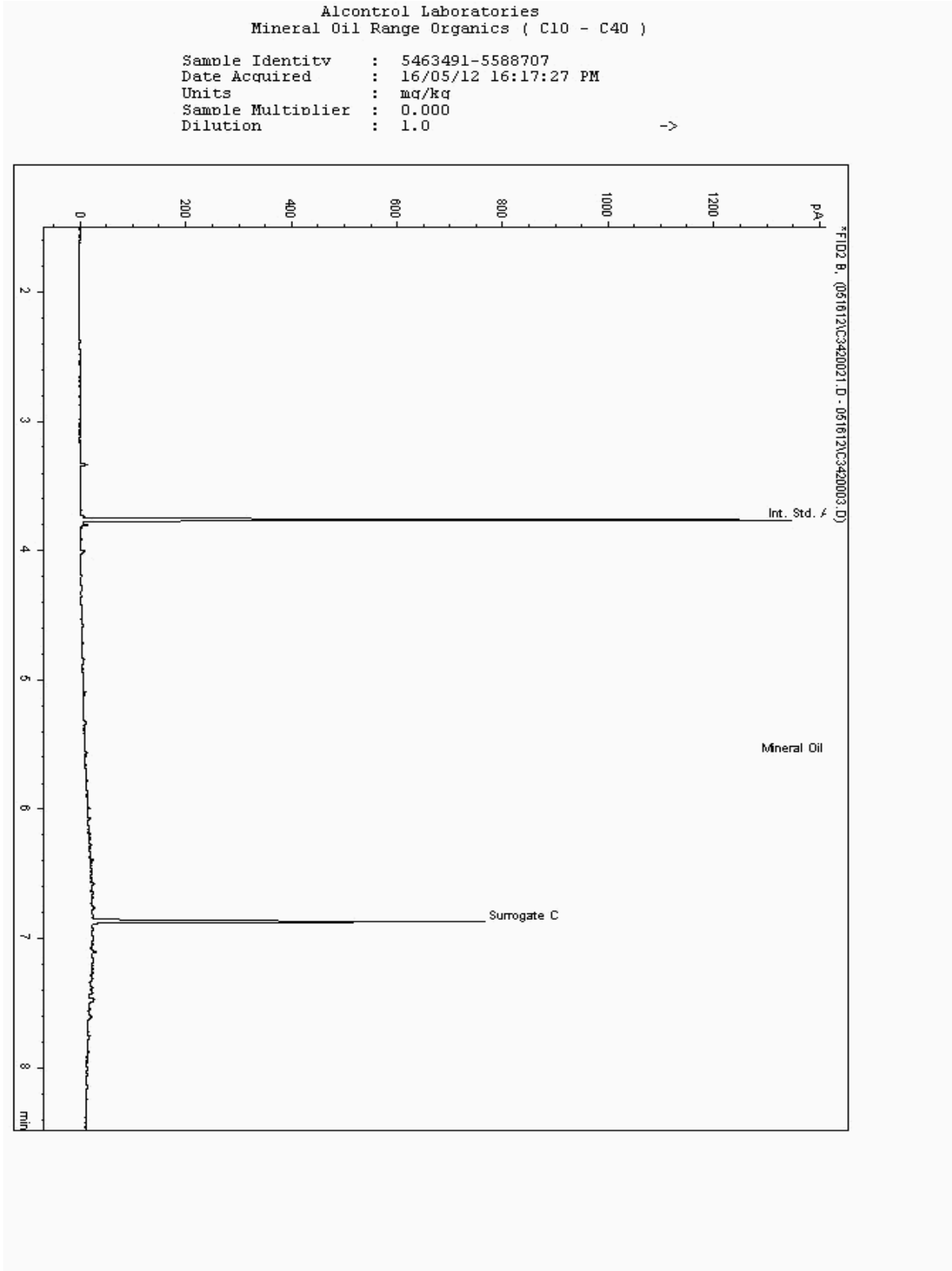
Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

Analysis: Mineral Oil

Sample No : 5588707  
Sample ID : BH314 E14

Depth : 3.20





SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

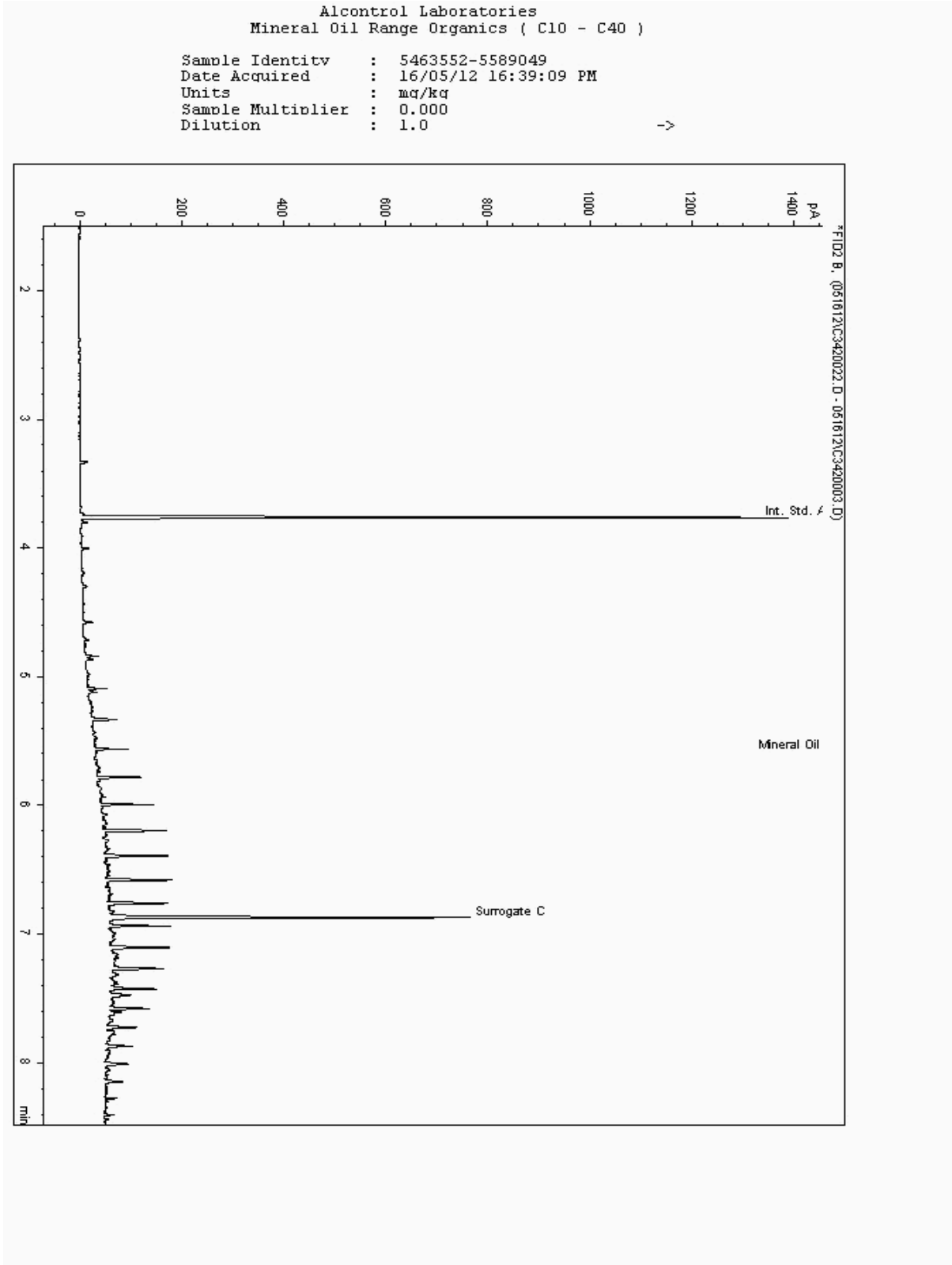
Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

Analysis: Mineral Oil

Sample No : 5589049  
Sample ID : BH312B E17

Depth : 5.00





SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189655  
Superseded Report:

# Chromatogram

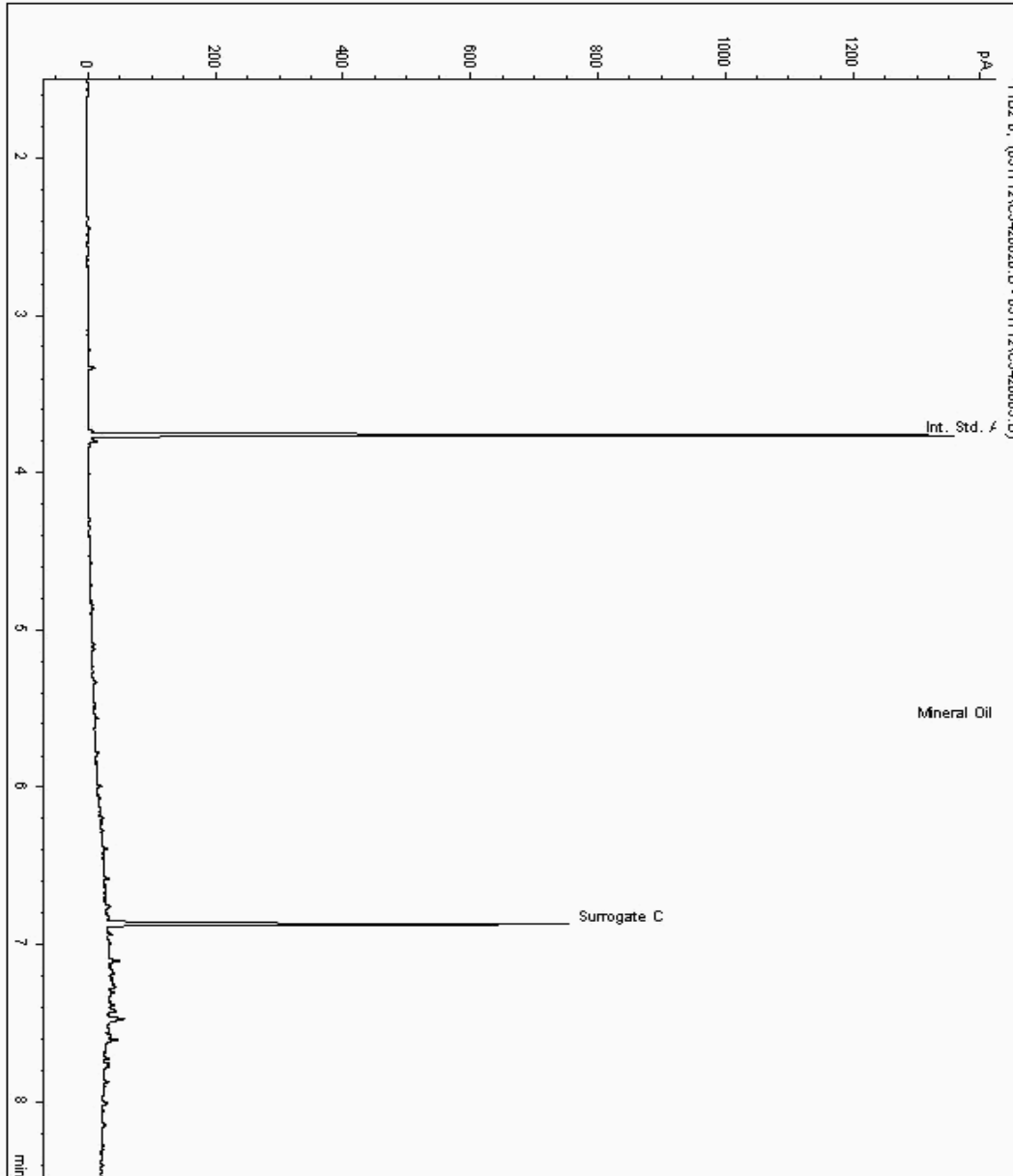
Analysis: Mineral Oil

Sample No : 5596636  
Sample ID : BH314 E22

Depth : 5.30

Alcontrol Laboratories  
Mineral Oil Range Organics ( C10 - C40 )

Sample Identity : 5471856-5596636  
Date Acquired : 17/05/12 15:56:07 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution : 1.0 ->





SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

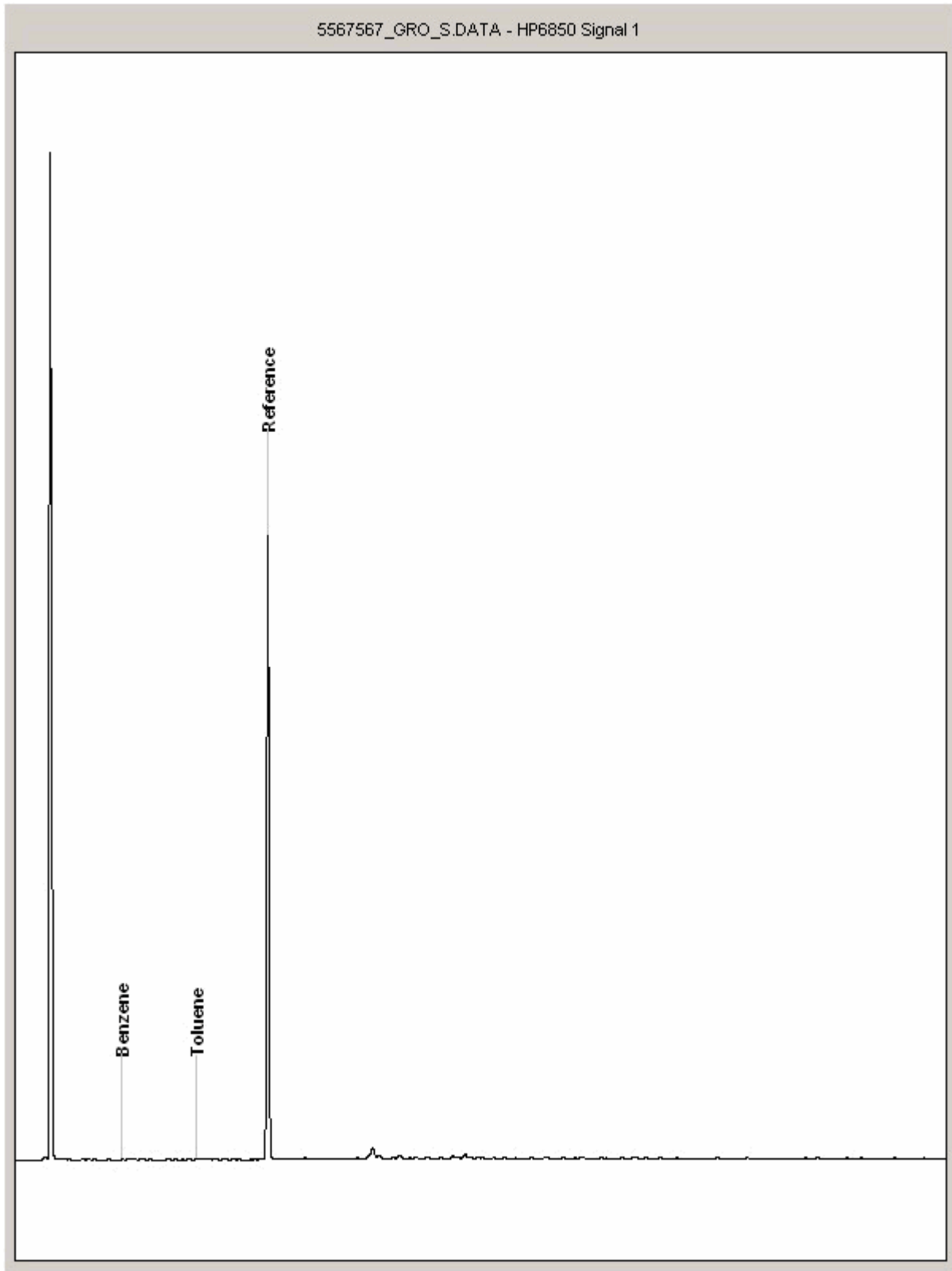
Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5567567  
Sample ID : BH312B E17

Depth : 5.00







SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

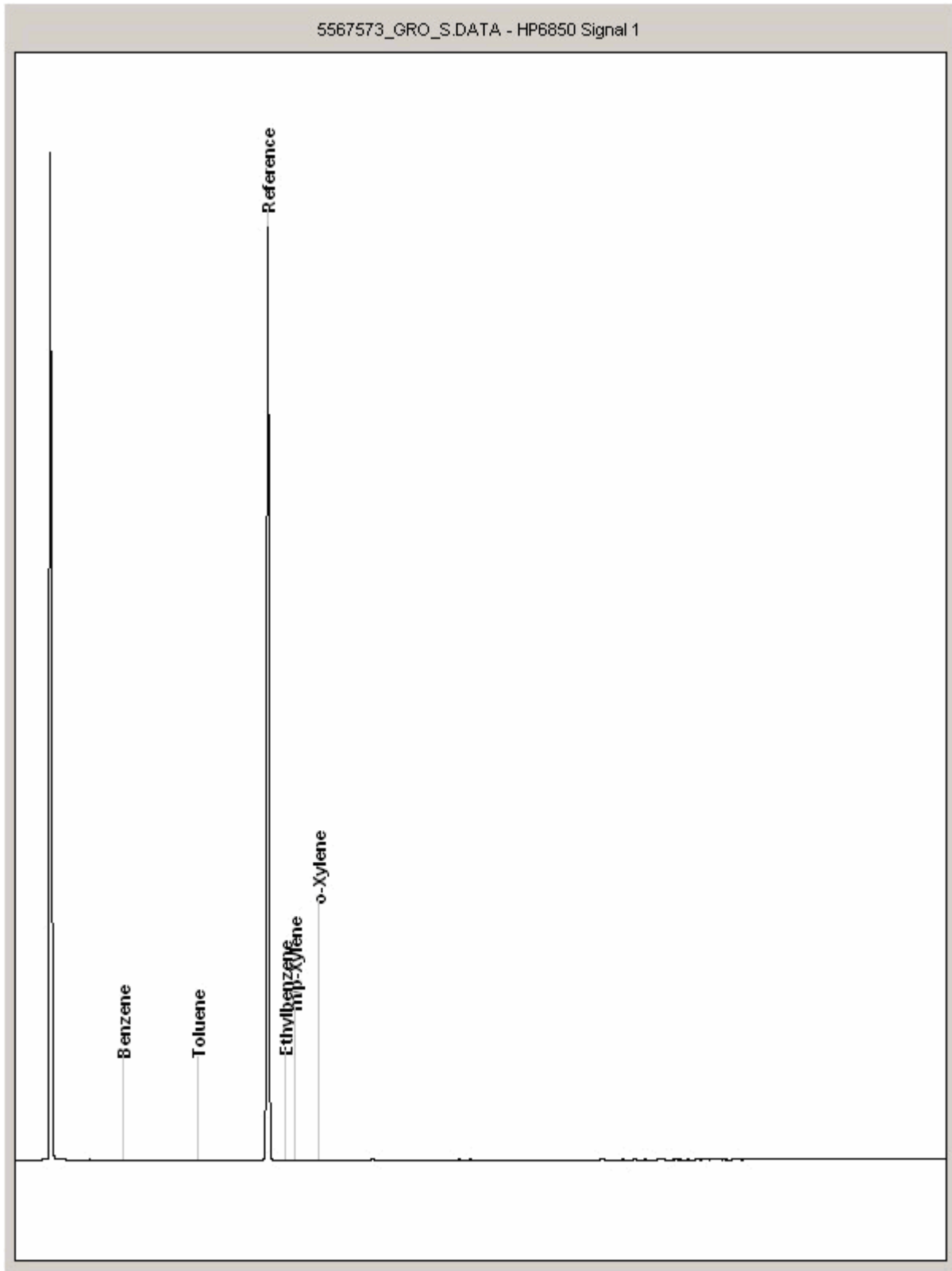
Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5567573  
Sample ID : BH314 E14

Depth : 3.20





SDG: 120503-70  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

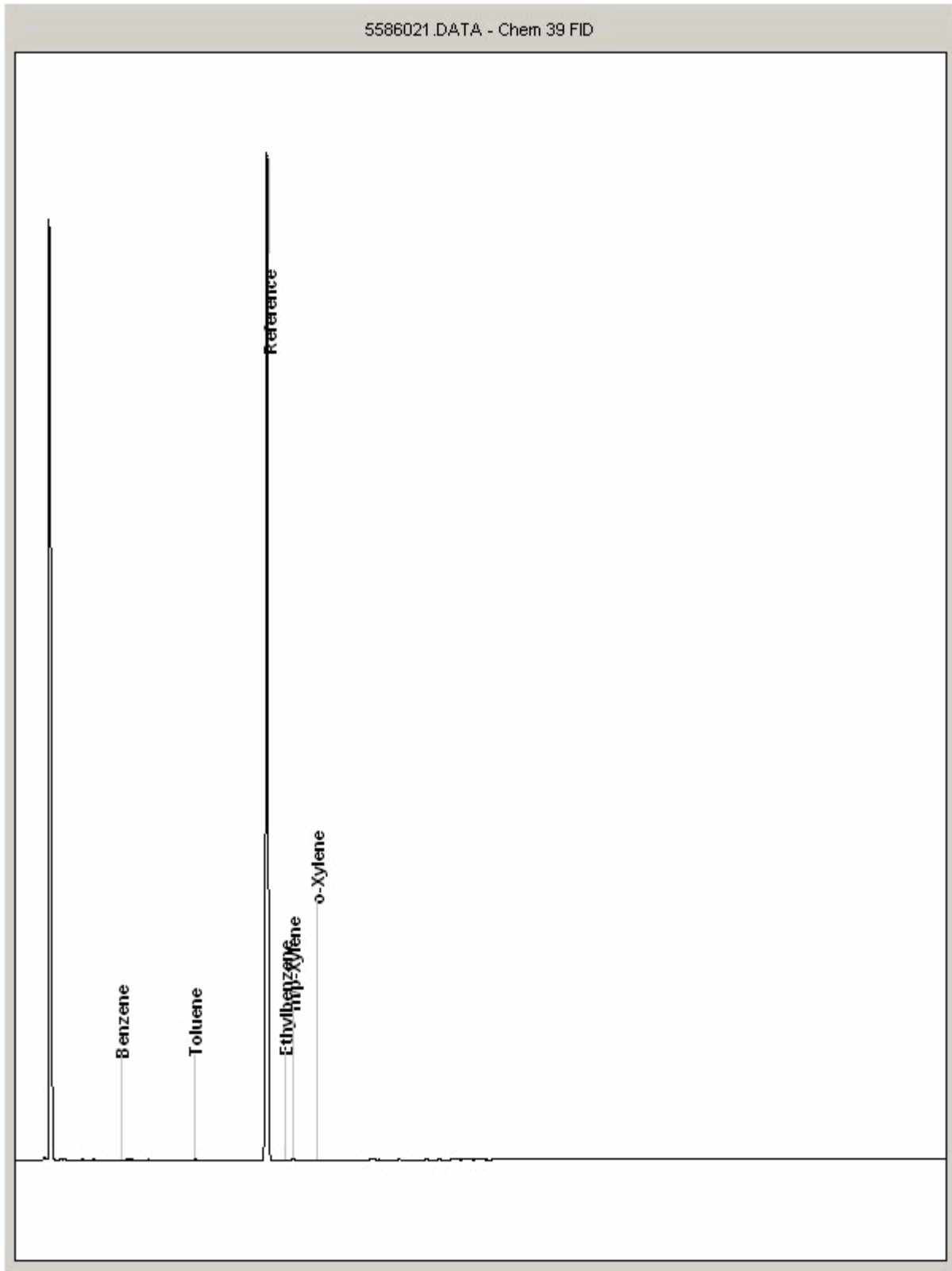
Order Number:  
Report Number: 189655  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5586021  
Sample ID : BH314 E22

Depth : 5.30



# Alcontrol Laboratories

## SVOC Tentatively Identified Compounds

**SDG** - 120503-70  
**Client** - D\_PRIORGEOT\_CRK  
**Sample Identity** - 5587480 / 5460531-BH312B E17[5.00]  
**Sample Type [Units]** - Soil -µg/kg  
**Date Acquired** - 15/05/12  
**Date Reported** - 17/05/12  
**Analyst** - Y. BRYANT

Tentative Compound Identification	Retention Time min	Concentration µg/kg
C10 - C26 Hydrocarbon chains 10% aromatic hydrocarbons	5.00 - 14.19	1713221.28

TIC RESULTS ARE REPORTED ON AN AS RECEIVED BASIS AND ARE NOT MOISTURE  
CORRECTED  
MAY INCLUDE PREVIOUSLY QUANTIFIED RESULTS



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

## Scientific Analysis Laboratories Ltd

### Certificate of Analysis

Hadfield House  
Hadfield Street  
Combrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

**Report Number:** 279482-1

**Date of Report:** 28-May-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120503-70

**Customer Purchase Order:** 147654

**Customer Site Reference:** 30963310001518 (CON No)

**Date Job Received at SAL:** 17-May-2012

**Date Analysis Started:** 18-May-2012

**Date Analysis Completed:** 25-May-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Mr Ross Walker  
Customer Services Manager  
(Land)

Issued by :  
Mr Ross Walker  
Customer Services Manager  
(Land)



**SDG:** 120503-70  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189655  
**Superseded Report:**

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GCMS
HERBICIDES	D&C	HEXANE/ACETONE	SOX THERM	GCMS
PESTICIDES	D&C	HEXANE/ACETONE	SOX THERM	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 CWGBY GC	D&C	HEXANE/ACETONE	END OVER END	GC/FID
PCBAROCLOR 1254/PCBCON	D&C	HEXANE/ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE/ACETONE	MICROWAVE TM218.	GCMS
>C6-C40	WET	HEXANE/ACETONE	SHAKER	GC/FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE/ACETONE	SHAKER	GC/FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	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)	GC/FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC/FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC/FID
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVCC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL BY R	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC/FID

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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 Anorthophyllite	-
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.



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

**Attention:** Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 21 August 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120508-29  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 191696

We received 10 samples on Friday May 04, 2012 and 8 of these samples were scheduled for analysis which was completed on Tuesday August 21, 2012. 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:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5552230	BH306 A	E3	1.00	01/05/2012
5552231	BH306 A	E6	2.00	01/05/2012
5552232	BH306 A	E9	3.00	01/05/2012
5552233	BH306 A	E12	4.00	01/05/2012
5552234	BH306 A	E15	5.00	01/05/2012
5552229	BH310 A	E23	9.00	01/05/2012
5552238	BH312 B		11.50	01/05/2012
5552235	BH312 B		5.50	01/05/2012
5552236	BH312 B		7.50	01/05/2012
5552237	BH312 B		9.50	01/05/2012

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





SDG: 120508-29  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 191696  
 Superseded Report:

SOLID	Results Legend		Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
	Test	No Determination Possible					
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 5	5552230	BH306 A	E3	1.00	400g Tub (ALE214)
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 1	5552231	BH306 A	E6	2.00	400g Tub (ALE214)
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 1	5552233	BH306 A	E12	4.00	400g Tub (ALE214)
Ammonium Soil by Titration	All	NDPs: 0 Tests: 5	5552234	BH306 A	E15	5.00	250g Amber Jar (AL)
Anions by Kone (soil)	All	NDPs: 0 Tests: 5	5552229	BH310 A	E23	9.00	400g Tub (ALE214)
Anions by Kone (w)	All	NDPs: 0 Tests: 1	5552235	BH312 B		5.50	60g VOC (ALE215)
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 7	5552236	BH312 B		7.50	400g Tub (ALE214)
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2					250g Amber Jar (AL)
Boron Water Soluble	All	NDPs: 0 Tests: 5					250g Amber Jar (AL)
COD Unfiltered	All	NDPs: 0 Tests: 1					250g Amber Jar (AL)
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 1					250g Amber Jar (AL)
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 6					400g Tub (ALE214)
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1					400g Tub (ALE214)
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 1					400g Tub (ALE214)
Easily Liberated Sulphide	All	NDPs: 0 Tests: 5					400g Tub (ALE214)







SDG: 120508-29  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 191696  
 Superseded Report:

SOLID	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container					
	5552230	5552231	5552233	5552234	5552229	5552235	5552236	5552238	BH306 A	BH306 A	BH310 A	BH312 B	BH312 B	BH312 B
Results Legend														
<b>X</b> Test														
<b>N</b> No Determination Possible														
Phenols by HPLC (S)	All	NDPs: 0 Tests: 5	X	X	X	X								X
Phenols by HPLC (W)	All	NDPs: 0 Tests: 1											X	
Sample description	All	NDPs: 0 Tests: 6	X	X	X	X	X	X	X					X
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1					X							
Sulphide	All	NDPs: 0 Tests: 1											X	
Toluene extractable matter*	All	NDPs: 4 Tests: 1	N	N	N	N								X
Total Dissolved Solids (Grav)	All	NDPs: 0 Tests: 1											X	
Total Organic Carbon	All	NDPs: 1 Tests: 1					N							X
Total Organic Carbon (Asb)	All	NDPs: 0 Tests: 1					X							
Total Sulphate	All	NDPs: 0 Tests: 5	X	X	X	X								X
Total Sulphur	All	NDPs: 4 Tests: 1	N	N	N	N								X
TPH by IR Oils and Greases	All	NDPs: 0 Tests: 1											X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 1					X							
VOC MS (S)	All	NDPs: 0 Tests: 1											X	



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**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
5552231	BH306 A	2.00	Grey	Clinker	0.1 - 2 mm	Crushed Brick	N/A
5552234	BH306 A	5.00	Dark Brown	Clinker	0.1 - 2 mm	Crushed Brick	Stones
5552229	BH310 A	9.00	Black	Clinker	0.1 - 2 mm	N/A	N/A
5552235	BH312 B	5.50	Black	Silt Loam	<0.063 mm	Stones	N/A
5552236	BH312 B	7.50	Grey	Silty Clay	0.063 - 0.1 mm	Stones	N/A
5552238	BH312 B	11.50	Grey	Silty Clay	<0.063 mm	Stones	N/A

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

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring 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.



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

Results Legend			Customer Sample R					
#	ISO17025 accredited.		BH306 A	BH306 A	BH310 A	BH312 B	BH312 B	BH312 B
M	mCERTS accredited.							
S	Deviating sample.							
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							
		Depth (m)	2.00	5.00	9.00	11.50	5.50	7.50
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	01/05/2012	01/05/2012	01/05/2012	01/05/2012	01/05/2012	01/05/2012
		Sampled Time						
		Date Received	04/05/2012	04/05/2012	04/05/2012	04/05/2012	04/05/2012	04/05/2012
		SDG Ref	120508-29	120508-29	120508-29	120508-29	120508-29	120508-29
		Lab Sample No.(s)	5552231	5552234	5552229	5552238	5552235	5552236
		AGS Reference	E6	E15	E23			
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	9.2	7.2	4.9	26	20	
Tolulene Extractable Matter	<500 mg/kg	SUB				<500		
Dissolved solids, Total (gravimetric) NRA leach	<10 mg/l	TM021						3690
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15	<15	47.3	20.5	
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043						<2
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035	<0.035	<0.035	
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06	<0.06	<0.06	<0.06	
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090						6.58
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099						1.23
Sulphide NRA leach	<0.01 mg/l	TM101						<0.01
Fluoride NRA leach	<0.5 mg/l	TM104						<0.5
COD, unfiltered NRA leach	<7 mg/l	TM107						25.4
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120						1.57
Sulphur, Total	<0.02 %	TM132				0.979		
Fraction Organic Carbon (FOC)	<0.002 -	TM132				0.00585		
pH	1 pH Units	TM133	9.91	10.2	10	7.97	8.4	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6	<0.6	<0.6	
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152						14.2
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152						1.13
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152						3.84
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152						1.69
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152						306
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152						<0.1
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152						1.94
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152						<0.06
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152						<0.85
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152						1.31
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152						11.6
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152						16.8
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152						0.597



## CERTIFICATE OF ANALYSIS

**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

Results Legend			Customer Sample R		BH306 A	BH306 A	BH310 A	BH312 B	BH312 B	BH312 B
#	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>							
M	mCERTS accredited.			2.00	5.00	9.00	11.50	5.50	7.50	
§	Deviating sample.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
aq	Aqueous / settled sample.			01/05/2012	01/05/2012	01/05/2012	01/05/2012	01/05/2012	01/05/2012	
diss.filt	Dissolved / filtered sample.			04/05/2012	04/05/2012	04/05/2012	04/05/2012	04/05/2012	04/05/2012	
tot.unfilt	Total / unfiltered sample.			120508-29	120508-29	120508-29	120508-29	120508-29	120508-29	
tot.unfilt	Subcontracted test.			5552231	5552234	5552229	5552238	5552235	5552236	
*	% 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			E6	E15	E23				
**	Trigger breach confirmed									
(F)										
Component	LOD/Units	Method								
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152								<6.3
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152								1.94
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152								7.02
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152								<0.36
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152								42.3
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152								4.82
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1		
Cyanide, Free	<1 mg/kg	TM153	M	M	#	M	M	M		
Cyanide, Complex	<1 mg/kg	TM153	M	M	#	M	M	M		
Thiocyanate	<1 mg/kg	TM153	M	M	#	M	M	M		
Sulphide, Easily liberated	<15 mg/kg	TM180	§ #	§ #	§ #	§ #	§ #	§ #	43.6	
Aluminium	<11 mg/kg	TM181	21500	16200	22000	10400	6700			
Antimony	<0.6 mg/kg	TM181	34	30.9	35.1	<0.6	7.75			
Arsenic	<0.6 mg/kg	TM181	#	#	#	#	#	#		
Barium	<0.6 mg/kg	TM181	12.7	43.5	27.6	7.19	14.1			
Beryllium	<0.6 mg/kg	TM181	M	M	#	M	M	M		
Cadmium	<0.6 mg/kg	TM181	#	#	#	#	#	#		
Chromium	<0.1 mg/kg	TM181	<0.1	<0.1	<0.1	0.457	0.425			
Copper	<0.02 mg/kg	TM181	M	M	#	M	M	M		
Lead	<0.02 mg/kg	TM181	2.37	4.04	2.28	0.28	1.02			
Manganese	<0.9 mg/kg	TM181	6070	4400	6150	30.2	169			
Mercury	<1.4 mg/kg	TM181	M	M	#	M	M	M		
Nickel	<0.7 mg/kg	TM181	309	649	529	10.3	132			
Selenium	<0.13 mg/kg	TM181	28700	26500	35600	426	2500			
Vanadium	<0.14 mg/kg	TM181	M	M	#	M	M	M		
Zinc	<0.2 mg/kg	TM181	83.1	218	173	21.1	56.1			
Mercury (diss.filt) NRA leach	<1 mg/kg	TM181	#	#	#	#	#	#		
Sulphate NRA leach	<0.2 mg/kg	TM181	440	321	521	21.8	33			
Chloride NRA leach	<1.9 mg/kg	TM181	#	#	#	#	#	#		
Nitrate as NO3 NRA leach	<2 mg/l	TM184	718	2830	295	64.9	534			
PCB congener 28 NRA leach	<0.01 µg/l	TM183								<0.01
PCB congener 52 NRA leach	<2 mg/l	TM184								70.3
PCB congener 101 NRA leach	<2 mg/l	TM184								479
PCB congener 118 NRA leach	<0.3 mg/l	TM184								<0.3
PCB congener 138 NRA leach	<0.015 µg/l	TM197								<0.015
PCB congener 28 NRA leach	<0.015 µg/l	TM197								<0.015
PCB congener 52 NRA leach	<0.015 µg/l	TM197								<0.015
PCB congener 101 NRA leach	<0.015 µg/l	TM197								<0.015
PCB congener 118 NRA leach	<0.015 µg/l	TM197								<0.015
PCB congener 138 NRA leach	<0.015 µg/l	TM197								<0.015



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

Results Legend			Customer Sample R		BH306 A	BH306 A	BH310 A	BH312 B	BH312 B	BH312 B
#	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>							
M	mCERTS accredited.			2.00	5.00	9.00	11.50	5.50	7.50	
S	Deviating sample.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
aq	Aqueous / settled sample.			01/05/2012	01/05/2012	01/05/2012	01/05/2012	01/05/2012	01/05/2012	
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
**	% 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			04/05/2012	04/05/2012	04/05/2012	04/05/2012	04/05/2012	04/05/2012	
(F)	Trigger breach confirmed			120508-29	120508-29	120508-29	120508-29	120508-29	120508-29	
				5552231	5552234	5552229	5552238	5552235	5552236	
				E6	E15	E23				
Component	LOD/Units	Method								
PCB congener 153 NRA leach	<0.015 µg/l	TM197								<0.015
PCB congener 180 NRA leach	<0.015 µg/l	TM197								<0.015
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197								<0.105
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	<10	<10	<10			
Sulphate, Total	<48 mg/kg	TM221	5040	5530	3700	7290	2400			
Total sulphur	<0.0016 %	TM221	0.168	0.184	0.123	0.243	0.0798			
Boron, water soluble	<1 mg/kg	TM222	17.3	9.76	7.39	5.62	5.57			
Calcium	<21 mg/kg	TM224	197000	167000	238000	30100	43500			
Magnesium	<8 mg/kg	TM224	63000	43100	33700	6050	7230			
Cyanide, Total NRA leach	<0.05 mg/l	TM227								<0.05
Cyanide, Free NRA leach	<0.05 mg/l	TM227								<0.05
Cyanide, Complex NRA leach	<0.05 mg/l	TM227								<0.05
Thiocyanate NRA leach	<0.05 mg/l	TM227								<0.05
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228								14.8
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228								309
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228								21.8
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228								22.7
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228								0.019
TPH / Oil & Greases NRA leach	<1 mg/l	TM235								<1
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241								<0.03
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.535	0.496	0.274	0.258	0.581			
Chloride (soluble)	<5 mg/kg	TM243	3370	2960	1000	6530	5010			
pH NRA leach	<1 pH Units	TM256								8.13
Phenol NRA leach	<0.002 mg/l	TM259								<0.002
Cresols NRA leach	<0.006 mg/l	TM259								<0.006
Xylenols NRA leach	<0.008 mg/l	TM259								<0.008
2,3,5-Trimethylphenol NRA leach	<0.003 mg/l	TM259								<0.003
2-Isopropylphenol NRA leach	<0.006 mg/l	TM259								<0.006
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259								<0.016
Phenols, Total Detected 5 speciated NRA leach	<0.025 mg/l	TM259								<0.025
Sulphur, Free NRA leach	<0.05 mg/l	TM294								<0.05
Fraction Organic Carbon (FOC)	<0.1 -	TM321					<0.1			#







**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

## Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH312 B			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	5.50 Soil/Solid 01/05/2012 . 04/05/2012 120508-29 5552235			
M	mCERTS accredited.					
S	Deviating sample.					
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					
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100			
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100			





SDG: 120508-29  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 191696  
 Superseded Report:

## TPH CWG (S)

Results Legend		Customer Sample R	BH312 B					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	5.50 Soil/Solid 01/05/2012 . 04/05/2012 120508-29 5552235					
M	mCERTS accredited.							
S	Deviating sample.							
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							
Component	LOD/Units			Method				
GRO Surrogate % recovery**	%	TM089	108					
GRO >C5-C12	<44 µg/kg	TM089	372					
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	#				
Benzene	<10 µg/kg	TM089	<10	M				
Toluene	<2 µg/kg	TM089	<2	M				
Ethylbenzene	<3 µg/kg	TM089	<3	M				
m,p-Xylene	<6 µg/kg	TM089	<6	M				
o-Xylene	<3 µg/kg	TM089	<3	M				
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9					
sum of detected BTEX by GC	<24 µg/kg	TM089	<24					
Aliphatics >C5-C6	<10 µg/kg	TM089	<10					
Aliphatics >C6-C8	<10 µg/kg	TM089	21.1					
Aliphatics >C8-C10	<10 µg/kg	TM089	62					
Aliphatics >C10-C12	<10 µg/kg	TM089	139					
Aliphatics >C12-C16	<100 µg/kg	TM173	5510					
Aliphatics >C16-C21	<100 µg/kg	TM173	35200					
Aliphatics >C21-C35	<100 µg/kg	TM173	150000					
Aliphatics >C35-C44	<100 µg/kg	TM173	45100					
Total Aliphatics >C12-C44	<100 µg/kg	TM173	235000					
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10					
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10					
Aromatics >EC8-EC10	<10 µg/kg	TM089	47.1					
Aromatics >EC10-EC12	<10 µg/kg	TM089	93					
Aromatics >EC12-EC16	<100 µg/kg	TM173	4190					
Aromatics >EC16-EC21	<100 µg/kg	TM173	26000					
Aromatics >EC21-EC35	<100 µg/kg	TM173	121000					
Aromatics >EC35-EC44	<100 µg/kg	TM173	51800					
Aromatics >EC40-EC44	<100 µg/kg	TM173	20000					
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	203000					
Total Aliphatics >C5-35	<100 µg/kg	TM173	191000					
Total Aromatics >C5-35	<100 µg/kg	TM173	151000					
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	342000					
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	439000					



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

## VOC MS (S)

Results Legend		Customer Sample R	BH312 B					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	5.50 Soil/Solid 01/05/2012 . 04/05/2012 120508-29 5552235					
M	mCERTS accredited.							
S	Deviating sample.							
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							
Component	LOD/Units			Method				
Dibromofluoromethane**	%	TM116	78.2					
Toluene-d8**	%	TM116	104					
4-Bromofluorobenzene**	%	TM116	117					
Dichlorodifluoromethane	<4 µg/kg	TM116	<4	M				
Chloromethane	<7 µg/kg	TM116	<7					
Vinyl Chloride	<10 µg/kg	TM116	<10					
Bromomethane	<13 µg/kg	TM116	<13	M				
Chloroethane	<14 µg/kg	TM116	<14	M				
Trichlorofluoromethane	<6 µg/kg	TM116	<6	M				
1.1-Dichloroethene	<10 µg/kg	TM116	<10	#				
Carbon Disulphide	<7 µg/kg	TM116	197	M				
Dichloromethane	<10 µg/kg	TM116	14.3	#				
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	M				
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11	M				
1.1-Dichloroethane	<8 µg/kg	TM116	<8	M				
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5	M				
2.2-Dichloropropane	<12 µg/kg	TM116	<12	M				
Bromochloromethane	<14 µg/kg	TM116	<14	M				
Chloroform	<8 µg/kg	TM116	<8	M				
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7	M				
1.1-Dichloropropene	<11 µg/kg	TM116	<11	M				
Carbontetrachloride	<14 µg/kg	TM116	<14	M				
1.2-Dichloroethane	<5 µg/kg	TM116	<5	M				
Benzene	<9 µg/kg	TM116	<9	M				
Trichloroethene	<9 µg/kg	TM116	<9	M				
1.2-Dichloropropane	<12 µg/kg	TM116	<12	M				
Dibromomethane	<9 µg/kg	TM116	<9	M				
Bromodichloromethane	<7 µg/kg	TM116	<7	M				
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14	M				
Toluene	<5 µg/kg	TM116	<5	M				
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14					
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	M				
1.3-Dichloropropane	<7 µg/kg	TM116	<7	#				
Tetrachloroethene	<5 µg/kg	TM116	<5	M				
Dibromochloromethane	<13 µg/kg	TM116	<13	M				



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

## VOC MS (S)

Results Legend		Customer Sample R	BH312 B					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	5.50 Soil/Solid 01/05/2012 . 04/05/2012 120508-29 5552235					
M	mCERTS accredited.							
S	Deviating sample.							
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							
Component	LOD/Units			Method				
1,2-Dibromoethane	<12 µg/kg	TM116	<12	M				
Chlorobenzene	<5 µg/kg	TM116	<5	M				
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	M				
Ethylbenzene	<4 µg/kg	TM116	<4	M				
p/m-Xylene	<14 µg/kg	TM116	<14	#				
o-Xylene	<10 µg/kg	TM116	<10	M				
Styrene	<10 µg/kg	TM116	<10	M				
Bromoform	<10 µg/kg	TM116	<10	M				
Isopropylbenzene	<5 µg/kg	TM116	<5	M				
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	#				
1,2,3-Trichloropropane	<17 µg/kg	TM116	<17	M				
Bromobenzene	<10 µg/kg	TM116	<10	M				
Propylbenzene	<11 µg/kg	TM116	<11	M				
2-Chlorotoluene	<9 µg/kg	TM116	<9	M				
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	#				
4-Chlorotoluene	<12 µg/kg	TM116	<12	M				
tert-Butylbenzene	<12 µg/kg	TM116	<12	#				
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	#				
sec-Butylbenzene	<10 µg/kg	TM116	<10	M				
4-Isopropyltoluene	<11 µg/kg	TM116	<11	M				
1,3-Dichlorobenzene	<6 µg/kg	TM116	<6	M				
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	M				
n-Butylbenzene	<10 µg/kg	TM116	<10	M				
1,2-Dichlorobenzene	<12 µg/kg	TM116	<12	M				
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	M				
Tert-amyl methyl ether	<15 µg/kg	TM116	<15					
1,2,4-Trichlorobenzene	<6 µg/kg	TM116	<6	#				
Hexachlorobutadiene	<12 µg/kg	TM116	<12					
Naphthalene	<13 µg/kg	TM116	355	M				
1,2,3-Trichlorobenzene	<6 µg/kg	TM116	<6	M				
VOC TIC	-	TM116	No TICs identified					



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310 A E 23 9.00 SOLID 01/05/2012 00:00:00  120508-29 5552229 TM048	14/05/12	Lauren Sargeant	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306 A E 6 2.00 SOLID 01/05/2012 00:00:00  120508-29 5552231 TM048	14/05/12	Lauren Sargeant	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306 A E 15 5.00 SOLID 01/05/2012 00:00:00  120508-29 5552234 TM048	14/05/12	Lauren Sargeant	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312 B 5.50 SOLID 01/05/2012 00:00:00  120508-29 5552235 TM048	17/05/12	Chris Swindells	loose fibres in soil trace	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312 B 11.50 SOLID 01/05/2012 00:00:00  120508-29 5552238 TM048	17/05/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310 A E 23 9.00 SOLID 01/05/2012 00:00:00  120508-29 5552229 TM048	20/8/12	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310 A E 3 1.00 SOLID 01/05/2012 00:00:00  120508-29 5552230 TM048	20/8/12	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306 A E 6 2.00 SOLID 01/05/2012 00:00:00  120508-29 5552231 TM048	20/8/12	Paul Poynton	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306 A E 12 4.00 SOLID 01/05/2012 00:00:00  120508-29 5552233 TM048	20/8/12	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306 A E 15 5.00 SOLID 01/05/2012 00:00:00  120508-29 5552234 TM048	20/8/12	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312 B 5.50 SOLID 01/05/2012 00:00:00  120508-29 5552235 TM048	20/8/12	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected





SDG: 120508-29  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 191696  
Superseded Report:

### Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310 A E 23 9.00 SOLID 01/05/2012 00:00:00  120508-29 5552229 TM 304	Amphibole fibres found during PCM analysis. (#)	-	<0.001 (#)	0.0011 (#)	0.0014 (#)
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312 B 5.50 SOLID 01/05/2012 00:00:00  120508-29 5552235 TM 304	- (#)	-	0.0018 (#)	0.0010 (#)	0.0028 (#)



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5572056	BH310 A E23	9.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5572120	BH306 A E6	2.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5572378	BH306 A E15	5.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5572418	BH312 B	5.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5572454	BH312 B	11.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded

**Note :** Test results may be compromised



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

### Notification of NDPs (No determination possible)

Date Received : 08/05/2012 12:25:37

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5552229	BH310 A E23	9.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5552229	BH310 A E23	9.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5552231	BH306 A E6	2.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5552231	BH306 A E6	2.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5552234	BH306 A E15	5.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5552234	BH306 A E15	5.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5552235	BH312 B	5.50	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5552235	BH312 B	5.50	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5552235	BH312 B	5.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos



## CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120508-29	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	191696
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM 304				
TM021	Method 2540C, AWWA/APHA, 20th Ed., 1999	Determination of total dissolved solids in waters by gravimetry.		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
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		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		



## CERTIFICATE OF ANALYSIS

<b>SDG:</b> 120508-29	<b>Location:</b> Haulbowline	<b>Order Number:</b> 4559
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 191696
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b>

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		
TM243		Mixed Anions In Soils By Kone		
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		
TM294		Determination of Free Sulphur in liquids by HPLC		
TM321		Organic matter Content of Soil By Titration		

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



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

### Test Completion Dates

Lab Sample No(s)	5552230	5552231	5552233	5552234	5552229	5552235	5552236	5552238
Customer Sample Ref.	BH306 A	BH306 A	BH306 A	BH306 A	BH310 A	BH312 B	BH312 B	BH312 B
AGS Ref.	E3	E6	E12	E15	E23			
Depth	1.00	2.00	4.00	5.00	9.00	5.50	7.50	11.50
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)		15-May-2012		15-May-2012	15-May-2012	15-May-2012		15-May-2012
Alkalinity Filtered as CaCO3							22-May-2012	
Ammoniacal Nitrogen							23-May-2012	
Ammonium Soil by Titration		15-May-2012		15-May-2012	15-May-2012	15-May-2012		15-May-2012
Anions by Kone (soil)		14-May-2012		14-May-2012	14-May-2012	14-May-2012		18-May-2012
Anions by Kone (w)							24-May-2012	
Asbestos Identification (Soil)	21-Aug-2012	21-Aug-2012	21-Aug-2012	21-Aug-2012	21-Aug-2012	21-Aug-2012		17-May-2012
Asbestos Quantification - Full					20-Jun-2012	19-Jun-2012		
Boron Water Soluble		15-May-2012		15-May-2012	15-May-2012	15-May-2012		15-May-2012
COD Unfiltered							22-May-2012	
Conductivity (at 20 deg.C)							21-May-2012	
Cyanide Comp/Free/Total/Thiocyanate		14-May-2012		14-May-2012	14-May-2012	16-May-2012		16-May-2012
Dissolved Metals by ICP-MS							23-May-2012	
Dissolved Organic/Inorganic Carbon							22-May-2012	
Easily Liberated Sulphide		14-May-2012		14-May-2012	14-May-2012	18-May-2012		17-May-2012
EPH CWG (Aliphatic) GC (S)						15-May-2012		
EPH CWG (Aromatic) GC (S)						15-May-2012		
Fluoride							22-May-2012	
Free Sulphur							23-May-2012	
Hexavalent Chromium (s)		16-May-2012		16-May-2012	16-May-2012	16-May-2012		16-May-2012
Hexavalent Chromium (w)							22-May-2012	
Mercury Dissolved							22-May-2012	
Metals by iCap-OES (Soil)		15-May-2012		15-May-2012	15-May-2012	15-May-2012		15-May-2012
Metals by iCap-OES Dissolved (W)							23-May-2012	
Nitrite by Kone (w)							22-May-2012	
NRA Leachate							07-Jun-2012	
PAH Spec MS - Aqueous (W)							23-May-2012	
PAH Value of soil		15-May-2012		15-May-2012	15-May-2012	16-May-2012		16-May-2012
PCB Congeners - Aqueous (W)							23-May-2012	
pH		15-May-2012		15-May-2012	15-May-2012	18-May-2012		18-May-2012
pH Value							22-May-2012	
Phenols by HPLC (S)		16-May-2012		16-May-2012	15-May-2012	17-May-2012		18-May-2012
Phenols by HPLC (W)							24-May-2012	
Sample description		11-May-2012		11-May-2012	11-May-2012	11-May-2012	16-May-2012	11-May-2012
Semi Volatile Organic Compounds						18-May-2012		
Sulphide							22-May-2012	
Toluene extractable matter*								31-May-2012
Total Dissolved Solids (Grav)							23-May-2012	
Total Organic Carbon								18-May-2012
Total Organic Carbon (Asb)						18-May-2012		
Total Sulphate		15-May-2012		15-May-2012	15-May-2012	15-May-2012		15-May-2012
Total Sulphur								18-May-2012
TPH by IR Oils and Greases							13-Jun-2012	
TPH CWG GC (S)						18-May-2012		
VOC MS (S)						16-May-2012		



SDG: 120508-29  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 191696  
Superseded Report:

### Chromatogram

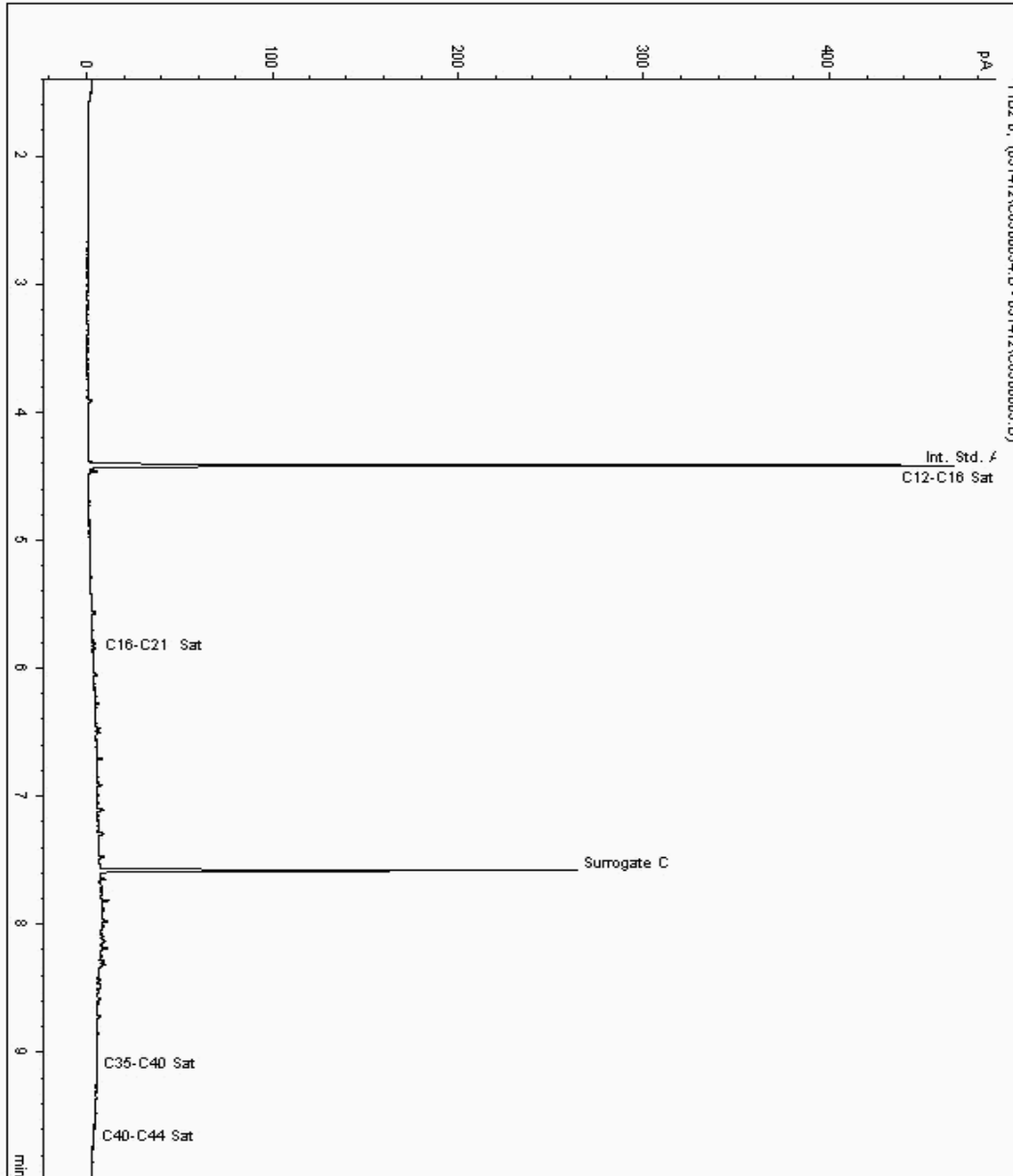
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5576715  
Sample ID : BH312 B

Depth : 5.50

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

Sample Identity: 5439416-5576715  
Date Acquired : 14/05/12 22:01:23 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 1.030





SDG: 120508-29  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 191696  
Superseded Report:

### Chromatogram

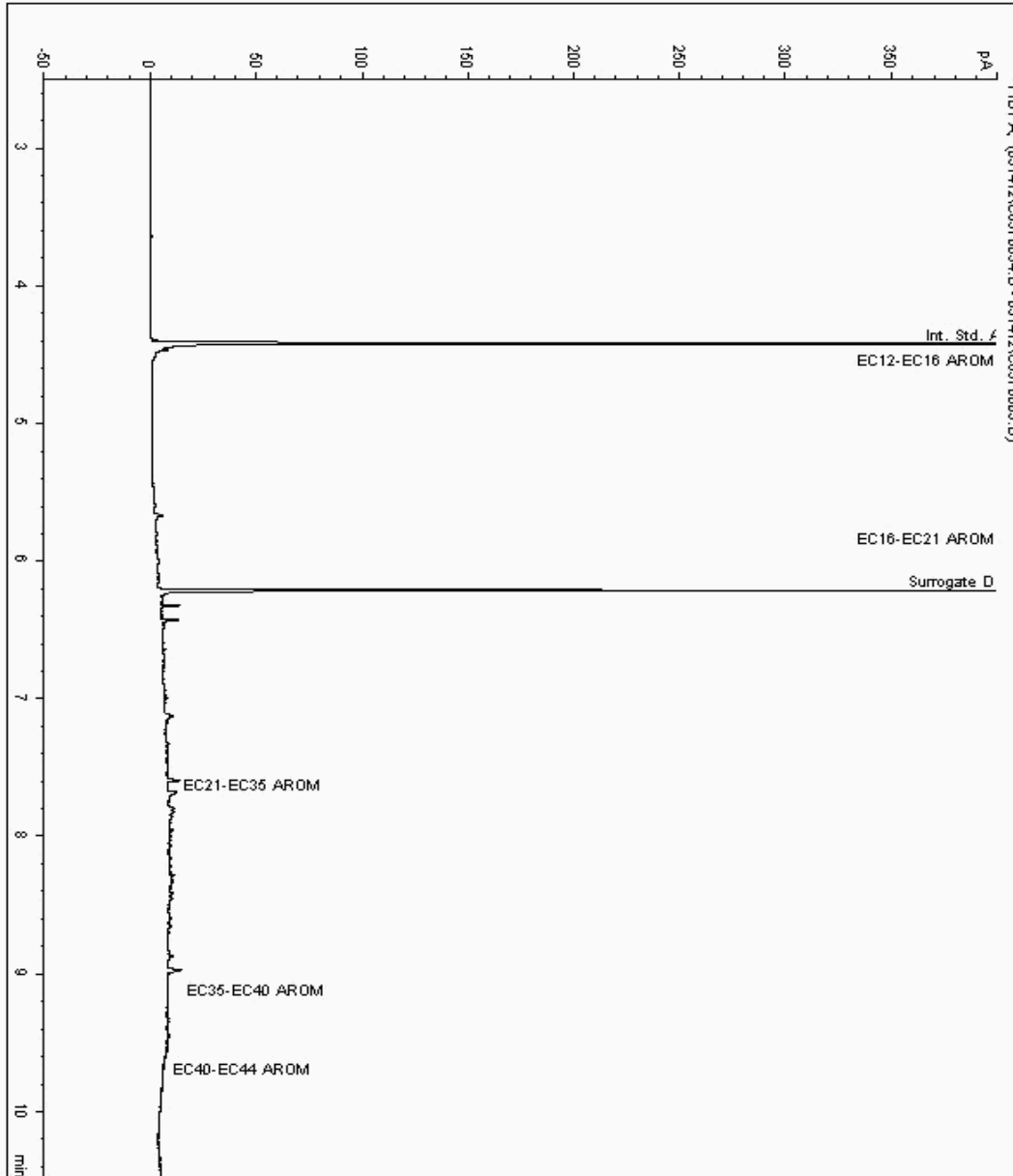
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5576715  
Sample ID : BH312 B

Depth : 5.50

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

Sample Identity: 5439417-5576715  
Date Acquired : 14/05/12 22:01:23 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 1.030







### CERTIFICATE OF ANALYSIS

SDG: 120508-29  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

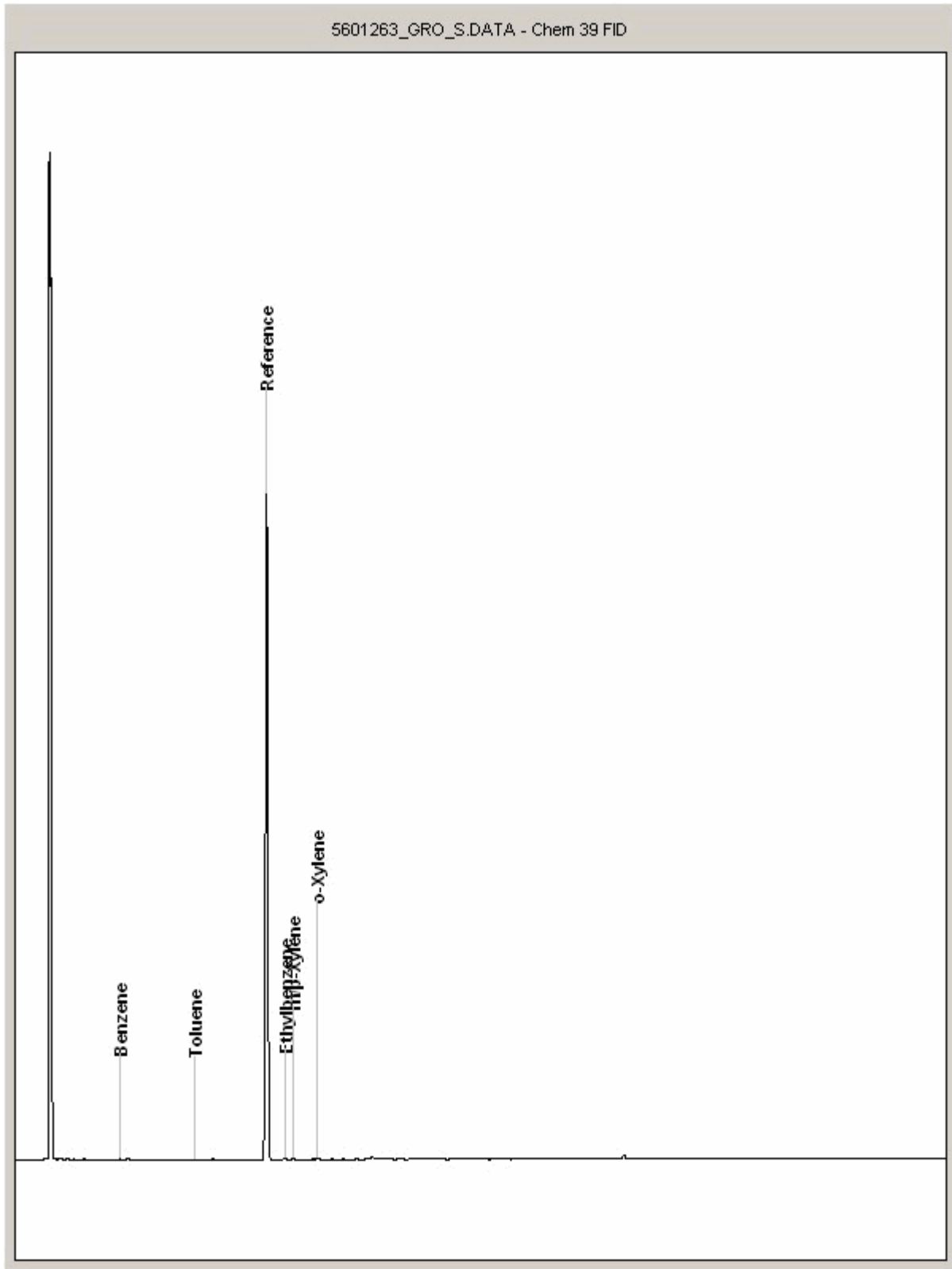
Order Number: 4559  
Report Number: 191696  
Superseded Report:

## Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5601263  
Sample ID : BH312 B

Depth : 5.50





# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Combrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 279597-1

**Date of Report:** 30-May-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120508-29 (Project Ref)

**Customer Purchase Order:** 147734

**Customer Site Reference:** 202260 (Req No)

**Date Job Received at SAL:** 18-May-2012

**Date Analysis Started:** 22-May-2012

**Date Analysis Completed:** 30-May-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Mr Ross Walker  
Customer Services Manager  
(Land)

Issued by :  
Mr Ross Walker  
Customer Services Manager  
(Land)

<b>SAL Reference:</b> 279597 <b>Project Site:</b> 202260 (Req No) <b>Customer Reference:</b> 120508-29 (Project Ref)					
Soil		Analysed as Soil			
Miscellaneous					
SAL Reference					279597 001
Customer Sample Reference					5597570
Depth					11.5
Date Sampled					01-MAY-2012
Determinand	Method	Test Sample	LOD	Units	
Toluene extractable matter	T2	AR	500	mg/kg	<500

### Index to symbols used in 279597-1

Value	Description
AR	As Received
N	Analysis is not UKAS accredited

### Method Index

Value	Description
T2	Grav

### Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Toluene extractable matter	T2	AR	500	mg/kg	N	001



**SDG:** 120508-29  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 191696  
**Superseded Report:**

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

## SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GCMS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
EPH (DRO)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (MIN OIL)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (CLEANED UP)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC FD
PCBAROCLOR 1254/PCBCON	D&C	HEXANE ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GCMS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC FD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC FD
SEMIVOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	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)	GC FD
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVCC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL BY R	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FD

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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 Anorthophyllite	-
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.



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

**Attention:** Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 06 August 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120509-46  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 189911

**This report has been revised and directly supersedes 184028 in its entirety.**

We received 9 samples on Tuesday May 08, 2012 and 5 of these samples were scheduled for analysis which was completed on Monday August 06, 2012. 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:** 120509-46  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189911  
**Superseded Report:** 184028

### Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5556828	BH306A E16		6.00	04/05/2012
5556825	BH306A E17		7.00	04/05/2012
5556826	BH306A E18		7.00	04/05/2012
5556834	BH310B E12		4.00	04/05/2012
5556835	BH310B E15		5.00	04/05/2012
5556837	BH310B E16		5.40	04/05/2012
5556830	BH310B E3		1.00	04/05/2012
5556831	BH310B E6		2.00	04/05/2012
5556832	BH310B E9		3.00	04/05/2012

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



SDG: 120509-46  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189911  
 Superseded Report: 184028

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)						
	Customer Sample Reference						
	AGS Reference						
	Depth (m)						
	Container						
			5556831	5556825	5556826	5556835	5556837
			BH310B E6	BH306A E17	BH306A E18	BH310B E15	BH310B E16
			2.00	7.00	7.00	5.00	5.40
			250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	400g Tub (ALE214)
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 3	X	X		X	
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 2			X		X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 2			X		X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3	X	X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 3	X	X		X	
Anions by Kone (w)	All	NDPs: 0 Tests: 2			X		X
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 3	X	X		X	
Boron Water Soluble	All	NDPs: 0 Tests: 3	X	X		X	
COD Unfiltered	All	NDPs: 0 Tests: 2			X		X
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 2			X		X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 5	X	X	X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2			X		X
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 2			X		X
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3	X	X		X	
Fluoride	All	NDPs: 0 Tests: 2			X		X



SDG: 120509-46  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189911  
 Superseded Report: 184028

SOLID Results Legend  <span style="background-color: yellow; border: 1px solid black; padding: 2px;">X</span> Test  <span style="background-color: red; color: white; border: 1px solid black; padding: 2px;">N</span> No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5556831	BH310B E6		2.00	250g Amber Jar (AL)
		5556825	BH306A E17		7.00	250g Amber Jar (AL)
		5556826	BH306A E18		7.00	400g Tub (ALE214)
		5556835	BH310B E15		5.00	400g Tub (ALE214)
	5556837	BH310B E16		5.40	400g Tub (ALE214)	
Free Sulphur	All	NDPs: 0 Tests: 2				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3				
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2				
Mercury Dissolved	All	NDPs: 0 Tests: 2				
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 3				
	Antimony	NDPs: 0 Tests: 3				
	Arsenic	NDPs: 0 Tests: 3				
	Barium	NDPs: 0 Tests: 3				
	Beryllium	NDPs: 0 Tests: 3				
	Cadmium	NDPs: 0 Tests: 3				
	Chromium	NDPs: 0 Tests: 3				
	Copper	NDPs: 0 Tests: 3				
	Lead	NDPs: 0 Tests: 3				
	Manganese	NDPs: 0 Tests: 3				
	Mercury	NDPs: 0 Tests: 3				







SDG: 120509-46  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189911  
 Superseded Report: 184028

SOLID	Lab Sample No(s)									
	5556831	5556825	5556826	5556835	5556837					
Results Legend	Customer Sample Reference									
Test	AGS Reference									
No Determination Possible	Depth (m)									
	Container									
Toluene extractable matter*	All	NDPs: 3 Tests: 0								
Total Dissolved Solids (Grav)	All	NDPs: 0 Tests: 2								
Total Organic Carbon	All	NDPs: 3 Tests: 0								
Total Organic Carbon (Asb)	All	NDPs: 0 Tests: 3								
Total Sulphate	All	NDPs: 0 Tests: 3								
Total Sulphur	All	NDPs: 3 Tests: 0								
TPH by IR Oils and Greases	All	NDPs: 0 Tests: 2								



**SDG:** 120509-46  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189911  
**Superseded Report:** 184028

## 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
5556825	BH306A E17	7.00	Dark Brown	N/A	0.1 - 2 mm	Metal	Stones
5556826	BH306A E18	7.00	Dark Brown	Shale	0.063 - 0.1 mm	Stones	N/A
5556831	BH310B E6	2.00	Black	N/A	0.1 - 2 mm	Stones	N/A
5556835	BH310B E15	5.00	Dark Brown	N/A	0.1 - 2 mm	Stones	N/A
5556837	BH310B E16	5.40	Dark Brown	Gravel	2 - 10 mm	Stones	N/A

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

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring 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:** 120509-46  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189911  
**Superseded Report:** 184028

Results Legend		Customer Sample R	BH306A E17	BH306A E18	BH310B E6	BH310B E15	BH310B E16
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>					
M	mCERTS accredited.		7.00	7.00	2.00	5.00	5.40
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		04/05/2012	04/05/2012	04/05/2012	04/05/2012	04/05/2012
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		08/05/2012	08/05/2012	08/05/2012	08/05/2012	08/05/2012
(F)	Trigger breach confirmed		120509-46	120509-46	120509-46	120509-46	120509-46
			5556825	5556826	5556831	5556835	5556837
Component	LOD/Units	Method					
Moisture content ratio	%	PM024	11		5.3	7.4	
Dissolved solids, Total (gravimetric) NRA leach	<10 mg/l	TM021		3610			792
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15		<15	<15	
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043		<2			19
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 #		0.0106 #	<0.01 #	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 #		<0.01 #	<0.01 #	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 #		<0.015 #	<0.015 #	
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01 #		<0.01 #	<0.01 #	
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015 #		<0.015 #	<0.015 #	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 #		<0.035 #	<0.035 #	
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06 #		<0.06 #	<0.06 #	
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090		<3			<3
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099		<0.2			<0.2
Sulphide NRA leach	<0.01 mg/l	TM101		<0.01			<0.01
Fluoride NRA leach	<0.5 mg/l	TM104		<0.5			<0.5
COD, unfiltered NRA leach	<7 mg/l	TM107		8.96			<7
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120		1.17			0.983
pH	1 pH Units	TM133	10.2 #		12.7 #	11.4 #	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 #		6.4 #	1.55 #	
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152		<2.9			13.7
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152		2			0.738
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152		0.834			0.608
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152		193			188
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152		482			721
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152		<0.1			<0.1
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152		0.438			4.51
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152		<0.06			<0.06
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152		<0.85			0.889
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152		0.812			0.702
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152		0.104			0.136
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152		4.68			17.4
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152		0.49			0.572
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152		<6.3			<6.3
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152		1.79			1.17
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152		6.48			9.49



## CERTIFICATE OF ANALYSIS

**SDG:** 120509-46  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189911  
**Superseded Report:** 184028

Results Legend		Customer Sample R	BH306A E17	BH306A E18	BH310B E6	BH310B E15	BH310B E16
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.		7.00	7.00	2.00	5.00	5.40
§	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		04/05/2012	04/05/2012	04/05/2012	04/05/2012	04/05/2012
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		08/05/2012	08/05/2012	08/05/2012	08/05/2012	08/05/2012
(F)	Trigger breach confirmed		120509-46	120509-46	120509-46	120509-46	120509-46
			5556825	5556826	5556831	5556835	5556837
Component	LOD/Units	Method					
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152		<0.36			<0.36
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152		1.3			2.72
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152		<0.41			<0.41
Cyanide, Total	<1 mg/kg	TM153	<1 #		<1 #	<1 #	
Cyanide, Free	<1 mg/kg	TM153	<1 #		<1 #	<1 #	
Cyanide, Complex	<1 mg/kg	TM153	<1 #		<1 #	<1 #	
Thiocyanate	<1 mg/kg	TM153	<1 #		<1 #	<1 #	
Sulphide, Easily liberated	<15 mg/kg	TM180	38.4 § #		<15 § #	<15 § #	
Aluminium	<11 mg/kg	TM181	15300		16500	26800	
Antimony	<0.6 mg/kg	TM181	30.1 #		28.9 #	29.5 #	
Arsenic	<0.6 mg/kg	TM181	38.8 #		39.9 #	29.2 #	
Barium	<0.6 mg/kg	TM181	600 #		566 #	1040 #	
Beryllium	<0.01 mg/kg	TM181	0.363 #		0.224 #	<0.1 #	
Cadmium	<0.02 mg/kg	TM181	5.06 #		3.75 #	2.85 #	
Chromium	<0.9 mg/kg	TM181	3400 #		2810 #	4790 #	
Copper	<1.4 mg/kg	TM181	869 #		979 #	667 #	
Lead	<0.7 mg/kg	TM181	239 #		138 #	152 #	
Manganese	<0.13 mg/kg	TM181	21100 #		19600 #	25100 #	
Mercury	<0.14 mg/kg	TM181	<0.14 #		<1.4 #	<1.4 #	
Nickel	<0.2 mg/kg	TM181	307 #		294 #	174 #	
Selenium	<1 mg/kg	TM181	13.1 #		14.8 #	17.6 #	
Vanadium	<0.2 mg/kg	TM181	253 #		300 #	543 #	
Zinc	<1.9 mg/kg	TM181	1070 #		651 #	591 #	
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183		<0.01			<0.01
Sulphate NRA leach	<2 mg/l	TM184		59.3			61.5
Chloride NRA leach	<2 mg/l	TM184		349			273
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184		<0.3			0.745
PCB congener 28 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015
PCB congener 52 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015
PCB congener 101 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015
PCB congener 118 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015
PCB congener 138 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015
PCB congener 153 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015
PCB congener 180 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197		<0.105			<0.105



**SDG:** 120509-46  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189911  
**Superseded Report:** 184028

Results Legend		Customer Sample R	BH306A E17	BH306A E18	BH310B E6	BH310B E15	BH310B E16
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>					
M	mCERTS accredited.		7.00	7.00	2.00	5.00	5.40
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		04/05/2012	04/05/2012	04/05/2012	04/05/2012	04/05/2012
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		08/05/2012	08/05/2012	08/05/2012	08/05/2012	08/05/2012
(F)	Trigger breach confirmed		120509-46	120509-46	120509-46	120509-46	120509-46
			5556825	5556826	5556831	5556835	5556837
Component	LOD/Units	Method					
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10		<10	<10	
Sulphate, Total	<48 mg/kg	TM221	5240	#	2050	5870	#
Total sulphur	<0.0016 %	TM221	0.175		0.0683	0.196	
Boron, water soluble	<1 mg/kg	TM222	5.45	#	2.61	5.71	#
Calcium	<21 mg/kg	TM224	123000		146000	227000	
Magnesium	<8 mg/kg	TM224	25100		19300	50100	
Cyanide, Total NRA leach	<0.05 mg/l	TM227		<0.05			<0.05
Cyanide, Free NRA leach	<0.05 mg/l	TM227		<0.05			<0.05
Cyanide, Complex NRA leach	<0.05 mg/l	TM227		<0.05			<0.05
Thiocyanate NRA leach	<0.05 mg/l	TM227		<0.05			<0.05
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228		66.2			80.1
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228		186			132
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228		4.56			0.476
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228		8.22			6.64
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228		<0.019			<0.019
TPH / Oil & Greases NRA leach	<1 mg/l	TM235		<1			<1
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241		0.034			<0.03
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.462	#	<0.008	0.223	#
Chloride (soluble)	<5 mg/kg	TM243	2940	#	45.5	1980	#
pH NRA leach	<1 pH Units	TM256		8.44			9.75
Phenol NRA leach	<0.002 mg/l	TM259		<0.002			<0.002
Cresols NRA leach	<0.006 mg/l	TM259		<0.006			<0.006
Xylenols NRA leach	<0.008 mg/l	TM259		<0.008			<0.008
2,3,5-Trimethylphenol NRA leach	<0.003 mg/l	TM259		<0.003			<0.003
2-Isopropylphenol NRA leach	<0.006 mg/l	TM259		<0.006			<0.006
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259		<0.016			<0.016
Phenols, Total Detected 5 speciated NRA leach	<0.025 mg/l	TM259		<0.025			<0.025
Sulphur, Free NRA leach	<0.05 mg/l	TM294		<0.05			<0.05
Fraction Organic Carbon (FOC)	<0.1	TM321	<0.1	#	<0.1	<0.1	#



### CERTIFICATE OF ANALYSIS

<b>SDG:</b> 120509-46	<b>Location:</b> Haulbowline	<b>Order Number:</b>
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 189911
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b> 184028

#### PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample R		BH306A E18	BH310B E16			
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	7.00 Soil/Solid 04/05/2012 . 08/05/2012 120509-46 5556826	5.40 Soil/Solid 04/05/2012 . 08/05/2012 120509-46 5556837				
M	mCERTS accredited.							
S	Deviating sample.							
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							
Component	LOD/Units				Method			
Naphthalene (aq) NRA leach	<0.1 µg/l	TM178	0.907	0.111				
Acenaphthene (aq) NRA leach	<0.015 µg/l	TM178	1.09	<0.015				
Acenaphthylene (aq) NRA leach	<0.011 µg/l	TM178	0.119	<0.011				
Fluoranthene (aq) NRA leach	<0.017 µg/l	TM178	0.202	0.0229				
Anthracene (aq) NRA leach	<0.015 µg/l	TM178	0.431	<0.015				
Phenanthrene (aq) NRA leach	<0.022 µg/l	TM178	1.87	0.0691				
Fluorene (aq) NRA leach	<0.014 µg/l	TM178	0.914	<0.014				
Chrysene (aq) NRA leach	<0.013 µg/l	TM178	<0.013	<0.013				
Pyrene (aq) NRA leach	<0.015 µg/l	TM178	0.143	0.0155				
Benzo(a)anthracene (aq) NRA leach	<0.017 µg/l	TM178	<0.017	<0.017				
Benzo(b)fluoranthene (aq) NRA leach	<0.023 µg/l	TM178	<0.023	<0.023				
Benzo(k)fluoranthene (aq) NRA leach	<0.027 µg/l	TM178	<0.027	<0.027				
Benzo(a)pyrene (aq) NRA leach	<0.009 µg/l	TM178	<0.009	<0.009				
Dibenzo(a,h)anthracene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016				
Benzo(g,h,i)perylene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016				
Indeno(1,2,3-cd)pyrene (aq) NRA leach	<0.014 µg/l	TM178	<0.014	<0.014				
PAH, Total Detected USEPA 16 (aq) NRA leach	<0.247 µg/l	TM178	5.68	<0.247				



**SDG:** 120509-46  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189911  
**Superseded Report:** 184028

## 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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306A E17 7.00 SOLID 04/05/2012 00:00:00  120509-46 5556825 TM048	17/05/12	Martin Cotterell	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310B E6 2.00 SOLID 04/05/2012 00:00:00  120509-46 5556831 TM048	17/05/12	Martin Cotterell	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310B E15 5.00 SOLID 04/05/2012 00:00:00  120509-46 5556835 TM048	17/05/12	Martin Cotterell	-	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306A E17 7.00 SOLID 04/05/2012 00:00:00  120509-46 5556825 TM048	6/8/12	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310B E6 2.00 SOLID 04/05/2012 00:00:00  120509-46 5556831 TM048	6/8/12	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected





### CERTIFICATE OF ANALYSIS

**SDG:** 120509-46  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 189911  
**Report Number:** 184028  
**Superseded Report:** 184028

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref.	BH310B E15	6/8/12	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	5.00										
Sample Type	SOLID										
Date Sampled	04/05/2012 00:00:00										
Date Received											
SDG	120509-46										
Original Sample	5556835										
Method Number	TM048										



SDG: 120509-46  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189911  
Superseded Report: 184028

### Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5583499	BH306A E17	7.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5583520	BH310B E6	2.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5583882	BH310B E15	5.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded

Note : Test results may be compromised



**SDG:** 120509-46  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189911  
**Superseded Report:** 184028

### Notification of NDPs (No determination possible)

Date Received : 09/05/2012 11:32:29

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5556825	BH306A E17	7.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5556825	BH306A E17	7.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5556825	BH306A E17	7.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5556831	BH310B E6	2.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5556831	BH310B E6	2.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5556831	BH310B E6	2.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5556835	BH310B E15	5.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5556835	BH310B E15	5.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5556835	BH310B E15	5.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos



<b>SDG:</b> 120509-46	<b>Location:</b> Haulbowline	<b>Order Number:</b>	
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 189911	
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b> 184028	

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM021	Method 2540C, AWWA/APHA, 20th Ed., 1999	Determination of total dissolved solids in waters by gravimetry.		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		



<b>SDG:</b> 120509-46	<b>Location:</b> Haulbowline	<b>Order Number:</b>
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 189911
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b> 184028

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM243		Mixed Anions In Soils By Kone		
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		
TM294		Determination of Free Sulphur in liquids by HPLC		
TM321		Organic matter Content of Soil By Titration		

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



**SDG:** 120509-46  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189911  
**Superseded Report:** 184028

### Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	5556825	5556826	5556831	5556835	5556837
	BH306A E17	BH306A E18	BH310B E6	BH310B E15	BH310B E16
AGS Ref.					
Depth	7.00	7.00	2.00	5.00	5.40
Type	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	17-May-2012		17-May-2012	17-May-2012	
Alkalinity Filtered as CaCO3		23-May-2012			23-May-2012
Ammoniacal Nitrogen		23-May-2012			23-May-2012
Ammonium Soil by Titration	17-May-2012		17-May-2012	17-May-2012	
Anions by Kone (soil)	18-May-2012		18-May-2012	18-May-2012	
Anions by Kone (w)		24-May-2012			24-May-2012
Asbestos Identification (Soil)	06-Aug-2012		06-Aug-2012	06-Aug-2012	
Boron Water Soluble	18-May-2012		18-May-2012	18-May-2012	
COD Unfiltered		22-May-2012			22-May-2012
Conductivity (at 20 deg.C)		21-May-2012			21-May-2012
Cyanide Comp/Free/Total/Thiocyanate	21-May-2012	22-May-2012	21-May-2012	21-May-2012	23-May-2012
Dissolved Metals by ICP-MS		23-May-2012			23-May-2012
Dissolved Organic/Inorganic Carbon		22-May-2012			22-May-2012
Easily Liberated Sulphide	17-May-2012		17-May-2012	17-May-2012	
Fluoride		22-May-2012			22-May-2012
Free Sulphur		23-May-2012			24-May-2012
Hexavalent Chromium (s)	17-May-2012		17-May-2012	17-May-2012	
Hexavalent Chromium (w)		22-May-2012			22-May-2012
Mercury Dissolved		22-May-2012			22-May-2012
Metals by iCap-OES (Soil)	17-May-2012		17-May-2012	17-May-2012	
Metals by iCap-OES Dissolved (W)		23-May-2012			23-May-2012
Nitrite by Kone (w)		22-May-2012			22-May-2012
NRA Leachate		07-Jun-2012			07-Jun-2012
PAH Spec MS - Aqueous (W)		23-May-2012			23-May-2012
PAH Value of soil	18-May-2012		18-May-2012	18-May-2012	
PCB Congeners - Aqueous (W)		23-May-2012			23-May-2012
pH	18-May-2012		18-May-2012	18-May-2012	
pH Value		22-May-2012			22-May-2012
Phenols by HPLC (S)	17-May-2012		17-May-2012	17-May-2012	
Phenols by HPLC (W)		24-May-2012			24-May-2012
Sample description	15-May-2012	19-May-2012	15-May-2012	15-May-2012	18-May-2012
Sulphide		22-May-2012			22-May-2012
Total Dissolved Solids (Grav)		23-May-2012			23-May-2012
Total Organic Carbon (Asb)	18-May-2012		18-May-2012	18-May-2012	
Total Sulphate	18-May-2012		18-May-2012	18-May-2012	
TPH by IR Oils and Greases		13-Jun-2012			13-Jun-2012

**SDG:** 120509-46  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189911  
**Superseded Report:** 184028

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

## SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GCMS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
EPH (DRO)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (MIN OIL)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (CLEANED UP)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC FD
PCBAROCLOR 1254/PCBCON	D&C	HEXANE ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GCMS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC FD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC FD
SEMIVOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	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)	GC FD
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVCC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL BY R	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FD

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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).

### 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.

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



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

Attention: Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 02 July 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120513-11  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 186147

We received 19 samples on Friday May 11, 2012 and 12 of these samples were scheduled for analysis which was completed on Monday July 02, 2012. 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:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5578221	BH303	E16	0.20	09/05/2012
5578227	BH303	E15	0.20	09/05/2012
5578210	BH303	E3	1.00	08/05/2012
5578211	BH303	E6	2.00	08/05/2012
5578212	BH303	E9	3.00	08/05/2012
5578213	BH303	E10	3.00	08/05/2012
5578214	BH303	E13	4.00	08/05/2012
5578215	BH303	E14	4.00	08/05/2012
5578209	BH306A	E19	8.00	08/05/2012
5578216	BH306A	E20	9.00	08/05/2012
5578217	BH310B	E19	6.00	08/05/2012
5578218	BH310B		7.00	09/05/2012
5578219	BH310B		8.00	10/05/2012
5578220	BH310B		9.00	10/05/2012
5578203	BH312C	E3	1.00	10/05/2012
5578204	BH312C	E6	2.30	10/05/2012
5578205	BH312C	E7	2.60	10/05/2012
5578207	BH312C	E10	3.50	10/05/2012
5578208	BH312C	E13	4.50	10/05/2012

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



SDG: 120513-11  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 186147  
 Superseded Report:

SOLID Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container					
	Test	No Determination Possible												
	<b>X</b>	<b>N</b>	5578210	5578212	5578213	5578227	5578221	5578216	5578219	5578203	5578204	5578205	5578207	5578208
			BH303	BH303	BH303	BH303	BH303	BH306A	BH310B	BH312C	BH312C	BH312C	BH312C	BH312C
			E3	E9	E10	E15	E16	E20	E3	E3	E6	E7	E10	E13
			1.00	3.00	3.00	0.20	0.20	9.00	8.00	1.00	2.30	2.60	3.50	4.50
			250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7	X	X				X	X	X	X		X	
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 4				X	X							X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 4				X	X					X		X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 7	X	X				X	X	X	X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 7	X	X				X	X	X	X		X	
Anions by Kone (w)	All	NDPs: 0 Tests: 4				X	X					X		X
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 7	X	X				X	X	X	X		X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1		X										
Boron Water Soluble	All	NDPs: 0 Tests: 7	X	X				X	X	X	X		X	
COD Unfiltered	All	NDPs: 0 Tests: 4				X	X					X		X
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 4				X	X					X		X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 11	X	X	X	X		X	X	X	X	X	X	X
Dioxins/Furans (S)*	All	NDPs: 0 Tests: 1					X							
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4				X	X					X		X
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 4				X	X					X		X



SDG: 120513-11  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 186147  
 Superseded Report:

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5578210	BH303	E3	1.00	250g Tub (ALE214) 250g Amber Jar (AL)
		5578212	BH303	E9	3.00	400g Tub (ALE214) 250g Amber Jar (AL)
		5578213	BH303	E10	3.00	250g Amber Jar (AL) 400g Tub (ALE214)
		5578227	BH303	E15	0.20	400g Tub (ALE214) 250g Amber Jar (AL)
	5578221	BH303	E16	0.20	400g Tub (ALE214) 250g Amber Jar (AL)	
	5578216	BH306A	E20	9.00	400g Tub (ALE214) 250g Amber Jar (AL)	
	5578219	BH310B	E20	8.00	400g Tub (ALE214) 250g Amber Jar (AL)	
	5578203	BH312C	E3	1.00	400g Tub (ALE214) 250g Amber Jar (AL)	
	5578204	BH312C	E6	2.30	400g Tub (ALE214) 60g VOC (ALE215)	
	5578205	BH312C	E7	2.60	400g Tub (ALE214) 250g Amber Jar (AL)	
	5578207	BH312C	E10	3.50	400g Tub (ALE214) 60g VOC (ALE215) 250g Amber Jar (AL)	
	5578208	BH312C	E13	4.50	400g Tub (ALE214) 250g Amber Jar (AL)	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 2				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 2				
Fluoride	All	NDPs: 0 Tests: 4				
Free Sulphur	All	NDPs: 0 Tests: 4				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 7				
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 4				
Mercury Dissolved	All	NDPs: 0 Tests: 4				
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 7				
	Antimony	NDPs: 0 Tests: 7				
	Arsenic	NDPs: 0 Tests: 7				
	Barium	NDPs: 0 Tests: 7				
	Beryllium	NDPs: 0 Tests: 7				
	Cadmium	NDPs: 0 Tests: 7				



**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

SOLID			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container							
<b>Results Legend</b> <span style="border: 1px solid black; padding: 2px; display: inline-block; width: 15px; height: 15px; background-color: yellow; margin-right: 5px;"></span> Test <span style="border: 1px solid black; padding: 2px; display: inline-block; width: 15px; height: 15px; background-color: red; margin-right: 5px;"></span> No Determination Possible			5578208	BH312C	E13	4.50	400g Tub (ALE214) 250g Amber Jar (AL)							
			5578207	BH312C	E10	3.50	60g VOC (ALE215) 400g Tub (ALE214)							
			5578205	BH312C	E7	2.60	250g Amber Jar (AL) 400g Tub (ALE214)							
			5578204	BH312C	E6	2.30	250g Amber Jar (AL) 60g VOC (ALE215) 400g Tub (ALE214)							
			5578203	BH312C	E3	1.00	250g Amber Jar (AL) 400g Tub (ALE214)							
			5578219	BH310B		8.00	250g Amber Jar (AL) 400g Tub (ALE214)							
			5578216	BH306A	E20	9.00	250g Amber Jar (AL) 400g Tub (ALE214)							
			5578227	BH303	E15	0.20	250g Amber Jar (AL)							
			5578221	BH303	E16	0.20	400g Tub (ALE214)							
			5578213	BH303	E10	3.00	250g Amber Jar (AL) 400g Tub (ALE214)							
5578212	BH303	E9	3.00	250g Amber Jar (AL) 400g Tub (ALE214)										
5578210	BH303	E3	1.00	250g Amber Jar (AL) 400g Tub (ALE214)										
Metals by iCap-OES (Soil)			Chromium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X		
			Copper	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
			Lead	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
			Manganese	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
			Mercury	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
			Nickel	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
			Selenium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
			Vanadium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
			Zinc	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
			Metals by iCap-OES Dissolved (W)			All	NDPs: 0 Tests: 4			X	X		X	X
Mineral Oil			All	NDPs: 0 Tests: 2					X	X				
NRA Leachate			All	NDPs: 0 Tests: 4			X	X		X	X			
PAH Spec MS - Aqueous (W)			All	NDPs: 0 Tests: 4			X	X		X	X			
PAH Value of soil			All	NDPs: 0 Tests: 7	X	X			X	X	X			
PCB Congeners - Aqueous (W)			All	NDPs: 0 Tests: 4			X	X		X	X			



<b>SDG:</b> 120513-11	<b>Location:</b> Haulbowline	<b>Order Number:</b> 4559
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 186147
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b>

SOLID		Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
<b>Results Legend</b> Test No Determination Possible		5578210	BH303	E3	1.00	250g Amber Jar (AL)
		5578212	BH303	E9	3.00	400g Tub (ALEE214)
		5578213	BH303	E10	3.00	250g Amber Jar (AL)
		5578227	BH303	E15	0.20	400g Tub (ALEE214)
		5578221	BH303	E16	0.20	400g Tub (ALEE214)
		5578216	BH306A	E20	9.00	250g Amber Jar (AL)
		5578219	BH310B	E20	8.00	400g Tub (ALEE214)
		5578203	BH312C	E3	1.00	250g Amber Jar (AL)
		5578204	BH312C	E6	2.30	400g Tub (ALEE214)
		5578205	BH312C	E7	2.60	250g Amber Jar (AL)
		5578207	BH312C	E10	3.50	60g VOC (ALEE215)
		5578208	BH312C	E13	4.50	400g Tub (ALEE214)

Parameter	All	5578210	5578212	5578213	5578227	5578221	5578216	5578219	5578203	5578204	5578205	5578207	5578208
PCBs by GCMS	All	NDPs: 0 Tests: 1			X								
pH	All	NDPs: 0 Tests: 7	X	X			X	X	X	X		X	
pH Value	All	NDPs: 0 Tests: 4			X	X					X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 7	X	X			X	X	X	X		X	
Phenols by HPLC (W)	All	NDPs: 0 Tests: 4			X	X					X		X
Sample description	All	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 2							X		X		
Sulphide	All	NDPs: 0 Tests: 4			X	X					X		X
Toluene extractable matter*	All	NDPs: 6 Tests: 1	N	N			N	N		N		N	
Total Dissolved Solids (Grav)	All	NDPs: 0 Tests: 4			X	X					X		X
Total Organic Carbon	All	NDPs: 3 Tests: 1	N	N					X			N	
Total Organic Carbon (Asb)	All	NDPs: 0 Tests: 3	X	X							X		
Total Sulphate	All	NDPs: 0 Tests: 7	X	X			X	X	X	X		X	
Total Sulphur	All	NDPs: 6 Tests: 1	N	N			N	N		N		N	
TPH by IR Oils and Greases	All	NDPs: 0 Tests: 4			X	X					X		X



**CERTIFICATE OF ANALYSIS**

**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

SOLID	Results Legend		Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
	X	No Determination Possible					
	X		5578208	BH312C	E13	4.50	400g Tub (ALE214)
			5578207	BH312C	E10	3.50	250g Amber Jar (AL)
			5578205	BH312C	E7	2.60	60g VOC (ALE215)
			5578204	BH312C	E6	2.30	400g Tub (ALE214)
			5578203	BH312C	E3	1.00	250g Amber Jar (AL)
			5578219	BH310B		8.00	400g Tub (ALE214)
			5578216	BH306A	E20	9.00	250g Amber Jar (AL)
			5578227	BH303	E15	0.20	400g Tub (ALE214)
			5578221	BH303	E16	0.20	250g Amber Jar (AL)
			5578213	BH303	E10	3.00	400g Tub (ALE214)
		5578212	BH303	E9	3.00	250g Amber Jar (AL)	
		5578210	BH303	E3	1.00	400g Tub (ALE214)	
							250g Amber Jar (AL)
TPH CWG GC (S)	All	NDPs: 0 Tests: 2					
VOC MS (S)	All	NDPs: 0 Tests: 2					

**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**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
5578210	BH303	1.00	Dark Brown	Sand	0.1 - 2 mm	Stones	N/A
5578212	BH303	3.00	Dark Brown	Sand	0.1 - 2 mm	Stones	N/A
5578213	BH303	3.00	Dark Brown	Silty Sand	0.063 - 0.1 mm	N/A	Stones
5578221	BH303	0.20	Dark Brown	Silty Sand	0.063 - 0.1 mm	Stones	N/A
5578227	BH303	0.20	Dark Brown	Sand	0.1 - 2 mm	Stones	None
5578216	BH306A	9.00	Black	Sand	0.1 - 2 mm	Stones	N/A
5578219	BH310B	8.00	Black	Sand	0.063 - 0.1 mm	Stones	N/A
5578203	BH312C	1.00	Dark Brown	Sand	0.1 - 2 mm	Stones	N/A
5578204	BH312C	2.30	Dark Brown	Sand	0.1 - 2 mm	Stones	N/A
5578205	BH312C	2.60	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones	N/A
5578207	BH312C	3.50	Dark Brown	Sand	0.063 - 0.1 mm	Stones	N/A
5578208	BH312C	4.50	Dark Brown	Silty Sand	0.063 - 0.1 mm	Stones	N/A

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

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring 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.



**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

Results Legend		Customer Sample R	BH303	BH303	BH303	BH303	BH303	BH306A
#	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>						
M	mCERTS accredited.		0.20	0.20	1.00	3.00	3.00	9.00
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		09/05/2012	09/05/2012	08/05/2012	08/05/2012	08/05/2012	08/05/2012
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		11/05/2012	11/05/2012	11/05/2012	11/05/2012	11/05/2012	11/05/2012
(F)	Trigger breach confirmed		120513-11	120513-11	120513-11	120513-11	120513-11	120513-11
			557821	557827	5578210	5578212	5578213	5578216
		E16	E15	E3	E9	E10	E20	
Component	LOD/Units	Method						
Moisture content ratio	%	PM024			6.7	7.1		11
Dissolved solids, Total (gravimetric) NRA leach	<10 mg/l	TM021	196				584	
Ammoniacal Nitrogen as N	<15 mg/kg	TM024			<15	<15		<15
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043	60				40	
Phenol	<0.01 mg/kg	TM062 (S)			<0.01	<0.01		<0.01
Cresols	<0.01 mg/kg	TM062 (S)			<0.01	<0.01		<0.01
Xylenols	<0.015 mg/kg	TM062 (S)			<0.015	<0.015		<0.015
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)			<0.01	<0.01		<0.01
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)			<0.015	<0.015		<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)			<0.035	<0.035		<0.035
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)			<0.06	<0.06		<0.06
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090	<3				<3	
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099	<0.2				<0.2	
Sulphide NRA leach	<0.01 mg/l	TM101	<0.01				<0.01	
Fluoride NRA leach	<0.5 mg/l	TM104	<0.5				<0.5	
COD, unfiltered NRA leach	<7 mg/l	TM107	<7				<7	
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120	0.181				1.16	
pH	1 pH Units	TM133			11.8	11.1		10.9
Chromium, Hexavalent	<0.6 mg/kg	TM151			1.49	<0.6		<0.6
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152	13.8				1190	
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152	15.4				2.13	
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152	6.4				0.55	
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152	22.8				483	
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152	63				32.8	
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152	<0.1				<0.1	
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152	15.9				418	
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152	0.1				0.177	
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152	10.9				3.4	
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152	0.646				5.13	
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152	0.568				0.098	
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152	12.7				44.4	
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152	0.603				0.549	
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152	<6.3				<6.3	
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152	0.922				1.83	
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152	1.9				<0.96	





**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

Results Legend			Customer Sample R		BH303	BH303	BH303	BH303	BH303	BH306A
#	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>							
M	mCERTS accredited.			0.20	0.20	1.00	3.00	3.00	9.00	
S	Deviating sample.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
aq	Aqueous / settled sample.			09/05/2012	09/05/2012	08/05/2012	08/05/2012	08/05/2012	08/05/2012	
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			11/05/2012	11/05/2012	11/05/2012	11/05/2012	11/05/2012	11/05/2012	
(F)	Trigger breach confirmed			120513-11	120513-11	120513-11	120513-11	120513-11	120513-11	
				5578221	5578227	5578210	5578212	5578213	5578216	
			E16	E15	E3	E9	E10	E20		
Component	LOD/Units	Method								
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152	0.758					<0.36		
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152	1.18					11.3		
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152	1.53					6.18		
Cyanide, Total	<1 mg/kg	TM153			<1	<1			<1	
Cyanide, Free	<1 mg/kg	TM153								
Cyanide, Complex	<1 mg/kg	TM153								
Thiocyanate	<1 mg/kg	TM153								
PCB congener 28	<3 µg/kg	TM168		7.1						
PCB congener 52	<3 µg/kg	TM168		5.84						
PCB congener 101	<3 µg/kg	TM168		5.65						
PCB congener 118	<3 µg/kg	TM168		3.03						
PCB congener 138	<3 µg/kg	TM168		4.41						
PCB congener 153	<3 µg/kg	TM168		3.28						
PCB congener 180	<3 µg/kg	TM168		<3						
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168		29.3						
Sulphide, Easily liberated	<15 mg/kg	TM180			<15	<15			<15	
Aluminium	<11 mg/kg	TM181			20500	24100			21100	
Antimony	<0.6 mg/kg	TM181			35.4	27			41.8	
Arsenic	<0.6 mg/kg	TM181			29.1	26.8			32.2	
Barium	<0.6 mg/kg	TM181			707	691			783	
Beryllium	<0.01 mg/kg	TM181			<0.25	<0.25			<0.25	
Cadmium	<0.02 mg/kg	TM181			16.5	6.8			5.47	
Chromium	<0.9 mg/kg	TM181			3540	3390			4190	
Copper	<1.4 mg/kg	TM181			642	498			763	
Lead	<0.7 mg/kg	TM181			1010	228			565	
Manganese	<0.13 mg/kg	TM181			40800	39400			35100	
Mercury	<0.14 mg/kg	TM181			<0.7	<0.7			<0.7	
Nickel	<0.2 mg/kg	TM181			200	156			251	
Selenium	<1 mg/kg	TM181			<25	31.2			<25	
Vanadium	<0.2 mg/kg	TM181			338	421			375	
Zinc	<1.9 mg/kg	TM181			5480	1500			639	
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183	<0.01					0.019		
Sulphate NRA leach	<2 mg/l	TM184	3.8					10		
Chloride NRA leach	<2 mg/l	TM184	27.5					3.5		
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184	0.592					0.355		



**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

Results Legend			Customer Sample R						
#	ISO17025 accredited.		BH303	BH303	BH303	BH303	BH303	BH306A	
M	mCERTS accredited.								
S	Deviating sample.								
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								
			Depth (m)	0.20	0.20	1.00	3.00	3.00	9.00
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	09/05/2012	09/05/2012	08/05/2012	08/05/2012	08/05/2012	08/05/2012
			Sampled Time						
			Date Received	11/05/2012	11/05/2012	11/05/2012	11/05/2012	11/05/2012	11/05/2012
			SDG Ref	120513-11	120513-11	120513-11	120513-11	120513-11	120513-11
			Lab Sample No.(s)	5578221	5578227	5578210	5578212	5578213	5578216
			AGS Reference	E16	E15	E3	E9	E10	E20
Component	LOD/Units	Method							
PCB congener 28 NRA leach	<0.015 µg/l	TM197	<0.015					<0.015	
PCB congener 52 NRA leach	<0.015 µg/l	TM197	<0.015					<0.015	
PCB congener 101 NRA leach	<0.015 µg/l	TM197	<0.015					<0.015	
PCB congener 118 NRA leach	<0.015 µg/l	TM197	<0.015					<0.015	
PCB congener 138 NRA leach	<0.015 µg/l	TM197	<0.015					<0.015	
PCB congener 153 NRA leach	<0.015 µg/l	TM197	<0.015					<0.015	
PCB congener 180 NRA leach	<0.015 µg/l	TM197	<0.015					<0.015	
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197	<0.105					<0.105	
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213			<10	<10			<10
Sulphate, Total	<48 mg/kg	TM221			2150	3350			8220
Total sulphur	<0.0016 %	TM221			0.0716	0.112			0.274
Boron, water soluble	<1 mg/kg	TM222			5.06	5.42			5.38
Calcium	<21 mg/kg	TM224			180000	217000			173000
Magnesium	<8 mg/kg	TM224			26500	37000			39200
Cyanide, Total NRA leach	<0.05 mg/l	TM227	<0.05					<0.05	
Cyanide, Free NRA leach	<0.05 mg/l	TM227	<0.05					<0.05	
Cyanide, Complex NRA leach	<0.05 mg/l	TM227	<0.05					<0.05	
Thiocyanate NRA leach	<0.05 mg/l	TM227	<0.05					<0.05	
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228	8.37					119	
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228	16.7					0.59	
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228	11.5					<0.036	
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228	<2.34					<2.34	
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228	<0.019					<0.019	
TPH / Oil & Greases NRA leach	<1 mg/l	TM235	<1					<1	
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241	<0.03					0.442	
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243			0.0807	0.358			0.55
Chloride (soluble)	<5 mg/kg	TM243			158	1950			3410
pH NRA leach	<1 pH Units	TM256	9.63					11.8	
Phenol NRA leach	<0.002 mg/l	TM259	<0.002					<0.002	
Cresols NRA leach	<0.006 mg/l	TM259	<0.006					<0.006	
Xylenols NRA leach	<0.008 mg/l	TM259	<0.008					<0.008	
2,3,5-Trimethylphenol NRA leach	<0.003 mg/l	TM259	<0.003					<0.003	
2-Isopropylphenol NRA leach	<0.006 mg/l	TM259	<0.006					<0.006	
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259	<0.016					<0.016	
Phenols, Total Detected 5 speciated NRA leach	<0.025 mg/l	TM259	<0.025					<0.025	



CERTIFICATE OF ANALYSIS

SDG: 120513-11
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 186147
Superseded Report:

Table with columns for Results Legend, Customer Sample R, and various sample parameters (BH303, BH303, BH303, BH303, BH303, BH306A). Rows include Sulphur, Free NRA leach and Fraction Organic Carbon (FOC).



**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

Results Legend			Customer Sample R		BH310B	BH312C	BH312C	BH312C	BH312C	BH312C
#	ISO17025 accredited.									
M	mCERTS accredited.									
S	Deviating sample.									
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									
			Depth (m)		8.00	1.00	2.30	2.60	3.50	4.50
			Sample Type		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled		10/05/2012	10/05/2012	10/05/2012	10/05/2012	10/05/2012	10/05/2012
			Sampled Time							
			Date Received		11/05/2012	11/05/2012	11/05/2012	11/05/2012	11/05/2012	11/05/2012
			SDG Ref		120513-11	120513-11	120513-11	120513-11	120513-11	120513-11
			Lab Sample No.(s)		5578219	5578203	5578204	5578205	5578207	5578208
			AGS Reference			E3	E6	E7	E10	E13
Component	LOD/Units	Method								
Moisture content ratio	%	PM024			2.8	5.7	8.4		13	
Tolulene Extractable Matter	<500 mg/kg	SUB				3400				
Dissolved solids, Total (gravimetric) NRA leach	<10 mg/l	TM021						4660		981
Ammoniacal Nitrogen as N	<15 mg/kg	TM024			<15	<15	<15		<15	
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043						60		<2
Mineral oil >C10-C40	<1 mg/kg	TM061					278		769	
Surrogate Value	-	TM061					39.1		39.6	
Mineral Oil Surrogate % recovery**	%	TM061					78.3		79.2	
Phenol	<0.01 mg/kg	TM062 (S)			<0.01	0.0106	<0.01		<0.01	
Cresols	<0.01 mg/kg	TM062 (S)			<0.01	<0.01	<0.01		<0.01	
Xylenols	<0.015 mg/kg	TM062 (S)			<0.015	<0.015	<0.015		<0.015	
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)			<0.01	<0.01	<0.01		<0.01	
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)			<0.015	<0.015	<0.015		<0.015	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)			<0.035	<0.035	<0.035		<0.035	
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)			<0.06	<0.06	<0.06		<0.06	
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090						3.8		<3
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099						<0.2		<0.2
Sulphide NRA leach	<0.01 mg/l	TM101						<0.01		<0.01
Fluoride NRA leach	<0.5 mg/l	TM104						<0.5		<0.5
COD, unfiltered NRA leach	<7 mg/l	TM107						13.1		<7
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120						0.98		1.22
Sulphur, Total	<0.02 %	TM132				0.128				
Fraction Organic Carbon (FOC)	<0.002 -	TM132				0.00338				
pH	1 pH Units	TM133			10.8	12.3	11.4		9.07	
Chromium, Hexavalent	<0.6 mg/kg	TM151			<0.6	1.4	<0.6		<0.6	
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152						1050		233
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152						8.79		1
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152						5.01		1.02
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152						160		88.9
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152						254		441
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152						<0.1		<0.1
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152						36.8		0.562
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152						<0.06		<0.06
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152						20		<0.85
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152						4.72		1.16



## CERTIFICATE OF ANALYSIS

**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

Results Legend			Customer Sample R							
#	ISO17025 accredited.		BH310B	BH312C	BH312C	BH312C	BH312C	BH312C		
M	mCERTS accredited.									
§	Deviating sample.									
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									
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Sampled Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152	8.00	Soil/Solid	10/05/2012		11/05/2012	120513-11	5578219	
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152	1.00	Soil/Solid	10/05/2012		11/05/2012	120513-11	5578203	
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152	2.30	Soil/Solid	10/05/2012		11/05/2012	120513-11	5578204	
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152	2.60	Soil/Solid	10/05/2012		11/05/2012	120513-11	5578205	
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152	3.50	Soil/Solid	10/05/2012		11/05/2012	120513-11	5578207	
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152	4.50	Soil/Solid	10/05/2012		11/05/2012	120513-11	5578208	
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152								
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152								
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152								
Cyanide, Total	<1 mg/kg	TM153	<1	M			<1	M		
Cyanide, Free	<1 mg/kg	TM153	<1	M			<1	M		
Cyanide, Complex	<1 mg/kg	TM153	<1				<1			
Thiocyanate	<1 mg/kg	TM153	<1	M			<1	M		
Sulphide, Easily liberated	<15 mg/kg	TM180	18.9	§ M			<15	§ #		
Aluminium	<11 mg/kg	TM181	22400				11900			
Antimony	<0.6 mg/kg	TM181	28.5	#			21.6	#		
Arsenic	<0.6 mg/kg	TM181	32.9	M			51.6	M		
Barium	<0.6 mg/kg	TM181	701	#			337	#		
Beryllium	<0.01 mg/kg	TM181	<0.25	M			<0.1	M		
Cadmium	<0.02 mg/kg	TM181	4.88	M			7	M		
Chromium	<0.9 mg/kg	TM181	4140	M			781	M		
Copper	<1.4 mg/kg	TM181	1040	M			1470	M		
Lead	<0.7 mg/kg	TM181	78.2	M			217	M		
Manganese	<0.13 mg/kg	TM181	31700	M			16700	M		
Mercury	<0.14 mg/kg	TM181	<0.7	M			<0.14	M		
Nickel	<0.2 mg/kg	TM181	215	M			308	M		
Selenium	<1 mg/kg	TM181	<25	#			<10	#		
Vanadium	<0.2 mg/kg	TM181	431	#			97.9	#		
Zinc	<1.9 mg/kg	TM181	169	M			1580	M		
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183								<0.01
Sulphate NRA leach	<2 mg/l	TM184								38.7
Chloride NRA leach	<2 mg/l	TM184								116
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184								0.588
PCB congener 28 NRA leach	<0.015 µg/l	TM197								<0.015
PCB congener 52 NRA leach	<0.015 µg/l	TM197								<0.015



**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

Results Legend			Customer Sample R		BH310B	BH312C	BH312C	BH312C	BH312C	BH312C
#	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>							
M	mCERTS accredited.			8.00	1.00	2.30	2.60	3.50	4.50	
S	Deviating sample.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
aq	Aqueous / settled sample.			10/05/2012	10/05/2012	10/05/2012	10/05/2012	10/05/2012	10/05/2012	
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			11/05/2012	11/05/2012	11/05/2012	11/05/2012	11/05/2012	11/05/2012	
(F)	Trigger breach confirmed			120513-11	120513-11	120513-11	120513-11	120513-11	120513-11	
				5578219	5578203	5578204	5578205	5578207	5578208	
				E3	E6	E7	E10	E13		
Component	LOD/Units	Method								
PCB congener 101 NRA leach	<0.015 µg/l	TM197					<0.015		<0.015	
PCB congener 118 NRA leach	<0.015 µg/l	TM197					<0.015		<0.015	
PCB congener 138 NRA leach	<0.015 µg/l	TM197					<0.015		<0.015	
PCB congener 153 NRA leach	<0.015 µg/l	TM197					<0.015		<0.015	
PCB congener 180 NRA leach	<0.015 µg/l	TM197					<0.015		<0.015	
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197					<0.105		<0.105	
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	<10		<10			
Sulphate, Total	<48 mg/kg	TM221	5580	1960	2000		4090			
Total sulphur	<0.0016 %	TM221	0.186	0.0652	0.0668		0.136			
Boron, water soluble	<1 mg/kg	TM222	5.08	1.47	3.05		4.09			
Calcium	<21 mg/kg	TM224	236000	128000	106000		50600			
Magnesium	<8 mg/kg	TM224	23900	47300	19100		29400			
Cyanide, Total NRA leach	<0.05 mg/l	TM227					<0.05		<0.05	
Cyanide, Free NRA leach	<0.05 mg/l	TM227					<0.05		<0.05	
Cyanide, Complex NRA leach	<0.05 mg/l	TM227					<0.05		<0.05	
Thiocyanate NRA leach	<0.05 mg/l	TM227					<0.05		<0.05	
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228					79.4		93.7	
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228					62.3		161	
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228					0.0414		8.82	
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228					4.43		6.84	
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228					<0.019		<0.019	
TPH / Oil & Greases NRA leach	<1 mg/l	TM235					<1		<1	
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241					0.044		<0.03	
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.454	0.0819	0.0571		0.635			
Chloride (soluble)	<5 mg/kg	TM243	1690	130	1000		3130			
pH NRA leach	<1 pH Units	TM256					11.5		7.29	
Phenol NRA leach	<0.002 mg/l	TM259					<0.002		<0.002	
Cresols NRA leach	<0.006 mg/l	TM259					<0.006		<0.006	
Xylenols NRA leach	<0.008 mg/l	TM259					<0.008		<0.008	
2,3,5-Trimethylphenol NRA leach	<0.003 mg/l	TM259					<0.003		<0.003	
2-Isopropylphenol NRA leach	<0.006 mg/l	TM259					<0.006		<0.006	
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259					<0.016		<0.016	
Phenols, Total Detected 5 speciated NRA leach	<0.025 mg/l	TM259					<0.025		<0.025	
Sulphur, Free NRA leach	<0.05 mg/l	TM294					<0.05		<0.05	
Fraction Organic Carbon (FOC)	<0.1 -	TM321					<0.1			#



CERTIFICATE OF ANALYSIS

SDG: 120513-11
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 186147
Superseded Report:

Dioxins/Furans (S)\*

Table with columns: Component, LOD/Units, Method, and numerical results. Includes a Results Legend and Customer Sample R details.



**CERTIFICATE OF ANALYSIS**

**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

**PAH Spec MS - Aqueous (W)**

Results Legend		Customer Sample R	BH303	BH303	BH312C	BH312C		
#	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>	BH303	BH303	BH312C	BH312C		
M	mCERTS accredited.		0.20	3.00	2.60	4.50		
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		09/05/2012	08/05/2012	10/05/2012	10/05/2012		
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		11/05/2012	11/05/2012	11/05/2012	11/05/2012		
(F)	Trigger breach confirmed		120513-11	120513-11	120513-11	120513-11		
			5578221	5578213	5578205	5578208		
		E16	E10	E7	E13			
Component	LOD/Units	Method						
Naphthalene (aq) NRA leach	<0.1 µg/l	TM178	0.25	1.18	0.359	0.689		
Acenaphthene (aq) NRA leach	<0.015 µg/l	TM178	0.521	0.496	0.0418	0.219		
Acenaphthylene (aq) NRA leach	<0.011 µg/l	TM178	0.0501	0.0514	<0.011	0.0212		
Fluoranthene (aq) NRA leach	<0.017 µg/l	TM178	0.0707	0.0916	0.0478	0.147		
Anthracene (aq) NRA leach	<0.015 µg/l	TM178	0.0763	0.0505	0.0262	0.0924		
Phenanthrene (aq) NRA leach	<0.022 µg/l	TM178	0.0913	0.34	0.256	0.481		
Fluorene (aq) NRA leach	<0.014 µg/l	TM178	0.423	0.169	0.0365	0.141		
Chrysene (aq) NRA leach	<0.013 µg/l	TM178	<0.013	<0.013	<0.013	0.0242		
Pyrene (aq) NRA leach	<0.015 µg/l	TM178	0.0491	0.0563	0.0381	0.0814		
Benzo(a)anthracene (aq) NRA leach	<0.017 µg/l	TM178	<0.017	<0.017	<0.017	<0.017		
Benzo(b)fluoranthene (aq) NRA leach	<0.023 µg/l	TM178	<0.023	<0.023	<0.023	<0.023		
Benzo(k)fluoranthene (aq) NRA leach	<0.027 µg/l	TM178	<0.027	<0.027	<0.027	<0.027		
Benzo(a)pyrene (aq) NRA leach	<0.009 µg/l	TM178	<0.009	<0.009	<0.009	<0.009		
Dibenzo(a,h)anthracene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016	<0.016	<0.016		
Benzo(g,h,i)perylene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016	<0.016	<0.016		
Indeno(1,2,3-cd)pyrene (aq) NRA leach	<0.014 µg/l	TM178	<0.014	<0.014	<0.014	<0.014		
PAH, Total Detected USEPA 16 (aq) NRA leach	<0.247 µg/l	TM178	1.53	2.43	0.806	1.9		





**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

## Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH312C	BH312C				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		2.30	3.50				
S	Deviating sample.		Soil/Solid	Soil/Solid				
aq	Aqueous / settled sample.		10/05/2012	10/05/2012				
diss.filt	Dissolved / filtered sample.		.	.				
tot.unfilt	Total / unfiltered sample.		11/05/2012	11/05/2012				
*	Subcontracted test.		120513-11	120513-11				
**	% 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		5578204	5578207				
(F)	Trigger breach confirmed		E6	E10				
Component	LOD/Units		Method					
Phenol	<100 µg/kg		TM157	<100	<100			
Pentachlorophenol	<100 µg/kg		TM157	<100	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg		TM157	<100	<100			
Nitrobenzene	<100 µg/kg	TM157	<100	<100				
Isophorone	<100 µg/kg	TM157	<100	<100				
Hexachloroethane	<100 µg/kg	TM157	<100	<100				
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100				
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100				
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100				
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	2200				
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100				
Diethyl phthalate	<100 µg/kg	TM157	<100	<100				
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100				
Dibenzofuran	<100 µg/kg	TM157	<100	<100				
Carbazole	<100 µg/kg	TM157	<100	<100				
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100				
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	452				
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100				
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100				
Azobenzene	<100 µg/kg	TM157	<100	<100				
4-Nitrophenol	<100 µg/kg	TM157	<100	<100				
4-Nitroaniline	<100 µg/kg	TM157	<100	<100				
4-Methylphenol	<100 µg/kg	TM157	<100	<100				
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100				
4-Chloroaniline	<100 µg/kg	TM157	<100	<100				
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100				
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100				
3-Nitroaniline	<100 µg/kg	TM157	<100	<100				
2-Nitrophenol	<100 µg/kg	TM157	<100	<100				
2-Nitroaniline	<100 µg/kg	TM157	<100	<100				
2-Methylphenol	<100 µg/kg	TM157	<100	<100				
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100				
2-Chlorophenol	<100 µg/kg	TM157	<100	<100				
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100				



SDG: 120513-11  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 186147  
 Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH312C	BH312C				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH312C	BH312C				
M	mCERTS accredited.		2.30	3.50				
S	Deviating sample.		Soil/Solid	Soil/Solid				
aq	Aqueous / settled sample.		10/05/2012	10/05/2012				
diss.filt	Dissolved / filtered sample.		.	.				
tot.unfilt	Total / unfiltered sample.		11/05/2012	11/05/2012				
+	Subcontracted test.		120513-11	120513-11				
**	% 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		5578204	5578207				
(F)	Trigger breach confirmed		E6	E10				
Component	LOD/Units		Method					
2,4-Dimethylphenol	<100 µg/kg		TM157	<100	<100			
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100				
Acenaphthylene	<100 µg/kg	TM157	<100	<100				
Acenaphthene	<100 µg/kg	TM157	<100	<100				
Anthracene	<100 µg/kg	TM157	<100	<100				
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100	133				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100	<100				
Benzo(a)pyrene	<100 µg/kg	TM157	<100	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100	139				
Chrysene	<100 µg/kg	TM157	<100	159				
Fluoranthene	<100 µg/kg	TM157	<100	213				
Fluorene	<100 µg/kg	TM157	<100	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100	<100				
Phenanthrene	<100 µg/kg	TM157	<100	140				
Pyrene	<100 µg/kg	TM157	<100	170				
Naphthalene	<100 µg/kg	TM157	<100	<100				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100	<100				
TIC report	-	TM157	See Attached	See Attached				



SDG: 120513-11  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 186147  
 Superseded Report:

## TPH CWG (S)

Results Legend		Customer Sample R	BH312C	BH312C				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		2.30	3.50				
S	Deviating sample.		Soil/Solid	Soil/Solid				
aq	Aqueous / settled sample.		10/05/2012	10/05/2012				
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.		11/05/2012	11/05/2012				
**	% 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		120513-11	120513-11				
(F)	Trigger breach confirmed		5578204	5578207				
			E6	E10				
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	110	87				
GRO >C5-C12	<44 µg/kg	TM089	243	357				
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	#	#		
Benzene	<10 µg/kg	TM089	<10	<10	M	M		
Toluene	<2 µg/kg	TM089	<2	<2	M	M		
Ethylbenzene	<3 µg/kg	TM089	<3	3.45	M	M		
m,p-Xylene	<6 µg/kg	TM089	<6	6.9	M	M		
o-Xylene	<3 µg/kg	TM089	<3	3.45	M	M		
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	10.4				
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24				
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	20.7				
Aliphatics >C6-C8	<10 µg/kg	TM089	13.1	77.1				
Aliphatics >C8-C10	<10 µg/kg	TM089	21.8	54.1				
Aliphatics >C10-C12	<10 µg/kg	TM089	111	93.2				
Aliphatics >C12-C16	<100 µg/kg	TM173	2920	7930				
Aliphatics >C16-C21	<100 µg/kg	TM173	21900	72200				
Aliphatics >C21-C35	<100 µg/kg	TM173	163000	447000				
Aliphatics >C35-C44	<100 µg/kg	TM173	61000	162000				
Total Aliphatics >C12-C44	<100 µg/kg	TM173	248000	690000				
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10				
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089	17.5	48.3				
Aromatics >EC10-EC12	<10 µg/kg	TM089	74.2	62.1				
Aromatics >EC12-EC16	<100 µg/kg	TM173	1690	6110				
Aromatics >EC16-EC21	<100 µg/kg	TM173	10200	41600				
Aromatics >EC21-EC35	<100 µg/kg	TM173	82800	235000				
Aromatics >EC35-EC44	<100 µg/kg	TM173	50500	116000				
Aromatics >EC40-EC44	<100 µg/kg	TM173	20900	46900				
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	145000	398000				
Total Aliphatics >C5-35	<100 µg/kg	TM173	187000	528000				
Total Aromatics >C5-35	<100 µg/kg	TM173	94700	282000				
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	282000	810000				
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	394000	1090000				



**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

## VOC MS (S)

Results Legend		Customer Sample R	BH312C	BH312C				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		2.30	3.50				
S	Deviating sample.		Soil/Solid	Soil/Solid				
aq	Aqueous / settled sample.		10/05/2012	10/05/2012				
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.		11/05/2012	11/05/2012				
**	% 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		120513-11	120513-11				
(F)	Trigger breach confirmed		5578204	5578207				
			E6	E10				
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	110	28.8				
Toluene-d8**	%	TM116	103	107				
4-Bromofluorobenzene**	%	TM116	99.3	113				
Dichlorodifluoromethane	<4 µg/kg	TM116	<80	<4	M	M		
Chloromethane	<7 µg/kg	TM116	<140	<7				
Vinyl Chloride	<10 µg/kg	TM116	<200	<10				
Bromomethane	<13 µg/kg	TM116	<260	<13	M	M		
Chloroethane	<14 µg/kg	TM116	<280	<14	M	M		
Trichlorofluoromethane	<6 µg/kg	TM116	<120	<6	M	M		
1.1-Dichloroethene	<10 µg/kg	TM116	<200	<10	#	#		
Carbon Disulphide	<7 µg/kg	TM116	<140	25.4	M	M		
Dichloromethane	<10 µg/kg	TM116	<200	<10	#	#		
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<220	<11	M	M		
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<220	<11	M	M		
1.1-Dichloroethane	<8 µg/kg	TM116	<160	<8	M	M		
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<100	<5	M	M		
2.2-Dichloropropane	<12 µg/kg	TM116	<240	<12	M	M		
Bromochloromethane	<14 µg/kg	TM116	<280	<14	M	M		
Chloroform	<8 µg/kg	TM116	<160	<8	M	M		
1.1.1-Trichloroethane	<7 µg/kg	TM116	<140	<7	M	M		
1.1-Dichloropropene	<11 µg/kg	TM116	<220	<11	M	M		
Carbontetrachloride	<14 µg/kg	TM116	<280	<14	M	M		
1.2-Dichloroethane	<5 µg/kg	TM116	<100	<5	M	M		
Benzene	<9 µg/kg	TM116	<180	<9	M	M		
Trichloroethene	<9 µg/kg	TM116	<180	<9	M	M		
1.2-Dichloropropane	<12 µg/kg	TM116	<240	<12	M	M		
Dibromomethane	<9 µg/kg	TM116	<180	<9	M	M		
Bromodichloromethane	<7 µg/kg	TM116	<140	<7	M	M		
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<280	<14	M	M		
Toluene	<5 µg/kg	TM116	<100	<5	M	M		
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<280	<14				
1.1.2-Trichloroethane	<10 µg/kg	TM116	<200	<10	M	M		
1.3-Dichloropropane	<7 µg/kg	TM116	<140	<7	#	#		
Tetrachloroethene	<5 µg/kg	TM116	<100	<5	M	M		
Dibromochloromethane	<13 µg/kg	TM116	<260	<13	M	M		



## CERTIFICATE OF ANALYSIS

SDG: 120513-11  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 186147  
 Superseded Report:

## VOC MS (S)

Results Legend		Customer Sample R	BH312C	BH312C			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	2.30	3.50			
M	mCERTS accredited.		Soil/Solid	Soil/Solid			
S	Deviating sample.		10/05/2012	10/05/2012			
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						
				E6	E10		
Component	LOD/Units	Method					
1.2-Dibromoethane	<12 µg/kg	TM116	<240 M	<12 M			
Chlorobenzene	<5 µg/kg	TM116	<100 M	<5 M			
1.1.1.2-Tetrachloroethane	<10 µg/kg	TM116	<200 M	<10 M			
Ethylbenzene	<4 µg/kg	TM116	<80 M	<4 M			
p/m-Xylene	<14 µg/kg	TM116	<280 #	<14 #			
o-Xylene	<10 µg/kg	TM116	<200 M	<10 M			
Styrene	<10 µg/kg	TM116	<200 M	<10 M			
Bromoform	<10 µg/kg	TM116	<200 M	<10 M			
Isopropylbenzene	<5 µg/kg	TM116	<100 M	<5 M			
1.1.2.2-Tetrachloroethane	<10 µg/kg	TM116	<200 #	<10 #			
1.2.3-Trichloropropane	<17 µg/kg	TM116	<340 M	<17 M			
Bromobenzene	<10 µg/kg	TM116	<200 M	<10 M			
Propylbenzene	<11 µg/kg	TM116	<220 M	<11 M			
2-Chlorotoluene	<9 µg/kg	TM116	<180 M	<9 M			
1.3.5-Trimethylbenzene	<8 µg/kg	TM116	<160 #	<8 #			
4-Chlorotoluene	<12 µg/kg	TM116	<240 M	<12 M			
tert-Butylbenzene	<12 µg/kg	TM116	<240 #	<12 #			
1.2.4-Trimethylbenzene	<9 µg/kg	TM116	<180 #	<9 #			
sec-Butylbenzene	<10 µg/kg	TM116	<200 M	<10 M			
4-Isopropyltoluene	<11 µg/kg	TM116	<220 M	<11 M			
1.3-Dichlorobenzene	<6 µg/kg	TM116	<120 M	<6 M			
1.4-Dichlorobenzene	<5 µg/kg	TM116	<100 M	<5 M			
n-Butylbenzene	<10 µg/kg	TM116	<200 M	<10 M			
1.2-Dichlorobenzene	<12 µg/kg	TM116	<240 M	<12 M			
1.2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<280 M	<14 M			
Tert-amyl methyl ether	<15 µg/kg	TM116	<300	<15			
1.2.4-Trichlorobenzene	<6 µg/kg	TM116	<120 #	<6 #			
Hexachlorobutadiene	<12 µg/kg	TM116	<240	<12			
Naphthalene	<13 µg/kg	TM116	<260 M	<13 M			
1.2.3-Trichlorobenzene	<6 µg/kg	TM116	<120 M	<6 M			
VOC TIC	-	TM116	No TICs identified	No TICs identified			



**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH303 E 3 1.00 SOLID 08/05/2012 00:00:00  120513-11 5578210 TM048	22/05/12	Martin Cotterell	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH303 E 9 3.00 SOLID 08/05/2012 00:00:00  120513-11 5578212 TM048	22/05/12	Martin Cotterell	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306A E 20 9.00 SOLID 08/05/2012 00:00:00  120513-11 5578216 TM048	22/05/12	Martin Cotterell	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310B 8.00 SOLID 10/05/2012 00:00:00  120513-11 5578219 TM048	22/05/12	Martin Cotterell	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH312C E 10 3.50 SOLID 10/05/2012 00:00:00  120513-11 5578207 TM048	21/05/12	Chris Swindells	loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

SDG: 120513-11
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 186147
Superseded Report:

Table with 12 columns: Customer Sample Ref., Date of Analysis, Analysed By, Comments, Amosite (Brown) Asbestos, Chrysotile (White) Asbestos, Crocidolite (Blue) Asbestos, Fibrous Actinolite, Fibrous Anthophyllite, Fibrous Tremolite, Non-Asbestos Fibre. It contains two rows of analysis data for samples BH312C E 3 and BH312C E 6.



SDG: 120513-11  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 186147  
Superseded Report:

### Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Customer Sample Ref.	BH303 E 9	- (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	3.00					
Sample Type	SOLID					
Date Sampled	08/05/2012 00:00:00					
Date Received						
SDG	120513-11					
Original Sample	5578212					
Method Number	TM 304					





**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowl  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5602768	BH312C E6	2.30	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5603158	BH312C E3	1.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5615073	BH310B	8.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5615216	BH306A E20	9.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5615526	BH303 E3	1.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5615589	BH303 E9	3.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded

**Note : Test results may be compromised**

**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

### Notification of NDPs (No determination possible)

Date Received : 13/05/2012 14:24:44

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5578204	BH312C E6	2.30	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5578204	BH312C E6	2.30	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5578207	BH312C E10	3.50	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5578207	BH312C E10	3.50	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5578207	BH312C E10	3.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5578210	BH303 E3	1.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5578210	BH303 E3	1.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5578210	BH303 E3	1.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5578212	BH303 E9	3.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5578212	BH303 E9	3.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5578212	BH303 E9	3.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5578216	BH306A E20	9.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5578216	BH306A E20	9.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5578219	BH310B	8.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5578219	BH310B	8.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos



## CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120513-11	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	186147
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM 304				
TM021	Method 2540C, AWWA/APHA, 20th Ed., 1999	Determination of total dissolved solids in waters by gravimetry.		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
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		
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		



## CERTIFICATE OF ANALYSIS

<b>SDG:</b> 120513-11	<b>Location:</b> Haulbowline	<b>Order Number:</b> 4559
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 186147
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b>

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		
TM243		Mixed Anions In Soils By Kone		
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		
TM294		Determination of Free Sulphur in liquids by HPLC		
TM321		Organic matter Content of Soil By Titration		

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



**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

### Test Completion Dates

Lab Sample No(s)	5578210	5578212	5578213	5578221	5578227	5578216	5578219	5578203	5578204	5578205
Customer Sample Ref.	BH303	BH303	BH303	BH303	BH303	BH306A	BH310B	BH312C	BH312C	BH312C
AGS Ref.	E3	E9	E10	E16	E15	E20		E3	E6	E7
Depth	1.00	3.00	3.00	0.20	0.20	9.00	8.00	1.00	2.30	2.60
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	24-May-2012	24-May-2012				24-May-2012	24-May-2012	24-May-2012	24-May-2012	
Alkalinity Filtered as CaCO3			22-May-2012	22-May-2012						22-May-2012
Ammoniacal Nitrogen			23-May-2012	23-May-2012						23-May-2012
Ammonium Soil by Titration	23-May-2012	23-May-2012				23-May-2012	23-May-2012	23-May-2012	23-May-2012	
Anions by Kone (soil)	23-May-2012	23-May-2012				23-May-2012	23-May-2012	23-May-2012	23-May-2012	
Anions by Kone (w)			23-May-2012	25-May-2012						24-May-2012
Asbestos Identification (Soil)	22-May-2012	22-May-2012				22-May-2012	22-May-2012	21-May-2012	21-May-2012	
Asbestos Quantification - Full		19-Jun-2012								
Boron Water Soluble	24-May-2012	24-May-2012				24-May-2012	24-May-2012	24-May-2012	24-May-2012	
COD Unfiltered			23-May-2012	22-May-2012						22-May-2012
Conductivity (at 20 deg.C)			23-May-2012	21-May-2012						21-May-2012
Cyanide Comp/Free/Total/Thiocyanate	24-May-2012	24-May-2012	23-May-2012	22-May-2012		24-May-2012	24-May-2012	23-May-2012	23-May-2012	22-May-2012
Dioxins/Furans (S)*					08-Jun-2012					
Dissolved Metals by ICP-MS			23-May-2012	23-May-2012						23-May-2012
Dissolved Organic/Inorganic Carbon			23-May-2012	22-May-2012						22-May-2012
Easily Liberated Sulphide	23-May-2012	23-May-2012				23-May-2012	22-May-2012	23-May-2012	23-May-2012	
EPH CWG (Aliphatic) GC (S)									23-May-2012	
EPH CWG (Aromatic) GC (S)									23-May-2012	
Fluoride			22-May-2012	22-May-2012						22-May-2012
Free Sulphur			24-May-2012	24-May-2012						24-May-2012
GRO by GC-FID (S)									23-May-2012	
Hexavalent Chromium (s)	23-May-2012	23-May-2012				23-May-2012	22-May-2012	23-May-2012	23-May-2012	
Hexavalent Chromium (w)			23-May-2012	22-May-2012						22-May-2012
Mercury Dissolved			23-May-2012	22-May-2012						22-May-2012
Metals by iCap-OES (Soil)	24-May-2012	24-May-2012				24-May-2012	24-May-2012	23-May-2012	24-May-2012	
Metals by iCap-OES Dissolved (W)			23-May-2012	23-May-2012						23-May-2012
Mineral Oil									24-May-2012	
Nitrite by Kone (w)			23-May-2012	22-May-2012						22-May-2012
NRA Leachate			12-Jun-2012	07-Jun-2012						07-Jun-2012
PAH Spec MS - Aqueous (W)			24-May-2012	25-May-2012						23-May-2012
PAH Value of soil	23-May-2012	23-May-2012				23-May-2012	23-May-2012	23-May-2012	23-May-2012	
PCB Congeners - Aqueous (W)			23-May-2012	25-May-2012						23-May-2012
PCBs by GCMS					23-May-2012					
pH	22-May-2012	22-May-2012				22-May-2012	22-May-2012	22-May-2012	22-May-2012	
pH Value			22-May-2012	22-May-2012						22-May-2012
Phenols by HPLC (S)	23-May-2012	23-May-2012				23-May-2012	23-May-2012	24-May-2012	24-May-2012	
Phenols by HPLC (W)			23-May-2012	23-May-2012						24-May-2012
Sample description	21-May-2012	21-May-2012	19-May-2012	19-May-2012	17-May-2012	21-May-2012	21-May-2012	21-May-2012	21-May-2012	19-May-2012
Semi Volatile Organic Compounds									24-May-2012	
Sulphide			22-May-2012	22-May-2012						22-May-2012
Toluene extractable matter*								02-Jul-2012		
Total Dissolved Solids (Grav)			23-May-2012	23-May-2012						23-May-2012
Total Organic Carbon								24-May-2012		
Total Organic Carbon (Asb)	23-May-2012	23-May-2012								
Total Sulphate	24-May-2012	24-May-2012				24-May-2012	24-May-2012	24-May-2012	24-May-2012	
Total Sulphur								24-May-2012		
TPH by IR Oils and Greases			15-Jun-2012	13-Jun-2012						13-Jun-2012
TPH CWG GC (S)									23-May-2012	
VOC MS (S)									24-May-2012	



**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

Lab Sample No(s)	5578207	5578208
Customer Sample Ref.	BH312C	BH312C
AGS Ref.	E10	E13
Depth	3.50	4.50
Type	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	24-May-2012	
Alkalinity Filtered as CaCO3		23-May-2012
Ammoniacal Nitrogen		23-May-2012
Ammonium Soil by Titration	23-May-2012	
Anions by Kone (soil)	24-May-2012	
Anions by Kone (w)		24-May-2012
Asbestos Identification (Soil)	21-May-2012	
Boron Water Soluble	24-May-2012	
COD Unfiltered		22-May-2012
Conductivity (at 20 deg.C)		21-May-2012
Cyanide Comp/Free/Total/Thiocyanate	23-May-2012	23-May-2012
Dissolved Metals by ICP-MS		23-May-2012
Dissolved Organic/Inorganic Carbon		22-May-2012
Easily Liberated Sulphide	23-May-2012	
EPH CWG (Aliphatic) GC (S)	24-May-2012	
EPH CWG (Aromatic) GC (S)	24-May-2012	
Fluoride		22-May-2012
Free Sulphur		24-May-2012
GRO by GC-FID (S)	23-May-2012	
Hexavalent Chromium (s)	23-May-2012	
Hexavalent Chromium (w)		22-May-2012
Mercury Dissolved		22-May-2012
Metals by iCap-OES (Soil)	24-May-2012	
Metals by iCap-OES Dissolved (W)		23-May-2012
Mineral Oil	24-May-2012	
Nitrite by Kone (w)		22-May-2012
NRA Leachate		07-Jun-2012
PAH Spec MS - Aqueous (W)		23-May-2012
PAH Value of soil	23-May-2012	
PCB Congeners - Aqueous (W)		23-May-2012
pH	23-May-2012	
pH Value		22-May-2012
Phenols by HPLC (S)	24-May-2012	
Phenols by HPLC (W)		24-May-2012
Sample description	21-May-2012	19-May-2012
Semi Volatile Organic Compounds	24-May-2012	
Sulphide		22-May-2012
Total Dissolved Solids (Grav)		23-May-2012
Total Organic Carbon (Asb)	24-May-2012	
Total Sulphate	24-May-2012	
TPH by IR Oils and Greases		13-Jun-2012
TPH CWG GC (S)	24-May-2012	
VOC MS (S)	24-May-2012	



SDG: 120513-11  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 186147  
Superseded Report:

### Chromatogram

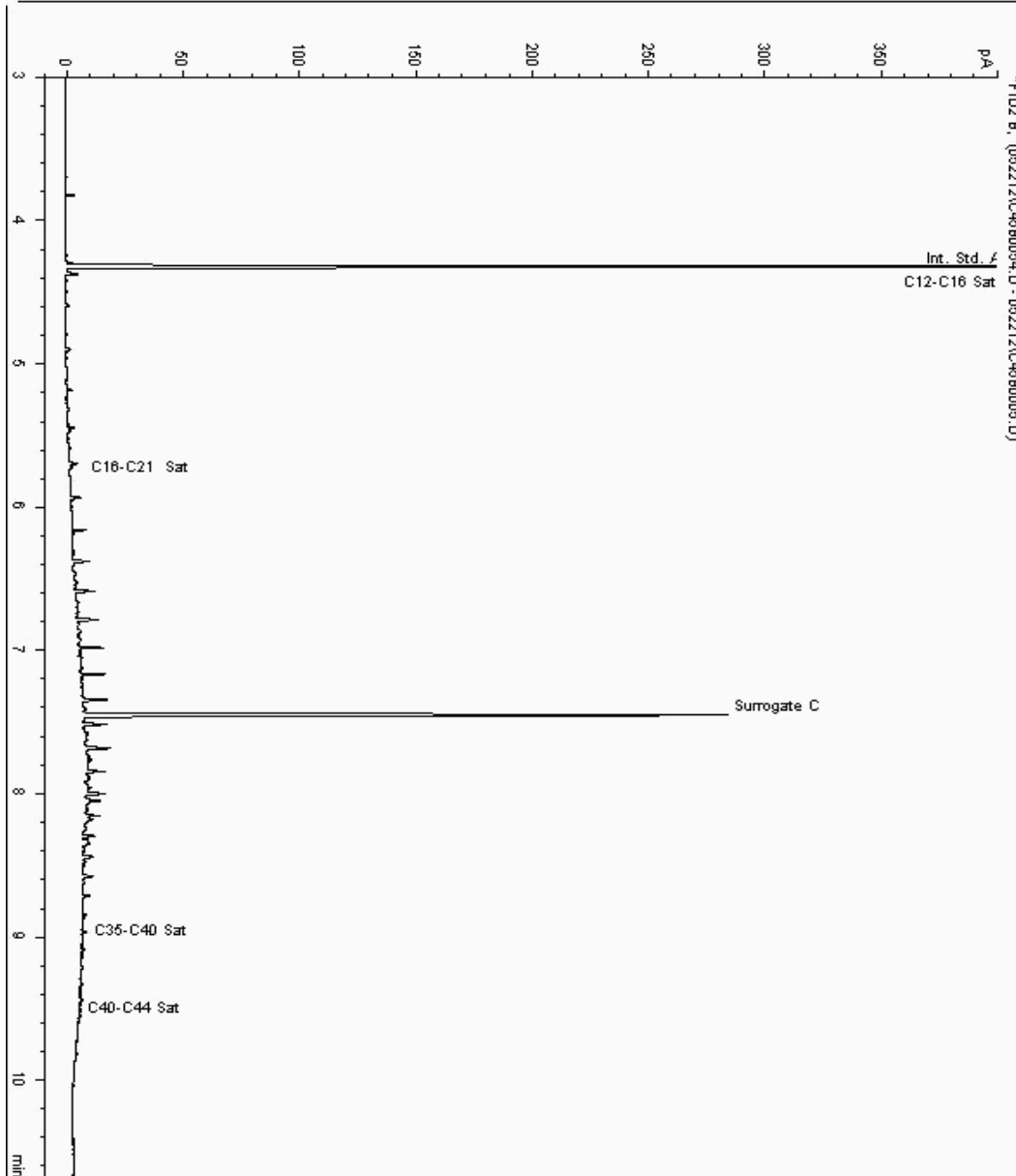
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5623559  
Sample ID : BH312C

Depth : 2.30

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

Sample Identity: 5464774-5623559  
Date Acquired : 23/05/12 14:56:24 PM  
Units : ppb  
Dilution:





SDG: 120513-11  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 186147  
Superseded Report:

### Chromatogram

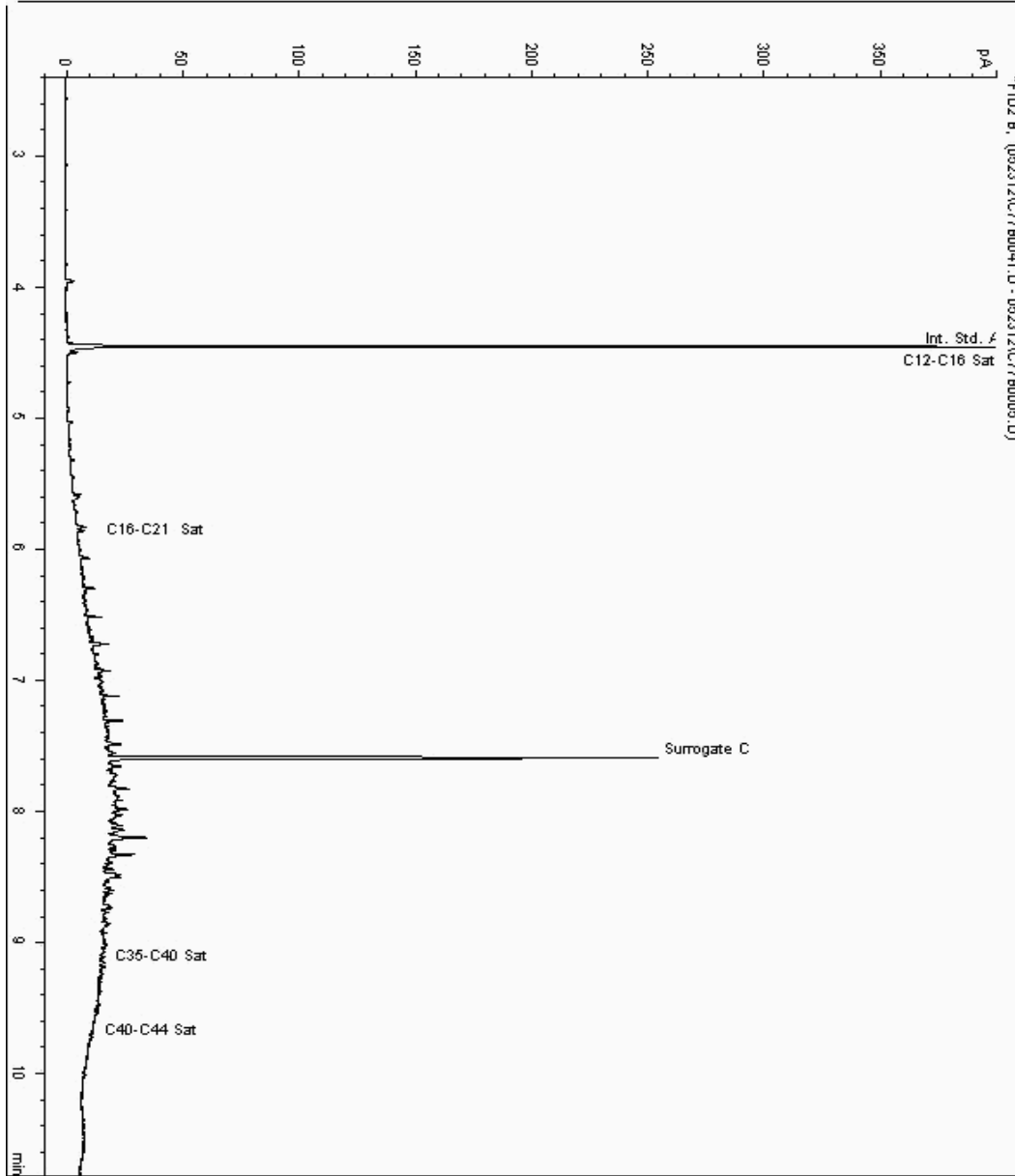
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5626043  
Sample ID : BH312C

Depth : 3.50

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

Sample Identity: 5464831-5626043  
Date Acquired : 24/05/12 14:58:16 PM  
Units : ppb  
Dilution:







CERTIFICATE OF ANALYSIS

SDG: 120513-11
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 186147
Superseded Report:

Chromatogram

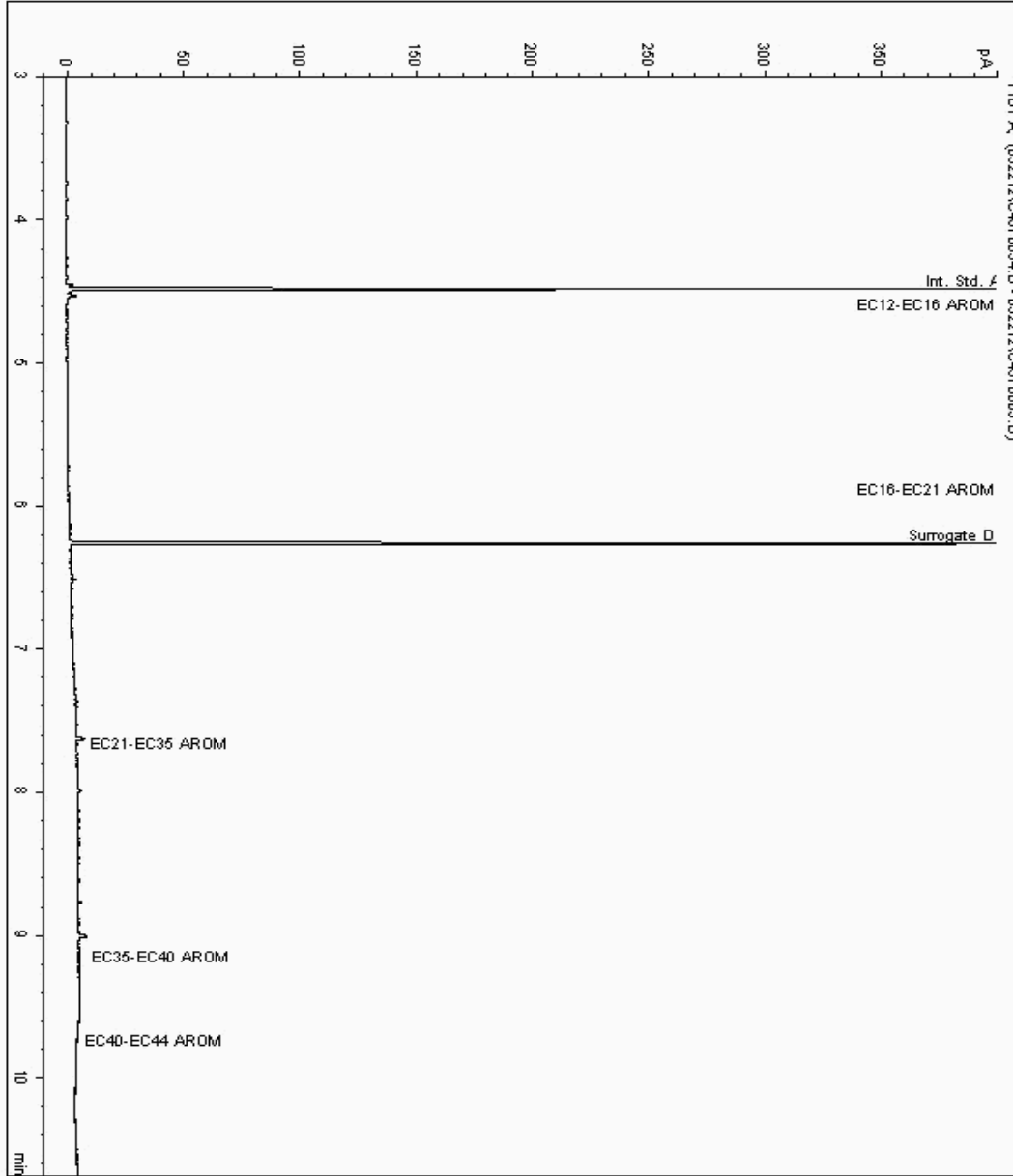
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5623559
Sample ID : BH312C

Depth : 2.30

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

Sample Identity: 5464775-5623559
Date Acquired : 23/05/12 14:56:25 PM
Units : ppb
Dilution:





SDG: 120513-11  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 186147  
Superseded Report:

### Chromatogram

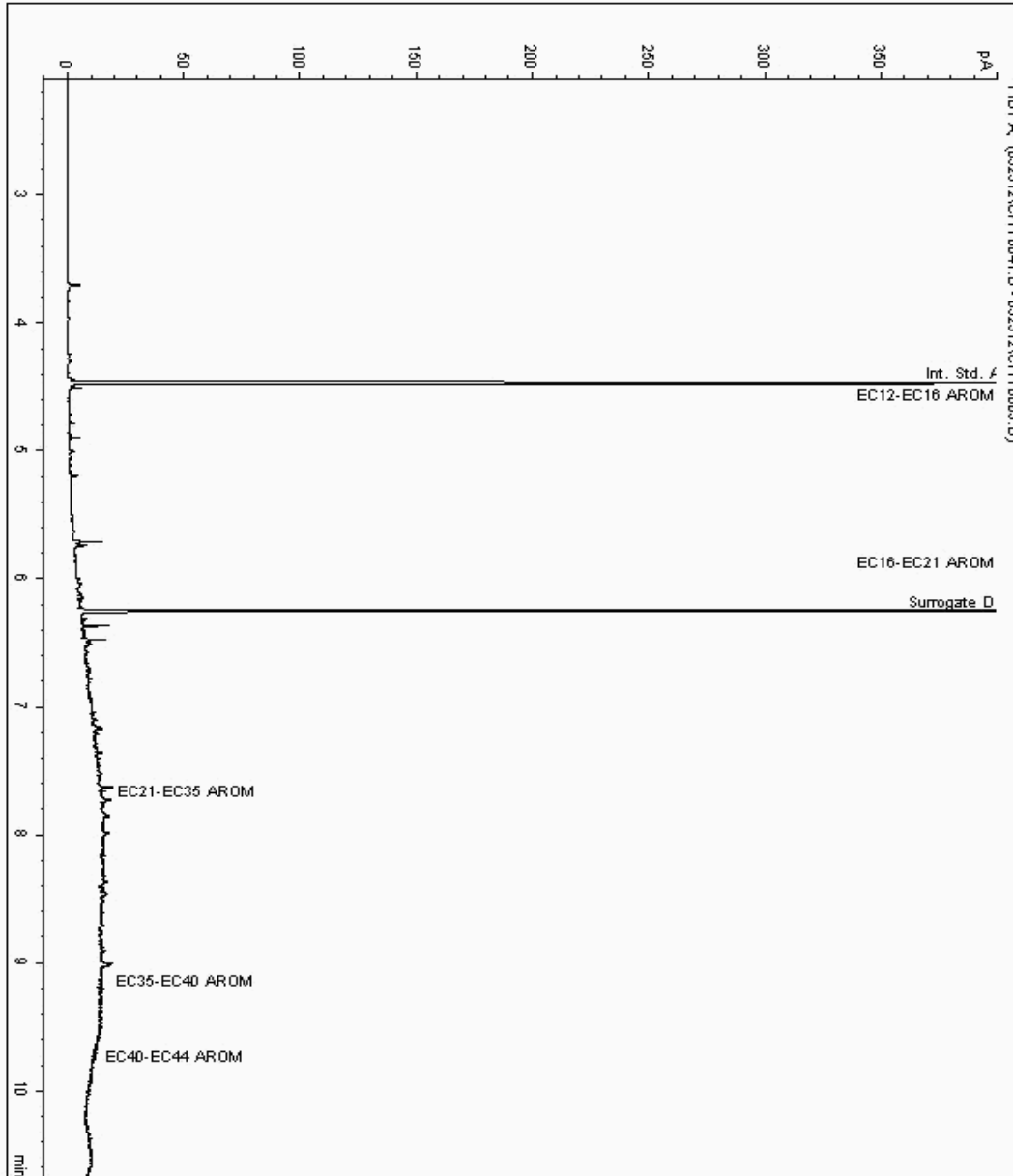
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5626043  
Sample ID : BH312C

Depth : 3.50

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

Sample Identity: 5464832-5626043  
Date Acquired : 24/05/12 14:58:16 PM  
Units : ppb  
Dilution:





### CERTIFICATE OF ANALYSIS

SDG: 120513-11  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 186147  
Superseded Report:

## Chromatogram

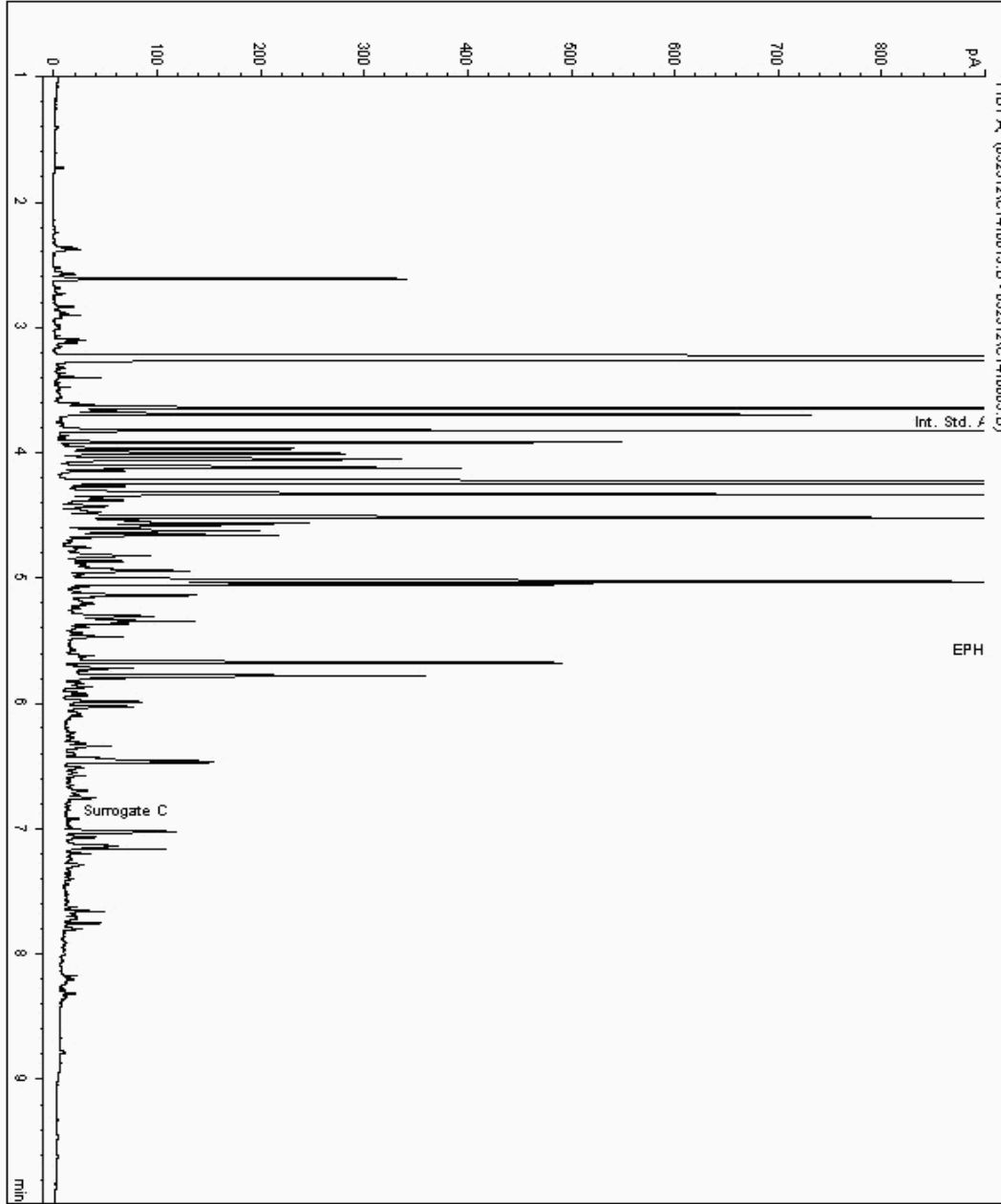
Analysis: Mineral Oil

Sample No : 5623457  
Sample ID : BH312C

Depth : 2.30

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5465906-5618655  
Date Acquired : 23/05/12 12:59:59 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120513-11  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 186147  
Superseded Report:

### Chromatogram

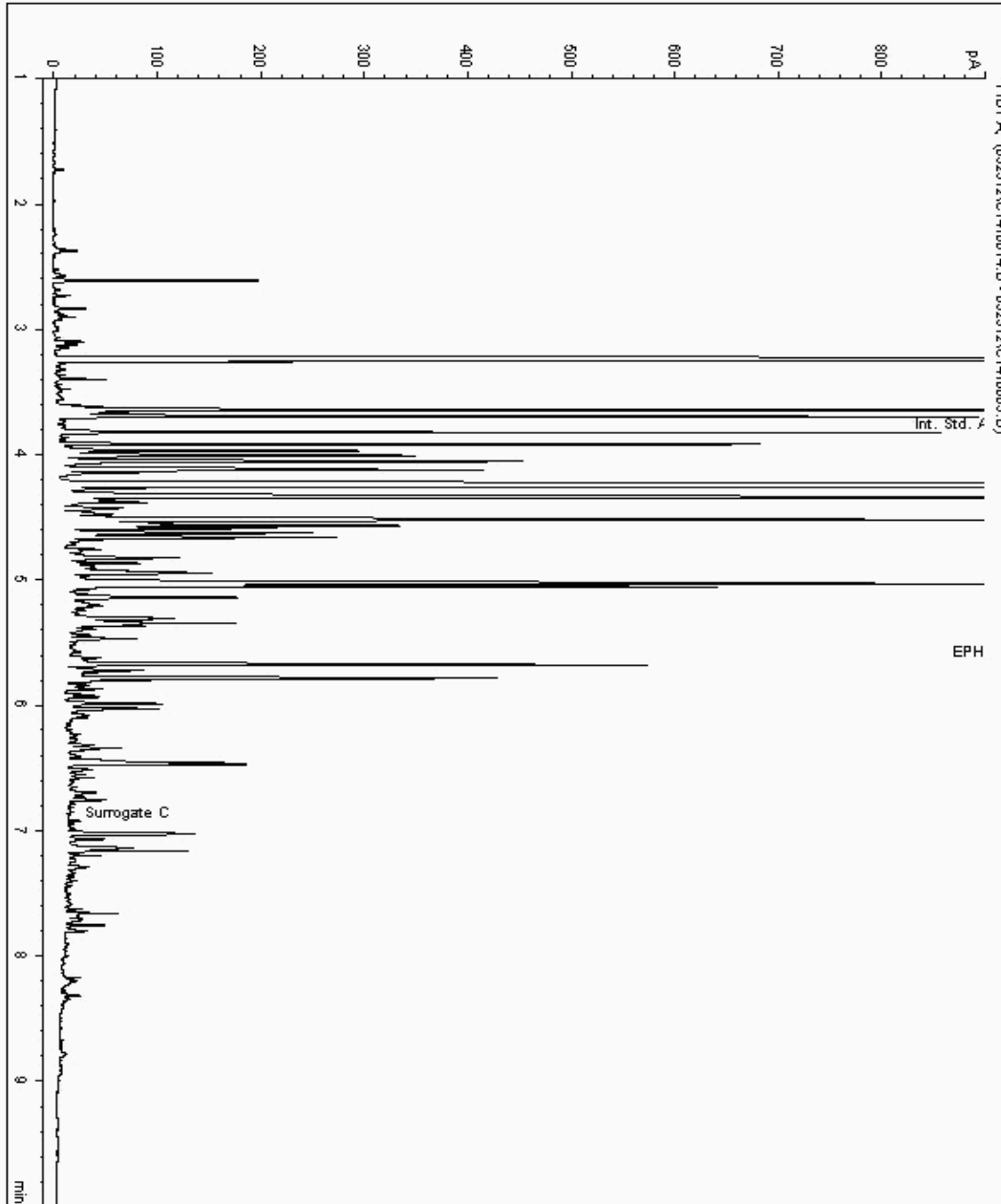
Analysis: Mineral Oil

Sample No : 5626033  
Sample ID : BH312C

Depth : 3.50

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5465886-5618617  
Date Acquired : 23/05/12 13:21:59 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120513-11  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

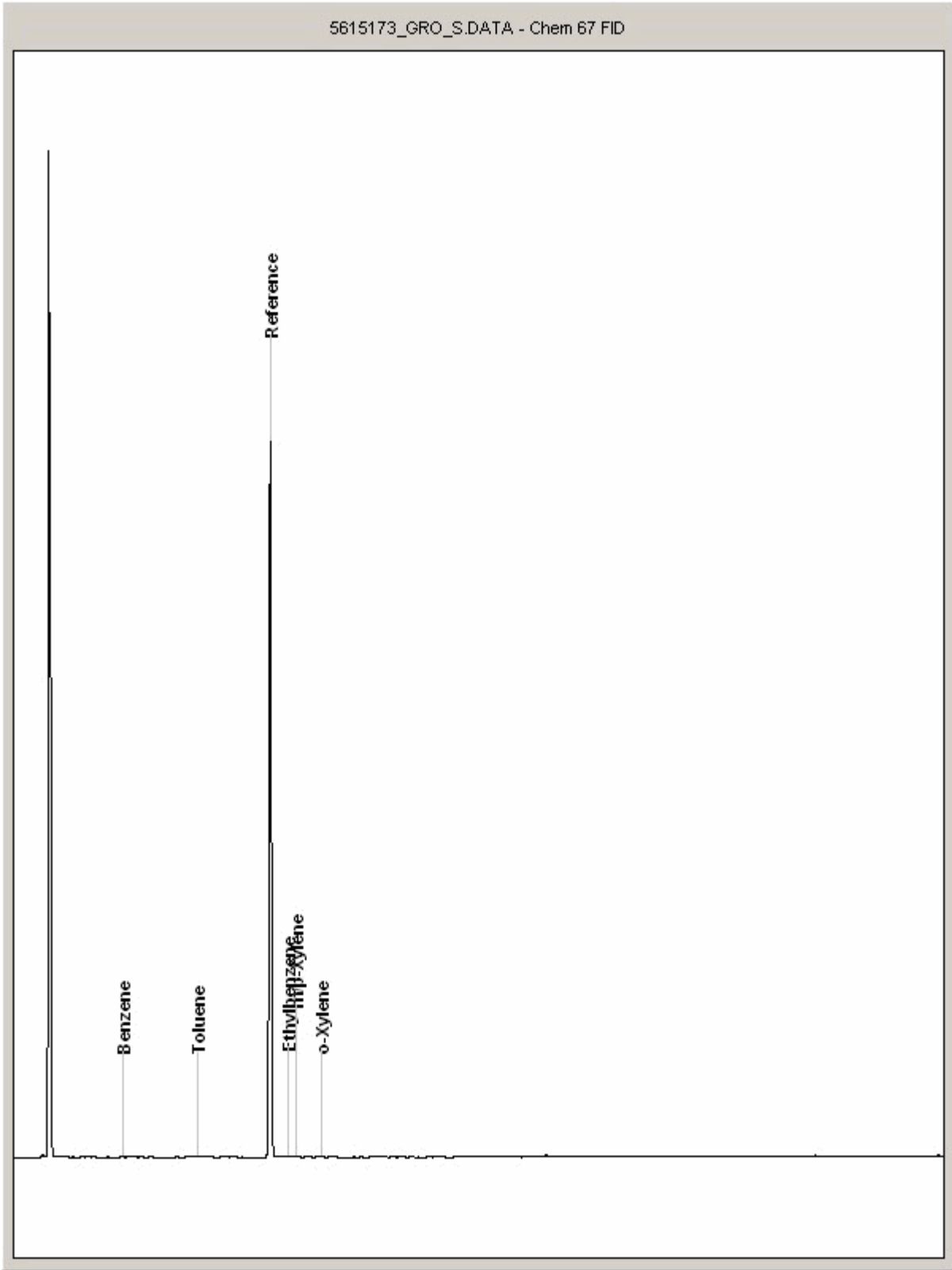
Order Number: 4559  
Report Number: 186147  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5615173  
Sample ID : BH312C

Depth : 3.50





SDG: 120513-11  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

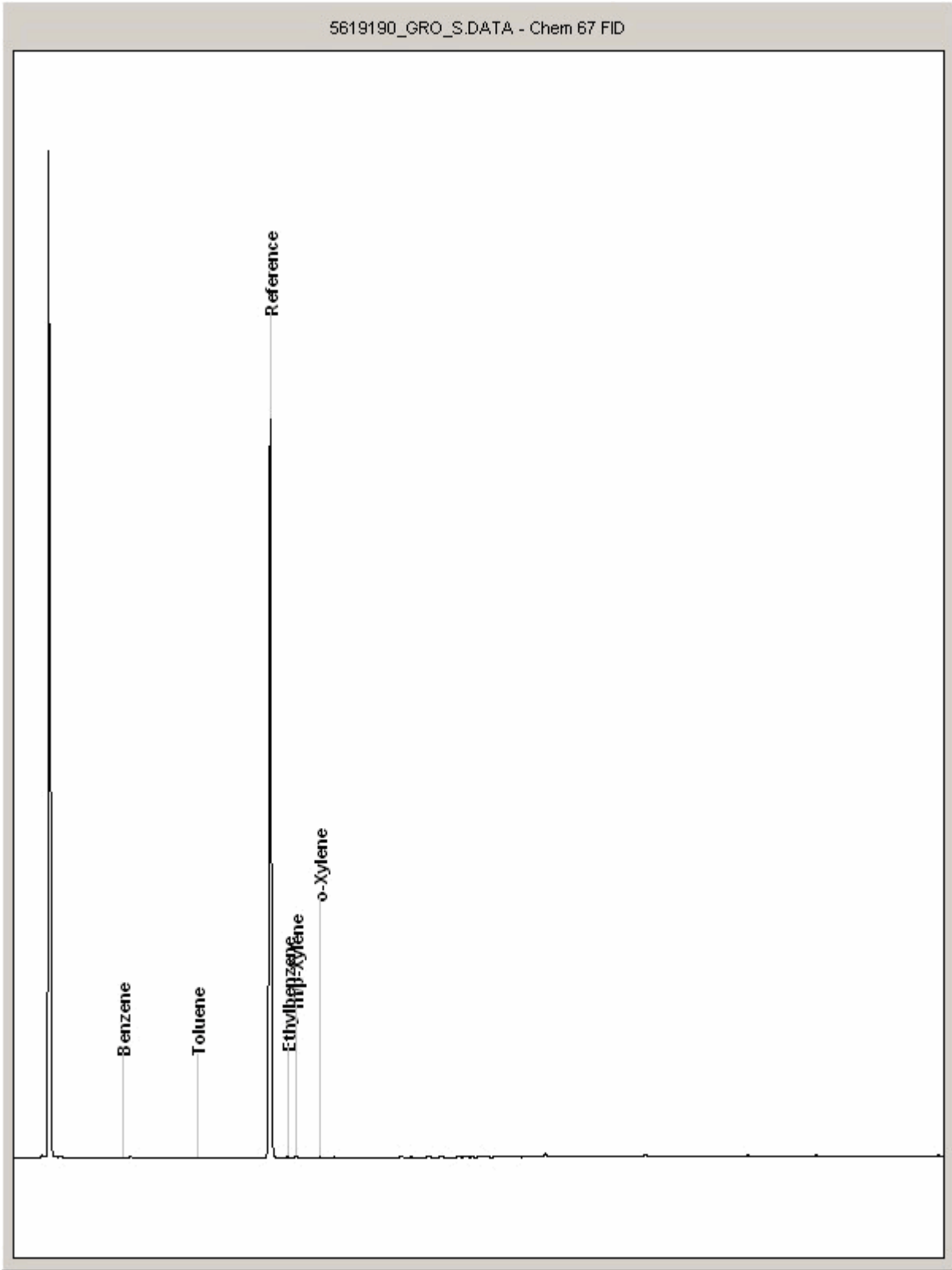
Order Number: 4559  
Report Number: 186147  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5619190  
Sample ID : BH312C

Depth : 2.30





# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Cornbrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 283958-1

**Date of Report:** 29-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120513-11

**Customer Purchase Order:** 147910

**Date Job Received at SAL:** 21-Jun-2012

**Date Analysis Started:** 22-Jun-2012

**Date Analysis Completed:** 28-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager

<b>SAL Reference:</b> 283958 <b>Customer Reference:</b> 120513-11  <b>Soil</b> Analysed as Soil <b>Miscellaneous</b>					
<b>SAL Reference</b>					<b>283958 001</b>
<b>Customer Sample Reference</b>					<b>5618327</b>
<b>Date Sampled</b>					<b>10-MAY-2012</b>
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>	
Toluene extractable matter	T2	AR	500	mg/kg	<b>3400</b>

### Index to symbols used in 283958-1

Value	Description
AR	As Received
N	Analysis is not UKAS accredited

### Method Index

Value	Description
T2	Grav

### Accreditation Summary

<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>	<b>Symbol</b>	<b>SAL References</b>
Toluene extractable matter	T2	AR	500	mg/kg	N	001



**SDG:** 120513-11  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186147  
**Superseded Report:**

## Appendix

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

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

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 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.

## SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GC-MS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GC-MS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GC-MS
EPH (DFO)	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 CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC-FID
PCBAROCLOR 1254/PCBCON	D&C	HEXANE ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GC-MS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC-FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM ACETONE	SONICATE	GC-MS

## LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
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
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC-MS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTICID POPP	DCM	LIQUID/LIQUID SHAKE	GC-MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC-MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC-MS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	R
MINERAL OIL by R	TCE	STIRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DIRECT INJECTION	GC-FID

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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).

### 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.

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



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

**Attention:** Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 13 June 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120516-77  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 184029

We received 16 samples on Tuesday May 15, 2012 and 2 of these samples were scheduled for analysis which was completed on Wednesday June 13, 2012. 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:** 120516-77  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 184029  
**Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5590409	BH301(E1)		0.30	11/05/2012
5590416	BH301(E11)		3.00	11/05/2012
5590417	BH301(E12)		3.00	11/05/2012
5590411	BH301(E4)		1.00	11/05/2012
5590413	BH301(E7)		2.00	11/05/2012
5590414	BH301(E8)		2.00	11/05/2012
5590418	BH303(E17)		5.50 - 6.00	14/05/2012
5590419	BH303(E18)		7.00	14/05/2012
5590420	BH303(E19)		8.00	14/05/2012
5590421	BH303(E20)		9.00	15/05/2012
5590403	BH310B		14.50	11/05/2012
5590404	BH310B		17.00	11/05/2012
5590406	BH310B		19.00	14/05/2012
5590407	BH310B		21.00	14/05/2012
5590408	BH310B		23.00	14/05/2012

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



SDG: 120516-77  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 184029  
 Superseded Report:

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)	5590402	5590420
	Customer Sample Reference	BH310B	BH303(E19)
	AGS Reference		
	Depth (m)	11.00	8.00
	Container	250g Amber Jar (AL 400g Tub (ALE214)	400g Tub (ALE214) 250g Amber Jar (AL 60ml red top tub
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Anions by Kone (w)	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Boron Water Soluble	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
COD Unfiltered	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Fluoride	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>



SDG: 120516-77  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 184029  
 Superseded Report:

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)	5590402	5590420	
	Customer Sample Reference	BH310B	BH303(E19)	
	AGS Reference			
	Depth (m)	11.00	8.00	
	Container	250g Amber Jar (AL 400g Tub (ALE214) 60ml red top tub 250g Amber Jar (AL	400g Tub (ALE214) 250g Amber Jar (AL	
Free Sulphur	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>	
Mercury Dissolved	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>	
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Antimony	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Arsenic	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Barium	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Beryllium	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Cadmium	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Chromium	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Copper	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Lead	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Manganese	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Mercury	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



SDG: 120516-77  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 184029  
 Superseded Report:

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)	5590402	5590420	
	Customer Sample Reference	BH310B	BH303(E19)	
	AGS Reference			
	Depth (m)	11.00	8.00	
	Container	250g Amber Jar (AL 400g Tub (ALE214) 60ml red top tub	400g Tub (ALE214) 250g Amber Jar (AL	
Metals by iCap-OES (Soil)	Nickel	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Selenium	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Vanadium	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Zinc	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>	
NRA Leachate	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>	
PAH Value of soil	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>	
pH	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
pH Value	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phenols by HPLC (W)	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>	
Sample description	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sulphide	All	NDPs: 0 Tests: 1	<input checked="" type="checkbox"/>	



SDG: 120516-77  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 184029  
 Superseded Report:

<b>SOLID</b> Results Legend X Test N No Determination Possible	Lab Sample No(s)	5590402	5590420	
	Customer Sample Reference	BH310B	BH303(E19)	
	AGS Reference			
	Depth (m)	11.00	8.00	
	Container	250g Amber Jar (AL)	400g Tub (ALE214)	250g Amber Jar (AL)
Toluene extractable matter*	All	NDPs: 0 Tests: 2	X	X
Total Dissolved Solids (Grav)	All	NDPs: 1 Tests: 0		N
Total Dissolved Solids on Leachates	All	NDPs: 0 Tests: 1	X	
Total Sulphate	All	NDPs: 0 Tests: 2	X	X
Total Sulphur	All	NDPs: 0 Tests: 2	X	X
TPH by IR Oils and Greases	All	NDPs: 0 Tests: 1	X	

SDG: 120516-77  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 184029  
 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
5590420	BH303(E19)	8.00	Grey	Silt Loam	0.063 - 0.1 mm	Stones	N/A
5590402	BH310B	11.00	Grey	Silty Clay	0.063 - 0.1 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 occurring 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.





SDG: 120516-77  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 184029  
 Superseded Report:

Results Legend		Customer Sample R	BH303(E19)	BH310B				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		8.00	11.00				
S	Deviating sample.		Soil/Solid	Soil/Solid				
aq	Aqueous / settled sample.		14/05/2012	11/05/2012				
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		15/05/2012	15/05/2012				
(F)	Trigger breach confirmed		120516-77	120516-77				
			5590420	5590402				
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	27	29				
Tolulene Extractable Matter	<500 mg/kg	SUB	<500	<500				
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	42	65.3				
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043		10				
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	M	M		
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M		
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	M	M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	M	M		
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06	M	M		
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090		7.84				
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099		2.78				
Sulphide NRA leach	<0.01 mg/l	TM101		<0.01				
Fluoride NRA leach	<0.5 mg/l	TM104		<0.5				
COD, unfiltered NRA leach	<7 mg/l	TM107		24.1				
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120		1.76				
Dissolved solids, Total (meter) NRA leach	<10 mg/l	TM123		1390				
Sulphur, Total	<0.02 %	TM132	0.747	1.1	#	#		
pH	1 pH Units	TM133	8.03	8.42	M	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	#	#		
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152		45.5				
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152		1.21				
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152		4.7				
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152		3.56				
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152		353				
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152		<0.1				
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152		1.95				
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152		0.064				
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152		1.22				
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152		1.65				
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152		13.3				
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152		32.8				
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152		0.714				
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152		143				



SDG: 120516-77  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 184029  
 Superseded Report:

Results Legend		Customer Sample R	BH303(E19)	BH310B			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	8.00	11.00			
M	mCERTS accredited.		Soil/Solid	Soil/Solid			
§	Deviating sample.		14/05/2012	11/05/2012			
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		15/05/2012	15/05/2012			
(F)	Trigger breach confirmed		120516-77	120516-77			
			5590420	5590402			
Component	LOD/Units	Method					
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152		2.29			
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152		10.5			
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152		<0.36			
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152		54.5			
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152		8.88			
Cyanide, Total	<1 mg/kg	TM153	<1	<1	M	M	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	M	M	
Cyanide, Complex	<1 mg/kg	TM153	<1	<1			
Thiocyanate	<1 mg/kg	TM153	<1	<1	M	M	
Sulphide, Easily liberated	<15 mg/kg	TM180	53.2	76.4	#	#	
Aluminium	<11 mg/kg	TM181	9170	11300			
Antimony	<0.6 mg/kg	TM181	1.09	1.03	#	#	
Arsenic	<0.6 mg/kg	TM181	4.53	5.76	M	M	
Barium	<0.6 mg/kg	TM181	16.1	18.6	#	#	
Beryllium	<0.01 mg/kg	TM181	0.652	0.739	M	M	
Cadmium	<0.02 mg/kg	TM181	0.412	0.302	M	M	
Chromium	<0.9 mg/kg	TM181	38.5	37.4	M	M	
Copper	<1.4 mg/kg	TM181	8.01	10.4	M	M	
Lead	<0.7 mg/kg	TM181	11.7	13.5	M	M	
Manganese	<0.13 mg/kg	TM181	356	370	M	M	
Mercury	<0.14 mg/kg	TM181	<0.14	<0.14	M	M	
Nickel	<0.2 mg/kg	TM181	19.2	23.9	M	M	
Selenium	<1 mg/kg	TM181	<1	<1	#	#	
Vanadium	<0.2 mg/kg	TM181	21.2	25.8	#	#	
Zinc	<1.9 mg/kg	TM181	68.1	69.9	M	M	
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183		<0.01			
Sulphate NRA leach	<2 mg/l	TM184		88.1			
Chloride NRA leach	<2 mg/l	TM184		516			
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184		<0.3			
PCB congener 28 NRA leach	<0.015 µg/l	TM197		<0.015			
PCB congener 52 NRA leach	<0.015 µg/l	TM197		<0.015			
PCB congener 101 NRA leach	<0.015 µg/l	TM197		<0.015			
PCB congener 118 NRA leach	<0.015 µg/l	TM197		<0.015			
PCB congener 138 NRA leach	<0.015 µg/l	TM197		<0.015			
PCB congener 153 NRA leach	<0.015 µg/l	TM197		<0.015			



SDG: 120516-77  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 184029  
 Superseded Report:

Results Legend		Customer Sample R	BH303(E19)	BH310B			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.		8.00	11.00			
S	Deviating sample.		Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		14/05/2012	11/05/2012			
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.		15/05/2012	15/05/2012			
*	Subcontracted test.		120516-77	120516-77			
**	% 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		5590420	5590402			
(F)	Trigger breach confirmed						
Component	LOD/Units		Method				
PCB congener 180 NRA leach	<0.015 µg/l	TM197		<0.015			
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197		<0.105			
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10			
Sulphate, Total	<48 mg/kg	TM221	4310	4440			
Total sulphur	<0.0016 %	TM221	0.144	0.148			
Boron, water soluble	<1 mg/kg	TM222	7.75	9.59			
Calcium	<21 mg/kg	TM224	98100	66800			
Magnesium	<8 mg/kg	TM224	5740	7380			
Cyanide, Total NRA leach	<0.05 mg/l	TM227		<0.05			
Cyanide, Free NRA leach	<0.05 mg/l	TM227		<0.05			
Cyanide, Complex NRA leach	<0.05 mg/l	TM227		<0.05			
Thiocyanate NRA leach	<0.05 mg/l	TM227		<0.05			
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228		12.7			
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228		296			
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228		23.3			
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228		21.8			
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228		0.0264			
TPH / Oil & Greases NRA leach	<1 mg/l	TM235		<1			
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241		<0.03			
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.14	0.306			
Chloride (soluble)	<5 mg/kg	TM243	6450	7190			
pH NRA leach	<1 pH Units	TM256		8.32			
Phenol NRA leach	<0.002 mg/l	TM259		<0.002			
Cresols NRA leach	<0.006 mg/l	TM259		<0.006			
Xylenols NRA leach	<0.008 mg/l	TM259		<0.008			
2,3,5-Trimethylphenol NRA leach	<0.003 mg/l	TM259		<0.003			
2-Isopropylphenol NRA leach	<0.006 mg/l	TM259		<0.006			
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259		<0.016			
Phenols, Total Detected 5 speciated NRA leach	<0.025 mg/l	TM259		<0.025			
Sulphur, Free NRA leach	<0.05 mg/l	TM294		<0.05			



SDG: 120516-77
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number:
Report Number: 184029
Superseded Report:

PAH Spec MS - Aqueous (W)

Table with columns: Component, LOD/Units, Method, and results for various PAHs like Naphthalene, Acenaphthene, Fluoranthene, etc.



SDG: 120516-77  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 184029  
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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH303(E19) 8.00 SOLID 14/05/2012 00:00:00  120516-77 5590420 TM048	21/05/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310B 11.00 SOLID 11/05/2012 00:00:00  120516-77 5590402 TM048	21/05/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 120516-77  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 184029  
Superseded Report:

Notification of NDPs (No determination possible)

Date Received : 16/05/2012 13:59:49

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5590402	BH310B	11.00	Total Dissolved Solids (Grav)	Unsuitable for analysis due to potential Asbestos



## CERTIFICATE OF ANALYSIS

**SDG:** 120516-77  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 184029  
**Superseded Report:**

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM021	Method 2540C, AWWA/APHA, 20th Ed., 1999	Determination of total dissolved solids in waters by gravimetry.		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		



## CERTIFICATE OF ANALYSIS

**SDG:** 120516-77      **Location:** Haulbowline      **Order Number:**  
**Job:** D\_PRIORGEOT\_CRK-44      **Customer:** Priority Geotechnical Ltd      **Report Number:** 184029  
**Client Reference:** P12030      **Attention:** Colette Kelly      **Superseded Report:**

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		
TM243		Mixed Anions In Soils By Kone		
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		
TM294		Determination of Free Sulphur in liquids by HPLC		

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





**SDG:** 120516-77  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 184029  
**Superseded Report:**

## Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	5590420	5590402
	BH303(E19)	BH310B
AGS Ref.		
Depth	8.00	11.00
Type	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	23-May-2012	23-May-2012
Alkalinity Filtered as CaCO3		22-May-2012
Ammoniacal Nitrogen		23-May-2012
Ammonium Soil by Titration	22-May-2012	22-May-2012
Anions by Kone (soil)	23-May-2012	23-May-2012
Anions by Kone (w)		23-May-2012
Asbestos Identification (Soil)	21-May-2012	21-May-2012
Boron Water Soluble	22-May-2012	22-May-2012
COD Unfiltered		23-May-2012
Conductivity (at 20 deg.C)		23-May-2012
Cyanide Comp/Free/Total/Thiocyanate	22-May-2012	23-May-2012
Dissolved Metals by ICP-MS		23-May-2012
Dissolved Organic/Inorganic Carbon		23-May-2012
Easily Liberated Sulphide	22-May-2012	22-May-2012
Fluoride		22-May-2012
Free Sulphur		23-May-2012
Hexavalent Chromium (s)	22-May-2012	22-May-2012
Hexavalent Chromium (w)		23-May-2012
Mercury Dissolved		23-May-2012
Metals by iCap-OES (Soil)	23-May-2012	22-May-2012
Metals by iCap-OES Dissolved (W)		23-May-2012
Nitrite by Kone (w)		23-May-2012
NRA Leachate		07-Jun-2012
PAH Spec MS - Aqueous (W)		23-May-2012
PAH Value of soil	22-May-2012	23-May-2012
PCB Congeners - Aqueous (W)		23-May-2012
pH	22-May-2012	21-May-2012
pH Value		22-May-2012
Phenols by HPLC (S)	23-May-2012	23-May-2012
Phenols by HPLC (W)		23-May-2012
Sample description	19-May-2012	21-May-2012
Sulphide		22-May-2012
Toluene extractable matter*	01-Jun-2012	01-Jun-2012
Total Dissolved Solids on Leachates		22-May-2012
Total Sulphate	23-May-2012	23-May-2012
Total Sulphur	22-May-2012	22-May-2012
TPH by IR Oils and Greases		13-Jun-2012



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

# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Combrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

**Report Number:** 280021-2

**Date of Report:** 31-May-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120516-77

**Customer Purchase Order:** 202426 (REQ No.)

**Date Job Received at SAL:** 22-May-2012

**Date Analysis Started:** 23-May-2012

**Date Analysis Completed:** 25-May-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Caroline Haworth  
Assistant Customer Service  
Manager

Issued by :  
Caroline Haworth  
Assistant Customer Service  
Manager

<b>SAL Reference:</b> 280021 <b>Customer Reference:</b> 120516-77						
Soil		Analysed as Soil				
Miscellaneous						
		<b>SAL Reference</b>		280021 001	280021 002	
		<b>Customer Sample Reference</b>		5616206	5616226	
		<b>Date Sampled</b>		14-MAY-2012	11-MAY-2012	
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>		
Toluene extractable matter	T2	AR	500	mg/kg	<500	<500

### Index to symbols used in 280021-2

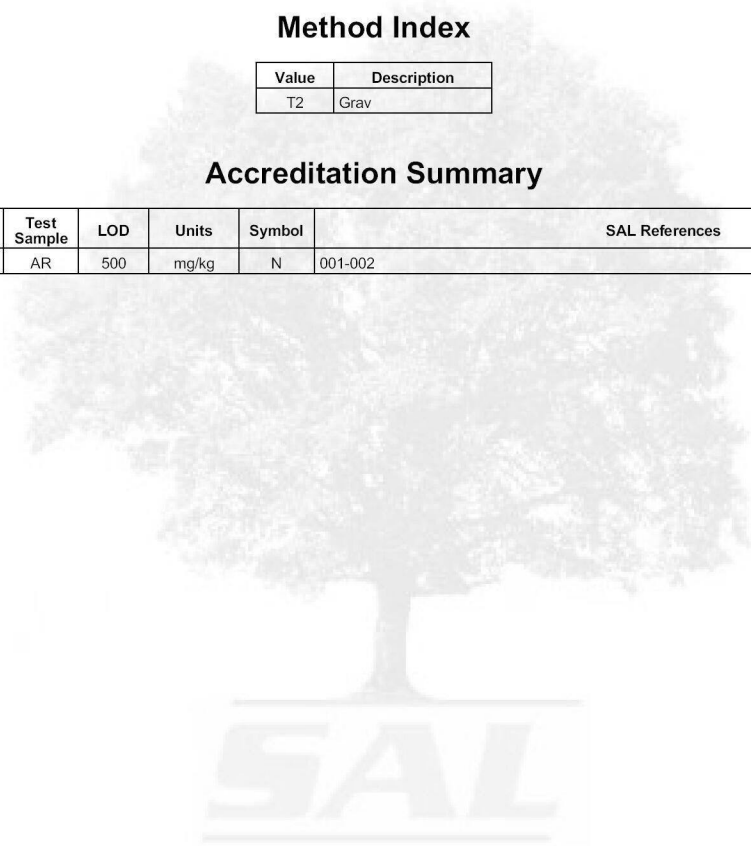
Value	Description
AR	As Received
N	Analysis is not UKAS accredited

### Method Index

Value	Description
T2	Grav

### Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Toluene extractable matter	T2	AR	500	mg/kg	N	001-002



**SDG:** 120516-77  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 184029  
**Superseded Report:**

## Appendix

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

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

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 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.

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GC-MS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GC-MS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GC-MS
EPH (DFO)	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 CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC-FID
PCBAROCLOR 1254/PCB CON	D&C	HEXANE ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GC-MS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC-FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY			
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOPOPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC MS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	R
MINERAL OIL BY R	TCE	STIRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DIRECT INJECTION	GC FD

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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 Anorthophyllite	-
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.



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

**Attention:** Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 06 September 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120520-1  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 193372

**This report has been revised and directly supersedes 192303 in its entirety.**

We received 31 samples on Friday May 18, 2012 and 12 of these samples were scheduled for analysis which was completed on Thursday September 06, 2012. 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:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5611296	BH301A	E3	0.20 - 0.30	15/05/2012
5611297	BH301A	E6	0.60 - 1.00	15/05/2012
5611298	BH301A	E7	0.60 - 1.00	15/05/2012
5611305	BH301A		11.50	17/05/2012
5611307	BH301A		14.00	17/05/2012
5611299	BH301A	E10	2.00	15/05/2012
5611300	BH301A	E11	2.00	15/05/2012
5611301	BH301A	E14	3.00	15/05/2012
5611302	BH301A	E17	4.00	15/05/2012
5611303	BH301A	E18	4.00	15/05/2012
5611304	BH301A	E19	5.00	15/05/2012
5611295	BH301A		6.00	16/05/2012
5611306	BH301A		7.50	16/05/2012
5611308	BH301A		9.00	16/05/2012
5611281	BH302		0.20	17/05/2012
5611282	BH302		1.00	17/05/2012
5611283	BH302		2.00	17/05/2012
5611284	BH302	E8	2.00	17/05/2012
5611285	BH302		3.00	17/05/2012
5611286	BH302	E14	4.00	17/05/2012
5611287	BH302	E15	4.00	17/05/2012
5611288	BH302		5.00	17/05/2012
5611294	BH303	E21	10.00	15/05/2012
5611289	BH313		1.00	16/05/2012
5611290	BH313		2.00	16/05/2012
5611291	BH313	E9	3.00	16/05/2012
5611292	BH313	E10	3.00	16/05/2012
5611293	BH313		4.50	16/05/2012
5611309	BH313	E15	5.00	17/05/2012
5611310	BH313	E14	5.00	17/05/2012
5611311	BH313		6.00	17/05/2012

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



SDG: 120520-1  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 193372  
 Superseded Report: 192303

SOLID Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
	<b>X</b> Test	5611296	BH301A	E3	0.20 - 0.30	250g Amber Jar (AL)
	<b>N</b> No Determination Possible	5611297	BH301A	E6	0.60 - 1.00	400g Tub (ALEE214) 250g Amber Jar (AL)
		5611302	BH301A	E17	4.00	250g Amber Jar (AL) 60g VOC (ALEE15) 400g Tub (ALEE214)
		5611306	BH301A	7.50	60g VOC (ALEE15) 400g Tub (ALEE214)	
	5611307	BH301A	14.00	250g Amber Jar (AL) 400g Tub (ALEE214)		
	5611308	BH301A	9.00	250g Amber Jar (AL) 400g Tub (ALEE214)		
	5611284	BH302	2.00	250g Amber Jar (AL) 400g Tub (ALEE214)		
	5611288	BH302	5.00	250g Amber Jar (AL) 400g Tub (ALEE214)		
	5611294	BH303	10.00	250g Amber Jar (AL) 400g Tub (ALEE214)		
	5611290	BH313	2.00	250g Amber Jar (AL) 400g Tub (ALEE214)		
	5611309	BH313	5.00	250g Amber Jar (AL) 400g Tub (ALEE214)		
	5611310	BH313	E14	5.00	400g Tub (ALEE214) 250g Amber Jar (AL)	
Alcohols and Acetates in Soils	All	NDPs: 0 Tests: 2				
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10				
Alkalinity as CaCO3	All	NDPs: 0 Tests: 1				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 1				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 10				
Anions by Kone (soil)	All	NDPs: 0 Tests: 10				
Anions by Kone (w)	All	NDPs: 0 Tests: 1				
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 11				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2				
Boron Water Soluble	All	NDPs: 0 Tests: 10				
COD Unfiltered	All	NDPs: 0 Tests: 1				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 1				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 11				
Dioxins/Furans (S)*	All	NDPs: 1 Tests: 1				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1				



SDG: 120520-1  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 193372  
 Superseded Report: 192303

SOLID	Lab Sample No(s)									
	5611296	5611297	5611302	5611306	5611307	5611308	5611284	5611288	5611294	5611290
Results Legend	Customer Sample Reference									
Test No Determination Possible	AGS Reference									
	E3	E6	E17				E8		E21	E14
	Depth (m)									
	0.20 - 0.30	0.60 - 1.00	4.00	7.50	14.00	9.00	2.00	5.00	10.00	5.00
	Container									
	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	60g VOC (ALEE15)	400g Tub (ALEE14)	250g Amber Jar (AL)	400g Tub (ALEE14)	250g Amber Jar (AL)	400g Tub (ALEE14)	400g Tub (ALEE14)
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 1						X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 10	X	X	X	X	X		X	X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 2		X	X					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 2		X	X					
Fluoride	All	NDPs: 0 Tests: 1						X		
Free Sulphur	All	NDPs: 0 Tests: 1						X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2			X	X				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1						X		
Mercury Dissolved	All	NDPs: 0 Tests: 1						X		
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X
	Antimony	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X
	Arsenic	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X
	Barium	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X
	Beryllium	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X





SDG: 120520-1  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 193372  
 Superseded Report: 192303

SOLID		Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container															
Results Legend		5611296	BH301A	E3	0.20 - 0.30	250g Amber Jar (AL)															
<b>X</b> Test <b>N</b> No Determination Possible		5611297	BH301A	E6	0.60 - 1.00	400g Tub (ALEE214) 250g Amber Jar (AL)															
		5611302	BH301A	E17	4.00	250g Amber Jar (AL) 60g VOC (ALEE15) 400g Tub (ALEE214)															
		5611306	BH301A		7.50	400g Tub (ALEE214) 60g VOC (ALEE15) 250g Amber Jar (AL)															
		5611307	BH301A		14.00	250g Amber Jar (AL) 400g Tub (ALEE214)															
		5611308	BH301A		9.00	250g Amber Jar (AL) 400g Tub (ALEE214)															
		5611284	BH302	E8	2.00	250g Amber Jar (AL) 400g Tub (ALEE214)															
		5611288	BH302		5.00	250g Amber Jar (AL) 400g Tub (ALEE214)															
		5611294	BH303	E21	10.00	250g Amber Jar (AL) 400g Tub (ALEE214)															
		5611290	BH313		2.00	250g Amber Jar (AL) 400g Tub (ALEE214)															
		5611309	BH313	E15	5.00	250g Amber Jar (AL) 400g Tub (ALEE214)															
		5611310	BH313	E14	5.00	400g Tub (ALEE214) 250g Amber Jar (AL)															
Metals by iCap-OES (Soil)	Cadmium	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Chromium	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Copper	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Lead	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Manganese	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Mercury	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Nickel	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Selenium	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Vanadium	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Zinc	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 1																		X	
Mineral Oil	All	NDPs: 0 Tests: 2																		X	X
NRA Leachate	All	NDPs: 0 Tests: 1																			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1																			X
PAH Value of soil	All	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	



SDG: 120520-1  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 193372  
 Superseded Report: 192303

SOLID Results Legend  Test  No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5611296	BH301A	E3	0.20 - 0.30	250g Amber Jar (AL)
		5611297	BH301A	E6	0.60 - 1.00	400g Tub (ALE214) 250g Amber Jar (AL)
		5611302	BH301A	E17	4.00	250g Amber Jar (AL) 60g VOC (ALE215) 400g Tub (ALE214)
		5611306	BH301A	7.50	4.00	60g VOC (ALE215) 400g Tub (ALE214)
	5611307	BH301A	14.00	9.00	250g Amber Jar (AL) 400g Tub (ALE214)	
	5611308	BH301A	9.00	2.00	250g Amber Jar (AL) 400g Tub (ALE214)	
	5611284	BH302	E8	5.00	250g Amber Jar (AL) 400g Tub (ALE214)	
	5611288	BH302	E21	10.00	250g Amber Jar (AL) 400g Tub (ALE214)	
	5611294	BH303	E15	5.00	250g Amber Jar (AL) 400g Tub (ALE214)	
	5611290	BH313	E14	2.00	250g Amber Jar (AL) 400g Tub (ALE214)	
	5611310	BH313	E15	5.00	400g Tub (ALE214) 250g Amber Jar (AL)	
	5611309	BH313	E15	5.00	400g Tub (ALE214) 250g Amber Jar (AL)	
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 1				
PCBs by GCMS	All	NDPs: 0 Tests: 2				
pH	All	NDPs: 0 Tests: 10				
pH Value	All	NDPs: 0 Tests: 1				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 10				
Phenols by HPLC (W)	All	NDPs: 0 Tests: 1				
Sample description	All	NDPs: 0 Tests: 11				
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 2				
Sulphide	All	NDPs: 0 Tests: 1				
Toluene extractable matter*	All	NDPs: 7 Tests: 3				
Total Dissolved Solids (Grav)	All	NDPs: 0 Tests: 1				
Total Organic Carbon	All	NDPs: 7 Tests: 3				
Total Organic Carbon (Asb)	All	NDPs: 0 Tests: 7				
Total Sulphate	All	NDPs: 0 Tests: 10				
Total Sulphur	All	NDPs: 7 Tests: 3				



## CERTIFICATE OF ANALYSIS

SDG: 120520-1  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 193372  
 Superseded Report: 192303

SOLID Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container			
	5611296	5611297	5611302	5611306	5611307	5611308	5611284	5611288	5611294	5611290	5611310	5611309
<b>X</b> Test <b>N</b> No Determination Possible	BH301A		BH301A	BH301A	BH301A	BH301A	BH302	BH302	BH303	BH313	BH313	BH313
	E3		E17	E7.50	E14.00	E9.00	E8	E5.00	E21	E15	E14	E15
	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)	250g Amber Jar (AL)
TPH by IR Oils and Greases	All	NDPs: 0 Tests: 1										
TPH CWG GC (S)	All	NDPs: 0 Tests: 2										
VOC MS (S)	All	NDPs: 0 Tests: 2										



**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

## 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
5611284	BH302	2.00	Dark Brown	Sandy Loam	0.063 - 0.1 mm	Vegetation	Stones
5611288	BH302	5.00	Dark Brown	Gravel	2 - 10 mm	Metal	Fibres
5611294	BH303	10.00	Grey	Clay	<0.063 mm	Stones	N/A
5611290	BH313	2.00	Dark Brown	Sand	0.1 - 2 mm	Stones	Vegetation
5611309	BH313	5.00	Grey	Gravel	2 - 10 mm	Stones	N/A
5611296	BH301A	0.20 - 0.30	Dark Brown	Sand	0.1 - 2 mm	Crushed Brick	Stones
5611297	BH301A	0.60 - 1.00	Black	Sand	0.063 - 0.1 mm	Stones	N/A
5611302	BH301A	4.00	Dark Brown	Loamy Sand	0.063 - 0.1 mm	Stones	Fibres
5611306	BH301A	7.50	Grey	Silt Loam	<0.063 mm	N/A	N/A
5611307	BH301A	14.00	Grey	Silt Loam	<0.063 mm	N/A	N/A
5611308	BH301A	9.00	Grey	Silty Clay	0.063 - 0.1 mm	Stones	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 occurring 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.



**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

Results Legend			Customer Sample R					
#	ISO17025 accredited.		BH302	BH302	BH303	BH313	BH313	BH301A
M	mCERTS accredited.							
S	Deviating sample.							
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							
		Depth (m)	2.00	5.00	10.00	2.00	5.00	0.20 - 0.30
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	17/05/2012	17/05/2012	15/05/2012	16/05/2012	17/05/2012	15/05/2012
		Sampled Time						
		Date Received	18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012
		SDG Ref	120520-1	120520-1	120520-1	120520-1	120520-1	120520-1
		Lab Sample No.(s)	5611284	5611288	5611294	5611290	5611309	5611296
		AGS Reference	E8		E21		E15	E3
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	16	4	15	9.5	11	4.4
Tolulene Extractable Matter	<500 mg/kg	SUB			<500			
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15	28.3	<15	<15	<15
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Sulphur, Total	<0.02 %	TM132			0.725			
Fraction Organic Carbon (FOC)	<0.002 -	TM132			0.00945			
pH	1 pH Units	TM133	9.42	11.2	8.79	11.9	11.4	12
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6	2.85	<0.6	3.55
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Thiocyanate	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
PCB congener 28	<3 µg/kg	TM168						15.5
PCB congener 52	<3 µg/kg	TM168						13
PCB congener 101	<3 µg/kg	TM168						20.2
PCB congener 118	<3 µg/kg	TM168						11.1
PCB congener 138	<3 µg/kg	TM168						21.4
PCB congener 153	<3 µg/kg	TM168						19.5
PCB congener 180	<3 µg/kg	TM168						13.2
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168						114
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	32.1	<15	<15	<15
Aluminium	<11 mg/kg	TM181	5960	18500	8560	12400	27200	21100
Antimony	<0.6 mg/kg	TM181	27.3	80.5	<6	48.3	82.8	87.2
Arsenic	<0.6 mg/kg	TM181	39.4	13.1	7.72	36.1	6.23	25.6
Barium	<0.6 mg/kg	TM181	84.2	660	9.59	483	804	769
Beryllium	<0.01 mg/kg	TM181	0.924	<0.1	<0.1	0.521	<0.1	<0.1
Cadmium	<0.02 mg/kg	TM181	4.84	4.59	<0.2	8.42	0.731	5.58
Chromium	<0.9 mg/kg	TM181	462	3290	24.4	1400	3730	3530
Copper	<1.4 mg/kg	TM181	1110	604	<14	453	329	770



**CERTIFICATE OF ANALYSIS**

**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

Results Legend			Customer Sample R		BH302	BH302	BH303	BH313	BH313	BH301A
#	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>							
M	mCERTS accredited.			2.00	5.00	10.00	2.00	5.00	0.20 - 0.30	
S	Deviating sample.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
aq	Aqueous / settled sample.			17/05/2012	17/05/2012	15/05/2012	16/05/2012	17/05/2012	15/05/2012	
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			18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012	
(F)	Trigger breach confirmed			120520-1	120520-1	120520-1	120520-1	120520-1	120520-1	
				5611284	5611288	5611294	5611290	5611309	5611296	
			E8		E21		E15	E3		
Component	LOD/Units	Method								
Lead	<0.7 mg/kg	TM181	568	469	15.2	941	136	660	M	M
Manganese	<0.13 mg/kg	TM181	3050	35900	283	15600	4660	38400	M	M
Mercury	<0.14 mg/kg	TM181	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	M	M
Nickel	<0.2 mg/kg	TM181	381	198	21.2	150	76.5	232	M	M
Selenium	<1 mg/kg	TM181	<10	13.6	<10	12	29.8	13.5	#	#
Vanadium	<0.2 mg/kg	TM181	24.4	316	22.9	189	451	315	#	#
Zinc	<1.9 mg/kg	TM181	2150	2080	63.5	3030	742	2470	M	M
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	16.7	<10	<10	13.3	<10	<10		
Sulphate, Total	<48 mg/kg	TM221	622	3600	2480	4960	2700	2300	M	M
Total sulphur	<0.0016 %	TM221	0.0207	0.12		0.165	0.0899	0.0766		
Boron, water soluble	<1 mg/kg	TM222	1.62	5.7	6.35	6.78	3.39	3.75	M	M
Calcium	<21 mg/kg	TM224	45400	167000	57400	99000	249000	165000		
Magnesium	<8 mg/kg	TM224	3580	29900	6380	30400	26400	30200		
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.0365	0.197	0.206	0.129	<0.008	0.0497	M	M
Chloride (soluble)	<5 mg/kg	TM243	28.7	1280	6270	787	1740	59.2	M	M
Fraction Organic Carbon (FOC)	<0.1 -	TM321	<0.1	<0.1		<0.1	<0.1	<0.1	#	#



## CERTIFICATE OF ANALYSIS

**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

Results Legend			Customer Sample R		BH301A	BH301A	BH301A	BH301A	BH301A
#	ISO17025 accredited.								
M	mCERTS accredited.								
S	Deviating sample.								
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								
			<b>Depth (m)</b>	0.60 - 1.00	14.00	4.00	7.50	9.00	
			<b>Sample Type</b>	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
			<b>Date Sampled</b>	15/05/2012	17/05/2012	15/05/2012	16/05/2012	16/05/2012	
			<b>Sampled Time</b>						
			<b>Date Received</b>	18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012	
			<b>SDG Ref</b>	120520-1	120520-1	120520-1	120520-1	120520-1	
			<b>Lab Sample No.(s)</b>	5611297	5611307	5611302	5611306	5611308	
			<b>AGS Reference</b>	E6		E17			
Component	LOD/Units	Method							
Moisture content ratio	%	PM024	6.6	26	12	23			
Tolulene Extractable Matter	<500 mg/kg	SUB	<500	<500					
Dissolved solids, Total (gravimetric) NRA leach	<10 mg/l	TM021						1140	
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	41.1	<15	32.1			
Alkalinity, Carbonate as CaCO3 NRA leach	<2 mg/l	TM043						10	
Mineral oil >C10-C40	<1 mg/kg	TM061			752	20.8	#	#	
Surrogate Value	-	TM061			35.4	40.5			
Mineral Oil Surrogate % recovery**	%	TM061			70.7	81			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	M	M	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	M	M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	M	M	
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	M	M	
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	M	M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035	<0.035	M	M	
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06	<0.06	<0.06	M	M	
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090						6.58	
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099						2.14	
Sulphide NRA leach	<0.01 mg/l	TM101						<0.01	
Fluoride NRA leach	<0.5 mg/l	TM104						<0.5	
COD, unfiltered NRA leach	<7 mg/l	TM107						17.2	
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120						1.88	
Sulphur, Total	<0.02 %	TM132	0.0413	0.927			#	#	
Fraction Organic Carbon (FOC)	<0.002 -	TM132	<0.002	0.00663			#	#	
pH	1 pH Units	TM133	9.66	7.94	9.38	7.93	M	M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6	<0.6	#	#	
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152						22.2	
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152						1.22	
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152						2.8	
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152						2.95	
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152						438	
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152						<0.1	
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152						1.16	
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152						0.07	
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152						0.898	
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152						0.054	



CERTIFICATE OF ANALYSIS

Validated

<b>SDG:</b> 120520-1	<b>Location:</b> Haulbowline	<b>Order Number:</b> 4559
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 193372
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b> 192303

Results Legend			Customer Sample R		BH301A	BH301A	BH301A	BH301A	BH301A
#	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>	0.60 - 1.00	14.00	4.00	7.50	9.00	
M	mCERTS accredited.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
§	Deviating sample.			15/05/2012	17/05/2012	15/05/2012	16/05/2012	16/05/2012	
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			18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012	
(F)	Trigger breach confirmed			120520-1	120520-1	120520-1	120520-1	120520-1	
				5611297	5611307	5611302	5611306	5611308	
			E6		E17				
<b>Component</b>	<b>LOD/Units</b>	<b>Method</b>							
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152						14.3	
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152						49.9	
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152						0.615	
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152						80.2	
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152						3.61	
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152						<0.96	
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152						<0.36	
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152						35.2	
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152						205	
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1	<1			
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	<1			
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1	<1			
Thiocyanate	<1 mg/kg	TM153	<1	<1	<1	<1			
PCB congener 28	<3 µg/kg	TM168	<3						
PCB congener 52	<3 µg/kg	TM168	<3						
PCB congener 101	<3 µg/kg	TM168	<3						
PCB congener 118	<3 µg/kg	TM168	<3						
PCB congener 138	<3 µg/kg	TM168	<3						
PCB congener 153	<3 µg/kg	TM168	<3						
PCB congener 180	<3 µg/kg	TM168	<3						
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21						
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	30.2	143	19.9			
Aluminium	<11 mg/kg	TM181	737	9880	7420	8790			
Antimony	<0.6 mg/kg	TM181	44.1	0.917	42.7	1.05			
Arsenic	<0.6 mg/kg	TM181	85.5	7.91	37	5.56			
Barium	<0.6 mg/kg	TM181	8.06	9.08	270	12.7			
Beryllium	<0.01 mg/kg	TM181	0.814	0.487	0.244	0.56			
Cadmium	<0.02 mg/kg	TM181	<0.2	0.139	6.64	0.29			
Chromium	<0.9 mg/kg	TM181	857	19.5	1240	25.6			
Copper	<1.4 mg/kg	TM181	2170	8.49	802	11.8			
Lead	<0.7 mg/kg	TM181	24.2	12.4	814	21.5			
Manganese	<0.13 mg/kg	TM181	5250	329	13100	293			
Mercury	<0.14 mg/kg	TM181	<1.4	<0.14	<0.14	<0.14			
Nickel	<0.2 mg/kg	TM181	707	20.8	280	20.4			
Selenium	<1 mg/kg	TM181	<10	<1	<10	<1			





**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

Results Legend			Customer Sample R					
#	ISO17025 accredited.		BH301A	BH301A	BH301A	BH301A	BH301A	
M	mCERTS accredited.							
S	Deviating sample.							
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							
			Depth (m)	0.60 - 1.00	14.00	4.00	7.50	9.00
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	15/05/2012	17/05/2012	15/05/2012	16/05/2012	16/05/2012
			Sampled Time					
			Date Received	18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012
			SDG Ref	120520-1	120520-1	120520-1	120520-1	120520-1
			Lab Sample No.(s)	5611297	5611307	5611302	5611306	5611308
			AGS Reference	E6		E17		
Component	LOD/Units	Method						
Vanadium	<0.2 mg/kg	TM181	3.07 #	21.3 #	108 #	23.4 #		
Zinc	<1.9 mg/kg	TM181	96.3 M	63.4 M	3610 M	78.7 M		
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183					<0.01	
Sulphate NRA leach	<2 mg/l	TM184					142	
Chloride NRA leach	<2 mg/l	TM184					531	
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184					<0.3	
PCB congener 28 NRA leach	<0.015 µg/l	TM197					<0.015	
PCB congener 52 NRA leach	<0.015 µg/l	TM197					<0.015	
PCB congener 101 NRA leach	<0.015 µg/l	TM197					<0.015	
PCB congener 118 NRA leach	<0.015 µg/l	TM197					<0.015	
PCB congener 138 NRA leach	<0.015 µg/l	TM197					<0.015	
PCB congener 153 NRA leach	<0.015 µg/l	TM197					<0.015	
PCB congener 180 NRA leach	<0.015 µg/l	TM197					<0.015	
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197					<0.105	
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	21.5	<10		
Sulphate, Total	<48 mg/kg	TM221	212 M	2930 M	4470 M	5790 M		
Total sulphur	<0.0016 %	TM221			0.149	0.193		
Boron, water soluble	<1 mg/kg	TM222	<1 M	5.48 M	8.38 M	7.17 M		
Calcium	<21 mg/kg	TM224	1550	47400	61100	63500		
Magnesium	<8 mg/kg	TM224	485	7220	17700	6320		
Cyanide, Total NRA leach	<0.05 mg/l	TM227					<0.05	
Cyanide, Free NRA leach	<0.05 mg/l	TM227					<0.05	
Cyanide, Complex NRA leach	<0.05 mg/l	TM227					<0.05	
Thiocyanate NRA leach	<0.05 mg/l	TM227					<0.05	
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228					24	
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228					355	
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228					28.2	
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228					27	
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228					0.028	
Acetone	<50 µg/kg	TM232			73.8	93.3		
2-Butanone	<100 µg/kg	TM232			<100	<100		
TPH / Oil & Greases NRA leach	<1 mg/l	TM235					<1	
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241					<0.03	
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.0235 M	0.604 M	0.615 M	0.381 M		
Chloride (soluble)	<5 mg/kg	TM243	14.2 M	6710 M	3160 M	7710 M		



CERTIFICATE OF ANALYSIS

SDG: 120520-1
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 193372
Superseded Report: 192303

Table with columns for Results Legend, Customer Sample R, and multiple BH301A sample columns. Rows include Component, LOD/Units, Method, and various chemical analysis results like pH NRA leach, Phenols, and Sulphur.





CERTIFICATE OF ANALYSIS

<b>SDG:</b> 120520-1	<b>Location:</b> Haulbowline	<b>Order Number:</b> 4559
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 193372
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b> 192303

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample R	BH301A					
#	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>	9.00					
M	mCERTS accredited.		Soil/Solid	16/05/2012				
S	Deviating sample.							
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			18/05/2012				
(F)	Trigger breach confirmed			120520-1				
				5611308				
<b>Component</b>	<b>LOD/Units</b>		<b>Method</b>					
Naphthalene (aq) NRA leach	<0.1 µg/l	TM178	0.199					
Acenaphthene (aq) NRA leach	<0.015 µg/l	TM178	<0.015					
Acenaphthylene (aq) NRA leach	<0.011 µg/l	TM178	<0.011					
Fluoranthene (aq) NRA leach	<0.017 µg/l	TM178	0.0302					
Anthracene (aq) NRA leach	<0.015 µg/l	TM178	<0.015					
Phenanthrene (aq) NRA leach	<0.022 µg/l	TM178	<0.022					
Fluorene (aq) NRA leach	<0.014 µg/l	TM178	0.0239					
Chrysene (aq) NRA leach	<0.013 µg/l	TM178	0.015					
Pyrene (aq) NRA leach	<0.015 µg/l	TM178	0.0262					
Benzo(a)anthracene (aq) NRA leach	<0.017 µg/l	TM178	<0.017					
Benzo(b)fluoranthene (aq) NRA leach	<0.023 µg/l	TM178	<0.023					
Benzo(k)fluoranthene (aq) NRA leach	<0.027 µg/l	TM178	<0.027					
Benzo(a)pyrene (aq) NRA leach	<0.009 µg/l	TM178	0.0102					
Dibenzo(a,h)anthracene (aq) NRA leach	<0.016 µg/l	TM178	<0.016					
Benzo(g,h,i)perylene (aq) NRA leach	<0.016 µg/l	TM178	<0.016					
Indeno(1,2,3-cd)pyrene (aq) NRA leach	<0.014 µg/l	TM178	<0.014					
PAH, Total Detected USEPA 16 (aq) NRA leach	<0.247 µg/l	TM178	0.304					



## CERTIFICATE OF ANALYSIS

**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

## Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH301A	BH301A			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.		4.00	7.50			
S	Deviating sample.		Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		15/05/2012	16/05/2012			
diss.filt	Dissolved / filtered sample.		.	.			
tot.unfilt	Total / unfiltered sample.		18/05/2012	18/05/2012			
*	Subcontracted test.		120520-1	120520-1			
**	% 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		5611302	5611306			
(F)	Trigger breach confirmed		E17				
Component	LOD/Units		Method				
Phenol	<100 µg/kg	TM157	<100	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100			
Nitrobenzene	<100 µg/kg	TM157	<100	<100			
Isophorone	<100 µg/kg	TM157	<100	<100			
Hexachloroethane	<100 µg/kg	TM157	<100	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	250	<100			
Dibenzofuran	<100 µg/kg	TM157	<100	<100			
Carbazole	<100 µg/kg	TM157	<100	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	1920	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100			
Azobenzene	<100 µg/kg	TM157	<100	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100	<100			
4-Methylphenol	<100 µg/kg	TM157	<100	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100	<100			
2-Methylphenol	<100 µg/kg	TM157	<100	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100	<100			
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100			
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100			



### CERTIFICATE OF ANALYSIS

**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

#### Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH301A	BH301A			
#	ISO17025 accredited.						
M	mCERTS accredited.						
S	Deviating sample.						
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						
		<b>Depth (m)</b>	4.00	7.50			
		<b>Sample Type</b>	Soil/Solid	Soil/Solid			
		<b>Date Sampled</b>	15/05/2012	16/05/2012			
		<b>Sampled Time</b>					
		<b>Date Received</b>	18/05/2012	18/05/2012			
		<b>SDG Ref</b>	120520-1	120520-1			
		<b>Lab Sample No.(s)</b>	5611302	5611306			
		<b>AGS Reference</b>	E17				
Component	LOD/Units	Method					
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100			
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100			
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100			
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100			
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100			
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100			
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100			
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100			
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100			
Acenaphthylene	<100 µg/kg	TM157	<100	<100			
Acenaphthene	<100 µg/kg	TM157	<100	<100			
Anthracene	<100 µg/kg	TM157	<100	<100			
Benzo(a)anthracene	<100 µg/kg	TM157	136	<100			
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100	<100			
Benzo(k)fluoranthene	<100 µg/kg	TM157	119	<100			
Benzo(a)pyrene	<100 µg/kg	TM157	137	<100			
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100	<100			
Chrysene	<100 µg/kg	TM157	171	<100			
Fluoranthene	<100 µg/kg	TM157	400	<100			
Fluorene	<100 µg/kg	TM157	<100	<100			
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100	<100			
Phenanthrene	<100 µg/kg	TM157	338	<100			
Pyrene	<100 µg/kg	TM157	354	<100			
Naphthalene	<100 µg/kg	TM157	<100	<100			
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100	<100			
TIC report	-	TM157	See Attached	No TICs identified			



## CERTIFICATE OF ANALYSIS

**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

## TPH CWG (S)

Results Legend		Customer Sample R	BH301A	BH301A				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		4.00	7.50				
S	Deviating sample.		Soil/Solid	Soil/Solid				
aq	Aqueous / settled sample.		15/05/2012	16/05/2012				
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.		18/05/2012	18/05/2012				
**	% 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		120520-1	120520-1				
(F)	Trigger breach confirmed		5611302	5611306				
			E17					
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	99	84				
GRO >C5-C12	<44 µg/kg	TM089	206	533				
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	#	#		
Benzene	<10 µg/kg	TM089	<10	<10	M	M		
Toluene	<2 µg/kg	TM089	<2	2.6	M	M		
Ethylbenzene	<3 µg/kg	TM089	<3	<3	M	M		
m,p-Xylene	<6 µg/kg	TM089	<6	<6	M	M		
o-Xylene	<3 µg/kg	TM089	<3	<3	M	M		
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9				
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24				
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	15.6				
Aliphatics >C6-C8	<10 µg/kg	TM089	11.3	32.5				
Aliphatics >C8-C10	<10 µg/kg	TM089	46.3	116				
Aliphatics >C10-C12	<10 µg/kg	TM089	63.3	170				
Aliphatics >C12-C16	<100 µg/kg	TM173	10100	<100				
Aliphatics >C16-C21	<100 µg/kg	TM173	64200	<100				
Aliphatics >C21-C35	<100 µg/kg	TM173	644000	<100				
Aliphatics >C35-C44	<100 µg/kg	TM173	242000	<100				
Total Aliphatics >C12-C44	<100 µg/kg	TM173	961000	<100				
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10				
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089	37.3	84.5				
Aromatics >EC10-EC12	<10 µg/kg	TM089	41.8	113				
Aromatics >EC12-EC16	<100 µg/kg	TM173	7470	2550				
Aromatics >EC16-EC21	<100 µg/kg	TM173	35400	5180				
Aromatics >EC21-EC35	<100 µg/kg	TM173	280000	23700				
Aromatics >EC35-EC44	<100 µg/kg	TM173	184000	8170				
Aromatics >EC40-EC44	<100 µg/kg	TM173	80800	2520				
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	507000	39700				
Total Aliphatics >C5-35	<100 µg/kg	TM173	719000	333				
Total Aromatics >C5-35	<100 µg/kg	TM173	323000	31700				
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	1040000	32000				
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	1470000	40200				



## CERTIFICATE OF ANALYSIS

**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

## VOC MS (S)

Results Legend		Customer Sample R	BH301A	BH301A				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		4.00	7.50				
S	Deviating sample.		Soil/Solid	Soil/Solid				
aq	Aqueous / settled sample.		15/05/2012	16/05/2012				
diss.filt	Dissolved / filtered sample.		.	.				
tot.unfilt	Total / unfiltered sample.		18/05/2012	18/05/2012				
*	Subcontracted test.		120520-1	120520-1				
**	% 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		5611302	5611306				
(F)	Trigger breach confirmed		E17					
Component	LOD/Units		Method					
Dibromofluoromethane**	%	TM116	103	102				
Toluene-d8**	%	TM116	97.5	97.6				
4-Bromofluorobenzene**	%	TM116	103	102				
Dichlorodifluoromethane	<4 µg/kg	TM116	<80	<80	M	M		
Chloromethane	<7 µg/kg	TM116	<140	<140				
Vinyl Chloride	<10 µg/kg	TM116	<200	<200				
Bromomethane	<13 µg/kg	TM116	<260	<260	M	M		
Chloroethane	<14 µg/kg	TM116	<280	<280	M	M		
Trichlorofluoromethane	<6 µg/kg	TM116	<120	<120	M	M		
1,1-Dichloroethene	<10 µg/kg	TM116	<200	<200	#	#		
Carbon Disulphide	<7 µg/kg	TM116	<140	464	M	M		
Dichloromethane	<10 µg/kg	TM116	<200	<200	#	#		
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<220	<220	M	M		
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<220	<220	M	M		
1,1-Dichloroethane	<8 µg/kg	TM116	<160	<160	M	M		
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<100	<100	M	M		
2,2-Dichloropropane	<12 µg/kg	TM116	<240	<240	M	M		
Bromochloromethane	<14 µg/kg	TM116	<280	<280	M	M		
Chloroform	<8 µg/kg	TM116	<160	<160	M	M		
1,1,1-Trichloroethane	<7 µg/kg	TM116	<140	<140	M	M		
1,1-Dichloropropene	<11 µg/kg	TM116	<220	<220	M	M		
Carbontetrachloride	<14 µg/kg	TM116	<280	<280	M	M		
1,2-Dichloroethane	<5 µg/kg	TM116	<100	<100	M	M		
Benzene	<9 µg/kg	TM116	<180	<180	M	M		
Trichloroethene	<9 µg/kg	TM116	<180	<180	M	M		
1,2-Dichloropropane	<12 µg/kg	TM116	<240	<240	M	M		
Dibromomethane	<9 µg/kg	TM116	<180	<180	M	M		
Bromodichloromethane	<7 µg/kg	TM116	<140	<140	M	M		
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<280	<280	M	M		
Toluene	<5 µg/kg	TM116	<100	<100	M	M		
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<280	<280				
1,1,2-Trichloroethane	<10 µg/kg	TM116	<200	<200	M	M		
1,3-Dichloropropane	<7 µg/kg	TM116	<140	<140	#	#		
Tetrachloroethene	<5 µg/kg	TM116	<100	<100	M	M		
Dibromochloromethane	<13 µg/kg	TM116	<260	<260	M	M		





## CERTIFICATE OF ANALYSIS

SDG: 120520-1  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 193372  
 Superseded Report: 192303

## VOC MS (S)

Results Legend		Customer Sample R	BH301A	BH301A			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	4.00	7.50			
M	mCERTS accredited.		Soil/Solid	Soil/Solid			
S	Deviating sample.		15/05/2012	16/05/2012			
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						
Component	LOD/Units		Method				
1.2-Dibromoethane	<12 µg/kg	TM116	<240 M	<240 M			
Chlorobenzene	<5 µg/kg	TM116	<100 M	<100 M			
1.1.1.2-Tetrachloroethane	<10 µg/kg	TM116	<200 M	<200 M			
Ethylbenzene	<4 µg/kg	TM116	<80 M	<80 M			
p/m-Xylene	<14 µg/kg	TM116	<280 #	<280 #			
o-Xylene	<10 µg/kg	TM116	<200 M	<200 M			
Styrene	<10 µg/kg	TM116	<200 M	<200 M			
Bromoform	<10 µg/kg	TM116	<200 M	<200 M			
Isopropylbenzene	<5 µg/kg	TM116	<100 M	<100 M			
1.1.2.2-Tetrachloroethane	<10 µg/kg	TM116	<200 #	<200 #			
1.2.3-Trichloropropane	<17 µg/kg	TM116	<340 M	<340 M			
Bromobenzene	<10 µg/kg	TM116	<200 M	<200 M			
Propylbenzene	<11 µg/kg	TM116	<220 M	<220 M			
2-Chlorotoluene	<9 µg/kg	TM116	<180 M	<180 M			
1.3.5-Trimethylbenzene	<8 µg/kg	TM116	<160 #	<160 #			
4-Chlorotoluene	<12 µg/kg	TM116	<240 M	<240 M			
tert-Butylbenzene	<12 µg/kg	TM116	<240 #	<240 #			
1.2.4-Trimethylbenzene	<9 µg/kg	TM116	<180 #	<180 #			
sec-Butylbenzene	<10 µg/kg	TM116	<200 M	<200 M			
4-Isopropyltoluene	<11 µg/kg	TM116	<220 M	<220 M			
1.3-Dichlorobenzene	<6 µg/kg	TM116	<120 M	<120 M			
1.4-Dichlorobenzene	<5 µg/kg	TM116	<100 M	<100 M			
n-Butylbenzene	<10 µg/kg	TM116	<200 M	<200 M			
1.2-Dichlorobenzene	<12 µg/kg	TM116	<240 M	<240 M			
1.2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<280 M	<280 M			
Tert-amyl methyl ether	<15 µg/kg	TM116	<300	<300			
1.2.4-Trichlorobenzene	<6 µg/kg	TM116	<120 #	<120 #			
Hexachlorobutadiene	<12 µg/kg	TM116	<240	<240			
Naphthalene	<13 µg/kg	TM116	<260 M	<260 M			
1.2.3-Trichlorobenzene	<6 µg/kg	TM116	<120 M	<120 M			
VOC TIC	-	TM116	No TICs identified	No TICs identified			



**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

## 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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH302 E 8 2.00 SOLID 17/05/2012 00:00:00  120520-1 5611284 TM048	01/06/12	Kevin Bowron	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH302 5.00 SOLID 17/05/2012 00:00:00  120520-1 5611288 TM048	31/05/12	Rachel Sullivan	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH301A E 3 0.20 - 0.30 SOLID 15/05/2012 00:00:00  120520-1 5611296 TM048	01/06/12	Kevin Bowron	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH301A E 6 0.20 - 1.00 SOLID 15/05/2012 00:00:00  120520-1 5611297 TM048	31/05/12	Rachel Sullivan	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH301A E 17 4.00 SOLID 15/05/2012 00:00:00  120520-1 5611302 TM048	31/05/12	Rachel Sullivan	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH301A 7.50 SOLID 16/05/2012 00:00:00  120520-1 5611306 TM048	01/06/12	Kevin Bowron	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH313 2.00 SOLID 16/05/2012 00:00:00  120520-1 5611290 TM048	01/06/12	Kevin Bowron	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH313 E 15 5.00 SOLID 17/05/2012 00:00:00  120520-1 5611309 TM048	31/05/12	Rachel Sullivan	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH303 E 21 10.00 SOLID 15/05/2012 00:00:00  120520-1 5611294 TM048	06/06/12	Rachel Sullivan	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH301A 14.00 SOLID 17/05/2012 00:00:00  120520-1 5611307 TM048	12/06/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH302 E 8 2.00 SOLID 17/05/2012 00:00:00  120520-1 5611284 TM048	31/07/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH302 5.00 SOLID 17/05/2012 00:00:00  120520-1 5611288 TM048	31/07/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH313 2.00 SOLID 16/05/2012 00:00:00  120520-1 5611290 TM048	31/07/12	Chris Swindells	Loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH301A E 3 0.20 - 0.30 SOLID 15/05/2012 00:00:00  120520-1 5611296 TM048	31/07/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH301A E 17 4.00 SOLID 15/05/2012 00:00:00  120520-1 5611302 TM048	31/07/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH301A 7.50 SOLID 16/05/2012 00:00:00  120520-1 5611306 TM048	31/07/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH313 E 15 5.00 SOLID 17/05/2012 00:00:00  120520-1 5611309 TM048	1/8/12	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

SDG: 120520-1  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 193372  
Superseded Report: 192303

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref.	BH313 E 14	5/9/12	Martin Cotterell	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	5.00										
Sample Type	SOLID										
Date Sampled	17/05/2012 00:00:00										
Date Received											
SDG	120520-1										
Original Sample	5611310										
Method Number	TM048										



**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

## Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH301A E 3 0.20 - 0.30 SOLID 15/05/2012 00:00:00  120520-1 5611296 TM 304	Amphibole fibres found during PCM analysis. (#)	-	0.0010 (#)	<0.001 (#)	0.0011 (#)
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH313 E 15 5.00 SOLID 17/05/2012 00:00:00  120520-1 5611309 TM 304	Amphibole fibres found during PCM analysis. (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)



**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5638567	BH302	5.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5638717	BH313	2.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5639073	BH301A	7.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5639489	BH302 E8	2.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5640495	BH301A E17	4.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5642117	BH301A E3	0.20 - 0.30	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5642269	BH301A E6	0.60 - 1.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5642547	BH313 E15	5.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5659137	BH303 E21	10.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5693410	BH301A	14.00	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5693410	BH301A	14.00	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5693410	BH301A	14.00	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5693410	BH301A	14.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5693410	BH301A	14.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5693410	BH301A	14.00	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5693410	BH301A	14.00	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5693438	BH301A	14.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded

**Note :** Test results may be compromised

**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

### Notification of NDPs (No determination possible)

Date Received : 20/05/2012 10:37:29

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5611296	BH301A E3	0.20 - 0.30	Dioxins/Furans (S)*	Unsuitable for analysis due to potential Asbestos
5611296	BH301A E3	0.20 - 0.30	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5611296	BH301A E3	0.20 - 0.30	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5611296	BH301A E3	0.20 - 0.30	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5611284	BH302 E8	2.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5611284	BH302 E8	2.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5611284	BH302 E8	2.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5611288	BH302	5.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5611288	BH302	5.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5611288	BH302	5.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5611290	BH313	2.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5611290	BH313	2.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5611290	BH313	2.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5611302	BH301A E17	4.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5611302	BH301A E17	4.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5611302	BH301A E17	4.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5611306	BH301A	7.50	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5611306	BH301A	7.50	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5611306	BH301A	7.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5611309	BH313 E15	5.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5611309	BH313 E15	5.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5611309	BH313 E15	5.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos





## CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120520-1	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	193372
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	192303

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM 304				
TM021	Method 2540C, AWWA/APHA, 20th Ed., 1999	Determination of total dissolved solids in waters by gravimetry.		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
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		
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		



## CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120520-1	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	193372
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	192303

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM232	USEPA Method No. 8260b 'Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC-MS)'	Determination of Volatile Alcohols, Acetates and Ketones in Waters by Headspace GC-MS		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		
TM243		Mixed Anions In Soils By Kone		
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		
TM294		Determination of Free Sulphur in liquids by HPLC		
TM321		Organic matter Content of Soil By Titration		

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



**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

### Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	5611284	5611288	5611294	5611290	5611309	5611310	5611296	5611297	5611302	5611306
	BH302	BH302	BH303	BH313	BH313	BH313	BH301A	BH301A	BH301A	BH301A
AGS Ref.	E8		E21		E15	E14	E3	E6	E17	
Depth	2.00	5.00	10.00	2.00	5.00	5.00	0.20 - 0.30	0.60 - 1.00	4.00	7.50
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alcohols and Acetates in Soils									01-Jun-2012	01-Jun-2012
Alkali Metals by iCap-OES (Soil)	29-May-2012	29-May-2012	01-Jun-2012	29-May-2012	29-May-2012		29-May-2012	29-May-2012	29-May-2012	29-May-2012
Ammonium Soil by Titration	29-May-2012	29-May-2012	30-May-2012	29-May-2012	29-May-2012		29-May-2012	29-May-2012	29-May-2012	29-May-2012
Anions by Kone (soil)	31-May-2012	31-May-2012	01-Jun-2012	31-May-2012	31-May-2012		31-May-2012	31-May-2012	31-May-2012	31-May-2012
Asbestos Identification (Soil)	31-Jul-2012	31-Jul-2012	06-Jun-2012	31-Jul-2012	01-Aug-2012	06-Sep-2012	31-Jul-2012	01-Jun-2012	31-Jul-2012	31-Jul-2012
Asbestos Quantification - Full					19-Jun-2012		19-Jun-2012			
Boron Water Soluble	29-May-2012	29-May-2012	31-May-2012	29-May-2012	29-May-2012		29-May-2012	29-May-2012	29-May-2012	29-May-2012
Cyanide Comp/Free/Total/Thiocyanate	29-May-2012	29-May-2012	31-May-2012	29-May-2012	29-May-2012		29-May-2012	29-May-2012	29-May-2012	29-May-2012
Dioxins/Furans (S)*								15-Jun-2012		
Easily Liberated Sulphide	30-May-2012	30-May-2012	30-May-2012	30-May-2012	30-May-2012		30-May-2012	30-May-2012	30-May-2012	30-May-2012
EPH CWG (Aliphatic) GC (S)									01-Jun-2012	29-May-2012
EPH CWG (Aromatic) GC (S)									01-Jun-2012	29-May-2012
GRO by GC-FID (S)									06-Jun-2012	06-Jun-2012
Hexavalent Chromium (s)	01-Jun-2012	01-Jun-2012	01-Jun-2012	01-Jun-2012	01-Jun-2012		01-Jun-2012	01-Jun-2012	01-Jun-2012	01-Jun-2012
Metals by iCap-OES (Soil)	29-May-2012	29-May-2012	01-Jun-2012	29-May-2012	29-May-2012		29-May-2012	29-May-2012	29-May-2012	28-May-2012
Mineral Oil									29-May-2012	29-May-2012
PAH Value of soil	29-May-2012	29-May-2012	31-May-2012	29-May-2012	29-May-2012		29-May-2012	29-May-2012	29-May-2012	29-May-2012
PCBs by GCMS							28-May-2012	28-May-2012		
pH	31-May-2012	31-May-2012	01-Jun-2012	31-May-2012	31-May-2012		31-May-2012	31-May-2012	31-May-2012	31-May-2012
Phenols by HPLC (S)	31-May-2012	31-May-2012	31-May-2012	30-May-2012	31-May-2012		30-May-2012	31-May-2012	29-May-2012	29-May-2012
Sample description	25-May-2012	25-May-2012	29-May-2012	25-May-2012	25-May-2012		25-May-2012	25-May-2012	25-May-2012	25-May-2012
Semi Volatile Organic Compounds									31-May-2012	31-May-2012
Toluene extractable matter*			18-Jun-2012					22-Jun-2012		
Total Organic Carbon			06-Jun-2012					01-Jun-2012		
Total Organic Carbon (Asb)	01-Jun-2012	01-Jun-2012		01-Jun-2012	01-Jun-2012		01-Jun-2012		01-Jun-2012	01-Jun-2012
Total Sulphate	28-May-2012	28-May-2012	31-May-2012	28-May-2012	28-May-2012		28-May-2012	28-May-2012	28-May-2012	28-May-2012
Total Sulphur			06-Jun-2012					01-Jun-2012		
TPH CWG GC (S)									06-Jun-2012	06-Jun-2012
VOC MS (S)									01-Jun-2012	01-Jun-2012



**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

Lab Sample No(s)	5611307	5611308
Customer Sample Ref.	BH301A	BH301A
AGS Ref.		
Depth	14.00	9.00
Type	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	12-Jun-2012	
Alkalinity as CaCO3		13-Jun-2012
Ammoniacal Nitrogen		14-Jun-2012
Ammonium Soil by Titration	13-Jun-2012	
Anions by Kone (soil)	12-Jun-2012	
Anions by Kone (w)		14-Jun-2012
Asbestos Identification (Soil)	12-Jun-2012	
Boron Water Soluble	12-Jun-2012	
COD Unfiltered		14-Jun-2012
Conductivity (at 20 deg.C)		13-Jun-2012
Cyanide Comp/Free/Total/Thiocyanate	13-Jun-2012	14-Jun-2012
Dissolved Metals by ICP-MS		13-Jun-2012
Dissolved Organic/Inorganic Carbon		13-Jun-2012
Easily Liberated Sulphide	12-Jun-2012	
Fluoride		13-Jun-2012
Free Sulphur		14-Jun-2012
Hexavalent Chromium (s)	14-Jun-2012	
Hexavalent Chromium (w)		14-Jun-2012
Mercury Dissolved		14-Jun-2012
Metals by iCap-OES (Soil)	12-Jun-2012	
Metals by iCap-OES Dissolved (W)		13-Jun-2012
Nitrite by Kone (w)		14-Jun-2012
NRA Leachate		11-Jun-2012
PAH Spec MS - Aqueous (W)		13-Jun-2012
PAH Value of soil	12-Jun-2012	
PCB Congeners - Aqueous (W)		15-Jun-2012
pH	13-Jun-2012	
pH Value		13-Jun-2012
Phenols by HPLC (S)	11-Jun-2012	
Phenols by HPLC (W)		14-Jun-2012
Sample description	07-Jun-2012	07-Jun-2012
Sulphide		15-Jun-2012
Toluene extractable matter*	21-Jun-2012	
Total Dissolved Solids (Grav)		14-Jun-2012
Total Organic Carbon	14-Jun-2012	
Total Sulphate	13-Jun-2012	
Total Sulphur	14-Jun-2012	
TPH by IR Oils and Greases		12-Jun-2012



SDG: 120520-1  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 193372  
Superseded Report: 192303

### Chromatogram

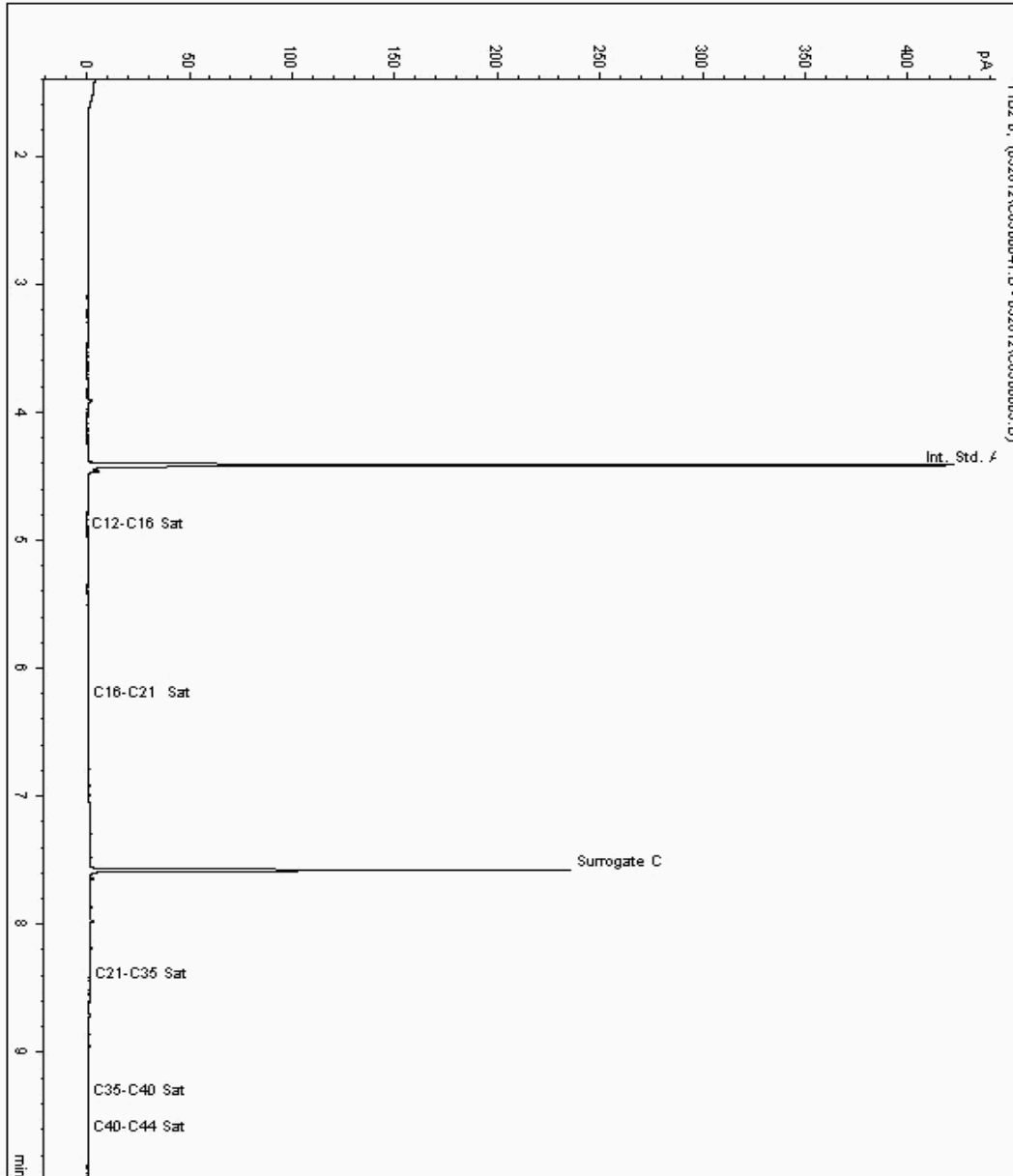
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5648418  
Sample ID : BH301A

Depth : 7.50

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

Sample Identity: 5505311-5648418  
Date Acquired : 29/05/12 04:17:53 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.990





SDG: 120520-1  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 193372  
Superseded Report: 192303

### Chromatogram

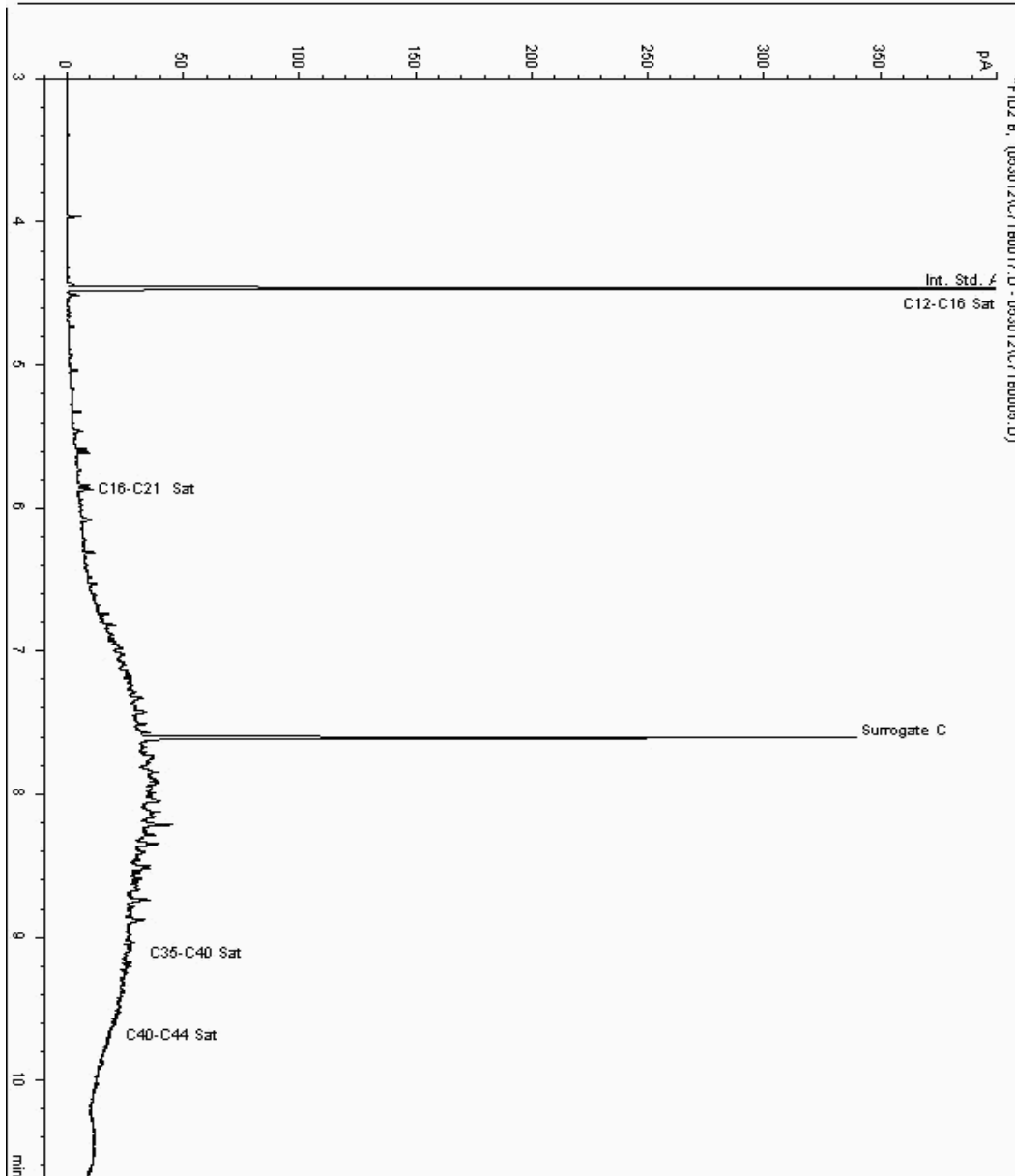
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5648534  
Sample ID : BH301A

Depth : 4.00

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

Sample Identity: 5505231-5648534  
Date Acquired : 30/05/2012 18:58:06 PM  
Units : ppb  
Dilution:





CERTIFICATE OF ANALYSIS

SDG: 120520-1
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 193372
Superseded Report: 192303

Chromatogram

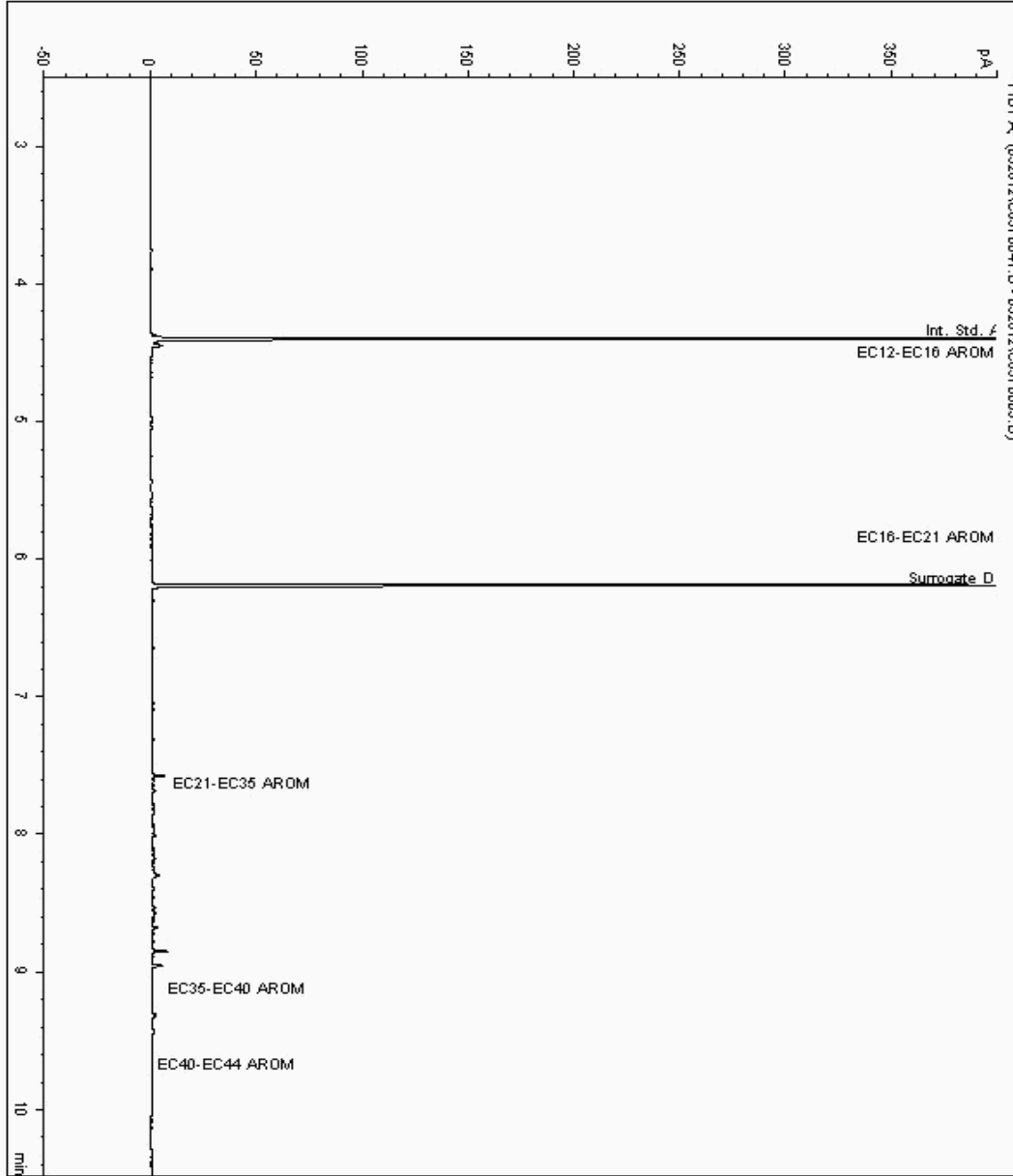
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5648418
Sample ID : BH301A

Depth : 7.50

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

Sample Identity: 5505312-5648418
Date Acquired : 29/05/12 04:17:53 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.990





SDG: 120520-1  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 193372  
Superseded Report: 192303

### Chromatogram

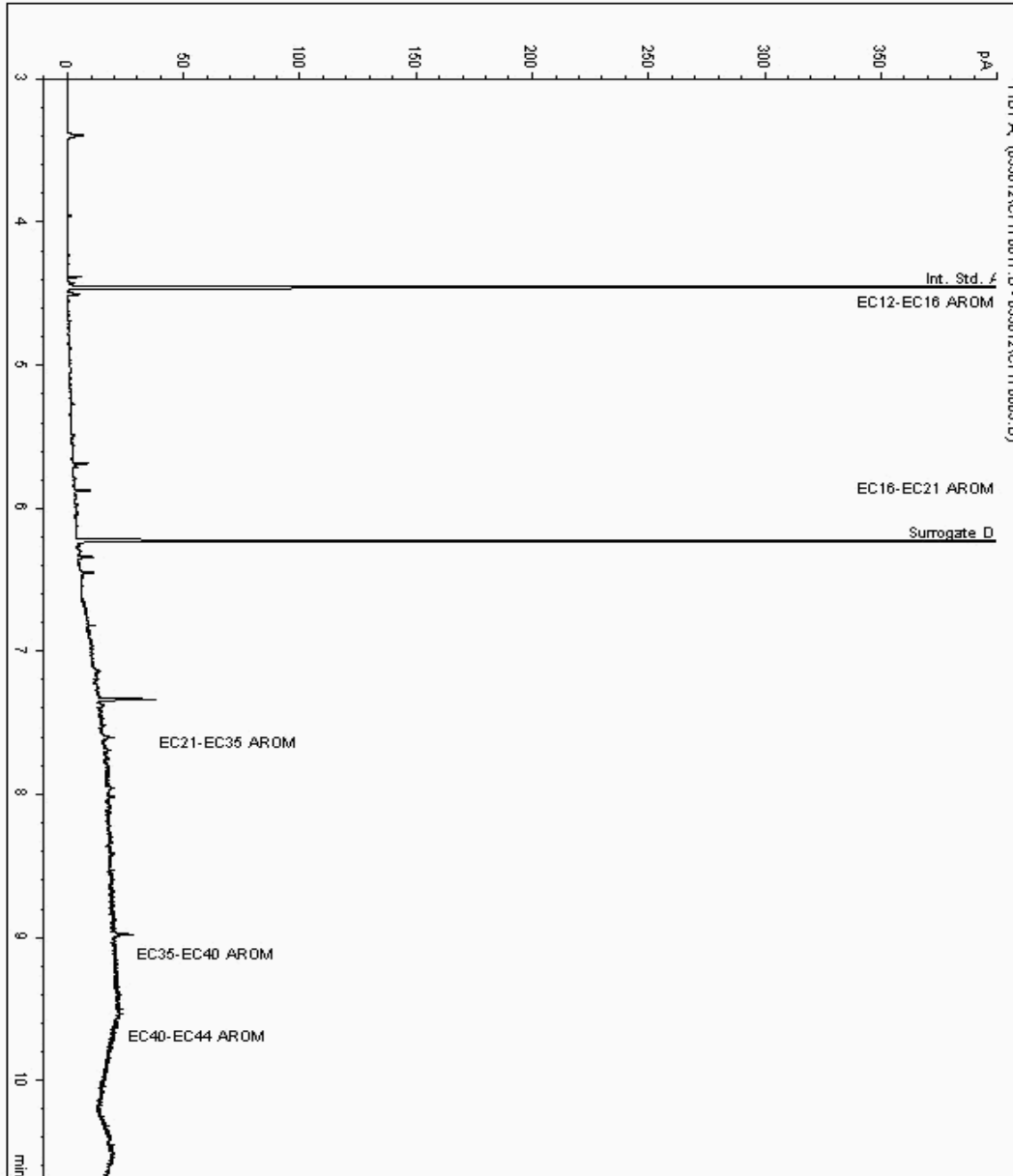
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5648534  
Sample ID : BH301A

Depth : 4.00

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

Sample Identity: 5505232-5648534  
Date Acquired : 30/05/2012 18:58:06 PM  
Units : ppb  
Dilution:







SDG: 120520-1  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 193372  
Superseded Report: 192303

### Chromatogram

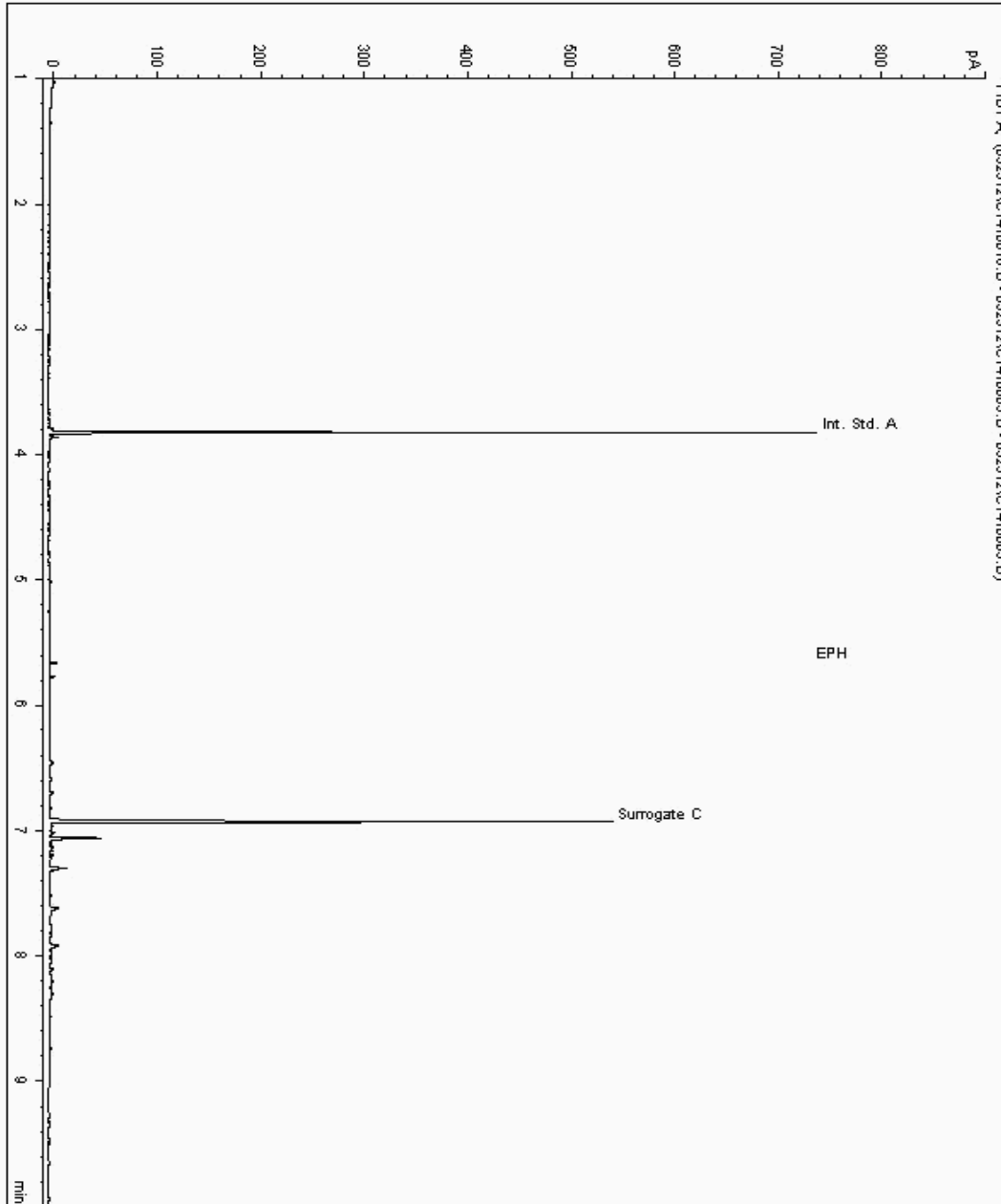
Analysis: Mineral Oil

Sample No : 5648407  
Sample ID : BH301A

Depth : 7.50

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5499281-5625808  
Date Acquired : 23/05/12 14:35:07 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120520-1  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 193372  
Superseded Report: 192303

### Chromatogram

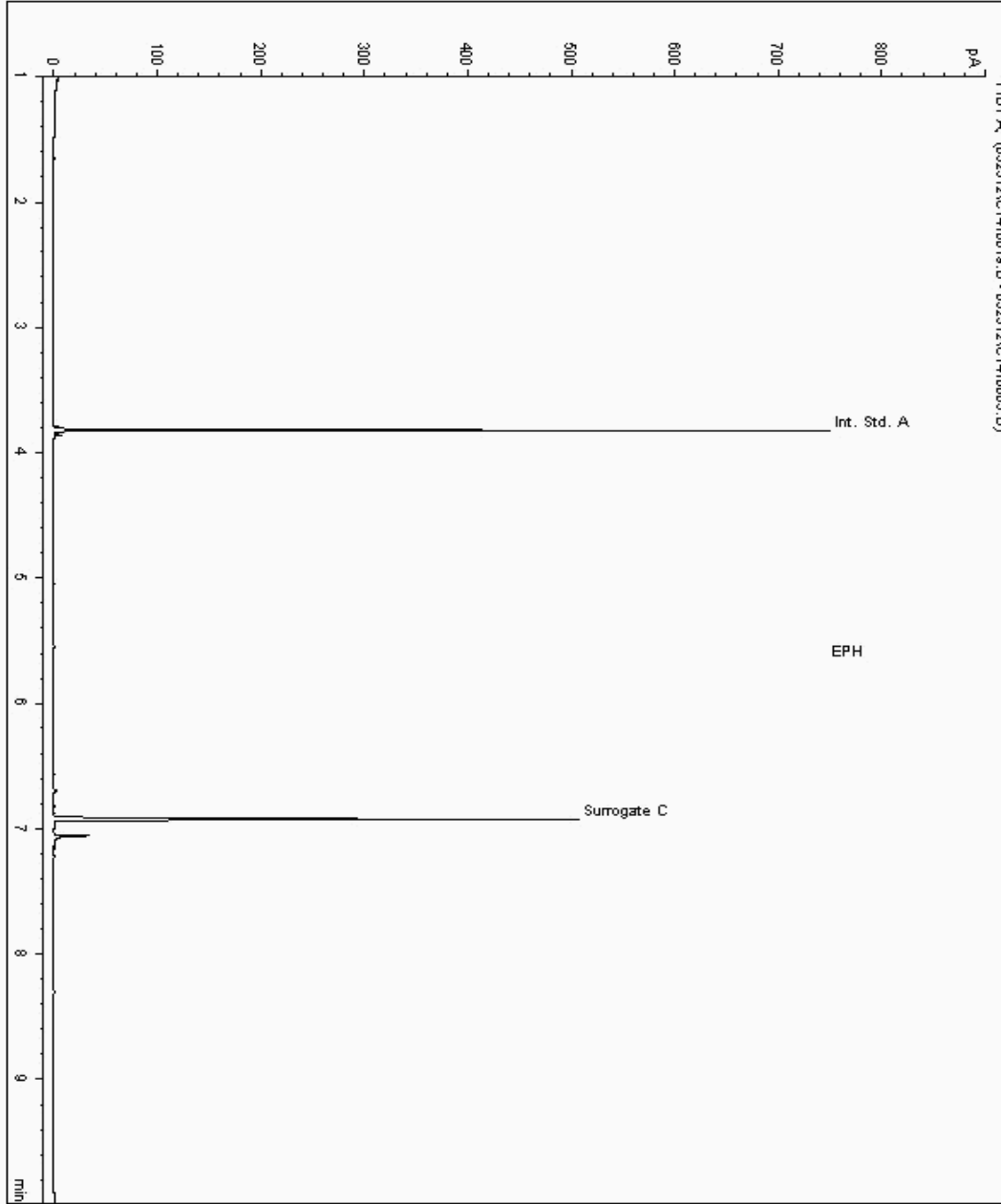
Analysis: Mineral Oil

Sample No : 5648517  
Sample ID : BH301A

Depth : 4.00

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5499282-5625810  
Date Acquired : 23/05/12 14:56:39 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120520-1  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

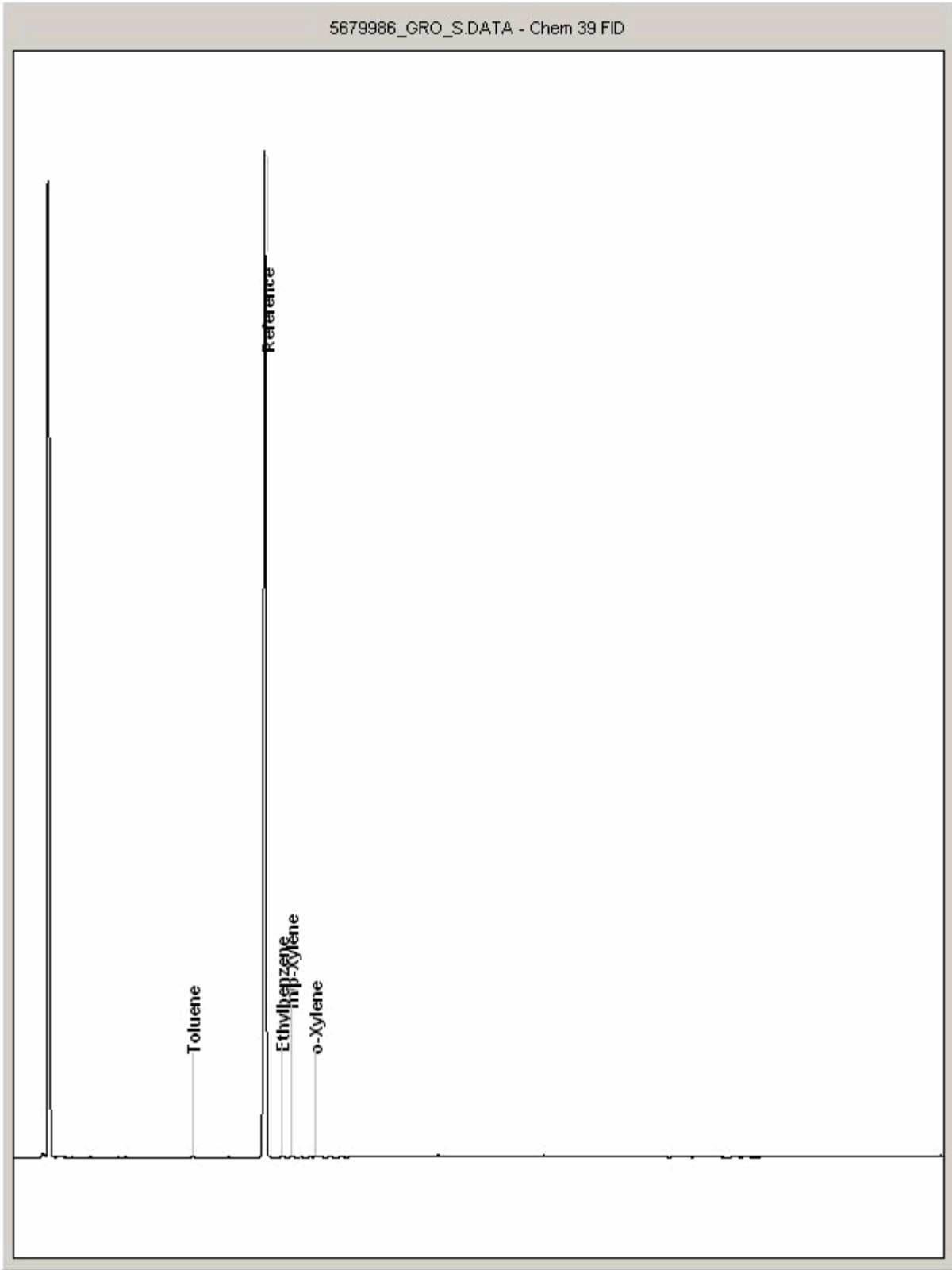
Order Number: 4559  
Report Number: 193372  
Superseded Report: 192303

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5679986  
Sample ID : BH301A

Depth : 4.00





CERTIFICATE OF ANALYSIS

SDG: 120520-1  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

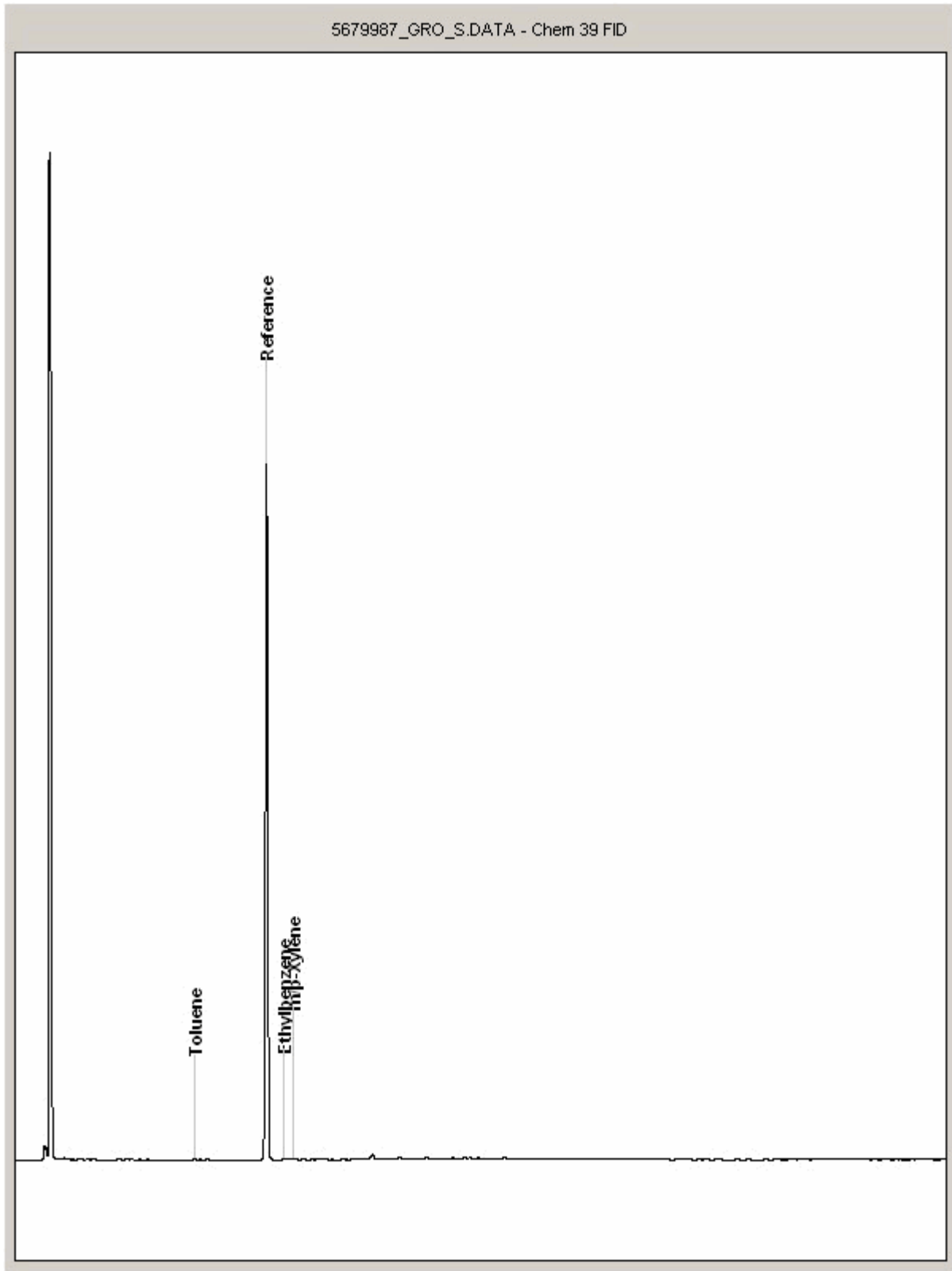
Order Number: 4559  
Report Number: 193372  
Superseded Report: 192303

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5679987  
Sample ID : BH301A

Depth : 7.50





## ALcontrol AB

Box 1083, 581 10 Linköping, Sweden  
 Tel: +46 13 254 900 · Fax: +46 13 121 728  
 Registered 556152-0916 Registered office: Linköping, Sweden



1006  
 ISO/IEC 17025

## REPORT

issued by an Accredited Laboratory

## Report No. 12181316

Assigner

ALcontrol Laboratories  
 Units 7-8, Hawarden Busin. Prk

Manor Road, Hawarden  
 CH53US Deeside, UK

Applies to

## Information about the project

Solid

Project number : 120520-1

## Information about sample and sampling

Description of sample	: Solid	Date of Arrival	: 2012-06-07
Sampling date	: 2012-05-15	Time of Arrival	: 1150
Sample name	: 5675775		
Reference	: BH301A		
Invoice reference	: 120520-1		

## Results of the analyses

Test method	Analysis / Investigation of	Results	Unit	Uncert. of measur.
SS-EN-1948	2378 TCDD	< 2	ng/kg DS	+/-30%
SS-EN-1948	12378 PeCDD	< 2	ng/kg DS	+/-30%
SS-EN-1948	123478 HxCDD	< 2	ng/kg DS	+/-35%
SS-EN-1948	123678 HxCDD	< 2	ng/kg DS	+/-35%
SS-EN-1948	123789 HxCDD	< 2	ng/kg DS	+/-35%
SS-EN-1948	1234678 HpCDD	15	ng/kg DS	+/-30%
SS-EN-1948	OCDD	23	ng/kg DS	+/-30%
SS-EN-1948	2378 TCDF	4.8	ng/kg DS	+/-30%
SS-EN-1948	12378 PeCDF	2.6	ng/kg DS	+/-30%
SS-EN-1948	23478 PeCDF	4.1	ng/kg DS	+/-30%
SS-EN-1948	123478 HxCDF	5.2	ng/kg DS	+/-30%
SS-EN-1948	123678 HxCDF	5.1	ng/kg DS	+/-30%
SS-EN-1948	123789 HxCDF	< 2	ng/kg DS	+/-30%
SS-EN-1948	234678 HxCDF	4.4	ng/kg DS	+/-30%
SS-EN-1948	1234678 HpCDF	12	ng/kg DS	+/-30%
SS-EN-1948	1234789 HpCDF	2.7	ng/kg DS	+/-30%
SS-EN-1948	OCDF	8.9	ng/kg DS	+/-30%
SS-EN-1948	I-PCDD/F-TEQ Lower Bound	4.5	ng/kg DS	+/-35%
SS-EN-1948	I-PCDD/F-TEQ Upper Bound	8.3	ng/kg DS	+/-35%
SS-EN-1948	Rec 2378 TCDD Extr spike	82	%	
SS-EN-1948	Rec 12378 PeCDD Extr spike	81	%	
SS-EN-1948	Rec 123478 HxCDD Extr spike	120	%	
SS-EN-1948	Rec 123678 HxCDD Extr spike	89	%	
SS-EN-1948	Rec 1234678 HpCDD Extr spike	85	%	
SS-EN-1948	Rec OCDD Extr spike	90	%	
SS-EN-1948	Rec 2378 TCDF Extr spike	78	%	
SS-EN-1948	Rec 12378 PeCDF Extr spike	92	%	
SS-EN-1948	Rec 23478 PeCDF Extr spike	85	%	
SS-EN-1948	Rec 123478 HxCDF Extr spike	91	%	

The stated uncertainty of measurement is calculated using a coverage  $k = 2$ . In case interval is set the higher figure refers to measurement uncertainty for results close to the reporting limit.  
 The measurement uncertainties for accredited microbiological analyses are available from the laboratory upon request.

(continued)



**ALcontrol AB**

Box 1083, 581 10 Linköping, Sweden  
 Tel: +46 13 254 900 · Fax: +46 13 121 728  
 Registered 556152-0916 Registered office: Linköping, Sweden



1006  
 ISO/IEC 17025



**REPORT**

issued by an Accredited Laboratory

**Report No. 12181316**

*Assigner*

ALcontrol Laboratories  
 Units 7-8, Hawarden Busin. Prk

Manor Road, Hawarden  
 CH53US Deeside, UK

*Applies to*

<b>Information about the project</b>		<b>Solid</b>
Project number	: 120520-1	

<b>Information about sample and sampling</b>			
Description of sample	: Solid	Date of Arrival	: 2012-06-07
Sampling date	: 2012-05-15	Time of Arrival	: 1150
Sample name	: 5675775		
Reference	: BH301A		
Invoice reference	: 120520-1		

<b>Results of the analyses</b>				
<i>Test method</i>	<i>Analysis / Investigation of</i>	<i>Results</i>	<i>Unit</i>	<i>Uncert. of measurem.</i>
SS-EN-1948	Rec 123678 HxCDF Extr spike	100	%	
SS-EN-1948	Rec 123789 HxCDF Extr spike	94	%	
SS-EN-1948	Rec 234678 HxCDF Extr spike	88	%	
SS-EN-1948	Rec 1234678 HpCDF Extr spike	100	%	
SS-EN-1948	Rec 1234789 HpCDF Extr spike	100	%	
SS-EN-1948	Rec OCDF Extr spike	100	%	
SS-EN 11465	Dry Substance	93.4	%	+/-10%

The stated uncertainty of measurement is calculated using a coverage  $k = 2$ . In case interval is set the higher figure refers to measurement uncertainty for results close to the reporting limit.  
 The measurement uncertainties for accredited microbiological analyses are available from the laboratory upon request.

Linköping 2012-06-15

The report has been reviewed and approved by

**Kristina Hallqvist**  
 Responsible reviewer

Control numbers 8380 7586 1167 8062



# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Combrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 282753-1

**Date of Report:** 15-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120520-1

**Customer Purchase Order:** 148684

**Customer Site Reference:** 7762

**Date Job Received at SAL:** 12-Jun-2012

**Date Analysis Started:** 14-Jun-2012

**Date Analysis Completed:** 15-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager

<b>SAL Reference:</b> 282753 <b>Project Site:</b> 7762 <b>Customer Reference:</b> 120520-1					
Soil		Analysed as Soil			
Miscellaneous					
<b>SAL Reference</b>					<b>282753 001</b>
<b>Customer Sample Reference</b>					<b>5688940 BH303</b>
<b>Date Sampled</b>					<b>15-MAY-2012</b>
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>	
Toluene extractable matter	T2	AR	500	mg/kg	<500

### Index to symbols used in 282753-1

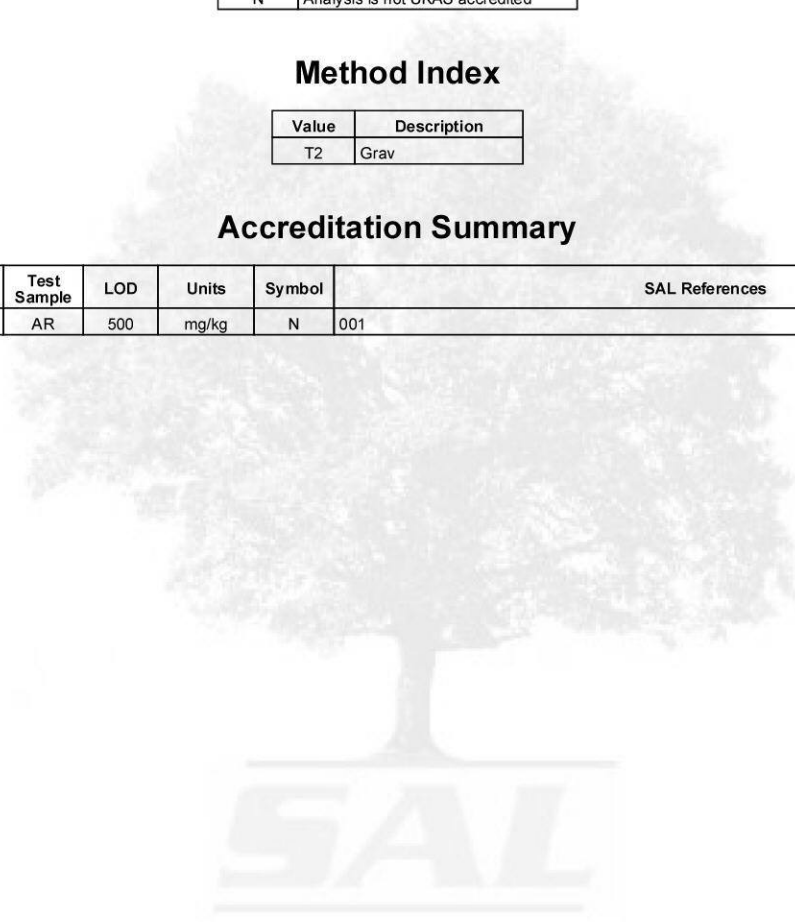
Value	Description
AR	As Received
N	Analysis is not UKAS accredited

### Method Index

Value	Description
T2	Grav

### Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Toluene extractable matter	T2	AR	500	mg/kg	N	001







# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Cornbrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 282896-1

**Date of Report:** 20-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120520-1

**Customer Site Reference:** 7796

**Date Job Received at SAL:** 13-Jun-2012

**Date Analysis Started:** 14-Jun-2012

**Date Analysis Completed:** 19-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager

<b>SAL Reference:</b> 282896 <b>Project Site:</b> 7796 <b>Customer Reference:</b> 120520-1					
Soil		Analysed as Soil			
Miscellaneous					
<b>SAL Reference</b>					<b>282896 001</b>
<b>Customer Sample Reference</b>					<b>5716807</b>
<b>Date Sampled</b>					<b>17-MAY-2012</b>
Determinand	Method	Test Sample	LOD	Units	
Toluene extractable matter	T2	AR	500	mg/kg	<500

### Index to symbols used in 282896-1

Value	Description
AR	As Received
N	Analysis is not UKAS accredited

### Method Index

Value	Description
T2	Grav

### Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Toluene extractable matter	T2	AR	500	mg/kg	N	001



# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Cornbrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 282754-1

**Date of Report:** 21-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120520-1

**Customer Purchase Order:** 148532

**Date Job Received at SAL:** 12-Jun-2012

**Date Analysis Started:** 14-Jun-2012

**Date Analysis Completed:** 19-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager



**SDG:** 120520-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 193372  
**Superseded Report:** 192303

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

## SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GCMS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
EPH (DRO)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (MIN OIL)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (CLEANED UP)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC FD
PCBAROCLOR 1254/PCBCON	D&C	HEXANE ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GCMS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC FD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC FD
SEMIVOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	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)	GC FD
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVCC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL BY R	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FD

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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).

### 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.

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



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

Attention: Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 01 August 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120523-88  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 189402

**This report has been revised and directly supersedes 185939 in its entirety.**

We received 18 samples on Tuesday May 22, 2012 and 7 of these samples were scheduled for analysis which was completed on Wednesday August 01, 2012. 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:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5627545	BH301A		16.50	18/05/2012
5627533	BH307	E3	0.60	21/05/2012
5627534	BH307	E6	1.80	21/05/2012
5627535	BH307	E9	2.50 - 3.00	21/05/2012
5627536	BH307	E12	4.50 - 5.00	21/05/2012
5627537	BH307	E13	4.50 - 5.00	21/05/2012
5627538	BH310C	E3	0.60 - 0.80	21/05/2012
5627540	BH310C	E6	2.10	21/05/2012
5627542	BH313	E20	11.50 - 12.00	21/05/2012
5627532	BH313	E17	7.00	18/05/2012
5627531	BH313	E18	8.00	18/05/2012
5627541	BH313	E19	9.50 - 10.00	21/05/2012
5627523	BH315	E3	1.00	18/05/2012
5627525	BH315	E6	2.00	18/05/2012
5627526	BH315	E9	3.00	18/05/2012
5627527	BH315	E10	3.00	18/05/2012
5627528	BH315	E13	4.00	18/05/2012
5627530	BH315	E16	5.00	18/05/2012

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



SDG: 120523-88  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189402  
 Superseded Report: 185939

SOLID Results Legend  Test  No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5627526	BH315	E9	3.00	60g VOC (ALE215) 400g Tub (ALE214)
		5627523	BH315	E3	1.00	250g Amber Jar (AL) 400g Tub (ALE214)
		5627531	BH313	E18	8.00	250g Amber Jar (AL) 400g Tub (ALE214)
		5627538	BH310C	E3	0.60 - 0.80	250g Amber Jar (AL) 400g Tub (ALE214)
	5627535	BH307	E9	2.50 - 3.00	250g Amber Jar (AL) 400g Tub (ALE214)	
	5627533	BH307	E3	0.60	250g Amber Jar (AL) 400g Tub (ALE214)	
	5627545	BH301A		16.50	250g Amber Jar (AL) 400g Tub (ALE214)	
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1				
					X	
Boron Water Soluble	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 7				
					X X X X X X X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 1				
					X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 1				
					X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1				
					X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 7				
					X X X X X X X	
	Antimony	NDPs: 0 Tests: 7				
					X X X X X X X	
	Arsenic	NDPs: 0 Tests: 7				
					X X X X X X X	





SDG: 120523-88  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189402  
 Superseded Report: 185939

SOLID Results Legend  <span style="background-color: yellow; border: 1px solid black; padding: 2px;">X</span> Test  <span style="background-color: red; color: white; border: 1px solid black; padding: 2px;">N</span> No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container								
		5627526	BH315	E9	3.00	60g VOC (ALE215)							
		5627523	BH315	E3	1.00	400g Tub (ALE214)							
		5627531	BH313	E18	8.00	250g Amber Jar (AL)							
		5627538	BH310C	E3	0.60 - 0.80	400g Tub (ALE214)							
	5627535	BH307	E9	2.50 - 3.00	250g Amber Jar (AL)								
	5627533	BH307	E3	0.60	400g Tub (ALE214)								
	5627545	BH301A		16.50	250g Amber Jar (AL)								
Metals by iCap-OES (Soil)	Barium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Beryllium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Cadmium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Chromium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Copper	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Lead	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Manganese	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Mercury	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Nickel	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Selenium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Vanadium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
	Zinc	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
Mineral Oil	All	NDPs: 0 Tests: 1											X
PAH Value of soil	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X		
pH	All	NDPs: 0 Tests: 7		X	X	X	X	X	X	X	X		X



SDG: 120523-88  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189402  
 Superseded Report: 185939

SOLID	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container				
	5627526	5627523	5627531	5627538	5627535	5627533	5627545	BH315	BH315	BH313	BH310C	BH307	BH301A
Results Legend	<p><b>X</b> Test</p> <p><b>N</b> No Determination Possible</p>												
Phenols by HPLC (S)	All	NDPs: 0 Tests: 7		X	X	X	X	X	X	X	X	X	X
Sample description	All	NDPs: 0 Tests: 7		X	X	X	X	X	X	X	X	X	X
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1											X
Toluene extractable matter*	All	NDPs: 2 Tests: 5		X	X	X	X	X		N	N		
Total Organic Carbon	All	NDPs: 2 Tests: 5		X	X	X	X	X		N	N		
Total Organic Carbon (Asb)	All	NDPs: 0 Tests: 2											X
Total Sulphate	All	NDPs: 0 Tests: 7		X	X	X	X	X	X	X	X	X	X
Total Sulphur	All	NDPs: 2 Tests: 5		X	X	X	X	X		N	N		
TPH CWG GC (S)	All	NDPs: 0 Tests: 1											X
VOC MS (S)	All	NDPs: 0 Tests: 1											X



**SDG:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

## 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
5627533	BH307	0.60	Grey	N/A	2 - 10 mm	Ash/Soot	Stones
5627535	BH307	2.50 - 3.00	Light Brown	N/A	2 - 10 mm	Stones	None
5627531	BH313	8.00	Grey	Clay	<0.063 mm	N/A	N/A
5627523	BH315	1.00	Dark Brown	Sand	0.1 - 2 mm	Stones	N/A
5627526	BH315	3.00	Grey	Sand	0.1 - 2 mm	Stones	N/A
5627545	BH301A	16.50	Light Brown	Clay	<0.063 mm	Stones	N/A
5627538	BH310C	0.60 - 0.80	Dark Brown	Sand	0.1 - 2 mm	Stones	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 occurring 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:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

Results Legend		Customer Sample R	BH307	BH307	BH313	BH315	BH315	BH301A
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.60	2.50 - 3.00	8.00	1.00	3.00	16.50
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
S	Deviating sample.		21/05/2012	21/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012
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		22/05/2012	22/05/2012	22/05/2012	22/05/2012	22/05/2012	22/05/2012
(F)	Trigger breach confirmed		120523-88	120523-88	120523-88	120523-88	120523-88	120523-88
			5627533	5627535	5627531	5627523	5627526	5627545
		E3	E9	E18	E3	E9		
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	2.5	2.7	19	5.1	8.7	14
Tolulene Extractable Matter	<500 mg/kg	SUB	<500	<500	<500			<500
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	16.7	<15	45.9	<15	<15	<15
Mineral oil >C10-C40	<1 mg/kg	TM061					89.7	
Surrogate Value	-	TM061					44.7	
Mineral Oil Surrogate % recovery**	%	TM061					89.3	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Sulphur, Total	<0.02 %	TM132	0.109	0.197	0.801			0.0557
Fraction Organic Carbon (FOC)	<0.002	TM132	<0.002	<0.002	0.00862			<0.002
pH	1 pH Units	TM133	11.7	9.3	7.98	11.1	9.95	8.45
Chromium, Hexavalent	<0.6 mg/kg	TM151	1.98	<0.6	<0.6	1.12	0.882	<0.6
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Thiocyanate	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	<15	<15	<15	<15
Aluminium	<11 mg/kg	TM181	33400	29800	9560	27800	21700	11900
Antimony	<0.6 mg/kg	TM181	86.7	86.1	<6	29.8	32.1	1.2
Arsenic	<0.6 mg/kg	TM181	<6	<6	6.08	10.6	11	11
Barium	<0.6 mg/kg	TM181	876	878	11.1	863	860	15.8
Beryllium	<0.01 mg/kg	TM181	1.7	0.556	0.25	<0.1	<0.1	0.848
Cadmium	<0.02 mg/kg	TM181	<0.2	<0.2	0.266	16.3	2.25	0.222
Chromium	<0.9 mg/kg	TM181	3930	3700	28.4	3130	4220	18.4
Copper	<1.4 mg/kg	TM181	175	244	<14	495	290	20.9
Lead	<0.7 mg/kg	TM181	34.2	38.8	16.9	1590	127	27
Manganese	<0.13 mg/kg	TM181	44300	39600	333	37100	45300	365
Mercury	<0.14 mg/kg	TM181	<1.4	<1.4	<1.4	<1.4	<1.4	<0.14
Nickel	<0.2 mg/kg	TM181	32.2	37	23.6	162	64.7	33
Selenium	<1 mg/kg	TM181	27.6	22.8	<10	21.6	21.2	<1



**CERTIFICATE OF ANALYSIS**

<b>SDG:</b> 120523-88	<b>Location:</b> Haulbowline	<b>Order Number:</b> 189402
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 185939
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b>

Results Legend			Customer Sample R						
#	ISO17025 accredited.		BH307	BH307	BH313	BH315	BH315	BH301A	
M	mCERTS accredited.								
§	Deviating sample.								
aq	Aqueous / settled sample.	Depth (m)	0.60	2.50 - 3.00	8.00	1.00	3.00	16.50	
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
tot.unfilt	Total / unfiltered sample.	Date Sampled	21/05/2012	21/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012	
*	Subcontracted test.	Date Received	22/05/2012	22/05/2012	22/05/2012	22/05/2012	22/05/2012	22/05/2012	
**	% 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	SDG Ref	120523-88	120523-88	120523-88	120523-88	120523-88	120523-88	
(F)	Trigger breach confirmed	Lab Sample No.(s)	5627533	5627535	5627531	5627523	5627526	5627545	
		AGS Reference	E3	E9	E18	E3	E9		
Component	LOD/Units	Method							
Vanadium	<0.2 mg/kg	TM181	503 #	442 #	26.1 #	498 #	421 #	13.7 #	
Zinc	<1.9 mg/kg	TM181	143 #	226 #	71.6 M	5910 M	709 M	106 M	
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	<10	<10	<10	<10	
Sulphate, Total	<48 mg/kg	TM221	1210 #	2670 #	2880 M	1290 M	6730 M	481 M	
Total sulphur	<0.0016 %	TM221	0.0403	0.0888	0.0958	0.043	0.224	0.016	
Boron, water soluble	<1 mg/kg	TM222	2.42 #	6.03 #	6.81 M	3.29 M	13.9 M	3.18 M	
Calcium	<21 mg/kg	TM224	264000	245000	45300	227000	216000	1270	
Magnesium	<8 mg/kg	TM224	29300	25800	7430	26400	48300	4290	
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	<0.008 #	<0.008 #	0.151 M	<0.008 M	0.313 M	0.0875 M	
Chloride (soluble)	<5 mg/kg	TM243	15.3 #	1190 #	6240 M	104 M	1960 M	3380 M	
Fraction Organic Carbon (FOC)	<0.1 -	TM321				<0.1 #	<0.1 #		



## CERTIFICATE OF ANALYSIS

**SDG:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

Results Legend		Customer Sample R	BH310C				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.60 - 0.80 Soil/Solid 21/05/2012 . 22/05/2012 120523-88 5627538 E3				
M	mCERTS accredited.						
S	Deviating sample.						
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						
Component	LOD/Units	Method					
Moisture content ratio	%	PM024	3.7				
Tolulene Extractable Matter	<500 mg/kg	SUB	<500				
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	102				
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M			
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	M			
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M			
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	M			
Sulphur, Total	<0.02 %	TM132	0.13	#			
Fraction Organic Carbon (FOC)	<0.002	TM132	0.00429	#			
pH	1 pH Units	TM133	11.7	M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	2.63	#			
Cyanide, Total	<1 mg/kg	TM153	<1	M			
Cyanide, Free	<1 mg/kg	TM153	<1	M			
Cyanide, Complex	<1 mg/kg	TM153	<1				
Thiocyanate	<1 mg/kg	TM153	<1	M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	§ #			
Aluminium	<11 mg/kg	TM181	21600				
Antimony	<0.6 mg/kg	TM181	82.5	#			
Arsenic	<0.6 mg/kg	TM181	<6	M			
Barium	<0.6 mg/kg	TM181	786	#			
Beryllium	<0.01 mg/kg	TM181	0.114	M			
Cadmium	<0.02 mg/kg	TM181	0.854	M			
Chromium	<0.9 mg/kg	TM181	3510	M			
Copper	<1.4 mg/kg	TM181	286	M			
Lead	<0.7 mg/kg	TM181	220	M			
Manganese	<0.13 mg/kg	TM181	34500	M			
Mercury	<0.14 mg/kg	TM181	<1.4	M			
Nickel	<0.2 mg/kg	TM181	118	M			
Selenium	<1 mg/kg	TM181	26.9	#			
Vanadium	<0.2 mg/kg	TM181	361	#			
Zinc	<1.9 mg/kg	TM181	631	M			
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10				



SDG: 120523-88
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number:
Report Number: 189402
Superseded Report: 185939

Table with columns: Results Legend, Customer Sample R, Component, LOD/Units, Method, and numerical results. Includes rows for Sulphate, Total sulphur, Boron, Calcium, Magnesium, Water Soluble Sulphate, and Chloride.



SDG: 120523-88  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189402  
 Superseded Report: 185939

## Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH315			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	3.00 Soil/Solid 18/05/2012 . 22/05/2012 120523-88 5627526 E9			
M	mCERTS accredited.					
S	Deviating sample.					
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					
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100			
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100			



SDG: 120523-88  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189402  
 Superseded Report: 185939

## Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH315					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	3.00					
M	mCERTS accredited.		Soil/Solid	18/05/2012				
§	Deviating sample.							
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			22/05/2012				
(F)	Trigger breach confirmed			120523-88				
				5627526				
				E9				
Component	LOD/Units		Method					
2,4-Dimethylphenol	<100 µg/kg	TM157	<100					
2,4-Dichlorophenol	<100 µg/kg	TM157	<100					
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100					
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100					
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100					
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100					
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100					
2-Chloronaphthalene	<100 µg/kg	TM157	<100					
2-Methylnaphthalene	<100 µg/kg	TM157	<100					
Acenaphthylene	<100 µg/kg	TM157	<100					
Acenaphthene	<100 µg/kg	TM157	<100					
Anthracene	<100 µg/kg	TM157	<100					
Benzo(a)anthracene	<100 µg/kg	TM157	<100					
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100					
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100					
Benzo(a)pyrene	<100 µg/kg	TM157	<100					
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100					
Chrysene	<100 µg/kg	TM157	<100					
Fluoranthene	<100 µg/kg	TM157	<100					
Fluorene	<100 µg/kg	TM157	<100					
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100					
Phenanthrene	<100 µg/kg	TM157	<100					
Pyrene	<100 µg/kg	TM157	<100					
Naphthalene	<100 µg/kg	TM157	<100					
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100					
TIC report	-	TM157	No TICs identified					



SDG: 120523-88  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189402  
 Superseded Report: 185939

## TPH CWG (S)

Results Legend		Customer Sample R	BH315				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	3.00 Soil/Solid 18/05/2012 . 22/05/2012 120523-88 5627526 E9				
M	mCERTS accredited.						
S	Deviating sample.						
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						
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	122				
GRO >C5-C12	<44 µg/kg	TM089	<44				
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	#			
Benzene	<10 µg/kg	TM089	<10	M			
Toluene	<2 µg/kg	TM089	<2	M			
Ethylbenzene	<3 µg/kg	TM089	<3	M			
m,p-Xylene	<6 µg/kg	TM089	<6	M			
o-Xylene	<3 µg/kg	TM089	<3	M			
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9				
sum of detected BTEX by GC	<24 µg/kg	TM089	<24				
Aliphatics >C5-C6	<10 µg/kg	TM089	<10				
Aliphatics >C6-C8	<10 µg/kg	TM089	<10				
Aliphatics >C8-C10	<10 µg/kg	TM089	<10				
Aliphatics >C10-C12	<10 µg/kg	TM089	<10				
Aliphatics >C12-C16	<100 µg/kg	TM173	<100				
Aliphatics >C16-C21	<100 µg/kg	TM173	8430				
Aliphatics >C21-C35	<100 µg/kg	TM173	64200				
Aliphatics >C35-C44	<100 µg/kg	TM173	15700				
Total Aliphatics >C12-C44	<100 µg/kg	TM173	88300				
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10				
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10				
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10				
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100				
Aromatics >EC16-EC21	<100 µg/kg	TM173	4520				
Aromatics >EC21-EC35	<100 µg/kg	TM173	24200				
Aromatics >EC35-EC44	<100 µg/kg	TM173	14200				
Aromatics >EC40-EC44	<100 µg/kg	TM173	6070				
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	43000				
Total Aliphatics >C5-35	<100 µg/kg	TM173	72600				
Total Aromatics >C5-35	<100 µg/kg	TM173	28800				
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	101000				
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	131000				



**SDG:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

## VOC MS (S)

Results Legend		Customer Sample R	BH315				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	3.00				
M	mCERTS accredited.		Soil/Solid				
S	Deviating sample.		18/05/2012				
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		22/05/2012				
(F)	Trigger breach confirmed		120523-88				
			5627526				
		E9					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	2.61				
Toluene-d8**	%	TM116	97				
4-Bromofluorobenzene**	%	TM116	106				
Dichlorodifluoromethane	<4 µg/kg	TM116	<4	M			
Chloromethane	<7 µg/kg	TM116	<7				
Vinyl Chloride	<10 µg/kg	TM116	<10				
Bromomethane	<13 µg/kg	TM116	<13	M			
Chloroethane	<14 µg/kg	TM116	<14	M			
Trichlorofluoromethane	<6 µg/kg	TM116	<6	M			
1.1-Dichloroethene	<10 µg/kg	TM116	<10	#			
Carbon Disulphide	<7 µg/kg	TM116	<7	M			
Dichloromethane	<10 µg/kg	TM116	<10	#			
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	M			
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11	M			
1.1-Dichloroethane	<8 µg/kg	TM116	<8	M			
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5	M			
2.2-Dichloropropane	<12 µg/kg	TM116	<12	M			
Bromochloromethane	<14 µg/kg	TM116	<14	M			
Chloroform	<8 µg/kg	TM116	<8	M			
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7	M			
1.1-Dichloropropene	<11 µg/kg	TM116	<11	M			
Carbontetrachloride	<14 µg/kg	TM116	<14	M			
1.2-Dichloroethane	<5 µg/kg	TM116	<5	M			
Benzene	<9 µg/kg	TM116	<9	M			
Trichloroethene	<9 µg/kg	TM116	<9	M			
1.2-Dichloropropane	<12 µg/kg	TM116	<12	M			
Dibromomethane	<9 µg/kg	TM116	<9	M			
Bromodichloromethane	<7 µg/kg	TM116	<7	M			
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14	M			
Toluene	<5 µg/kg	TM116	<5	M			
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14				
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	M			
1.3-Dichloropropane	<7 µg/kg	TM116	<7	#			
Tetrachloroethene	<5 µg/kg	TM116	<5	M			
Dibromochloromethane	<13 µg/kg	TM116	<13	M			



SDG: 120523-88  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number:  
 Report Number: 189402  
 Superseded Report: 185939

## VOC MS (S)

Results Legend		Customer Sample R	BH315				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	3.00				
M	mCERTS accredited.		Soil/Solid				
S	Deviating sample.		18/05/2012				
aq	Aqueous / settled sample.		.				
diss.filt	Dissolved / filtered sample.		22/05/2012				
tot.unfilt	Total / unfiltered sample.		120523-88				
*	Subcontracted test.		5627526				
**	% 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		E9				
(F)	Trigger breach confirmed						
Component	LOD/Units		Method				
1.2-Dibromoethane	<12 µg/kg	TM116	<12	M			
Chlorobenzene	<5 µg/kg	TM116	<5	M			
1.1.1.2-Tetrachloroethane	<10 µg/kg	TM116	<10	M			
Ethylbenzene	<4 µg/kg	TM116	<4	M			
p/m-Xylene	<14 µg/kg	TM116	<14	#			
o-Xylene	<10 µg/kg	TM116	<10	M			
Styrene	<10 µg/kg	TM116	<10	M			
Bromoform	<10 µg/kg	TM116	<10	M			
Isopropylbenzene	<5 µg/kg	TM116	<5	M			
1.1.2.2-Tetrachloroethane	<10 µg/kg	TM116	<10	#			
1.2.3-Trichloropropane	<17 µg/kg	TM116	<17	M			
Bromobenzene	<10 µg/kg	TM116	<10	M			
Propylbenzene	<11 µg/kg	TM116	<11	M			
2-Chlorotoluene	<9 µg/kg	TM116	<9	M			
1.3.5-Trimethylbenzene	<8 µg/kg	TM116	<8	#			
4-Chlorotoluene	<12 µg/kg	TM116	<12	M			
tert-Butylbenzene	<12 µg/kg	TM116	<12	#			
1.2.4-Trimethylbenzene	<9 µg/kg	TM116	<9	#			
sec-Butylbenzene	<10 µg/kg	TM116	<10	M			
4-Isopropyltoluene	<11 µg/kg	TM116	<11	M			
1.3-Dichlorobenzene	<6 µg/kg	TM116	<6	M			
1.4-Dichlorobenzene	<5 µg/kg	TM116	<5	M			
n-Butylbenzene	<10 µg/kg	TM116	<10	M			
1.2-Dichlorobenzene	<12 µg/kg	TM116	<12	M			
1.2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	M			
Tert-amyl methyl ether	<15 µg/kg	TM116	<15				
1.2.4-Trichlorobenzene	<6 µg/kg	TM116	<6	#			
Hexachlorobutadiene	<12 µg/kg	TM116	<12				
Naphthalene	<13 µg/kg	TM116	<13	M			
1.2.3-Trichlorobenzene	<6 µg/kg	TM116	<6	M			
VOC TIC	-	TM116	No TICs identified				



**SDG:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

## 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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH301A 16.50 SOLID 18/05/2012 00:00:00  120523-88 5627545 TM048	12/06/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH307 E 3 0.60 SOLID 21/05/2012 00:00:00  120523-88 5627533 TM048	01/06/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH307 E 9 2.50 - 3.00 SOLID 21/05/2012 00:00:00  120523-88 5627535 TM048	01/06/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310C E 3 0.60 - 0.80 SOLID  120523-88 5627538 TM048	01/06/12	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH313 E 18 8.00 SOLID  120523-88 5627531 TM048	01/06/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**CERTIFICATE OF ANALYSIS**

**SDG:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 189402  
**Report Number:** 185939  
**Superseded Report:** 185939

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH315 E 3 1.00 SOLID 18/05/2012 00:00:00  120523-88 5627523 TM048	1/8/12	Rachel Sullivan	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH315 E 9 3.00 SOLID 18/05/2012 00:00:00  120523-88 5627526 TM048	1/8/12	Rachel Sullivan	Soil containing loose fibres and ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



SDG: 120523-88  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189402  
Superseded Report: 185939

### Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Customer Sample Ref.	BH315 E 3	- (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	1.00					
Sample Type	SOLID					
Date Sampled	18/05/2012 00:00:00					
Date Received						
SDG	120523-88					
Original Sample	5627523					
Method Number	TM 304					



**SDG:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5650881	BH310C E3	0.60 - 0.80	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5650969	BH313 E18	8.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5651051	BH315 E3	1.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5651121	BH307 E3	0.60	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5651199	BH307 E9	2.50 - 3.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5651242	BH315 E9	3.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5694835	BH301A	16.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded

**Note :** Test results may be compromised





**SDG:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

### Notification of NDPs (No determination possible)

Date Received : 23/05/2012 14:06:38

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5627523	BH315 E3	1.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5627523	BH315 E3	1.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5627523	BH315 E3	1.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5627526	BH315 E9	3.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5627526	BH315 E9	3.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5627526	BH315 E9	3.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos



**SDG:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
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		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM243		Mixed Anions In Soils By Kone		
TM321		Organic matter Content of Soil By Titration		

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



**SDG:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

### Test Completion Dates

Lab Sample No(s)	5627533	5627535	5627531	5627523	5627526	5627545	5627538
Customer Sample Ref.	BH307	BH307	BH313	BH315	BH315	BH301A	BH310C
AGS Ref.	E3	E9	E18	E3	E9		E3
Depth	0.60	2.50 - 3.00	8.00	1.00	3.00	16.50	0.60 - 0.80
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	31-May-2012	31-May-2012	01-Jun-2012	01-Jun-2012	01-Jun-2012	12-Jun-2012	31-May-2012
Ammonium Soil by Titration	29-May-2012	30-May-2012	30-May-2012	30-May-2012	30-May-2012	13-Jun-2012	29-May-2012
Anions by Kone (soil)	31-May-2012	31-May-2012	31-May-2012	31-May-2012	31-May-2012	12-Jun-2012	31-May-2012
Asbestos Identification (Soil)	01-Jun-2012	01-Jun-2012	01-Jun-2012	01-Aug-2012	01-Aug-2012	12-Jun-2012	01-Jun-2012
Asbestos Quantification - Full				19-Jun-2012			
Boron Water Soluble	30-May-2012	30-May-2012	31-May-2012	31-May-2012	31-May-2012	12-Jun-2012	30-May-2012
Cyanide Comp/Free/Total/Thiocyanate	30-May-2012	30-May-2012	30-May-2012	30-May-2012	30-May-2012	13-Jun-2012	30-May-2012
Easily Liberated Sulphide	30-May-2012	30-May-2012	30-May-2012	30-May-2012	30-May-2012	12-Jun-2012	30-May-2012
EPH CWG (Aliphatic) GC (S)					01-Jun-2012		
EPH CWG (Aromatic) GC (S)					01-Jun-2012		
GRO by GC-FID (S)					01-Jun-2012		
Hexavalent Chromium (s)	31-May-2012	31-May-2012	31-May-2012	31-May-2012	31-May-2012	14-Jun-2012	31-May-2012
Metals by iCap-OES (Soil)	31-May-2012	31-May-2012	01-Jun-2012	01-Jun-2012	01-Jun-2012	12-Jun-2012	31-May-2012
Mineral Oil					01-Jun-2012		
PAH Value of soil	31-May-2012	31-May-2012	31-May-2012	31-May-2012	31-May-2012	14-Jun-2012	31-May-2012
pH	31-May-2012	31-May-2012	31-May-2012	31-May-2012	31-May-2012	13-Jun-2012	31-May-2012
Phenols by HPLC (S)	30-May-2012	30-May-2012	01-Jun-2012	01-Jun-2012	01-Jun-2012	11-Jun-2012	30-May-2012
Sample description	29-May-2012	29-May-2012	29-May-2012	29-May-2012	29-May-2012	07-Jun-2012	29-May-2012
Semi Volatile Organic Compounds					07-Jun-2012		
Toluene extractable matter*	19-Jun-2012	19-Jun-2012	19-Jun-2012			21-Jun-2012	19-Jun-2012
Total Organic Carbon	06-Jun-2012	06-Jun-2012	06-Jun-2012			14-Jun-2012	06-Jun-2012
Total Organic Carbon (Asb)				06-Jun-2012	06-Jun-2012		
Total Sulphate	30-May-2012	30-May-2012	31-May-2012	31-May-2012	31-May-2012	11-Jun-2012	30-May-2012
Total Sulphur	06-Jun-2012	06-Jun-2012	06-Jun-2012			14-Jun-2012	06-Jun-2012
TPH CWG GC (S)					01-Jun-2012		
VOC MS (S)					01-Jun-2012		



SDG: 120523-88  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189402  
Superseded Report: 185939

### Chromatogram

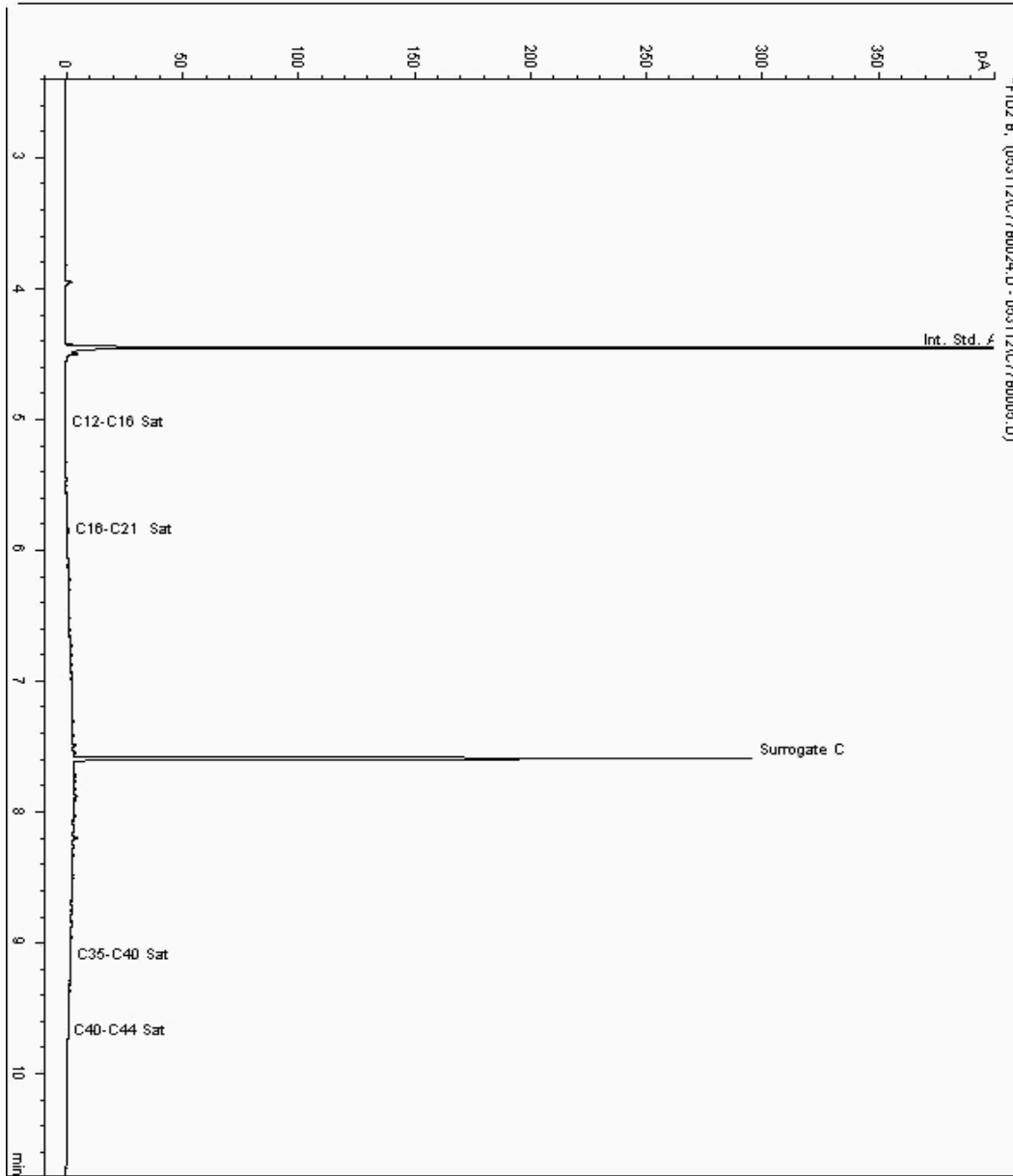
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5664111  
Sample ID : BH315

Depth : 3.00

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

Sample Identity: 5506455-5664111  
Date Acquired : 31/05/12 21:09:21 PM  
Units : ppb  
Dilution:





SDG: 120523-88  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number:  
Report Number: 189402  
Superseded Report: 185939

### Chromatogram

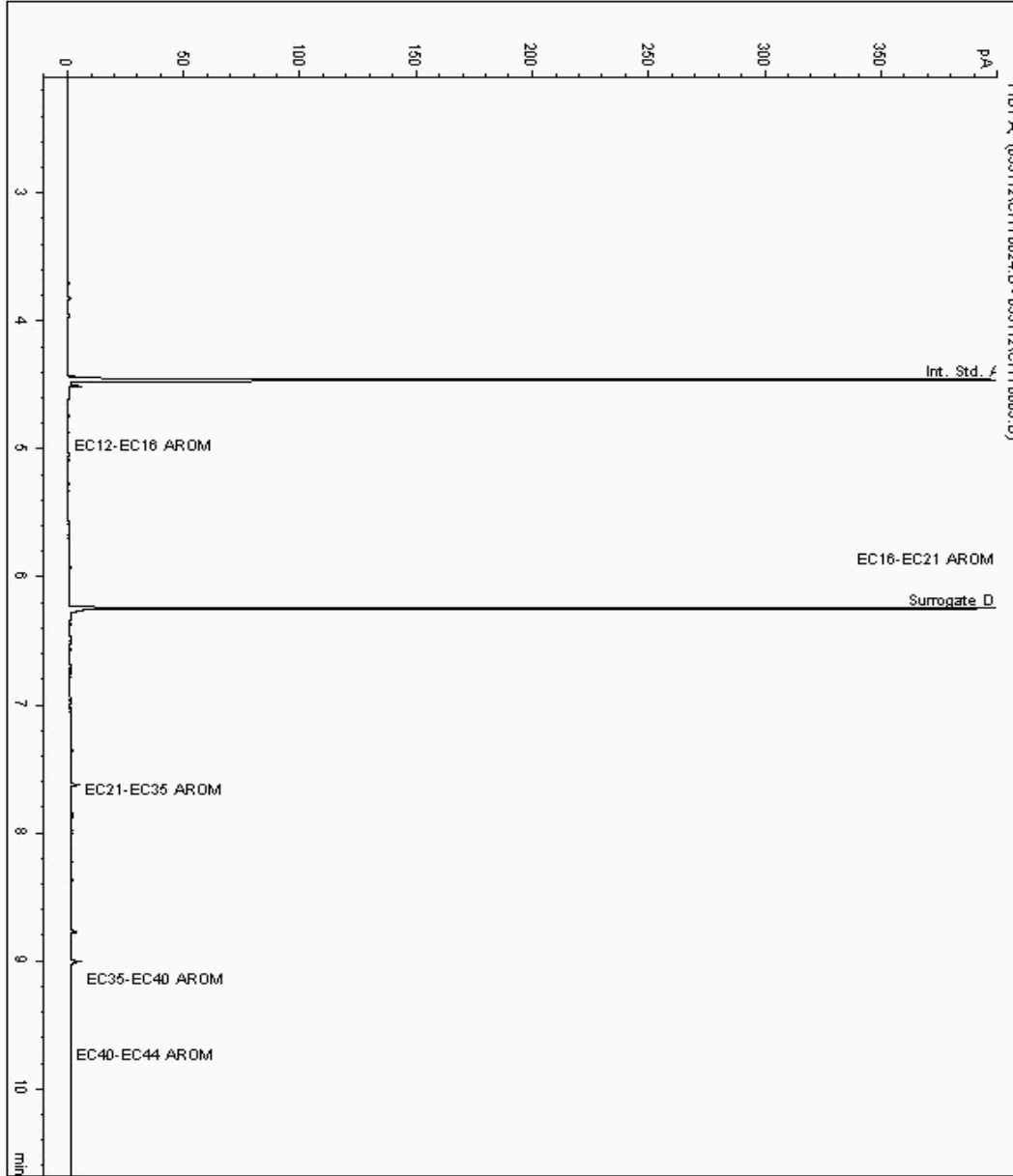
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5664111  
Sample ID : BH315

Depth : 3.00

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

Sample Identity: 5506456-5664111  
Date Acquired : 31/05/12 21:09:21 PM  
Units : ppb  
Dilution:





CERTIFICATE OF ANALYSIS

SDG: 120523-88  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

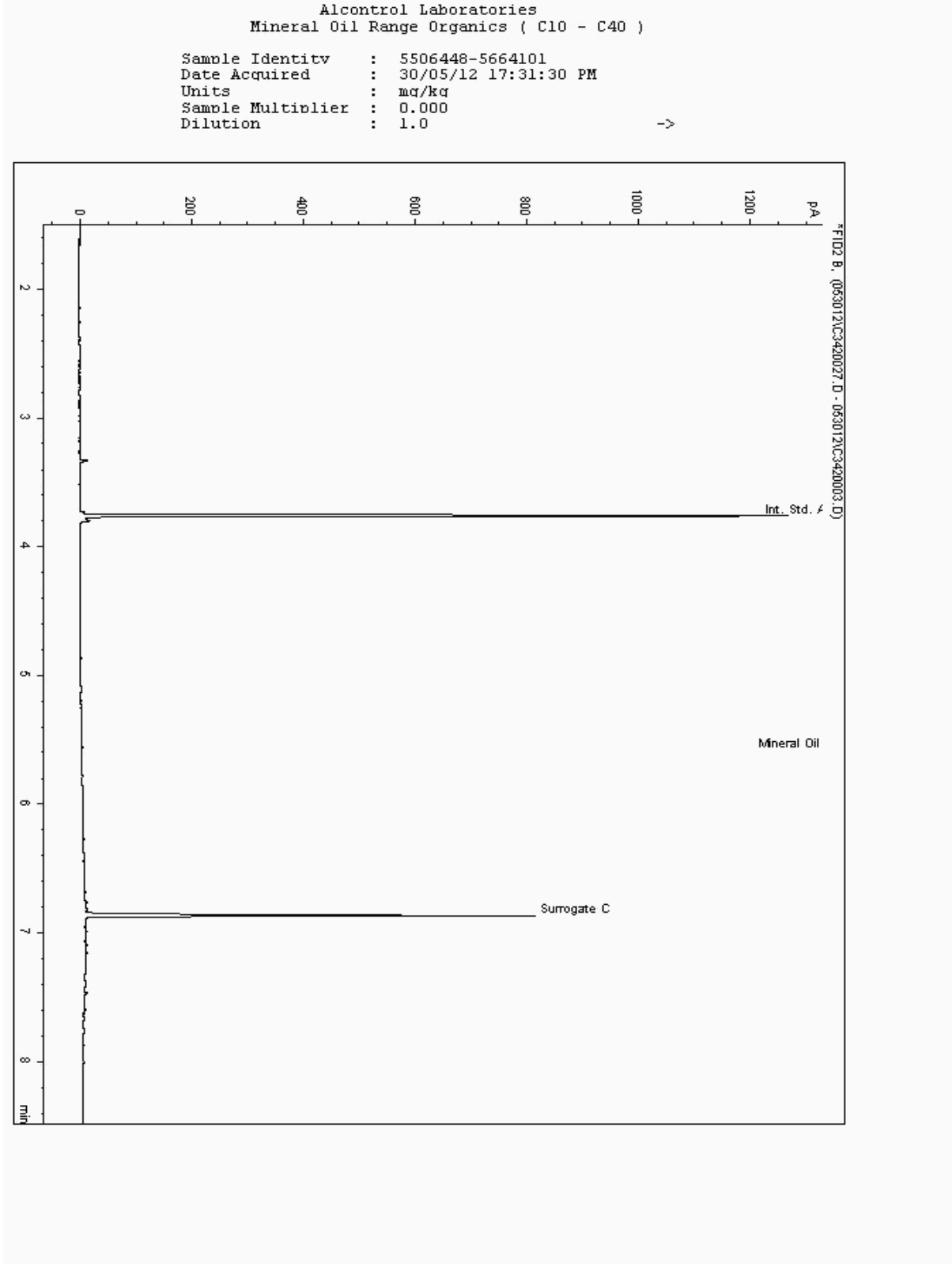
Order Number:  
Report Number: 189402  
Superseded Report: 185939

Chromatogram

Analysis: Mineral Oil

Sample No : 5664101  
Sample ID : BH315

Depth : 3.00





SDG: 120523-88  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

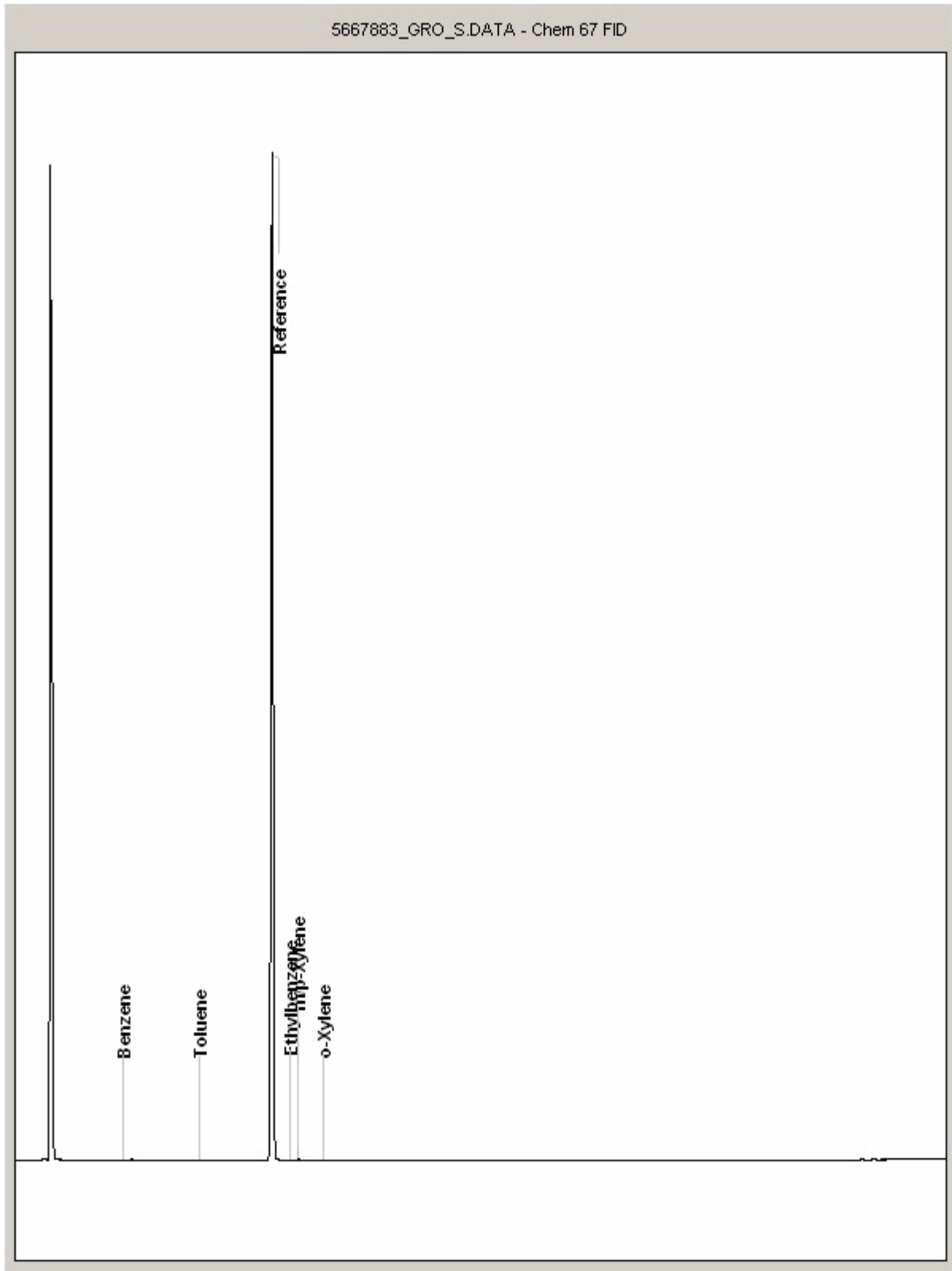
Order Number:  
Report Number: 189402  
Superseded Report: 185939

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5667883  
Sample ID : BH315

Depth : 3.00





# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Cornbrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 282748-1

**Date of Report:** 15-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 7763

**Customer Purchase Order:** 148684

**Date Job Received at SAL:** 12-Jun-2012

**Date Analysis Started:** 14-Jun-2012

**Date Analysis Completed:** 15-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager







**Scientific Analysis Laboratories Ltd**  
**Certificate of Analysis**

Hadfield House  
Hadfield Street  
Combrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 282891-1

**Date of Report:** 20-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120523-88

**Customer Site Reference:** 7797

**Date Job Received at SAL:** 13-Jun-2012

**Date Analysis Started:** 14-Jun-2012

**Date Analysis Completed:** 19-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager

<b>SAL Reference:</b> 282891 <b>Project Site:</b> 7797 <b>Customer Reference:</b> 120523-88					
Soil		Analysed as Soil			
Miscellaneous					
<b>SAL Reference</b>					<b>282891 001</b>
<b>Customer Sample Reference</b>					<b>5716877</b>
<b>Date Sampled</b>					<b>18-MAY-2012</b>
Determinand	Method	Test Sample	LOD	Units	
Toluene extractable matter	T2	AR	500	mg/kg	<500

### Index to symbols used in 282891-1

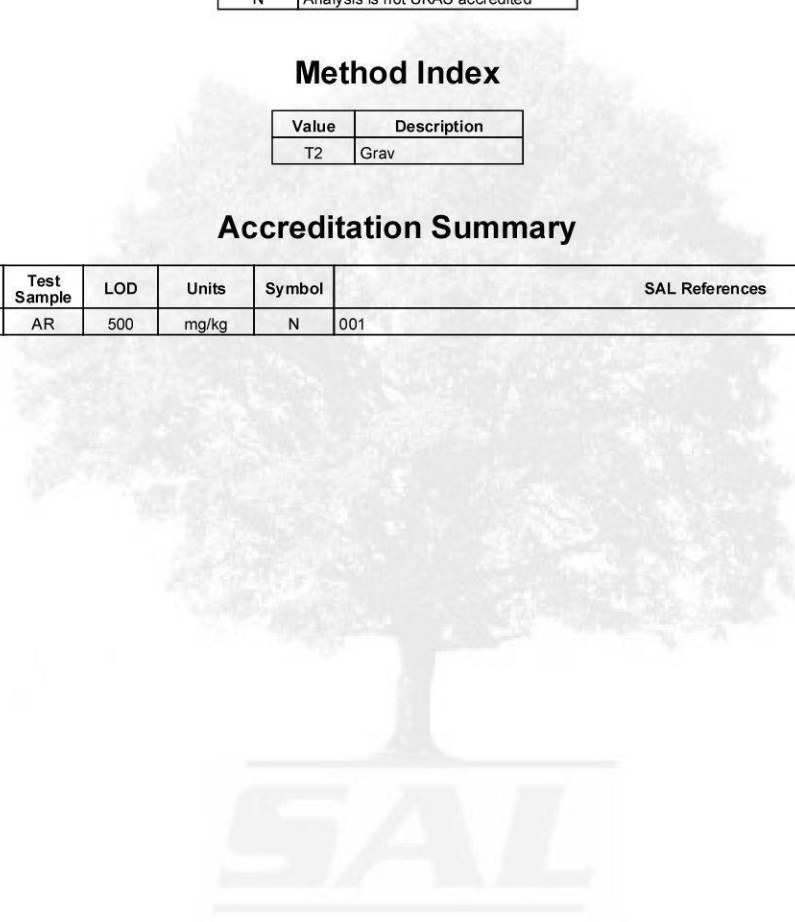
Value	Description
AR	As Received
N	Analysis is not UKAS accredited

### Method Index

Value	Description
T2	Grav

### Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Toluene extractable matter	T2	AR	500	mg/kg	N	001



**SDG:** 120523-88  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:**  
**Report Number:** 189402  
**Superseded Report:** 185939

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

## SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GCMS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
EPH (DRO)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (MIN OIL)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (CLEANED UP)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC FD
PCBAROCLOR 1254/PCBCON	D&C	HEXANE ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GCMS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC FD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC FD
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	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)	GC FD
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVCC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	R
MINERAL OIL BY R	TCE	STIRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DIRECT INJECTION	GC FD

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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 Anorthophyllite	-
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.



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

**Attention:** Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 04 September 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120528-25  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 192995

We received 23 samples on Friday May 25, 2012 and 9 of these samples were scheduled for analysis which was completed on Tuesday September 04, 2012. 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:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5652747	BH305	E3	0.30	24/05/2012
5652748	BH305	E6	0.80 - 1.20	24/05/2012
5652749	BH305	E9	1.90 - 2.30	24/05/2012
5652751	BH305	E10	3.00	24/05/2012
5652752	BH305	E15	4.00 - 4.50	24/05/2012
5652755	BH305	E16	4.00 - 4.50	24/05/2012
5652738	BH310C	E18	0.40	22/05/2012
5652735	BH310C	E9	2.80	22/05/2012
5652736	BH310C	E12	4.00	22/05/2012
5652737	BH310C	E15	5.20	22/05/2012
5652740	BH311	E3	0.00 - 0.30	22/05/2012
5657305	BH311	E3	0.00 - 0.30	23/05/2012
5652741	BH311	E6	0.50 - 0.60	22/05/2012
5652742	BH311	E7	0.50 - 0.60	22/05/2012
5652743	BH311	E10	1.60 - 1.80	23/05/2012
5652744	BH311	E13	3.50	23/05/2012
5652745	BH311	E16	4.50	23/05/2012
5657307	BH311	E16	4.50	23/05/2012
5652746	BH311 DUPLICATE 2		0.50 - 0.60	23/05/2012
5652761	BH313	E21	13.50 - 14.00	22/05/2012
5652759	BH313	E22	15.50 - 16.00	22/05/2012
5652757	BH313	E23	17.50	23/05/2012
5652739	BH315	E19	6.00	22/05/2012

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



SDG: 120528-25  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 192995  
 Superseded Report:



SOLID Results Legend  Test  No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5662746	BH311 DUPLICATE 2		0.50 - 0.60	400g Tub (ALEE214)
		5662739	BH315	E19	6.00	250g Amber Jar (AL)
		5662744	BH311	E13	3.50	400g Tub (ALEE214)
		5662742	BH311	E7	0.50 - 0.60	250g Amber Jar (AL)
	5662741	BH311	E6	0.50 - 0.60	250g Amber Jar (AL)	
	5662736	BH310C	E12	4.00	250g Amber Jar (AL)	
	5662755	BH305	E16	4.00 - 4.50	250g Amber Jar (AL)	
	5662752	BH305	E15	4.00 - 4.50	400g Tub (ALEE214)	
	5662747	BH305	E3	0.30	400g Tub (ALEE214)	
					250g Amber Jar (AL)	
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 2				
					X X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 2				
					X X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Anions by ion Chromatography	All	NDPs: 0 Tests: 1				
					X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Anions by Kone (w)	All	NDPs: 0 Tests: 2				
					X X	
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Boron Water Soluble	All	NDPs: 0 Tests: 7				
					X X X X X X X	
COD Unfiltered	All	NDPs: 0 Tests: 2				
					X X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 2				
					X X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 9				
					X X X X X X X X X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2				
					X X	
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 2				
					X X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 7				
					X X X X X X X	



SDG: 120528-25  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 192995  
 Superseded Report:

SOLID Results Legend   Test   No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5662746	BH311 DUPLICATE 2		0.50 - 0.60	400g Tub (ALEE214)
		5662739	BH315	E19	6.00	250g Amber Jar (AL)
		5662744	BH311	E13	3.50	400g Tub (ALEE214)
		5662742	BH311	E7	0.50 - 0.60	250g Amber Jar (AL)
	5662741	BH311	E6	0.50 - 0.60	250g Amber Jar (AL)	
	5662736	BH310C	E12	4.00	250g Amber Jar (AL)	
	5662755	BH305	E16	4.00 - 4.50	250g Amber Jar (AL)	
	5662752	BH305	E15	4.00 - 4.50	400g Tub (ALEE214)	
	5662747	BH305	E3	0.30	250g Amber Jar (AL)	
Fluoride	All	NDPs: 0 Tests: 1				
Free Sulphur	All	NDPs: 0 Tests: 2				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 7				
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2				
Mercury Dissolved	All	NDPs: 0 Tests: 2				
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 7				
	Antimony	NDPs: 0 Tests: 7				
	Arsenic	NDPs: 0 Tests: 7				
	Barium	NDPs: 0 Tests: 7				
	Beryllium	NDPs: 0 Tests: 7				
	Cadmium	NDPs: 0 Tests: 7				
	Chromium	NDPs: 0 Tests: 7				
	Copper	NDPs: 0 Tests: 7				
	Lead	NDPs: 0 Tests: 7				
	Manganese	NDPs: 0 Tests: 7				





SDG: 120528-25  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 192995  
 Superseded Report:

SOLID Results Legend  Test  No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5662746	BH311 DUPLICATE 2		0.50 - 0.60	400g Tub (ALEE214)
		5662739	BH315	E19	6.00	250g Amber Jar (AL)
		5662744	BH311	E13	3.50	400g Tub (ALEE214)
		5662742	BH311	E7	0.50 - 0.60	250g Amber Jar (AL)
	5662741	BH311	E6	0.50 - 0.60	400g Tub (ALEE214)	
	5662736	BH310C	E12	4.00	250g Amber Jar (AL)	
	5662755	BH305	E16	4.00 - 4.50	400g Tub (ALEE214)	
	5662752	BH305	E15	4.00 - 4.50	400g Tub (ALEE214)	
	5662747	BH305	E3	0.30	250g Amber Jar (AL)	
Metals by iCap-OES (Soil)	Mercury	NDPs: 0 Tests: 7				
					X X X X X X X	
	Nickel	NDPs: 0 Tests: 7				
					X X X X X X X	
	Selenium	NDPs: 0 Tests: 7				
					X X X X X X X	
	Vanadium	NDPs: 0 Tests: 7				
					X X X X X X X	
	Zinc	NDPs: 0 Tests: 7				
					X X X X X X X	
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 2				
					X X	
NRA Leachate	All	NDPs: 0 Tests: 2				
					X X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 2				
					X X	
PAH Value of soil	All	NDPs: 0 Tests: 7				
					X X X X X X X	
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2				
					X X	
pH	All	NDPs: 0 Tests: 7				
					X X X X X X X	
pH Value	All	NDPs: 0 Tests: 2				
					X X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 7				
					X X X X X X X	
Phenols by HPLC (W)	All	NDPs: 0 Tests: 2				
					X X	
Sample description	All	NDPs: 0 Tests: 9				
					X X X X X X X X X	



**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

<b>SOLID</b> <b>Results Legend</b> Test No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5662746	BH311 DUPLICATE 2		0.50 - 0.60	400g Tub (ALE214)
		5662739	BH315	E19	6.00	250g Amber Jar (AL)
		5662744	BH311	E13	3.50	250g Amber Jar (AL)
		5662742	BH311	E7	0.50 - 0.60	250g Amber Jar (AL)
	5662741	BH311	E6	0.50 - 0.60	250g Amber Jar (AL)	
	5662736	BH310C	E12	4.00	250g Amber Jar (AL)	
	5662755	BH305	E16	4.00 - 4.50	250g Amber Jar (AL)	
	5662752	BH305	E15	4.00 - 4.50	250g Amber Jar (AL)	
	5662747	BH305	E3	0.30	250g Amber Jar (AL)	
Sulphide	All	NDPs: 0 Tests: 2				
Toluene extractable matter*	All	NDPs: 5 Tests: 1				
Total Dissolved Solids (Grav)	All	NDPs: 0 Tests: 2				
Total Organic Carbon	All	NDPs: 5 Tests: 1				
Total Organic Carbon (Asb)	All	NDPs: 0 Tests: 6				
Total Sulphate	All	NDPs: 0 Tests: 7				
Total Sulphur	All	NDPs: 5 Tests: 1				
TPH by IR Oils and Greases	All	NDPs: 0 Tests: 2				



**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**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
5652747	BH305	0.30	Light Brown	Loamy Sand	0.063 - 0.1 mm	Stones	N/A
5652752	BH305	4.00 - 4.50	Dark Brown	Sand	0.1 - 2 mm	Stones	N/A
5652755	BH305	4.00 - 4.50	Dark Brown	Sand	0.1 - 2 mm	Stones	None
5652741	BH311	0.50 - 0.60	Dark Brown	Sand	0.1 - 2 mm	Stones	N/A
5652742	BH311	0.50 - 0.60	Dark Brown	Sand	0.1 - 2 mm	Stones	None
5652744	BH311	3.50	Dark Brown	Sand	0.1 - 2 mm	Stones	N/A
5652739	BH315	6.00	Black	Sand	0.1 - 2 mm	Stones	N/A
5652746	BH311 DUPLICATE 2	0.50 - 0.60	Dark Brown	Sand	0.063 - 0.1 mm	Stones	N/A
5652736	BH310C	4.00	Black	Sand	0.1 - 2 mm	Stones	N/A

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

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring 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:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

Results Legend		Customer Sample R	BH305	BH305	BH305	BH311	BH311	BH311
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	BH305	BH305	BH305	BH311	BH311	BH311
M	mCERTS accredited.		0.30	4.00 - 4.50	4.00 - 4.50	0.50 - 0.60	0.50 - 0.60	3.50
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		24/05/2012	24/05/2012	24/05/2012	22/05/2012	22/05/2012	23/05/2012
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		25/05/2012	25/05/2012	25/05/2012	25/05/2012	25/05/2012	25/05/2012
(F)	Trigger breach confirmed		120528-25	120528-25	120528-25	120528-25	120528-25	120528-25
			5652747	5652752	5652755	5652741	5652742	5652744
		E3	E15	E16	E6	E7	E13	
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	13	2.9		7.6		11
Tolulene Extractable Matter	<500 mg/kg	SUB	<500					
Dissolved solids, Total (gravimetric) NRA leach	<10 mg/l	TM021			694		395	
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15		<15		<15
Alkalinity, Carbonate as CaCO3 NRA leach	<2 mg/l	TM043			70		50	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01		<0.01		<0.01
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01		<0.01		<0.01
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015		<0.015		0.396
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01		<0.01		<0.01
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015		<0.015		<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035		<0.035		0.396
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06		<0.06		0.396
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090			<3		<3	
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099			<0.2		<0.2	
Sulphide NRA leach	<0.01 mg/l	TM101			<0.01		<0.01	
Fluoride NRA leach	<0.5 mg/l	TM104					<0.5	
COD, unfiltered NRA leach	<7 mg/l	TM107			<7		<7	
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120			0.969		0.869	
Sulphur, Total	<0.02 %	TM132	0.026					
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.00414					
pH	1 pH Units	TM133	7.75	10.6		11.6		10.1
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6		2.25		<0.6
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152			6840		665	
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152			2.69		6.71	
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152			3.84		3.42	
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152			283		497	
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152			786		137	
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152			<0.1		<0.1	
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152			1.26		192	
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152			0.101		0.157	
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152			1.63		9.81	
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152			3.62		15.6	
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152			0.433		0.724	
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152			6.22		20.4	
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152			1.18		1.11	



**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

Results Legend			Customer Sample R					
#	ISO17025 accredited.		BH305	BH305	BH305	BH311	BH311	BH311
M	mCERTS accredited.							
S	Deviating sample.							
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							
Customer Sample R								
Depth (m)			0.30	4.00 - 4.50	4.00 - 4.50	0.50 - 0.60	0.50 - 0.60	3.50
Sample Type			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled			24/05/2012	24/05/2012	24/05/2012	22/05/2012	22/05/2012	23/05/2012
Sample Time								
Date Received			25/05/2012	25/05/2012	25/05/2012	25/05/2012	25/05/2012	25/05/2012
SDG Ref			120528-25	120528-25	120528-25	120528-25	120528-25	120528-25
Lab Sample No.(s)			5652747	5652752	5652755	5652741	5652742	5652744
AGS Reference			E3	E15	E16	E6	E7	E13
Component	LOD/Units	Method						
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152			<6.3		<6.3	
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152			2.88		0.902	
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152			<0.96		<0.96	
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152			1.21		0.636	
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152			11.6		6.24	
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152			2.89		9.57	
Cyanide, Total	<1 mg/kg	TM153	<1	<1		<1		<1
			M	M		M		M
Cyanide, Free	<1 mg/kg	TM153	<1	<1		<1		<1
			M	M		M		M
Cyanide, Complex	<1 mg/kg	TM153	<1	<1		<1		<1
Thiocyanate	<1 mg/kg	TM153	<1	<1		<1		<1
			M	M		M		M
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15		<15		<15
			§ #	§ #		§ #		§ #
Aluminium	<11 mg/kg	TM181	11100	1920		958		9400
Antimony	<0.6 mg/kg	TM181	1.52	6.89		5.02		14
			#	#		#		#
Arsenic	<0.6 mg/kg	TM181	16.2	<0.6		3.47		21.8
			M	M		M		M
Barium	<0.6 mg/kg	TM181	28.9	88.4		48.2		399
			#	#		#		#
Beryllium	<0.01 mg/kg	TM181	0.473	<0.01		<0.01		0.262
			M	M		M		M
Cadmium	<0.02 mg/kg	TM181	0.377	0.301		0.636		2.41
			M	M		M		M
Chromium	<0.9 mg/kg	TM181	25.5	302		143		1100
			M	M		M		M
Copper	<1.4 mg/kg	TM181	13.9	28.9		44.7		160
			M	M		M		M
Lead	<0.7 mg/kg	TM181	36.7	28.4		108		292
			M	M		M		M
Manganese	<0.13 mg/kg	TM181	1310	11400		1780		23100
			M	M		M		M
Mercury	<0.14 mg/kg	TM181	<0.14	<0.14		<0.14		<0.7
			M	M		M		M
Nickel	<0.2 mg/kg	TM181	25.8	10.4		10.3		56.8
			M	M		M		M
Selenium	<1 mg/kg	TM181	1.59	1.14		<1		9.27
			#	#		#		#
Vanadium	<0.2 mg/kg	TM181	20.5	38.4		21.6		243
			#	#		#		#
Zinc	<1.9 mg/kg	TM181	99.6	592		1070		731
			M	M		M		M
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183			<0.01		<0.01	
Sulphate NRA leach	<2 mg/l	TM184			41.1		14.1	
Chloride NRA leach	<2 mg/l	TM184			188		9.9	
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184			<0.3		0.963	
PCB congener 28 NRA leach	<0.015 µg/l	TM197			0.02		<0.015	
PCB congener 52 NRA leach	<0.015 µg/l	TM197			<0.015		<0.015	
PCB congener 101 NRA leach	<0.015 µg/l	TM197			<0.015		<0.015	
PCB congener 118 NRA leach	<0.015 µg/l	TM197			<0.015		<0.015	
PCB congener 138 NRA leach	<0.015 µg/l	TM197			<0.015		<0.015	





## CERTIFICATE OF ANALYSIS

**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

Results Legend		Customer Sample R	BH315	BH311 DUPLICATE 2	BH310C		
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	BH315	BH311 DUPLICATE 2	BH310C		
M	mCERTS accredited.		6.00	0.50 - 0.60	4.00		
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		22/05/2012	23/05/2012	22/05/2012		
diss.filt	Dissolved / filtered sample.		.	.	.		
tot.unfilt	Total / unfiltered sample.		25/05/2012	25/05/2012	25/05/2012		
**	Subcontracted test.		120528-25	120528-25	120528-25		
	% 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		5652739	5652746	5652736		
(F)	Trigger breach confirmed		E19	E19	E12		
Component	LOD/Units	Method					
Moisture content ratio	%	PM024	5.2	6.6	6.4		
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15	<15		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015		
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01		
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035		
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06	<0.06		
pH	1 pH Units	TM133	11.1	11.7	11.6		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	2.23	0.701		
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1		
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1		
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1		
Thiocyanate	<1 mg/kg	TM153	<1	<1	<1		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	<15		
Aluminium	<11 mg/kg	TM181	2040	7820	19200		
Antimony	<0.6 mg/kg	TM181	7.97	27.8	26.7		
Arsenic	<0.6 mg/kg	TM181	<0.6	37.7	15.9		
Barium	<0.6 mg/kg	TM181	74.2	344	1080		
Beryllium	<0.01 mg/kg	TM181	<0.01	<0.05	0.191		
Cadmium	<0.02 mg/kg	TM181	0.114	10.3	3.19		
Chromium	<0.9 mg/kg	TM181	351	996	3490		
Copper	<1.4 mg/kg	TM181	33.6	491	474		
Lead	<0.7 mg/kg	TM181	29.3	1270	282		
Manganese	<0.13 mg/kg	TM181	11300	10700	61900		
Mercury	<0.14 mg/kg	TM181	<0.14	<0.7	<0.7		
Nickel	<0.2 mg/kg	TM181	8.09	93.9	102		
Selenium	<1 mg/kg	TM181	2.02	6.16	25.8		
Vanadium	<0.2 mg/kg	TM181	28.7	144	342		
Zinc	<1.9 mg/kg	TM181	95.2	13200	418		
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	<10		
Sulphate, Total	<48 mg/kg	TM221	5470	2920	2150		
Total sulphur	<0.0016 %	TM221	0.182	0.0974	0.0718		
Boron, water soluble	<1 mg/kg	TM222	4.7	6.32	8.76		



CERTIFICATE OF ANALYSIS

SDG: 120528-25
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 192995
Superseded Report:

Table with columns: Results Legend, Customer Sample R, BH315, BH311 DUPLICATE 2, BH310C, Component, LOD/Units, Method. Rows include Calcium, Magnesium, Water Soluble Sulphate as SO4 2:1 Extract, Chloride (soluble), and Fraction Organic Carbon (FOC).







**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310C E 12 4.00 SOLID 22/05/2012 00:00:00  120528-25 5652736 TM048	13/06/12	Rachel Sullivan	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310 E 19 6.00 SOLID 22/05/2012 00:00:00  120528-25 5652739 TM048	13/06/12	Lauren Sargeant	Loose fibres and ACM debris in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH311 E 6 0.50 - 0.60 SOLID 22/05/2012 00:00:00  120528-25 5652741 TM048	13/06/12	Lauren Sargeant	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH311 E 13 3.50 SOLID 23/05/2012 00:00:00  120528-25 5652744 TM048	13/06/12	Lauren Sargeant	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH311 DU(L)ICATE 2 0.50 - 0.60 SOLID 23/05/2012 00:00:00  120528-25 5652746 TM048	13/06/12	Lauren Sargeant	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH305 E 3 0.30 SOLID 24/05/2012 00:00:00  120528-25 5652747 TM048	13/06/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH305 E 15 4.00 - 4.50 SOLID 24/05/2012 00:00:00  120528-25 5652752 TM048	13/06/12	Lauren Sargeant	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH310C E 12 4.00 SOLID 22/05/2012 00:00:00  120528-25 5652736 TM048	7/8/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH315 E 19 6.00 SOLID 22/05/2012 00:00:00  120528-25 5652739 TM048	7/8/12	Kevin Bowron	Soil Containing loose fibres and material typical of asbestos bitumen	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH311 E 6 0.50 - 0.60 SOLID 22/05/2012 00:00:00  120528-25 5652741 TM048	7/8/12	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH311 E 13 3.50 SOLID 23/05/2012 00:00:00  120528-25 5652744 TM048	03/08/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



### CERTIFICATE OF ANALYSIS

**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH311 DUPLICATE 2 0.50 - 0.60 SOLID 23/05/2012 00:00:00 120528-25 5652746 TM048	03/08/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH305 E 15 4.00 - 4.50 SOLID 24/05/2012 00:00:00 120528-25 5652752 TM048	7/8/12	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5697544	BH310C E12	4.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5697592	BH315 E19	6.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5697722	BH305 E3	0.30	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5697733	BH311 DUPLICATE 2	0.50 - 0.60	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5697745	BH311 E13	3.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5699201	BH311 E6	0.50 - 0.60	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5699201	BH311 E6	0.50 - 0.60	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5699201	BH311 E6	0.50 - 0.60	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5699201	BH311 E6	0.50 - 0.60	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5699201	BH311 E6	0.50 - 0.60	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5699201	BH311 E6	0.50 - 0.60	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5699201	BH311 E6	0.50 - 0.60	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5699232	BH311 E6	0.50 - 0.60	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5699401	BH305 E15	4.00 - 4.50	SOLID	Phenols by HPLC (S)	2,3,5-Trimethylphenol	Sample holding time exceeded
5699401	BH305 E15	4.00 - 4.50	SOLID	Phenols by HPLC (S)	2-Isopropylphenol	Sample holding time exceeded
5699401	BH305 E15	4.00 - 4.50	SOLID	Phenols by HPLC (S)	Cresols	Sample holding time exceeded
5699401	BH305 E15	4.00 - 4.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5699401	BH305 E15	4.00 - 4.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected 5 speciated	Sample holding time exceeded
5699401	BH305 E15	4.00 - 4.50	SOLID	Phenols by HPLC (S)	Phenols, Total Detected monohydric	Sample holding time exceeded
5699401	BH305 E15	4.00 - 4.50	SOLID	Phenols by HPLC (S)	Xylenols	Sample holding time exceeded
5699409	BH305 E15	4.00 - 4.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded

**Note : Test results may be compromised**



**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

### Notification of NDPs (No determination possible)

Date Received : 28/05/2012 10:56:22

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5652739	BH315 E19	6.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5652739	BH315 E19	6.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5652739	BH315 E19	6.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5652741	BH311 E6	0.50 - 0.60	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5652741	BH311 E6	0.50 - 0.60	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5652741	BH311 E6	0.50 - 0.60	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5652744	BH311 E13	3.50	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5652744	BH311 E13	3.50	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5652744	BH311 E13	3.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5652746	BH311 DUPLICATE 2	0.50 - 0.60	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5652746	BH311 DUPLICATE 2	0.50 - 0.60	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5652746	BH311 DUPLICATE 2	0.50 - 0.60	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5652752	BH305 E15	4.00 - 4.50	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5652752	BH305 E15	4.00 - 4.50	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5652752	BH305 E15	4.00 - 4.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos



## CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120528-25	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	192995
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM021	Method 2540C, AWWA/APHA, 20th Ed., 1999	Determination of total dissolved solids in waters by gravimetry.		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM226	In-House Method	Determination of Anions in Waters using Ion Chromatography		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		



## CERTIFICATE OF ANALYSIS

<b>SDG:</b> 120528-25	<b>Location:</b> Haulbowline	<b>Order Number:</b> 4559
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 192995
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b>

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM243		Mixed Anions In Soils By Kone		
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		
TM294		Determination of Free Sulphur in liquids by HPLC		
TM321		Organic matter Content of Soil By Titration		

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





**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

### Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	5652747	5652752	5652755	5652741	5652742	5652744	5652739	5652746	5652736
	BH305	BH305	BH305	BH311	BH311	BH311	BH315	BH311 DUPLICATE 2	BH310C
<b>AGS Ref.</b>	E3	E15	E16	E6	E7	E13	E19		E12
<b>Depth</b>	0.30	4.00 - 4.50	4.00 - 4.50	0.50 - 0.60	0.50 - 0.60	3.50	6.00	0.50 - 0.60	4.00
<b>Type</b>	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	14-Jun-2012	12-Jun-2012		12-Jun-2012		14-Jun-2012	12-Jun-2012	14-Jun-2012	14-Jun-2012
Alkalinity as CaCO3			13-Jun-2012		13-Jun-2012				
Ammoniacal Nitrogen			14-Jun-2012		14-Jun-2012				
Ammonium Soil by Titration	13-Jun-2012	13-Jun-2012		13-Jun-2012		13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012
Anions by ion Chromatography			15-Jun-2012						
Anions by Kone (soil)	14-Jun-2012	12-Jun-2012		12-Jun-2012		15-Jun-2012	12-Jun-2012	15-Jun-2012	14-Jun-2012
Anions by Kone (w)			15-Jun-2012		15-Jun-2012				
Asbestos Identification (Soil)	13-Jun-2012	07-Aug-2012		07-Aug-2012		03-Aug-2012	07-Aug-2012	03-Aug-2012	07-Aug-2012
Boron Water Soluble	14-Jun-2012	12-Jun-2012		12-Jun-2012		14-Jun-2012	12-Jun-2012	14-Jun-2012	14-Jun-2012
COD Unfiltered			14-Jun-2012		14-Jun-2012				
Conductivity (at 20 deg.C)			13-Jun-2012		13-Jun-2012				
Cyanide Comp/Free/Total/Thiocyanate	13-Jun-2012	13-Jun-2012	14-Jun-2012	13-Jun-2012	14-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012
Dissolved Metals by ICP-MS			15-Jun-2012		14-Jun-2012				
Dissolved Organic/Inorganic Carbon			14-Jun-2012		14-Jun-2012				
Easily Liberated Sulphide	13-Jun-2012	13-Jun-2012		13-Jun-2012		13-Jun-2012	14-Jun-2012	13-Jun-2012	13-Jun-2012
Fluoride					14-Jun-2012				
Free Sulphur			14-Jun-2012		14-Jun-2012				
Hexavalent Chromium (s)	14-Jun-2012	14-Jun-2012		14-Jun-2012		14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
Hexavalent Chromium (w)			14-Jun-2012		14-Jun-2012				
Mercury Dissolved			14-Jun-2012		14-Jun-2012				
Metals by iCap-OES (Soil)	14-Jun-2012	04-Sep-2012		12-Jun-2012		14-Jun-2012	04-Sep-2012	15-Jun-2012	15-Jun-2012
Metals by iCap-OES Dissolved (W)			13-Jun-2012		13-Jun-2012				
Nitrite by Kone (w)			14-Jun-2012		14-Jun-2012				
NRA Leachate			07-Jun-2012		07-Jun-2012				
PAH Spec MS - Aqueous (W)			13-Jun-2012		13-Jun-2012				
PAH Value of soil	14-Jun-2012	14-Jun-2012		14-Jun-2012		14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
PCB Congeners - Aqueous (W)			15-Jun-2012		15-Jun-2012				
pH	14-Jun-2012	13-Jun-2012		13-Jun-2012		14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
pH Value			13-Jun-2012		13-Jun-2012				
Phenols by HPLC (S)	12-Jun-2012	12-Jun-2012		12-Jun-2012		12-Jun-2012	11-Jun-2012	12-Jun-2012	12-Jun-2012
Phenols by HPLC (W)			14-Jun-2012		14-Jun-2012				
Sample description	08-Jun-2012	08-Jun-2012	07-Jun-2012	08-Jun-2012	07-Jun-2012	08-Jun-2012	08-Jun-2012	08-Jun-2012	08-Jun-2012
Sulphide			15-Jun-2012		15-Jun-2012				
Toluene extractable matter*	28-Jun-2012								
Total Dissolved Solids (Grav)			15-Jun-2012		15-Jun-2012				
Total Organic Carbon	14-Jun-2012								
Total Organic Carbon (Asb)		15-Jun-2012		15-Jun-2012		15-Jun-2012	15-Jun-2012	15-Jun-2012	15-Jun-2012
Total Sulphate	15-Jun-2012	13-Jun-2012		13-Jun-2012		15-Jun-2012	13-Jun-2012	15-Jun-2012	15-Jun-2012
Total Sulphur	14-Jun-2012								
TPH by IR Oils and Greases			13-Jun-2012		13-Jun-2012				



# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Cornbrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 283469-1

**Date of Report:** 27-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120528-25

**Customer Purchase Order:** 149129

**Date Job Received at SAL:** 18-Jun-2012

**Date Analysis Started:** 20-Jun-2012

**Date Analysis Completed:** 22-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager



**SDG:** 120528-25  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 192995  
**Superseded Report:**

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

## SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GCMS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
EPH (DFO)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (MIN OIL)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (CLEANED UP)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC FD
PCBAROCLOR 1254/PCBCON	D&C	HEXANE ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GCMS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC FD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC FD
SEMIVOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	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)	GC FD
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVCC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL BY R	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FD

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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 Anorthophyllite	-
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.



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

Attention: Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 31 July 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120530-71  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 189306

**This report has been revised and directly supersedes 185850 in its entirety.**

We received 18 samples on Tuesday May 29, 2012 and 7 of these samples were scheduled for analysis which was completed on Tuesday July 31, 2012. 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:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5664377	BH302		6.00	25/05/2012
5664372	BH302	E24	7.00	25/05/2012
5664373	BH302	E27	8.00	25/05/2012
5664383	BH304	E3	0.30	25/05/2012
5664384	BH304	E6	0.90	25/05/2012
5664385	BH304	E9	2.00	25/05/2012
5664386	BH304	E12	3.00	25/05/2012
5664390	BH304	E9	3.00	25/05/2012
5664387	BH304	E15	4.20	25/05/2012
5664388	BH304	E16	4.20	25/05/2012
5664389	BH307	E14	6.00	28/05/2012
5664381	BH308	E3	0.30	25/05/2012
5664375	BH308	E7	0.70 - 0.90	25/05/2012
5664376	BH308	E8	0.70 - 0.90	25/05/2012
5664374	BH308	E6	1.30	25/05/2012
5664380	BH308	E13	2.00	28/05/2012
5664378	BH308	E17	3.50 - 4.00	25/05/2012
5664379	BH311	E19	5.00 - 5.30	25/05/2012

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



SDG: 120530-71  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189306  
 Superseded Report: 185850

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5664373	BH302	E27	8.00	250g Amber Jar (AL)
		5664383	BH304	E3	0.30	250g Amber Jar (AL)
		5664385	BH304	E9	2.00	250g Amber Jar (AL)
		5664387	BH304	E15	4.20	400g Tub (ALEE214)
	5664375	BH308	E7	0.70 - 0.90	250g Amber Jar (AL)	
	5664378	BH308	E17	3.50 - 4.00	400g Tub (ALEE214)	
	5664381	BH308	E3	0.30	400g Tub (ALEE214)	
Alcohols and Acetates in Soils	All	NDPs: 0 Tests: 1				
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 7				
Anions by Kone (soil)	All	NDPs: 0 Tests: 7				
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 7				
Boron Water Soluble	All	NDPs: 0 Tests: 7				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Easily Liberated Sulphide	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 1				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 1				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 7				
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 7				
	Antimony	NDPs: 0 Tests: 7				
	Arsenic	NDPs: 0 Tests: 7				



SDG: 120530-71  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189306  
 Superseded Report: 185850

<b>SOLID</b> Results Legend X Test N No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container								
	5664373	BH302	E27	8.00	250g Amber Jar (AL)								
	5664383	BH304	E3	0.30	250g Amber Jar (AL)								
	5664385	BH304	E9	2.00	250g Amber Jar (AL)								
	5664387	BH304	E15	4.20	400g Tub (ALEE214)								
5664375	BH308	E7	0.70 - 0.90	250g Amber Jar (AL)									
5664378	BH308	E17	3.50 - 4.00	400g Tub (ALEE214)									
5664381	BH308	E3	0.30	400g Tub (ALEE214)									
Metals by iCap-OES (Soil)	Barium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Beryllium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Cadmium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Chromium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Copper	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Lead	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Manganese	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Mercury	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Nickel	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Selenium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Vanadium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	Zinc	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	X
	PAH Value of soil	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
pH	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X	





SDG: 120530-71  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189306  
 Superseded Report: 185850

SOLID Results Legend  Test  No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5664373	BH302	E27	8.00	250g Amber Jar (AL)
		5664383	BH304	E3	0.30	250g Amber Jar (AL)
		5664385	BH304	E9	2.00	400g Tub (ALE214)
		5664387	BH304	E15	4.20	400g Tub (ALE214)
	5664375	BH308	E7	0.70 - 0.90	250g Amber Jar (AL)	
	5664378	BH308	E17	3.50 - 4.00	400g Tub (ALE214)	
	5664381	BH308	E3	0.30	400g Tub (ALE214)	
Sample description	All	NDPs: 0 Tests: 7				
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1				
Toluene extractable matter*	All	NDPs: 4 Tests: 3				
Total Organic Carbon	All	NDPs: 4 Tests: 3				
Total Organic Carbon (Asb)	All	NDPs: 0 Tests: 4				
Total Sulphate	All	NDPs: 0 Tests: 7				
Total Sulphur	All	NDPs: 4 Tests: 3				
TPH CWG GC (S)	All	NDPs: 0 Tests: 1				
VOC MS (S)	All	NDPs: 0 Tests: 1				



**SDG:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

## 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
5664373	BH302	8.00	Black	Sand	2 - 10 mm	Stones	Vegetation
5664383	BH304	0.30	Dark Brown	Silt Loam	0.063 - 0.1 mm	Stones	None
5664385	BH304	2.00	Dark Brown	Sand	0.1 - 2 mm	Crushed Brick	Stones
5664387	BH304	4.20	Dark Brown	Sand	0.1 - 2 mm	Stones	None
5664375	BH308	0.70 - 0.90	Dark Brown	Sand	0.1 - 2 mm	Stones	None
5664378	BH308	3.50 - 4.00	Beige	Sandy Clay	0.063 - 0.1 mm	Stones	None
5664381	BH308	0.30	Light Brown	Sandy Loam	0.1 - 2 mm	Stones	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 occurring 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:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

Results Legend		Customer Sample R	BH302	BH304	BH304	BH304	BH308	BH308
#	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>	BH302	BH304	BH304	BH304	BH308	BH308
M	mCERTS accredited.		8.00	0.30	2.00	4.20	0.30	0.70 - 0.90
\$	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		25/05/2012	25/05/2012	25/05/2012	25/05/2012	25/05/2012	25/05/2012
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		29/05/2012	29/05/2012	29/05/2012	29/05/2012	29/05/2012	29/05/2012
(F)	Trigger breach confirmed		120530-71	120530-71	120530-71	120530-71	120530-71	120530-71
			5664373	5664383	5664385	5664387	5664381	5664375
		E27	E3	E9	E15	E3	E7	
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	3.6	9.2	6.2	0.88	12	13
Tolulene Extractable Matter	<500 mg/kg	SUB		<500			<500	
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15	<15	<15	<15	<15
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Sulphur, Total	<0.02 %	TM132		<0.02			0.0298	
Fraction Organic Carbon (FOC)	<0.002 -	TM132		0.00859			0.00931	
pH	1 pH Units	TM133	11.1	6.54	10.4	9.57	7.29	11.9
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	1.06	<0.6	<0.6	0.929
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Thiocyanate	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	<15	29.2	<15	<15
Aluminium	<11 mg/kg	TM181	21800	10300	16200	16000	12600	8310
Antimony	<0.6 mg/kg	TM181	25.6	4.09	27.3	30.9	2.32	19.2
Arsenic	<0.6 mg/kg	TM181	7.09	16.2	36.9	21.3	17.3	33.4
Barium	<0.6 mg/kg	TM181	808	116	663	543	42.5	383
Beryllium	<0.01 mg/kg	TM181	0.145	0.393	0.261	0.0686	0.44	0.127
Cadmium	<0.02 mg/kg	TM181	2.31	0.301	14.2	8.12	0.627	4.1
Chromium	<0.9 mg/kg	TM181	3660	23.4	1520	2230	41.3	801
Copper	<1.4 mg/kg	TM181	258	20.6	652	305	75.8	431
Lead	<0.7 mg/kg	TM181	212	127	1090	645	66.8	542
Manganese	<0.13 mg/kg	TM181	31200	1170	16600	29400	1320	18000
Mercury	<0.14 mg/kg	TM181	<0.7	0.305	<0.7	<0.7	<0.14	<0.7
Nickel	<0.2 mg/kg	TM181	69.4	21.4	179	78.8	37.5	131
Selenium	<1 mg/kg	TM181	16.9	1.27	9.9	17.5	<1	8.42
Vanadium	<0.2 mg/kg	TM181	351	22.4	151	498	24.1	251
Zinc	<1.9 mg/kg	TM181	847	162	5970	3700	213	2020
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	11.7	<10	<10	<10





**SDG:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

Results Legend		Customer Sample R	BH308					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	3.50 - 4.00 Soil/Solid 25/05/2012 . 29/05/2012 120530-71 5664378 E17					
M	mCERTS accredited.							
S	Deviating sample.							
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							
Component	LOD/Units			Method				
Moisture content ratio	%	PM024	15					
Tolulene Extractable Matter	<500 mg/kg	SUB	<500					
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15					
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M				
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M				
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M				
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	M				
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M				
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	M				
Sulphur, Total	<0.02 %	TM132	0.407	#				
Fraction Organic Carbon (FOC)	<0.002	TM132	0.00278	#				
pH	1 pH Units	TM133	7.94	M				
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#				
Cyanide, Total	<1 mg/kg	TM153	<1	M				
Cyanide, Free	<1 mg/kg	TM153	<1	M				
Cyanide, Complex	<1 mg/kg	TM153	<1					
Thiocyanate	<1 mg/kg	TM153	<1	M				
Sulphide, Easily liberated	<15 mg/kg	TM180	23.7	§ #				
Aluminium	<11 mg/kg	TM181	10800					
Antimony	<0.6 mg/kg	TM181	1.11	#				
Arsenic	<0.6 mg/kg	TM181	12	M				
Barium	<0.6 mg/kg	TM181	19.9	#				
Beryllium	<0.01 mg/kg	TM181	0.683	M				
Cadmium	<0.02 mg/kg	TM181	0.321	M				
Chromium	<0.9 mg/kg	TM181	19.9	M				
Copper	<1.4 mg/kg	TM181	18.6	M				
Lead	<0.7 mg/kg	TM181	26.9	M				
Manganese	<0.13 mg/kg	TM181	306	M				
Mercury	<0.14 mg/kg	TM181	<0.14	M				
Nickel	<0.2 mg/kg	TM181	27.5	M				
Selenium	<1 mg/kg	TM181	<1	#				
Vanadium	<0.2 mg/kg	TM181	16.8	#				
Zinc	<1.9 mg/kg	TM181	96.8	M				
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10					



SDG: 120530-71
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 189306
Superseded Report: 185850

Table with columns: Results Legend, Customer Sample R, Component, LOD/Units, Method, and numerical results. Includes rows for Sulphate, Total sulphur, Boron, Calcium, Magnesium, Water Soluble Sulphate, and Chloride.



**SDG:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

## Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH304			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	4.20 Soil/Solid 25/05/2012 . 29/05/2012 120530-71 5664387 E15			
M	mCERTS accredited.					
S	Deviating sample.					
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					
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	115			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	5380			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100			
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100			







SDG: 120530-71  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189306  
 Superseded Report: 185850

## TPH CWG (S)

Results Legend		Customer Sample R	BH304					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	4.20 Soil/Solid 25/05/2012 . 29/05/2012 120530-71 5664387 E15					
M	mCERTS accredited.							
S	Deviating sample.							
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							
Component	LOD/Units			Method				
GRO Surrogate % recovery**	%	TM089	112					
GRO >C5-C12	<44 µg/kg	TM089	<44					
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	#				
Benzene	<10 µg/kg	TM089	<10	M				
Toluene	<2 µg/kg	TM089	<2	M				
Ethylbenzene	<3 µg/kg	TM089	<3	M				
m,p-Xylene	<6 µg/kg	TM089	<6	M				
o-Xylene	<3 µg/kg	TM089	<3	M				
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9					
sum of detected BTEX by GC	<24 µg/kg	TM089	<24					
Aliphatics >C5-C6	<10 µg/kg	TM089	<10					
Aliphatics >C6-C8	<10 µg/kg	TM089	<10					
Aliphatics >C8-C10	<10 µg/kg	TM089	<10					
Aliphatics >C10-C12	<10 µg/kg	TM089	<10					
Aliphatics >C12-C16	<100 µg/kg	TM173	2230					
Aliphatics >C16-C21	<100 µg/kg	TM173	18500					
Aliphatics >C21-C35	<100 µg/kg	TM173	88300					
Aliphatics >C35-C44	<100 µg/kg	TM173	20400					
Total Aliphatics >C12-C44	<100 µg/kg	TM173	129000					
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10					
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10					
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10					
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10					
Aromatics >EC12-EC16	<100 µg/kg	TM173	1890					
Aromatics >EC16-EC21	<100 µg/kg	TM173	11900					
Aromatics >EC21-EC35	<100 µg/kg	TM173	54600					
Aromatics >EC35-EC44	<100 µg/kg	TM173	22900					
Aromatics >EC40-EC44	<100 µg/kg	TM173	8330					
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	91300					
Total Aliphatics >C5-35	<100 µg/kg	TM173	109000					
Total Aromatics >C5-35	<100 µg/kg	TM173	68400					
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	177000					
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	221000					



**SDG:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

## VOC MS (S)

Results Legend		Customer Sample R	BH304					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	4.20					
M	mCERTS accredited.		Soil/Solid					
S	Deviating sample.		25/05/2012					
aq	Aqueous / settled sample.		.					
diss.filt	Dissolved / filtered sample.		29/05/2012					
tot.unfilt	Total / unfiltered sample.		120530-71					
*	Subcontracted test.		5664387					
**	% 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		E15					
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
Dibromofluoromethane**	%	TM116	75.4					
Toluene-d8**	%	TM116	99					
4-Bromofluorobenzene**	%	TM116	103					
Dichlorodifluoromethane	<4 µg/kg	TM116	<4	M				
Chloromethane	<7 µg/kg	TM116	<7					
Vinyl Chloride	<10 µg/kg	TM116	<10					
Bromomethane	<13 µg/kg	TM116	<13	M				
Chloroethane	<14 µg/kg	TM116	<14	M				
Trichlorofluoromethane	<6 µg/kg	TM116	<6	M				
1.1-Dichloroethene	<10 µg/kg	TM116	<10	#				
Carbon Disulphide	<7 µg/kg	TM116	14.7	M				
Dichloromethane	<10 µg/kg	TM116	<10	#				
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	M				
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11	M				
1.1-Dichloroethane	<8 µg/kg	TM116	<8	M				
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5	M				
2.2-Dichloropropane	<12 µg/kg	TM116	<12	M				
Bromochloromethane	<14 µg/kg	TM116	<14	M				
Chloroform	<8 µg/kg	TM116	<8	M				
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7	M				
1.1-Dichloropropene	<11 µg/kg	TM116	<11	M				
Carbontetrachloride	<14 µg/kg	TM116	<14	M				
1.2-Dichloroethane	<5 µg/kg	TM116	<5	M				
Benzene	<9 µg/kg	TM116	<9	M				
Trichloroethene	<9 µg/kg	TM116	<9	M				
1.2-Dichloropropane	<12 µg/kg	TM116	<12	M				
Dibromomethane	<9 µg/kg	TM116	<9	M				
Bromodichloromethane	<7 µg/kg	TM116	<7	M				
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14	M				
Toluene	<5 µg/kg	TM116	<5	M				
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14					
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	M				
1.3-Dichloropropane	<7 µg/kg	TM116	<7	#				
Tetrachloroethene	<5 µg/kg	TM116	<5	M				
Dibromochloromethane	<13 µg/kg	TM116	<13	M				



SDG: 120530-71  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189306  
 Superseded Report: 185850

## VOC MS (S)

Results Legend		Customer Sample R	BH304				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	4.20				
M	mCERTS accredited.		Soil/Solid				
S	Deviating sample.		25/05/2012				
aq	Aqueous / settled sample.		.				
diss.filt	Dissolved / filtered sample.		29/05/2012				
tot.unfilt	Total / unfiltered sample.		120530-71				
*	Subcontracted test.		5664387				
**	% 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		E15				
(F)	Trigger breach confirmed						
Component	LOD/Units		Method				
1,2-Dibromoethane	<12 µg/kg	TM116	<12	M			
Chlorobenzene	<5 µg/kg	TM116	<5	M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	M			
Ethylbenzene	<4 µg/kg	TM116	<4	M			
p/m-Xylene	<14 µg/kg	TM116	<14	#			
o-Xylene	<10 µg/kg	TM116	<10	M			
Styrene	<10 µg/kg	TM116	<10	M			
Bromoform	<10 µg/kg	TM116	<10	M			
Isopropylbenzene	<5 µg/kg	TM116	<5	M			
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	#			
1,2,3-Trichloropropane	<17 µg/kg	TM116	<17	M			
Bromobenzene	<10 µg/kg	TM116	<10	M			
Propylbenzene	<11 µg/kg	TM116	<11	M			
2-Chlorotoluene	<9 µg/kg	TM116	<9	M			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	#			
4-Chlorotoluene	<12 µg/kg	TM116	<12	M			
tert-Butylbenzene	<12 µg/kg	TM116	<12	#			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	#			
sec-Butylbenzene	<10 µg/kg	TM116	<10	M			
4-Isopropyltoluene	<11 µg/kg	TM116	<11	M			
1,3-Dichlorobenzene	<6 µg/kg	TM116	<6	M			
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	M			
n-Butylbenzene	<10 µg/kg	TM116	<10	M			
1,2-Dichlorobenzene	<12 µg/kg	TM116	<12	M			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	M			
Tert-amyl methyl ether	<15 µg/kg	TM116	<15				
1,2,4-Trichlorobenzene	<6 µg/kg	TM116	<6	#			
Hexachlorobutadiene	<12 µg/kg	TM116	<12				
Naphthalene	<13 µg/kg	TM116	<13	M			
1,2,3-Trichlorobenzene	<6 µg/kg	TM116	<6	M			
VOC TIC	-	TM116	No TICs identified				



**SDG:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

## 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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH302 E 27 8.00 SOLID 25/05/2012 00:00:00  120530-71 5664373 TM048	31/7/12	Lauren Sargeant	Soil containing loose fibres and ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH304 E 15 4.20 SOLID 25/05/2012 00:00:00  120530-71 5664387 TM048	31/7/12	Lauren Sargeant	Soil containing loose fibres and ACM debris	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH304 E 3 0.30 SOLID 25/05/2012 00:00:00  120530-71 5664383 TM048	12/06/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH304 E 9 2.00 SOLID 25/05/2012 00:00:00  120530-71 5664385 TM048	31/7/12	Rachel Sullivan	Soil containing loose fibres and ACM debris	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH308 E 17 3.50 - 4.00 SOLID 25/05/2012 00:00:00  120530-71 5664378 TM048	12/06/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**CERTIFICATE OF ANALYSIS**

**SDG:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH308 E 3 0.30 SOLID 25/05/2012 00:00:00  120530-71 5664381 TM048	12/06/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH308 E 7 0.70 - 0.90 SOLID 25/05/2012 00:00:00  120530-71 5664375 TM048	31/7/12	Lauren Sargeant	Soil containing loose fibres and debris typical of asbestos cement	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5694331	BH308 E7	0.70 - 0.90	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5694525	BH308 E3	0.30	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5694720	BH304 E3	0.30	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5694875	BH304 E15	4.20	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5694995	BH304 E9	2.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5695984	BH308 E17	3.50 - 4.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5696612	BH302 E27	8.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded

**Note :** Test results may be compromised



**SDG:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

### Notification of NDPs (No determination possible)

Date Received : 30/05/2012 13:00:56

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5664373	BH302 E27	8.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5664373	BH302 E27	8.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5664373	BH302 E27	8.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5664375	BH308 E7	0.70 - 0.90	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5664375	BH308 E7	0.70 - 0.90	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5664375	BH308 E7	0.70 - 0.90	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5664385	BH304 E9	2.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5664385	BH304 E9	2.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5664385	BH304 E9	2.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5664387	BH304 E15	4.20	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5664387	BH304 E15	4.20	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5664387	BH304 E15	4.20	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos



## CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120530-71	<b>Location:</b>	Haulbowlne	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	189306
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	185850

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
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		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM232	USEPA Method No. 8260b 'Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC-MS)'	Determination of Volatile Alcohols, Acetates and Ketones in Waters by Headspace GC-MS		
TM243		Mixed Anions In Soils By Kone		
TM321		Organic matter Content of Soil By Titration		

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





**SDG:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

### Test Completion Dates

Lab Sample No(s)	5664373	5664383	5664385	5664387	5664375	5664378	5664381
Customer Sample Ref.	BH302	BH304	BH304	BH304	BH308	BH308	BH308
AGS Ref.	E27	E3	E9	E15	E7	E17	E3
Depth	8.00	0.30	2.00	4.20	0.70 - 0.90	3.50 - 4.00	0.30
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alcohols and Acetates in Soils				14-Jun-2012			
Alkali Metals by iCap-OES (Soil)	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012
Ammonium Soil by Titration	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012
Anions by Kone (soil)	12-Jun-2012	11-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012
Asbestos Identification (Soil)	31-Jul-2012	12-Jun-2012	31-Jul-2012	31-Jul-2012	31-Jul-2012	12-Jun-2012	12-Jun-2012
Boron Water Soluble	12-Jun-2012	12-Jun-2012	14-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012
Cyanide Comp/Free/Total/Thiocyanate	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012
Easily Liberated Sulphide	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012
EPH CWG (Aliphatic) GC (S)				12-Jun-2012			
EPH CWG (Aromatic) GC (S)				12-Jun-2012			
GRO by GC-FID (S)				14-Jun-2012			
Hexavalent Chromium (s)	14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
Metals by iCap-OES (Soil)	12-Jun-2012	11-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012
PAH Value of soil	12-Jun-2012	14-Jun-2012	12-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
pH	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012
Phenols by HPLC (S)	11-Jun-2012	11-Jun-2012	11-Jun-2012	11-Jun-2012	11-Jun-2012	11-Jun-2012	11-Jun-2012
Sample description	07-Jun-2012	07-Jun-2012	07-Jun-2012	07-Jun-2012	07-Jun-2012	07-Jun-2012	07-Jun-2012
Semi Volatile Organic Compounds				13-Jun-2012			
Toluene extractable matter*		25-Jun-2012				25-Jun-2012	25-Jun-2012
Total Organic Carbon		14-Jun-2012				14-Jun-2012	14-Jun-2012
Total Organic Carbon (Asb)	13-Jun-2012		13-Jun-2012	13-Jun-2012	13-Jun-2012		
Total Sulphate	13-Jun-2012	11-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012
Total Sulphur		14-Jun-2012				14-Jun-2012	14-Jun-2012
TPH CWG GC (S)				14-Jun-2012			
VOC MS (S)				12-Jun-2012			



SDG: 120530-71  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189306  
Superseded Report: 185850

### Chromatogram

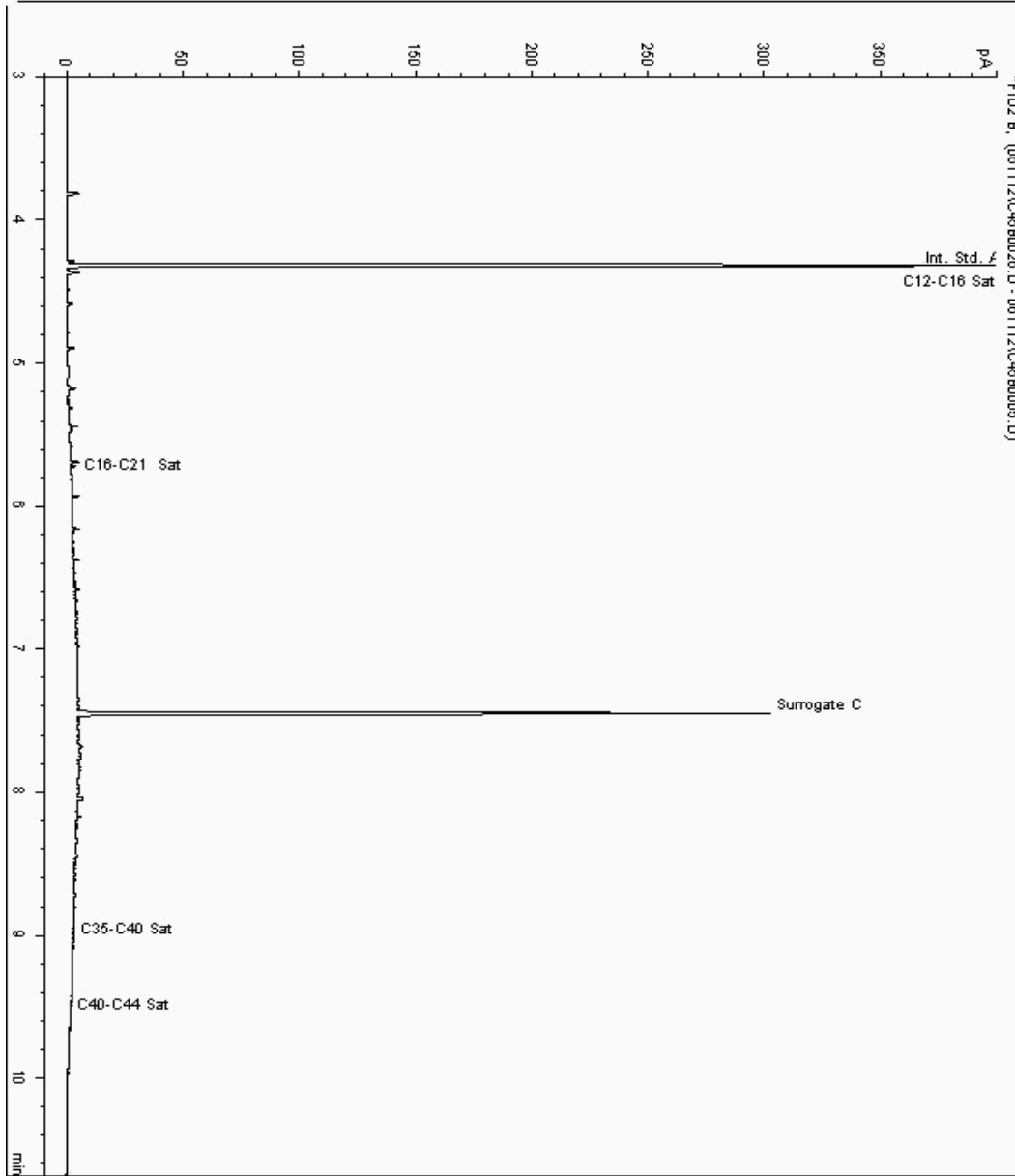
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5705288  
Sample ID : BH304

Depth : 4.20

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

Sample Identity: 5554785-5705288  
Date Acquired : 11/06/12 23:50:14 PM  
Units : ppb  
Dilution:





SDG: 120530-71  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189306  
Superseded Report: 185850

### Chromatogram

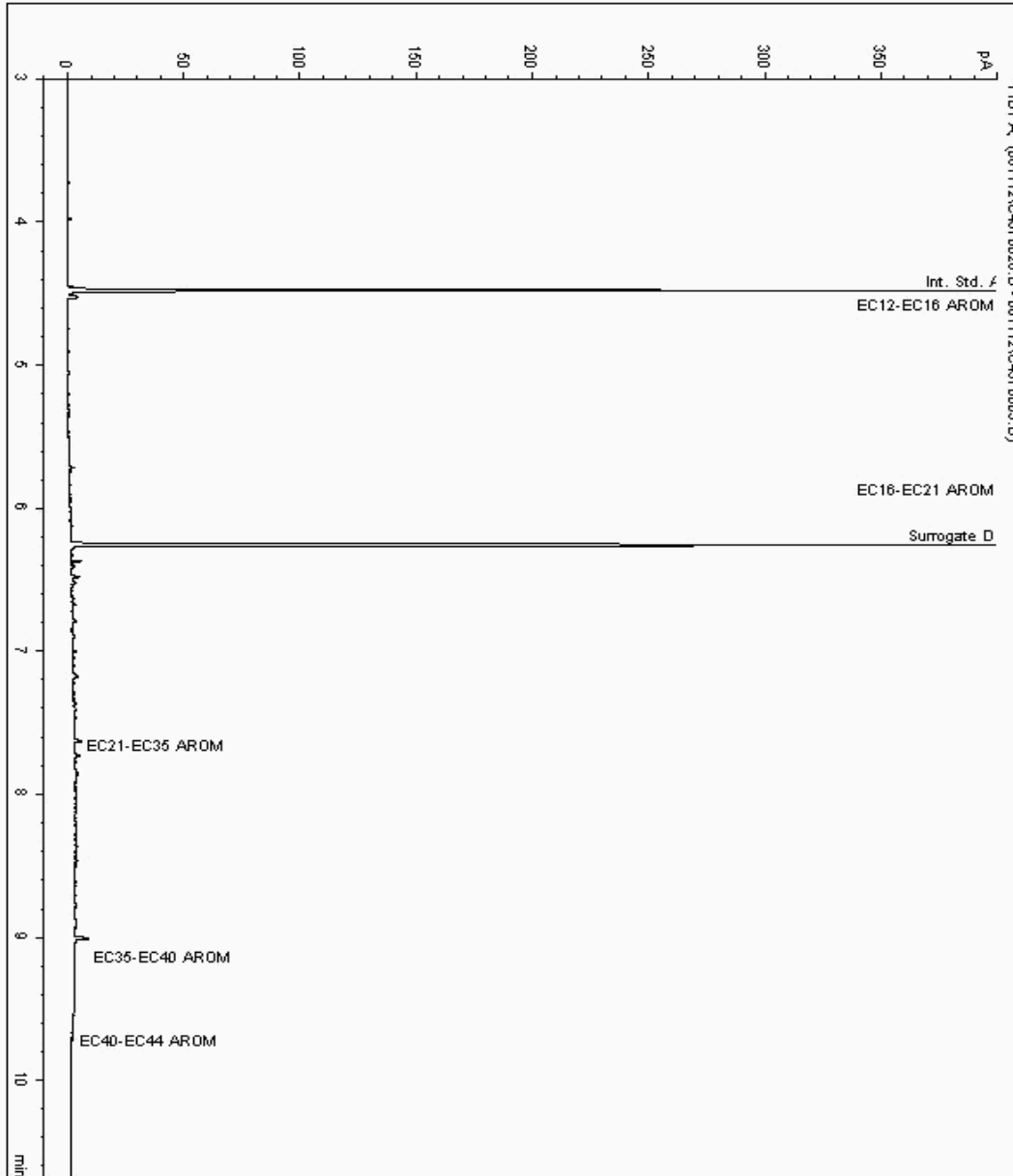
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5705288  
Sample ID : BH304

Depth : 4.20

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

Sample Identity: 5554786-5705288  
Date Acquired : 11/06/12 23:50:14 PM  
Units : ppb  
Dilution:





SDG: 120530-71  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

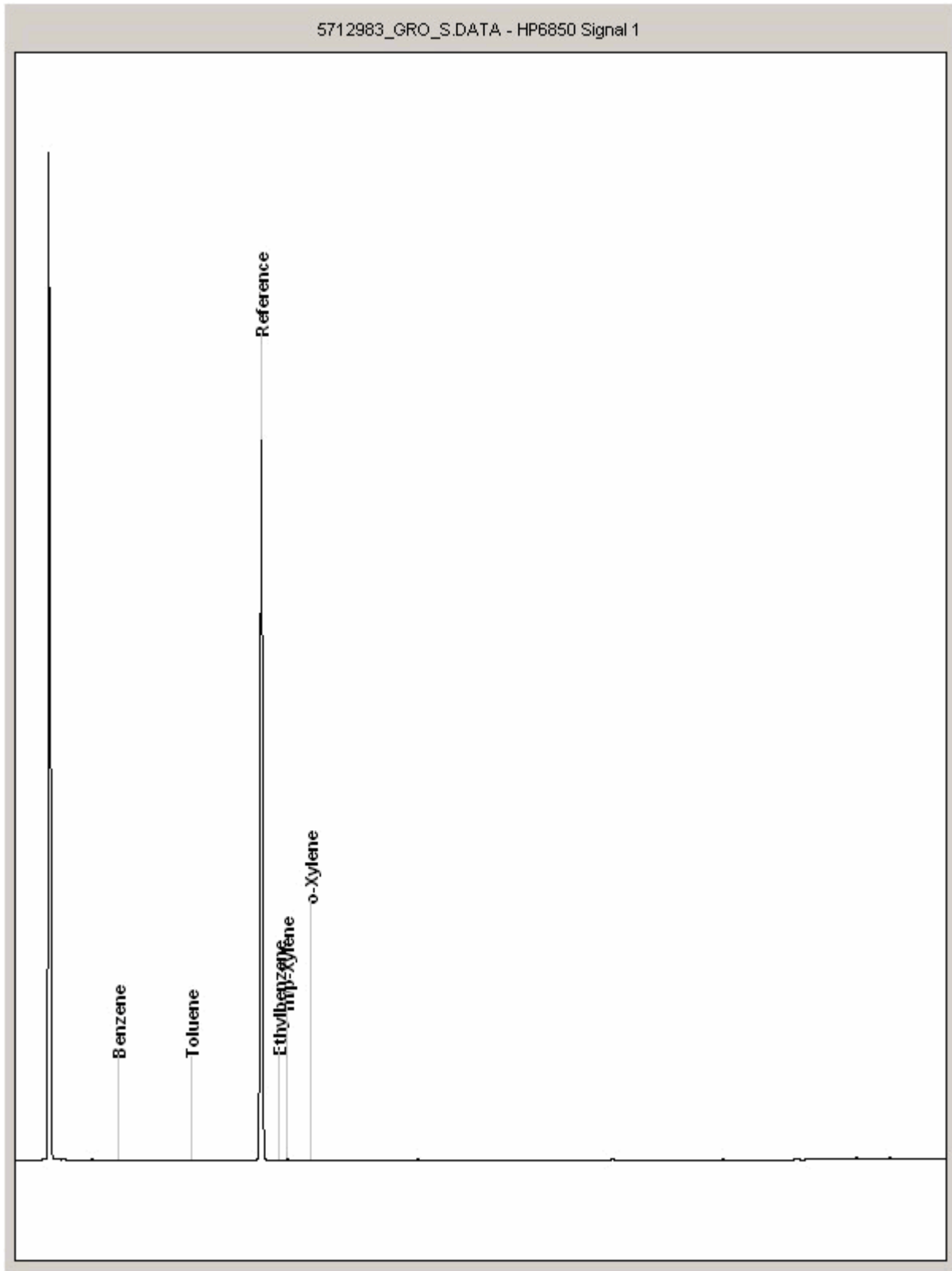
Order Number: 4559  
Report Number: 189306  
Superseded Report: 185850

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5712983  
Sample ID : BH304

Depth : 4.20



**SDG:** 120530-71  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189306  
**Superseded Report:** 185850

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

## SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GCMS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
EPH (DFO)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (MIN OIL)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (CLEANED UP)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC FD
PCBAROCLOR 1254/PCBCON	D&C	HEXANE ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GCMS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC FD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC FD
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM ACETONE	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)	GC FD
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVCC	DCM	LIQUID LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOPOPP	DCM	LIQUID LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL by R	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FD

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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).

### 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.

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



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

Attention: Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 03 August 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120606-3  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 189816

**This report has been revised and directly supersedes 185790 in its entirety.**

We received 26 samples on Friday June 01, 2012 and 6 of these samples were scheduled for analysis which was completed on Friday August 03, 2012. 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:** 120606-3  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189816  
**Superseded Report:** 185790

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5687026	BH305		5.50 - 6.00	30/05/2012
5687027	BH305		6.50 - 7.00	30/05/2012
5687028	BH305		7.50 - 8.00	31/05/2012
5687029	BH305		9.50 - 10.00	31/05/2012
5687046	BH306D	E1	0.50	30/05/2012
5687047	BH306D	E2	2.00	30/05/2012
5687045	BH306D	E3	5.00	30/05/2012
5687039	BH307	E18	10.00	30/05/2012
5687040	BH307	E19	12.00	30/05/2012
5687041	BH307	E20	14.00	30/05/2012
5687042	BH307	E15	7.00	29/05/2012
5687044	BH307	E16	8.00	29/05/2012
5687038	BH307	E17	9.00	30/05/2012
5687022	BH308	E37	11.50 - 12.00	29/05/2012
5687023	BH308	E41	13.50 - 14.00	29/05/2012
5687024	BH308	E44	14.50 - 15.00	30/05/2012
5687025	BH308	E47	15.00 - 15.50	30/05/2012
5687019	BH308	E22	5.50 - 6.00	29/05/2012
5687020	BH308	E25	7.00 - 7.50	29/05/2012
5687021	BH308	E32	9.50 - 10.00	29/05/2012
5687030	BH309	E3	0.20 - 0.30	31/05/2012
5687031	BH309	E6	0.80 - 1.20	31/05/2012
5687034	BH309	E9	2.20 - 2.50	31/05/2012
5687035	BH309	E12	4.00	31/05/2012
5687036	BH309	E15	5.00	31/05/2012
5687037	BH309	E16	5.00	31/05/2012

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



SDG: 120606-3  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189816  
 Superseded Report: 185790

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)									
	Customer Sample Reference									
	AGS Reference									
	Depth (m)									
	Container									
	5687022	5687020	5687042	5687040	5687039	5687028	BH308	E37	11.50 - 12.00	400g Tub (ALE214)
		BH308	E25	7.00 - 7.50	250g Amber Jar (AL)					250g Amber Jar (AL)
		BH307	E15	7.00	250g Amber Jar (AL)					250g Amber Jar (AL)
		BH307	E19	12.00	250g Amber Jar (AL)					250g Amber Jar (AL)
		BH307	E18	10.00	250g Amber Jar (AL)					250g Amber Jar (AL)
		BH305		7.50 - 8.00	250g Amber Jar (AL)					250g Amber Jar (AL)
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 5								
Alkalinity as CaCO3	All	NDPs: 0 Tests: 1								
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 1								
Ammonium Soil by Titration	All	NDPs: 0 Tests: 5								
Anions by Kone (soil)	All	NDPs: 0 Tests: 5								
Anions by Kone (w)	All	NDPs: 0 Tests: 1								
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 5								
Boron Water Soluble	All	NDPs: 0 Tests: 5								
COD Unfiltered	All	NDPs: 0 Tests: 1								
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 1								
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 6								
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1								
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 1								
Easily Liberated Sulphide	All	NDPs: 0 Tests: 5								
Fluoride	All	NDPs: 0 Tests: 1								





SDG: 120606-3  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189816  
 Superseded Report: 185790

SOLID Results Legend  Test  No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5687022	BH308	E37	11.50 - 12.00	400g Tub (ALE214)
		5687020	BH308	E25	7.00 - 7.50	250g Amber Jar (AL)
		5687042	BH307	E15	7.00	250g Tub (ALE214)
		5687040	BH307	E19	12.00	250g Amber Jar (AL)
	5687039	BH307	E18	10.00	400g Tub (ALE214)	
	5687028	BH305		7.50 - 8.00	250g Amber Jar (AL)	
Free Sulphur	All	NDPs: 0 Tests: 1				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 5				
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1				
Mercury Dissolved	All	NDPs: 0 Tests: 1				
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 5				
	Antimony	NDPs: 0 Tests: 5				
	Arsenic	NDPs: 0 Tests: 5				
	Barium	NDPs: 0 Tests: 5				
	Beryllium	NDPs: 0 Tests: 5				
	Cadmium	NDPs: 0 Tests: 5				
	Chromium	NDPs: 0 Tests: 5				
	Copper	NDPs: 0 Tests: 5				
	Lead	NDPs: 0 Tests: 5				
	Manganese	NDPs: 0 Tests: 5				
	Mercury	NDPs: 0 Tests: 5				







**SDG:** 120606-3  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189816  
**Superseded Report:** 185790

## 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
5687028	BH305	7.50 - 8.00	Grey	Sandy Clay	<0.063 mm	Stones	N/A
5687039	BH307	10.00	Grey	Silty Clay	0.063 - 0.1 mm	Stones	None
5687040	BH307	12.00	Grey	Clay	<0.063 mm	Stones	N/A
5687042	BH307	7.00	Black	Sand	0.1 - 2 mm	Stones	N/A
5687020	BH308	7.00 - 7.50	Grey	Clay	<0.063 mm	Stones	N/A
5687022	BH308	11.50 - 12.00	Light Brown	Clay	<0.063 mm	Stones	N/A

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

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring 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:** 120606-3  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189816  
**Superseded Report:** 185790

Results Legend			Customer Sample R					
#	ISO17025 accredited.		BH305	BH307	BH307	BH307	BH308	BH308
M	mCERTS accredited.							
S	Deviating sample.							
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							
		Depth (m)	7.50 - 8.00	10.00	12.00	7.00	11.50 - 12.00	7.00 - 7.50
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	31/05/2012	30/05/2012	30/05/2012	29/05/2012	29/05/2012	29/05/2012
		Sample Time						
		Date Received	01/06/2012	01/06/2012	01/06/2012	01/06/2012	01/06/2012	01/06/2012
		SDG Ref	120606-3	120606-3	120606-3	120606-3	120606-3	120606-3
		Lab Sample No.(s)	5687028	5687039	5687040	5687042	5687022	5687020
		AGS Reference		E18	E19	E15	E37	E25
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	29		29	3.7	31	30
Tolulene Extractable Matter	<500 mg/kg	SUB	<500		<500		<500	<500
Dissolved solids, Total (gravimetric) NRA leach	<10 mg/l	TM021		1030				
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15		54.7	<15	31.7	37.5
Alkalinity, Carbonate as CaCO3 NRA leach	<2 mg/l	TM043		<2				
Phenol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01	<0.01	<0.01	<0.01
Cresols	<0.01 mg/kg	TM062 (S)	<0.01		<0.01	<0.01	<0.01	<0.01
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015		<0.015	<0.015	<0.015	<0.015
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01	<0.01	<0.01	<0.01
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015		<0.015	<0.015	<0.015	<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035		<0.035	<0.035	<0.035	<0.035
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06		<0.06	<0.06	<0.06	<0.06
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090		7.4				
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099		1.8				
Sulphide NRA leach	<0.01 mg/l	TM101		<0.01				
Fluoride NRA leach	<0.5 mg/l	TM104		<0.5				
COD, unfiltered NRA leach	<7 mg/l	TM107		17.3				
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120		1.69				
Sulphur, Total	<0.02 %	TM132	0.533		0.807		0.752	0.773
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.00703		0.00841		0.00727	0.0101
pH	1 pH Units	TM133	8.55		8.03	10.9	7.85	8.09
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6		<0.6	<0.6	<0.6	<0.6
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152		113				
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152		1.23				
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152		7.25				
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152		3.75				
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152		444				
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152		0.139				
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152		0.686				
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152		0.06				
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152		1.29				
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152		0.332				
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152		15				
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152		62.3				
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152		0.503				



**SDG:** 120606-3  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189816  
**Superseded Report:** 185790

Results Legend			Customer Sample R						
#	ISO17025 accredited.		BH305	BH307	BH307	BH307	BH308	BH308	
M	mCERTS accredited.								
S	Deviating sample.								
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								
Depth (m)			7.50 - 8.00	10.00	12.00	7.00	11.50 - 12.00	7.00 - 7.50	
Sample Type			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
Date Sampled			31/05/2012	30/05/2012	30/05/2012	29/05/2012	29/05/2012	29/05/2012	
Sample Time									
Date Received			01/06/2012	01/06/2012	01/06/2012	01/06/2012	01/06/2012	01/06/2012	
SDG Ref			120606-3	120606-3	120606-3	120606-3	120606-3	120606-3	
Lab Sample No.(s)			5687028	5687039	5687040	5687042	5687022	5687020	
AGS Reference				E18	E19	E15	E37	E25	
Component	LOD/Units	Method							
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152		173					
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152		4.47					
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152		<0.96					
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152		0.538					
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152		64.2					
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152		0.791					
Cyanide, Total	<1 mg/kg	TM153	<1		<1	<1	<1	<1	
			M		M	M	M	M	
Cyanide, Free	<1 mg/kg	TM153	<1		<1	<1	<1	<1	
			M		M	M	M	M	
Cyanide, Complex	<1 mg/kg	TM153	<1		<1	<1	<1	<1	
Thiocyanate	<1 mg/kg	TM153	<1		<1	<1	<1	<1	
			M		M	M	M	M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15		<15	<15	26.6	43.2	
			§ #		§ #	§ #	§ #	§ #	
Aluminium	<11 mg/kg	TM181	7330		9800	21300	9690	9350	
Antimony	<0.6 mg/kg	TM181	0.853		1.33	33.2	0.792	<0.6	
			#		#	#	#	#	
Arsenic	<0.6 mg/kg	TM181	4.14		4.8	27.8	6.23	4.34	
			M		M	M	M	M	
Barium	<0.6 mg/kg	TM181	41.5		43.2	830	10.4	12.3	
			#		#	#	#	#	
Beryllium	<0.01 mg/kg	TM181	0.29		0.466	<0.05	0.413	0.459	
			M		M	M	M	M	
Cadmium	<0.02 mg/kg	TM181	0.195		0.201	0.357	0.271	0.168	
			M		M	M	M	M	
Chromium	<0.9 mg/kg	TM181	102		135	4650	23.7	23.2	
			M		M	M	M	M	
Copper	<1.4 mg/kg	TM181	9.46		19.6	524	19.7	6.79	
			M		M	M	M	M	
Lead	<0.7 mg/kg	TM181	7.75		15.3	20.8	13.3	10.1	
			M		M	M	M	M	
Manganese	<0.13 mg/kg	TM181	1790		2770	35700	318	271	
			M		M	M	M	M	
Mercury	<0.14 mg/kg	TM181	<0.14		<0.14	<0.7	<0.14	<0.14	
			M		M	M	M	M	
Nickel	<0.2 mg/kg	TM181	13.4		22.3	211	22.2	16.3	
			M		M	M	M	M	
Selenium	<1 mg/kg	TM181	1.12		1.55	17.4	<1	<1	
			#		#	#	#	#	
Vanadium	<0.2 mg/kg	TM181	26		28.5	332	21.4	23.2	
			#		#	#	#	#	
Zinc	<1.9 mg/kg	TM181	62.1		77.9	374	69.6	47.5	
			M		M	M	M	M	
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183		<0.01					
Sulphate NRA leach	<2 mg/l	TM184		123					
Chloride NRA leach	<2 mg/l	TM184		470					
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184		<0.3					
PCB congener 28 NRA leach	<0.015 µg/l	TM197		<0.015					
PCB congener 52 NRA leach	<0.015 µg/l	TM197		<0.015					
PCB congener 101 NRA leach	<0.015 µg/l	TM197		<0.015					
PCB congener 118 NRA leach	<0.015 µg/l	TM197		<0.015					
PCB congener 138 NRA leach	<0.015 µg/l	TM197		<0.015					



**SDG:** 120606-3  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189816  
**Superseded Report:** 185790

Results Legend			Customer Sample R						
#	ISO17025 accredited.		BH305	BH307	BH307	BH307	BH308	BH308	
M	mCERTS accredited.								
S	Deviating sample.								
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								
Depth (m)			7.50 - 8.00	10.00	12.00	7.00	11.50 - 12.00	7.00 - 7.50	
Sample Type			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
Date Sampled			31/05/2012	30/05/2012	30/05/2012	29/05/2012	29/05/2012	29/05/2012	
Sample Time									
Date Received			01/06/2012	01/06/2012	01/06/2012	01/06/2012	01/06/2012	01/06/2012	
SDG Ref			120606-3	120606-3	120606-3	120606-3	120606-3	120606-3	
Lab Sample No.(s)			5687028	5687039	5687040	5687042	5687022	5687020	
AGS Reference				E18	E19	E15	E37	E25	
Component	LOD/Units	Method							
PCB congener 153 NRA leach	<0.015 µg/l	TM197		<0.015					
PCB congener 180 NRA leach	<0.015 µg/l	TM197		<0.015					
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197		<0.105					
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10		<10	<10	<10	<10	
Sulphate, Total	<48 mg/kg	TM221	2900		3080	6510	1310	1520	
Total sulphur	<0.0016 %	TM221	0.0967		0.103	0.217	0.0438	0.0505	
Boron, water soluble	<1 mg/kg	TM222	4.66		6.39	7.08	6.46	10.4	
Calcium	<21 mg/kg	TM224	96100		97000	243000	63000	91500	
Magnesium	<8 mg/kg	TM224	6500		8360	26800	6410	5900	
Cyanide, Total NRA leach	<0.05 mg/l	TM227		<0.05					
Cyanide, Free NRA leach	<0.05 mg/l	TM227		<0.05					
Cyanide, Complex NRA leach	<0.05 mg/l	TM227		<0.05					
Thiocyanate NRA leach	<0.05 mg/l	TM227		<0.05					
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228		20.4					
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228		315					
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228		21.9					
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228		25.1					
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228		0.0551					
TPH / Oil & Greases NRA leach	<1 mg/l	TM235		<1					
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241		<0.03					
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.191		0.544	0.294	0.406	0.322	
Chloride (soluble)	<5 mg/kg	TM243	6760		7650	2570	6220	6060	
pH NRA leach	<1 pH Units	TM256		8.18					
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259		<0.016					
Sulphur, Free NRA leach	<0.05 mg/l	TM294		<0.05					
Fraction Organic Carbon (FOC)	<0.1 -	TM321				<0.1	#		







**SDG:** 120606-3  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189816  
**Superseded Report:** 185790

## 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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH308 E 25 7.00 - 7.50 SOLID 29/05/2012 00:00:00  120606-3 5687020 TM048	13/06/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH308 E 37 7.00 - 7.50 SOLID 29/05/2012 00:00:00  120606-3 5687022 TM048	13/06/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH305 7.50 - 8.00 SOLID 31/05/2012 00:00:00  120606-3 5687028 TM048	13/06/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH307 E 19 12.00 SOLID 30/05/2012 00:00:00  120606-3 5687040 TM048	13/06/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH307 E 15 7.00 SOLID 29/05/2012 00:00:00  120606-3 5687042 TM048	13/06/12	Lauren Sargeant	ACM debris in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



## CERTIFICATE OF ANALYSIS

**SDG:** 120606-3  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189816  
**Superseded Report:** 185790

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH308 E 25 7.00 - 7.50 SOLID 29/05/2012 00:00:00  120606-3 5687020 TM048	03/08/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH308 E 37 7.00 - 7.50 SOLID 29/05/2012 00:00:00  120606-3 5687022 TM048	03/08/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH305 7.50 - 8.00 SOLID 31/05/2012 00:00:00  120606-3 5687028 TM048	03/08/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH307 E 19 12.00 SOLID 30/05/2012 00:00:00  120606-3 5687040 TM048	03/08/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH307 E 15 7.00 SOLID 29/05/2012 00:00:00  120606-3 5687042 TM048	03/08/12	Kevin Bowron	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120606-3  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189816  
**Superseded Report:** 185790

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5697619	BH307 E15	7.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5697635	BH307 E19	12.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5697652	BH308 E25	7.00 - 7.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5697673	BH308 E37	11.50 - 12.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5697690	BH305	7.50 - 8.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded

**Note :** Test results may be compromised



CERTIFICATE OF ANALYSIS

Validated

<b>SDG:</b> 120606-3	<b>Location:</b> Haulbowline	<b>Order Number:</b> 4559
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 189816
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b> 185790

Notification of NDPs (No determination possible)

Date Received : 06/06/2012 07:34:35

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5687042	BH307 E15	7.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5687042	BH307 E15	7.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5687042	BH307 E15	7.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos



## CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120606-3	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	189816
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	185790

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM021	Method 2540C, AWWA/APHA, 20th Ed., 1999	Determination of total dissolved solids in waters by gravimetry.		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		
TM243		Mixed Anions In Soils By Kone		



## CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120606-3	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	189816
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	185790

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
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		
TM294		Determination of Free Sulphur in liquids by HPLC		
TM321		Organic matter Content of Soil By Titration		

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



**SDG:** 120606-3  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowl  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189816  
**Superseded Report:** 185790

### Test Completion Dates

Lab Sample No(s)	5687028	5687039	5687040	5687042	5687020	5687022
Customer Sample Ref.	BH305	BH307	BH307	BH307	BH308	BH308
AGS Ref.		E18	E19	E15	E25	E37
Depth	7.50 - 8.00	10.00	12.00	7.00	7.00 - 7.50	11.50 - 12.00
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	15-Jun-2012		12-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
Alkalinity as CaCO3		13-Jun-2012				
Ammoniacal Nitrogen		14-Jun-2012				
Ammonium Soil by Titration	13-Jun-2012		13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012
Anions by Kone (soil)	14-Jun-2012		12-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
Anions by Kone (w)		15-Jun-2012				
Asbestos Identification (Soil)	03-Aug-2012		03-Aug-2012	03-Aug-2012	03-Aug-2012	03-Aug-2012
Boron Water Soluble	14-Jun-2012		12-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
COD Unfiltered		14-Jun-2012				
Conductivity (at 20 deg.C)		13-Jun-2012				
Cyanide Comp/Free/Total/Thiocyanate	13-Jun-2012	14-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012
Dissolved Metals by ICP-MS		14-Jun-2012				
Dissolved Organic/Inorganic Carbon		14-Jun-2012				
Easily Liberated Sulphide	13-Jun-2012		13-Jun-2012	13-Jun-2012	13-Jun-2012	13-Jun-2012
Fluoride		14-Jun-2012				
Free Sulphur		14-Jun-2012				
Hexavalent Chromium (s)	14-Jun-2012		14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
Hexavalent Chromium (w)		14-Jun-2012				
Mercury Dissolved		14-Jun-2012				
Metals by iCap-OES (Soil)	14-Jun-2012		12-Jun-2012	15-Jun-2012	14-Jun-2012	14-Jun-2012
Metals by iCap-OES Dissolved (W)		13-Jun-2012				
Nitrite by Kone (w)		14-Jun-2012				
NRA Leachate		07-Jun-2012				
PAH Spec MS - Aqueous (W)		13-Jun-2012				
PAH Value of soil	14-Jun-2012		14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
PCB Congeners - Aqueous (W)		15-Jun-2012				
pH	14-Jun-2012		14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
pH Value		13-Jun-2012				
Phenols by HPLC (S)	12-Jun-2012		11-Jun-2012	12-Jun-2012	12-Jun-2012	12-Jun-2012
Phenols by HPLC (W)		14-Jun-2012				
Sample description	08-Jun-2012	07-Jun-2012	08-Jun-2012	08-Jun-2012	08-Jun-2012	08-Jun-2012
Sulphide		15-Jun-2012				
Toluene extractable matter*	28-Jun-2012		28-Jun-2012		28-Jun-2012	28-Jun-2012
Total Dissolved Solids (Grav)		15-Jun-2012				
Total Organic Carbon	14-Jun-2012		14-Jun-2012		14-Jun-2012	14-Jun-2012
Total Organic Carbon (Asb)				15-Jun-2012		
Total Sulphate	15-Jun-2012		13-Jun-2012	15-Jun-2012	15-Jun-2012	15-Jun-2012
Total Sulphur	14-Jun-2012		14-Jun-2012		14-Jun-2012	14-Jun-2012
TPH by IR Oils and Greases		13-Jun-2012				



# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Cornbrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 283474-1

**Date of Report:** 27-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120606-3

**Customer Purchase Order:** 149129

**Date Job Received at SAL:** 18-Jun-2012

**Date Analysis Started:** 20-Jun-2012

**Date Analysis Completed:** 22-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager





**SDG:** 120606-3  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189816  
**Superseded Report:** 185790

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GCMS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
EPH (DFO)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (MIN OIL)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (CLEANED UP)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC FD
PCBAROCLOR 1254/PCBCON	D&C	HEXANE ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GCMS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC FD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC FD
SEMIVOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	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)	GC FD
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVCC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL by R	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FD

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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 Anorthophyllite	-
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.



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

**Attention:** Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 11 July 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120606-7  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 187223

We received 10 samples on Tuesday June 05, 2012 and 7 of these samples were scheduled for analysis which was completed on Wednesday July 11, 2012. 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:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5689390	BH302	E29	10.00	01/06/2012
5689391	BH302 E28	E28	9.00	01/06/2012
5689393	OP10 E1	E1	0.80	05/06/2012
5689394	OP10 E2	E2	0.80	05/06/2012
5723187	OP10 E2	E2	0.80	05/06/2012
5689395	OP10 E3	E3	2.00	05/06/2012
5689396	OP10 E4	E4	2.00	05/06/2012
5689397	OP10 E5	E5	1.10	05/06/2012
5723195	OP10 E6	E6	1.10	05/06/2012
5689399	OP10E6	E6	1.10	05/06/2012

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

SDG: 120606-7  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 187223  
 Superseded Report:

SOLID Results Legend  <span style="background-color: yellow; border: 1px solid black; padding: 2px;">X</span> Test  <span style="background-color: red; color: white; border: 1px solid black; padding: 2px;">N</span> No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5689393	OP10 E1	E1	0.80	400g Tub (ALE214) 250g Amber Jar
		5689394	OP10 E2	E2	0.80	400g Tub (ALE214) 250g Amber Jar
		5689395	OP10 E3	E3	2.00	400g Tub (ALE214) 250g Amber Jar
		5689396	OP10 E4	E4	2.00	400g Tub (ALE214) 250g Amber Jar
	5689397	OP10 E5	E5	1.10	400g Tub (ALE215) 250g Amber Jar	
	5689399	OP10 E6	E6	1.10	400g Tub (ALE214) 250g Amber Jar	
	5689391	BH302 E28	E28	9.00	400g Tub (ALE214) 250g Amber Jar	
Alcohols and Acetates in Soils	All	NDPs: 0 Tests: 3				
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 3				
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 4				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 4				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3				
Anions by Kone (soil)	All	NDPs: 0 Tests: 3				
Anions by Kone (w)	All	NDPs: 0 Tests: 4				
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 3				
Boron Water Soluble	All	NDPs: 0 Tests: 3				
COD Unfiltered	All	NDPs: 0 Tests: 4				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 4				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Dioxins/Furans (S)*	All	NDPs: 0 Tests: 3				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 4				



SDG: 120606-7  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 187223  
 Superseded Report:

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5689391	BH302 E28	E28	9.00	400g Tub (ALE214)
		5689399	OP10E6	E6	1.10	250g Amber Jar
		5689397	OP10 E5	E5	1.10	250g Amber Jar
		5689396	OP10 E4	E4	2.00	250g Amber Jar
	5689395	OP10 E3	E3	2.00	60g VOC (ALE215)	
	5689394	OP10 E2	E2	0.80	400g Tub (ALE214)	
	5689393	OP10 E1	E1	0.80	250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					60g VOC (ALE215)	
					400g Tub (ALE214)	
					250g Amber Jar	
					400g Tub (ALE214)	
					250g Amber Jar	
					6	



SDG: 120606-7  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 187223  
 Superseded Report:

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)		5689393	5689394	5689395	5689396	5689397	5689399	5689391
	Customer Sample Reference		OP10 E1	OP10 E2	OP10 E3	OP10 E4	OP10 E5	OP10 E6	BH302 E28
	AGS Reference		E1	E2	E3	E4	E5	E6	E28
	Depth (m)		0.80	0.80	2.00	2.00	1.10	1.10	9.00
	Container		400g Tub (ALE214) 250g Amber Jar	400g Tub (ALE214) 250g Amber Jar 60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar	400g Tub (ALE214) 250g Amber Jar 60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar	400g Tub (ALE214) 250g Amber Jar	400g Tub (ALE214) 250g Amber Jar
Metals by iCap-OES (Soil)	Chromium	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Copper	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Lead	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Manganese	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Mercury	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Nickel	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Selenium	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Vanadium	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Zinc	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 4		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mineral Oil	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
NRA Leachate	All	NDPs: 0 Tests: 4		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 4		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PAH Value of soil	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 4		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



SDG: 120606-7  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 187223  
 Superseded Report:

SOLID Results Legend	Lab Sample No(s)	5689393	5689394	5689395	5689396	5689397	5689399	5689391
	Customer Sample Reference	OP10 E1	OP10 E2	OP10 E3	OP10 E4	OP10 E5	OP10 E6	BH302 E28
	AGS Reference	E1	E2	E3	E4	E5	E6	E28
	Depth (m)	0.80	0.80	2.00	2.00	1.10	1.10	9.00
	Container	400g Tub (ALE214) 250g Amber Jar	400g Tub (ALE214) 250g Amber Jar 60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar	400g Tub (ALE214) 250g Amber Jar 60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar	400g Tub (ALE215) 60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar
PCBs by GCMS	All	NDPs: 0 Tests: 3	X	X	X			
pH	All	NDPs: 0 Tests: 3	X	X	X			
pH Value	All	NDPs: 0 Tests: 4		X	X		X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	X	X	X			
Phenols by HPLC (W)	All	NDPs: 0 Tests: 4		X	X		X	X
Sample description	All	NDPs: 0 Tests: 7	X	X	X	X	X	X
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 3	X	X	X			
Sulphide	All	NDPs: 0 Tests: 4		X	X		X	X
Toluene extractable matter*	All	NDPs: 0 Tests: 3	X	X	X			
Total Dissolved Solids (Grav)	All	NDPs: 0 Tests: 4		X	X		X	X
Total Sulphate	All	NDPs: 0 Tests: 3	X	X	X			
Total Sulphur	All	NDPs: 0 Tests: 3	X	X	X			
TPH by IR Oils and Greases	All	NDPs: 0 Tests: 4		X	X		X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 3	X	X	X			
VOC MS (S)	All	NDPs: 0 Tests: 3		X	X	X		





**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**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
5689391	BH302 E28	9.00	Black	N/A	0.1 - 2 mm	Ash/Soot	Coal fragments
5689393	OP10 E1	0.80	Black	Sand	0.1 - 2 mm	Stones	N/A
5689394	OP10 E2	0.80	Black	Sand	0.1 - 2 mm	Ash/Soot	Coal fragments
5689395	OP10 E3	2.00	Dark Brown	Silt Loam	0.063 - 0.1 mm	N/A	N/A
5689396	OP10 E4	2.00	Dark Brown	Sandy Loam	0.063 - 0.1 mm	None	None
5689397	OP10 E5	1.10	Grey	Sand	0.1 - 2 mm	Stones	N/A
5689399	OP10E6	1.10	Grey	Sand	0.1 - 2 mm	Ash/Soot	Stones

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 occurring 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.



**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowl  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

Results Legend			Customer Sample Ref.	BH302 E28	OP10 E1	OP10 E2	OP10 E3	OP10 E4	OP10 E5
#	ISO17025 accredited.								
M	mCERTS accredited.								
S	Deviating sample.								
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								
			Depth (m)	9.00	0.80	0.80	2.00	2.00	1.10
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	01/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012
			Date Received	05/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012
			SDG Ref	120606-7	120606-7	120606-7	120606-7	120606-7	120606-7
			Lab Sample No.(s)	5689391	5689393	5689394	5689395	5689396	5689397
			AGS Reference	E28	E1	E2	E3	E4	E5
Component	LOD/Units	Method							
Moisture content ratio	%	PM024			4.7		32		5.6
Toluene Extractable Matter	<500 mg/kg	SUB			<500		<500		<500
Dissolved solids, Total (gravimetric) NRA leach	<10 mg/l	TM021	457			53.7		545	
Ammoniacal Nitrogen as N	<15 mg/kg	TM024			<15		<15		<15
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA leach	<2 mg/l	TM043	60			2		20	
Mineral oil >C10-C40	<1 mg/kg	TM061		57			95.7		68.8
Surrogate Value	-	TM061			#		#		#
Mineral Oil Surrogate % recovery**	%	TM061		39.1			39.9		41.2
Phenol	<0.01 mg/kg	TM062 (S)			<0.01		<0.01		<0.01
Cresols	<0.01 mg/kg	TM062 (S)				M		M	
Xylenols	<0.015 mg/kg	TM062 (S)			<0.01		<0.01		<0.01
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)				M		M	
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)			<0.015		<0.015		<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)				M		M	
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)			<0.035		<0.035		<0.035
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090	<3					<3	
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099	<0.2					<0.2	
Sulphide NRA leach	<0.01 mg/l	TM101	<0.01					<0.01	
Fluoride NRA leach	<0.5 mg/l	TM104	0.565			0.794		1.89	
COD, unfiltered NRA leach	<7 mg/l	TM107	<7					<7	
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120	0.843			0.0828		0.855	
Sulphur, Total	<0.02 %	TM132		0.0325			0.254		0.214
pH	1 pH Units	TM133			#		#		#
Chromium, Hexavalent	<0.6 mg/kg	TM151		0.835			8.6		0.657
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152	1140			494		280	
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152	3.48			8.92		0.701	
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152	0.661			1.66		0.639	
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152	159			56.8		72.9	
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152	759			52.9		129	
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152	<0.1			<0.1		0.26	
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152	3.37			37.9		8.74	
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152	<0.06			<0.06		0.117	
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152	<0.85			5.02		2.4	
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152	0.276			0.344		255	
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152	<0.04			0.3		<0.04	

**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowl  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

Results Legend			Customer Sample Ref.	BH302 E28	OP10 E1	OP10 E2	OP10 E3	OP10 E4	OP10 E5
#	ISO17025 accredited.								
M	mCERTS accredited.								
S	Deviating sample.								
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								
			Depth (m)	9.00	0.80	0.80	2.00	2.00	1.10
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	01/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012
			Sampled Time						
			Date Received	05/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012
			SDG Ref	120606-7	120606-7	120606-7	120606-7	120606-7	120606-7
			Lab Sample No.(s)	5689391	5689393	5689394	5689395	5689396	5689397
			AGS Reference	E28	E1	E2	E3	E4	E5
Component	LOD/Units	Method							
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152	6.75		21		168		
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152	0.588		0.487		1.35		
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152	<6.3		16.8		<6.3		
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152	1.49		7.37		9.84		
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152	<0.96		<0.96		<0.96		
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152	<0.36		<0.36		<0.36		
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152	13.1		<0.24		<0.24		
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152	<0.41		4.53		124		
Cyanide, Total	<1 mg/kg	TM153		<1		<1		<1	
					M		M		M
Cyanide, Free	<1 mg/kg	TM153		<1		<1		<1	
					M		M		M
Cyanide, Complex	<1 mg/kg	TM153		<1		<1		<1	
Thiocyanate	<1 mg/kg	TM153		<1		<1		<1	
					M		M		M
PCB congener 28	<3 µg/kg	TM168		<3		<3		3.93	
					M		M		M
PCB congener 52	<3 µg/kg	TM168		<3		<3		<3	
					M		M		M
PCB congener 101	<3 µg/kg	TM168		<3		<3		<3	
					M		M		M
PCB congener 118	<3 µg/kg	TM168		<3		<3		<3	
					M		M		M
PCB congener 138	<3 µg/kg	TM168		<3		7.44		<3	
					M		M		M
PCB congener 153	<3 µg/kg	TM168		<3		5.67		<3	
					M		M		M
PCB congener 180	<3 µg/kg	TM168		<3		5.58		<3	
					M		M		M
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168		<21		<21		<21	
Sulphide, Easily liberated	<15 mg/kg	TM180		<15		<15		<15	
					§ #		§ #		§ #
Aluminium	<11 mg/kg	TM181		632		5170		27500	
Antimony	<0.6 mg/kg	TM181		34.2		130		26.9	
					#		#		#
Arsenic	<0.6 mg/kg	TM181		62.9		75.2		13.8	
					M		M		M
Barium	<0.6 mg/kg	TM181		17.5		559		947	
					#		#		#
Beryllium	<0.01 mg/kg	TM181		<0.25		<0.25		<0.05	
					M		M		M
Cadmium	<0.02 mg/kg	TM181		17.7		553		2.75	
					M		M		M
Chromium	<0.9 mg/kg	TM181		592		3280		3880	
					M		M		M
Copper	<1.4 mg/kg	TM181		1510		3460		287	
					M		M		M
Lead	<0.7 mg/kg	TM181		966		41700		165	
					M		M		M
Manganese	<0.13 mg/kg	TM181		5560		46200		70800	
					M		M		M
Mercury	<0.14 mg/kg	TM181		<3.5		<3.5		<0.7	
					M		M		M
Nickel	<0.2 mg/kg	TM181		505		236		72.2	
					M		M		M
Selenium	<1 mg/kg	TM181		<25		<25		22.5	
					#		#		#
Vanadium	<0.2 mg/kg	TM181		11.8		123		423	
					#		#		#



**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

Results Legend			Customer Sample Ref.	BH302 E28	OP10 E1	OP10 E2	OP10 E3	OP10 E4	OP10 E5
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.			9.00	0.80	0.80	2.00	2.00	1.10
S	Deviating sample.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.			01/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012
diss.filt	Dissolved / filtered sample.			05/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012	05/06/2012
tot.unfilt	Total / unfiltered sample.			120606-7	120606-7	120606-7	120606-7	120606-7	120606-7
*	Subcontracted test.			5689391	5689393	5689394	5689395	5689396	5689397
**	% 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			E28	E1	E2	E3	E4	E5
(F)	Trigger breach confirmed								
Component	LOD/Units	Method							
Zinc	<1.9 mg/kg	TM181		4410	M		189000	M	1090
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183	<0.01			<0.01		0.162	
Sulphate NRA leach	<2 mg/l	TM184	29.5			4.2		185	
Chloride NRA leach	<2 mg/l	TM184	109			<2		62.8	
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184	<0.3			<0.3		<0.3	
PCB congener 28 NRA leach	<0.015 µg/l	TM197	0.02			<0.015		<0.015	
PCB congener 52 NRA leach	<0.015 µg/l	TM197	0.02			<0.015		<0.015	
PCB congener 101 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015		<0.015	
PCB congener 118 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015		<0.015	
PCB congener 138 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015		<0.015	
PCB congener 153 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015		<0.015	
PCB congener 180 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015		<0.015	
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197	<0.105			<0.105		<0.105	
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213		<10			<10		<10
Sulphate, Total	<48 mg/kg	TM221		incomplete	M		6340	M	incomplete
Total sulphur	<0.0016 %	TM221		incomplete			0.211		incomplete
Boron, water soluble	<1 mg/kg	TM222		<1	M		<1	M	1.23
Calcium	<21 mg/kg	TM224		2330			24200		189000
Magnesium	<8 mg/kg	TM224		410			13900		39400
Cyanide, Total NRA leach	<0.05 mg/l	TM227	<0.05			<0.05		<0.05	
Cyanide, Free NRA leach	<0.05 mg/l	TM227	<0.05			<0.05		<0.05	
Cyanide, Complex NRA leach	<0.05 mg/l	TM227	<0.05			<0.05		<0.05	
Thiocyanate NRA leach	<0.05 mg/l	TM227	<0.05			<0.05		<0.05	
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228	83.1			14.9		147	
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228	50.1			0.108		22.9	
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228	0.108			1.53		<0.036	
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228	<2.34			<2.34		<2.34	
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228	<0.019			<0.019		<0.019	
Acetone	<50 µg/kg	TM232		<50			<50		<50
2-Butanone	<100 µg/kg	TM232		<100			<100		<100
TPH / Oil & Greases NRA leach	<1 mg/l	TM235	<1			<1		<1	
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241	<0.03			0.039		<0.03	
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243		0.0182	M		1.55	M	0.0523
Chloride (soluble)	<5 mg/kg	TM243		9.05	M		536	M	299
pH NRA leach	<1 pH Units	TM256	11.5			9.52		11.2	





**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

Results Legend		Customer Sample Ref.				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	OP10E6			
M	mCERTS accredited.		1.10			
S	Deviating sample.		Soil/Solid			
aq	Aqueous / settled sample.		05/06/2012			
diss.filt	Dissolved / filtered sample.					
tot.unfilt	Total / unfiltered sample.					
*	Subcontracted test.		05/06/2012			
**	% 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		120606-7			
(F)	Trigger breach confirmed		5689399			
			E6			
Component	LOD/Units	Method				
Dissolved solids, Total (aravimetric) NRA leach	<10 mg/l	TM021	277			
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA leach	<2 mg/l	TM043	30			
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090	<3			
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099	<0.2			
Sulphide NRA leach	<0.01 mg/l	TM101	<0.01			
Fluoride NRA leach	<0.5 mg/l	TM104	0.814			
COD, unfiltered NRA leach	<7 mg/l	TM107	<7			
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120	0.442			
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152	112			
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152	3.16			
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152	1.54			
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152	341			
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152	292			
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152	<0.1			
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152	18.4			
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152	<0.06			
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152	<0.85			
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152	3.53			
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152	<0.04			
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152	10.8			
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152	0.55			
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152	<6.3			
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152	1.81			
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152	<0.96			
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152	<0.36			
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152	5.04			
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152	6.89			
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183	<0.01			
Sulphate NRA leach	<2 mg/l	TM184	22.2			
Chloride NRA leach	<2 mg/l	TM184	44.7			
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184	0.352			
PCB congener 28 NRA leach	<0.015 µg/l	TM197	<0.015			
PCB congener 52 NRA leach	<0.015 µg/l	TM197	<0.015			
PCB congener 101 NRA leach	<0.015 µg/l	TM197	<0.015			
PCB congener 118 NRA leach	<0.015 µg/l	TM197	<0.015			









**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

**PAH Spec MS - Aqueous (W)**

Results Legend		Customer Sample Ref.	BH302 E28	OP10 E2	OP10 E4	OP10E6		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		9.00	0.80	2.00	1.10		
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		01/06/2012	05/06/2012	05/06/2012	05/06/2012		
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		05/06/2012	05/06/2012	05/06/2012	05/06/2012		
(F)	Trigger breach confirmed		120606-7	120606-7	120606-7	120606-7		
			5689391	5689394	5689396	5689399		
		E28	E2	E4	E6			
Component	LOD/Units	Method						
Naphthalene (aq) NRA leach	<0.1 µg/l	TM178	0.141	<0.1	0.11	0.112		
Acenaphthene (aq) NRA leach	<0.015 µg/l	TM178	0.121	0.0199	<0.015	0.0158		
Acenaphthylene (aq) NRA leach	<0.011 µg/l	TM178	<0.011	<0.011	<0.011	<0.011		
Fluoranthene (aq) NRA leach	<0.017 µg/l	TM178	0.186	0.0422	0.562	0.0665		
Anthracene (aq) NRA leach	<0.015 µg/l	TM178	0.114	<0.015	0.0366	0.0207		
Phenanthrene (aq) NRA leach	<0.022 µg/l	TM178	0.554	0.0905	0.733	0.0944		
Fluorene (aq) NRA leach	<0.014 µg/l	TM178	0.166	<0.014	<0.014	0.0151		
Chrysene (aq) NRA leach	<0.013 µg/l	TM178	0.0147	<0.013	0.125	0.0153		
Pyrene (aq) NRA leach	<0.015 µg/l	TM178	0.126	0.028	0.183	0.0474		
Benzo(a)anthracene (aq) NRA leach	<0.017 µg/l	TM178	<0.017	<0.017	0.0176	<0.017		
Benzo(b)fluoranthene (aq) NRA leach	<0.023 µg/l	TM178	<0.023	<0.023	<0.023	<0.023		
Benzo(k)fluoranthene (aq) NRA leach	<0.027 µg/l	TM178	<0.027	<0.027	<0.027	<0.027		
Benzo(a)pyrene (aq) NRA leach	<0.009 µg/l	TM178	<0.009	<0.009	<0.009	<0.009		
Dibenzo(a,h)anthracene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016	<0.016	<0.016		
Benzo(g,h,i)perylene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016	<0.016	<0.016		
Indeno(1,2,3-cd)pyrene (aq) NRA leach	<0.014 µg/l	TM178	<0.014	<0.014	<0.014	<0.014		
PAH, Total Detected USEPA 16 (aq) NRA leach	<0.247 µg/l	TM178	1.42	<0.247	1.77	0.387		



**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

## Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	OP10 E1	OP10 E3	OP10 E5		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.		0.80	2.00	1.10		
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		05/06/2012	05/06/2012	05/06/2012		
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted test.		05/06/2012	05/06/2012	05/06/2012		
**	% 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		120606-7	120606-7	120606-7		
(F)	Trigger breach confirmed		5689393	5689395	5689397		
			E1	E3	E5		
Component	LOD/Units	Method					
Phenol	<100 µg/kg	TM157	<100	<100	<100		
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100		
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100		
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100		
Isophorone	<100 µg/kg	TM157	<100	<100	<100		
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100		
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100		
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100		
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100		
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100		
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100		
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100		
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100		
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100		
Carbazole	<100 µg/kg	TM157	<100	<100	<100		
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100		
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	274	<100		
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100		
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100		
Azobenzene	<100 µg/kg	TM157	<100	<100	<100		
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100		
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100		
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100		
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100		
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100		
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100		
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100		
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100		
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100		
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100		
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100		
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100		
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100		
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100		
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100		





**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowl  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

## TPH CWG (S)

Results Legend		Customer Sample Ref.	OP10 E1	OP10 E3	OP10 E5		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80	2.00	1.10		
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid		
S	Deviating sample.		05/06/2012	05/06/2012	05/06/2012		
aq	Aqueous / settled sample.		05/06/2012	05/06/2012	05/06/2012		
diss.filt	Dissolved / filtered sample.		120606-7	120606-7	120606-7		
tot.unfilt	Total / unfiltered sample.		5689393	5689395	5689397		
*	Subcontracted test.		E1	E3	E5		
**	% 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						
Component	LOD/Units		Method				
GRO Surrogate % recovery**	%	TM089	120	126	127		
GRO >C5-C12	<44 µg/kg	TM089	<44	<44	<44		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5		
Benzene	<10 µg/kg	TM089	<10	<10	<10		
Toluene	<2 µg/kg	TM089	<2	<2	<2		
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3		
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6		
o-Xylene	<3 µg/kg	TM089	<3	<3	<3		
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9		
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24		
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10		
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10		
Aliphatics >C12-C16	<100 µg/kg	TM173	1430	<100	<100		
Aliphatics >C16-C21	<100 µg/kg	TM173	3770	4680	2160		
Aliphatics >C21-C35	<100 µg/kg	TM173	38000	67900	36200		
Aliphatics >C35-C44	<100 µg/kg	TM173	19000	17100	6680		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	62200	89800	45100		
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10		
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10		
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	<100		
Aromatics >EC16-EC21	<100 µg/kg	TM173	1020	3190	1190		
Aromatics >EC21-EC35	<100 µg/kg	TM173	4650	28600	9250		
Aromatics >EC35-EC44	<100 µg/kg	TM173	3430	9350	4770		
Aromatics >EC40-EC44	<100 µg/kg	TM173	1060	3420	1960		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	9100	41200	15200		
Total Aliphatics >C5-35	<100 µg/kg	TM173	43200	72600	38400		
Total Aromatics >C5-35	<100 µg/kg	TM173	5670	31800	10400		
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	48900	104000	48800		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	71300	131000	60300		



**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowl  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

## VOC MS (S)

Results Legend		Customer Sample Ref.	OP10 E1	OP10 E3	OP10 E5		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80	2.00	1.10		
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid		
S	Deviating sample.		05/06/2012	05/06/2012	05/06/2012		
aq	Aqueous / settled sample.		05/06/2012	05/06/2012	05/06/2012		
diss.filt	Dissolved / filtered sample.		120606-7	120606-7	120606-7		
tot.unfilt	Total / unfiltered sample.		5689393	5689395	5689397		
*	Subcontracted test.		E1	E3	E5		
**	% 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						
Component	LOD/Units		Method				
Dibromofluoromethane**	%	TM116	102	34	102		
Toluene-d8**	%	TM116	99.6	99.8	99.5		
4-Bromofluorobenzene**	%	TM116	105	103	96		
Dichlorodifluoromethane	<4 µg/kg	TM116	<4	<4	<80		
Chloromethane	<7 µg/kg	TM116	<7	<7	<140		
Vinyl Chloride	<10 µg/kg	TM116	<10	<10	<200		
Bromomethane	<13 µg/kg	TM116	<13	<13	<260		
Chloroethane	<14 µg/kg	TM116	<14	<14	<280		
Trichlorofluoromethane	<6 µg/kg	TM116	<6	<6	<120		
1.1-Dichloroethene	<10 µg/kg	TM116	<10	<10	<200		
Carbon Disulphide	<7 µg/kg	TM116	<7	<7	<140		
Dichloromethane	<10 µg/kg	TM116	<10	<10	<200		
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	<11	<220		
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11	<11	<220		
1.1-Dichloroethane	<8 µg/kg	TM116	<8	<8	<160		
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5	<5	<100		
2.2-Dichloropropane	<12 µg/kg	TM116	<12	<12	<240		
Bromochloromethane	<14 µg/kg	TM116	<14	<14	<280		
Chloroform	<8 µg/kg	TM116	<8	<8	<160		
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7	<7	<140		
1.1-Dichloropropene	<11 µg/kg	TM116	<11	<11	<220		
Carbontetrachloride	<14 µg/kg	TM116	<14	<14	<280		
1.2-Dichloroethane	<5 µg/kg	TM116	<5	<5	<100		
Benzene	<9 µg/kg	TM116	<9	<9	<180		
Trichloroethene	<9 µg/kg	TM116	<9	<9	<180		
1.2-Dichloropropane	<12 µg/kg	TM116	<12	<12	<240		
Dibromomethane	<9 µg/kg	TM116	<9	<9	<180		
Bromodichloromethane	<7 µg/kg	TM116	<7	<7	<140		
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<14	<280		
Toluene	<5 µg/kg	TM116	<5	<5	<100		
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<14	<280		
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	<10	<200		
1.3-Dichloropropane	<7 µg/kg	TM116	<7	<7	<140		
Tetrachloroethene	<5 µg/kg	TM116	<5	<5	<100		
Dibromochloromethane	<13 µg/kg	TM116	<13	<13	<260		



SDG: 120606-7  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowl  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 187223  
 Superseded Report:

## VOC MS (S)

Results Legend		Customer Sample Ref.	OP10 E1	OP10 E3	OP10 E5			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80	2.00	1.10			
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid			
S	Deviating sample.		05/06/2012	05/06/2012	05/06/2012			
aq	Aqueous / settled sample.		05/06/2012	05/06/2012	05/06/2012			
diss.filt	Dissolved / filtered sample.		120606-7	120606-7	120606-7			
tot.unfilt	Total / unfiltered sample.		5689393	5689395	5689397			
*	Subcontracted test.		E1	E3	E5			
**	% 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							
Component	LOD/Units		Method					
1,2-Dibromoethane	<12 µg/kg	TM116	<12 M	<12 M	<240 M			
Chlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<100 M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<200 M			
Ethylbenzene	<4 µg/kg	TM116	<4 M	<4 M	<80 M			
p/m-Xylene	<14 µg/kg	TM116	<14 #	<14 #	<280 #			
o-Xylene	<10 µg/kg	TM116	<10 M	<10 M	<200 M			
Styrene	<10 µg/kg	TM116	<10 M	<10 M	<200 M			
Bromoform	<10 µg/kg	TM116	<10 M	<10 M	<200 M			
Isopropylbenzene	<5 µg/kg	TM116	<5 M	<5 M	<100 M			
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10 #	<10 #	<200 #			
1,2,3-Trichloropropane	<17 µg/kg	TM116	<17 M	<17 M	<340 M			
Bromobenzene	<10 µg/kg	TM116	<10 M	<10 M	<200 M			
Propylbenzene	<11 µg/kg	TM116	<11 M	<11 M	<220 M			
2-Chlorotoluene	<9 µg/kg	TM116	<9 M	<9 M	<180 M			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8 #	<8 #	<160 #			
4-Chlorotoluene	<12 µg/kg	TM116	<12 M	<12 M	<240 M			
tert-Butylbenzene	<12 µg/kg	TM116	<12 #	<12 #	<240 #			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9 #	<9 #	<180 #			
sec-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<200 M			
4-Isopropyltoluene	<11 µg/kg	TM116	<11 M	<11 M	<220 M			
1,3-Dichlorobenzene	<6 µg/kg	TM116	<6 M	<6 M	<120 M			
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<100 M			
n-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<200 M			
1,2-Dichlorobenzene	<12 µg/kg	TM116	<12 M	<12 M	<240 M			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14 M	<14 M	<280 M			
Tert-amyl methyl ether	<15 µg/kg	TM116	<15	<15	<300			
1,2,4-Trichlorobenzene	<6 µg/kg	TM116	<6 #	<6 #	<120 #			
Hexachlorobutadiene	<12 µg/kg	TM116	<12	<12	<240			
Naphthalene	<13 µg/kg	TM116	<13 M	40.4 M	420 M			
1,2,3-Trichlorobenzene	<6 µg/kg	TM116	<6 M	<6 M	<120 M			
VOC TIC	-	TM116	No TICs identified	No TICs identified	No TICs identified			



**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	OP10 E1 E 1 0.80 SOLID 05/06/2012 00:00:00  120606-7 5689393 TM048	18/6/12	Rachel Sullivan	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	OP10 E3 E 3 2.00 SOLID 05/06/2012 00:00:00  120606-7 5689395 TM048	18/6/12	Rachel Sullivan	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	OP10 E5 E 5 1.10 SOLID 05/06/2012 00:00:00  120606-7 5689397 TM048	18/6/12	Rachel Sullivan	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected



**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5729761	OP10 E3 E3	2.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5729888	OP10 E1 E1	0.80	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5731194	OP10 E5 E5	1.10	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded

**Note :** Test results may be compromised





**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM021	Method 2540C, AWWA/APHA, 20th Ed., 1999	Determination of total dissolved solids in waters by gravimetry.		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
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		
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM232	USEPA Method No. 8260b 'Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC-MS)'	Determination of Volatile Alcohols, Acetates and Ketones in Waters by Headspace GC-MS		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		



**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		
TM243		Mixed Anions In Soils By Kone		
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		
TM294		Determination of Free Sulphur in liquids by HPLC		

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



**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowl  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

## Test Completion Dates

Lab Sample No(s) Customer Sample Ref.  AGS Ref. Depth Type	5689391	5689393	5689394	5689395	5689396	5689397	5689399
	BH302 E28	OP10 E1	OP10 E2	OP10 E3	OP10 E4	OP10 E5	OP10E6
	E28	E1	E2	E3	E4	E5	E6
	9.00	0.80	0.80	2.00	2.00	1.10	1.10
	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alcohols and Acetates in Soils		19-Jun-2012		19-Jun-2012		19-Jun-2012	
Alkali Metals by iCap-OES (Soil)		19-Jun-2012		19-Jun-2012		19-Jun-2012	
Alkalinity Filtered as CaCO3	18-Jun-2012		19-Jun-2012		18-Jun-2012		18-Jun-2012
Ammoniacal Nitrogen	18-Jun-2012		18-Jun-2012		18-Jun-2012		18-Jun-2012
Ammonium Soil by Titration		15-Jun-2012		18-Jun-2012		15-Jun-2012	
Anions by Kone (soil)		18-Jun-2012		18-Jun-2012		18-Jun-2012	
Anions by Kone (w)	19-Jun-2012		19-Jun-2012		19-Jun-2012		19-Jun-2012
Asbestos Identification (Soil)		18-Jun-2012		18-Jun-2012		18-Jun-2012	
Boron Water Soluble		19-Jun-2012		19-Jun-2012		19-Jun-2012	
COD Unfiltered	16-Jun-2012		16-Jun-2012		16-Jun-2012		16-Jun-2012
Conductivity (at 20 deg.C)	15-Jun-2012		15-Jun-2012		15-Jun-2012		15-Jun-2012
Cyanide Comp/Free/Total/Thiocyanate	18-Jun-2012	18-Jun-2012	18-Jun-2012	18-Jun-2012	18-Jun-2012	18-Jun-2012	18-Jun-2012
Dioxins/Furans (S)*		06-Jul-2012		06-Jul-2012		06-Jul-2012	
Dissolved Metals by ICP-MS	18-Jun-2012		18-Jun-2012		18-Jun-2012		18-Jun-2012
Dissolved Organic/Inorganic Carbon	16-Jun-2012		16-Jun-2012		16-Jun-2012		16-Jun-2012
Easily Liberated Sulphide		18-Jun-2012		18-Jun-2012		18-Jun-2012	
EPH CWG (Aliphatic) GC (S)		19-Jun-2012		19-Jun-2012		19-Jun-2012	
EPH CWG (Aromatic) GC (S)		19-Jun-2012		19-Jun-2012		19-Jun-2012	
Fluoride	19-Jun-2012		19-Jun-2012		19-Jun-2012		19-Jun-2012
Free Sulphur	15-Jun-2012		15-Jun-2012		15-Jun-2012		15-Jun-2012
GRO by GC-FID (S)		16-Jun-2012		16-Jun-2012		16-Jun-2012	
Hexavalent Chromium (s)		18-Jun-2012		18-Jun-2012		18-Jun-2012	
Hexavalent Chromium (w)	18-Jun-2012		18-Jun-2012		18-Jun-2012		18-Jun-2012
Mercury Dissolved	18-Jun-2012		18-Jun-2012		18-Jun-2012		18-Jun-2012
Metals by iCap-OES (Soil)		19-Jun-2012		19-Jun-2012		19-Jun-2012	
Metals by iCap-OES Dissolved (W)	18-Jun-2012		18-Jun-2012		18-Jun-2012		18-Jun-2012
Mineral Oil		19-Jun-2012		19-Jun-2012		19-Jun-2012	
Nitrite by Kone (w)	18-Jun-2012		18-Jun-2012		18-Jun-2012		18-Jun-2012
NRA Leachate	13-Jun-2012		13-Jun-2012		13-Jun-2012		13-Jun-2012
PAH Spec MS - Aqueous (W)	19-Jun-2012		19-Jun-2012		19-Jun-2012		19-Jun-2012
PAH Value of soil		19-Jun-2012		19-Jun-2012		19-Jun-2012	
PCB Congeners - Aqueous (W)	19-Jun-2012		19-Jun-2012		19-Jun-2012		19-Jun-2012
PCBs by GCMS		19-Jun-2012		19-Jun-2012		19-Jun-2012	
pH		18-Jun-2012		18-Jun-2012		18-Jun-2012	
pH Value	15-Jun-2012		15-Jun-2012		15-Jun-2012		15-Jun-2012
Phenols by HPLC (S)		19-Jun-2012		19-Jun-2012		18-Jun-2012	
Phenols by HPLC (W)	18-Jun-2012		19-Jun-2012		18-Jun-2012		18-Jun-2012
Sample description	14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012	14-Jun-2012
Semi Volatile Organic Compounds		16-Jun-2012		16-Jun-2012		16-Jun-2012	
Sulphide	19-Jun-2012		19-Jun-2012		19-Jun-2012		19-Jun-2012
Toluene extractable matter*		02-Jul-2012		02-Jul-2012		02-Jul-2012	
Total Dissolved Solids (Grav)	19-Jun-2012		19-Jun-2012		19-Jun-2012		19-Jun-2012
Total Sulphate		18-Jun-2012		18-Jun-2012		18-Jun-2012	
Total Sulphur		19-Jun-2012		19-Jun-2012		19-Jun-2012	
TPH by IR Oils and Greases	18-Jun-2012		18-Jun-2012		18-Jun-2012		18-Jun-2012
TPH CWG GC (S)		19-Jun-2012		19-Jun-2012		19-Jun-2012	
VOC MS (S)		17-Jun-2012		19-Jun-2012		19-Jun-2012	



SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

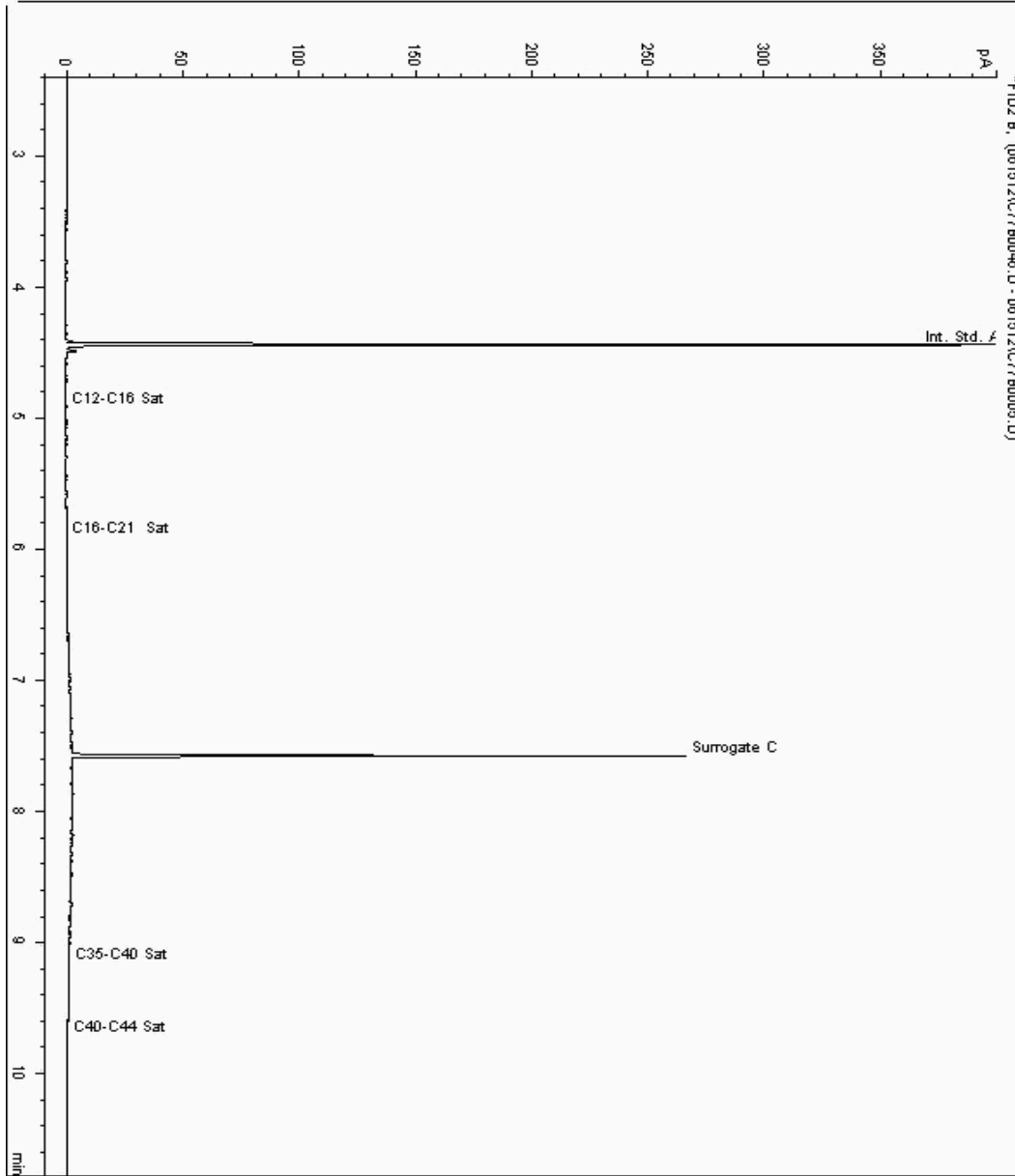
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5738714  
Sample ID : OP10 E5

Depth : 1.10

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

Sample Identity: 5579154-5738714  
Date Acquired : 18/06/12 14:53:21 PM  
Units : ppb  
Dilution:





SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

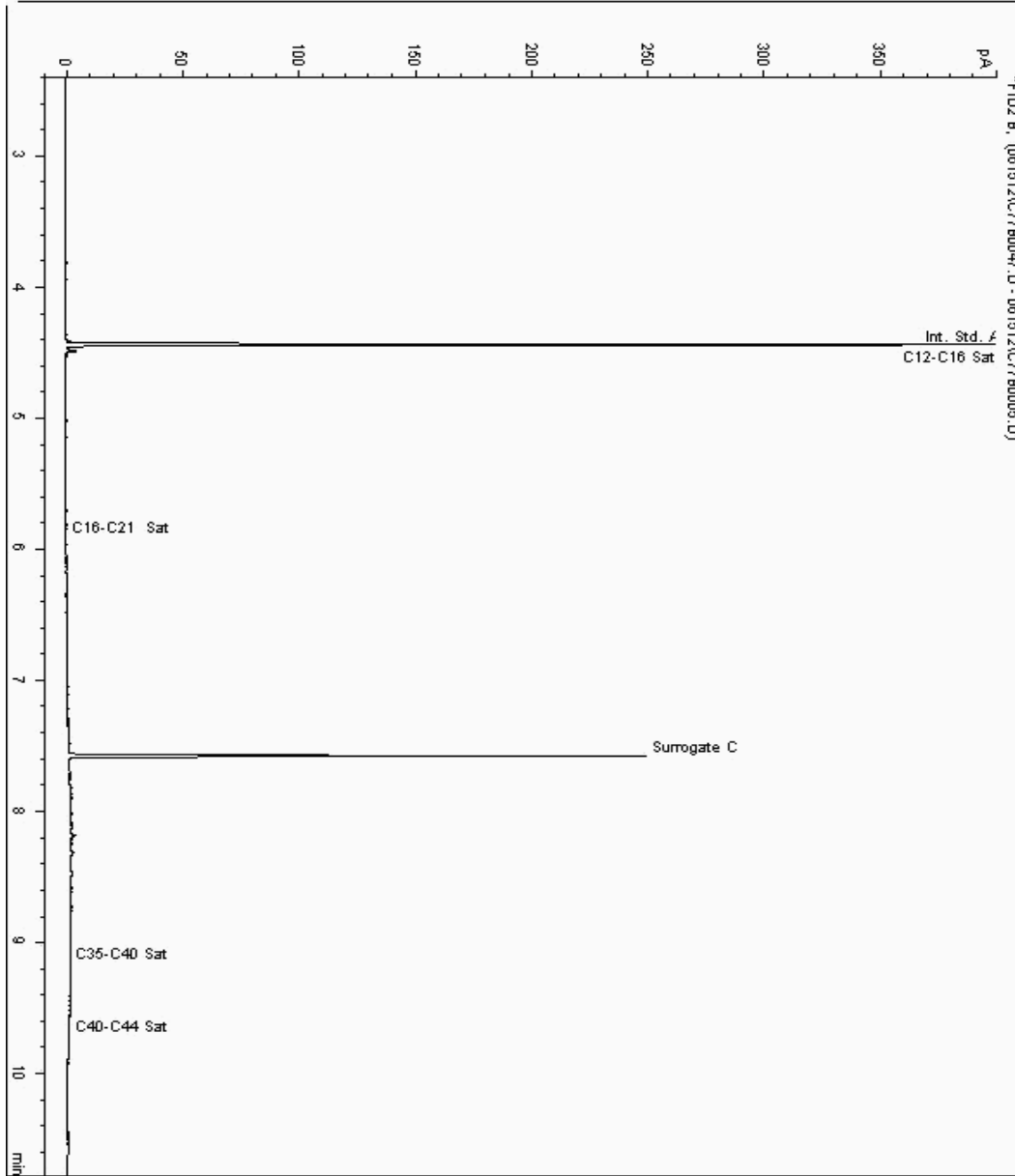
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5738882  
Sample ID : OP10 E1

Depth : 0.80

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

Sample Identity: 5579086-5738882  
Date Acquired : 18/06/12 15:13:55 PM  
Units : ppb  
Dilution:





SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

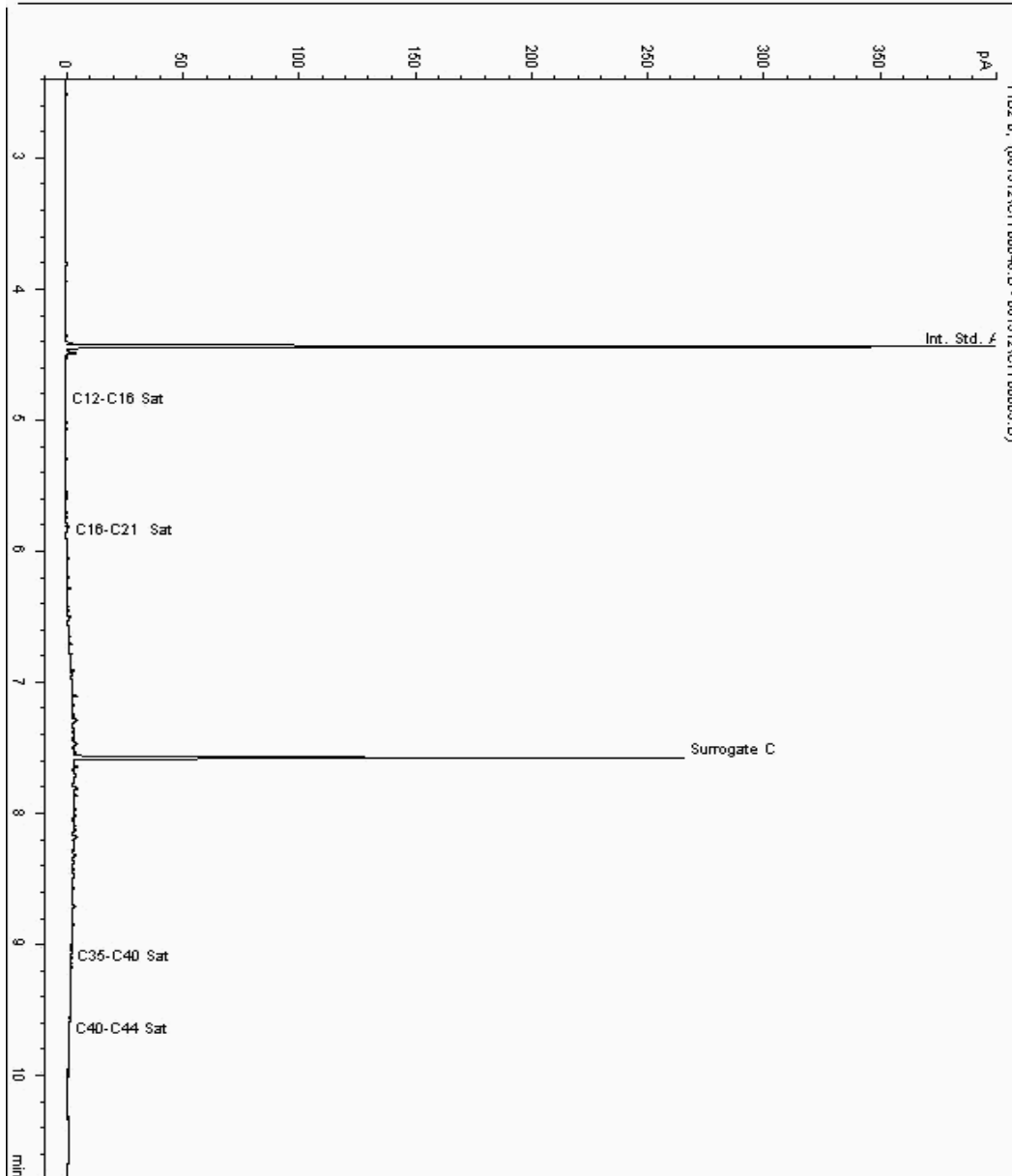
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5740640  
Sample ID : OP10 E3

Depth : 2.00

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

Sample Identity: 5579119-5740640  
Date Acquired : 18/06/12 15:34:19 PM  
Units : ppb  
Dilution:





SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

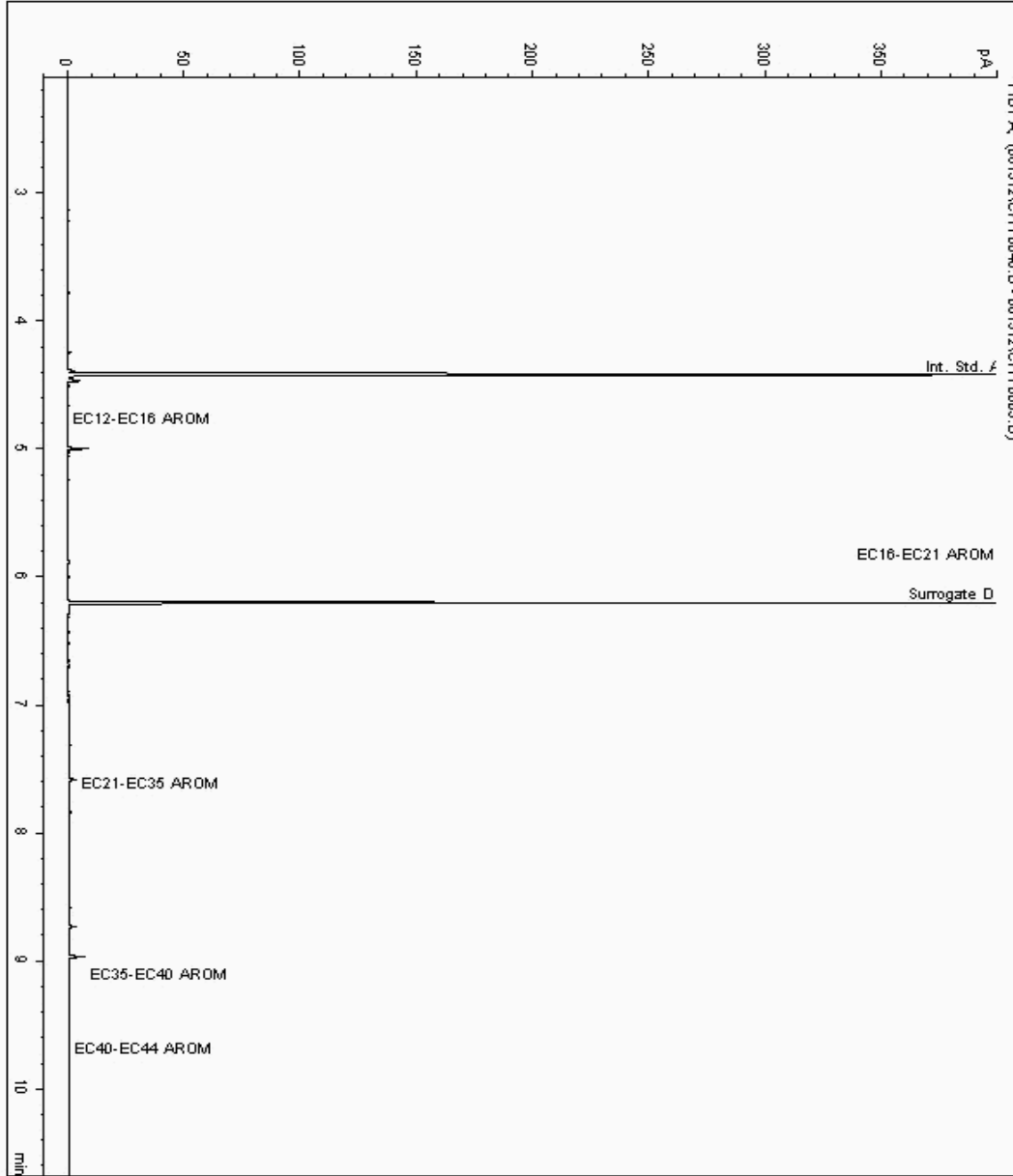
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5738714  
Sample ID : OP10 E5

Depth : 1.10

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

Sample Identity: 5579155-5738714  
Date Acquired : 18/06/12 14:53:21 PM  
Units : ppb  
Dilution:





SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

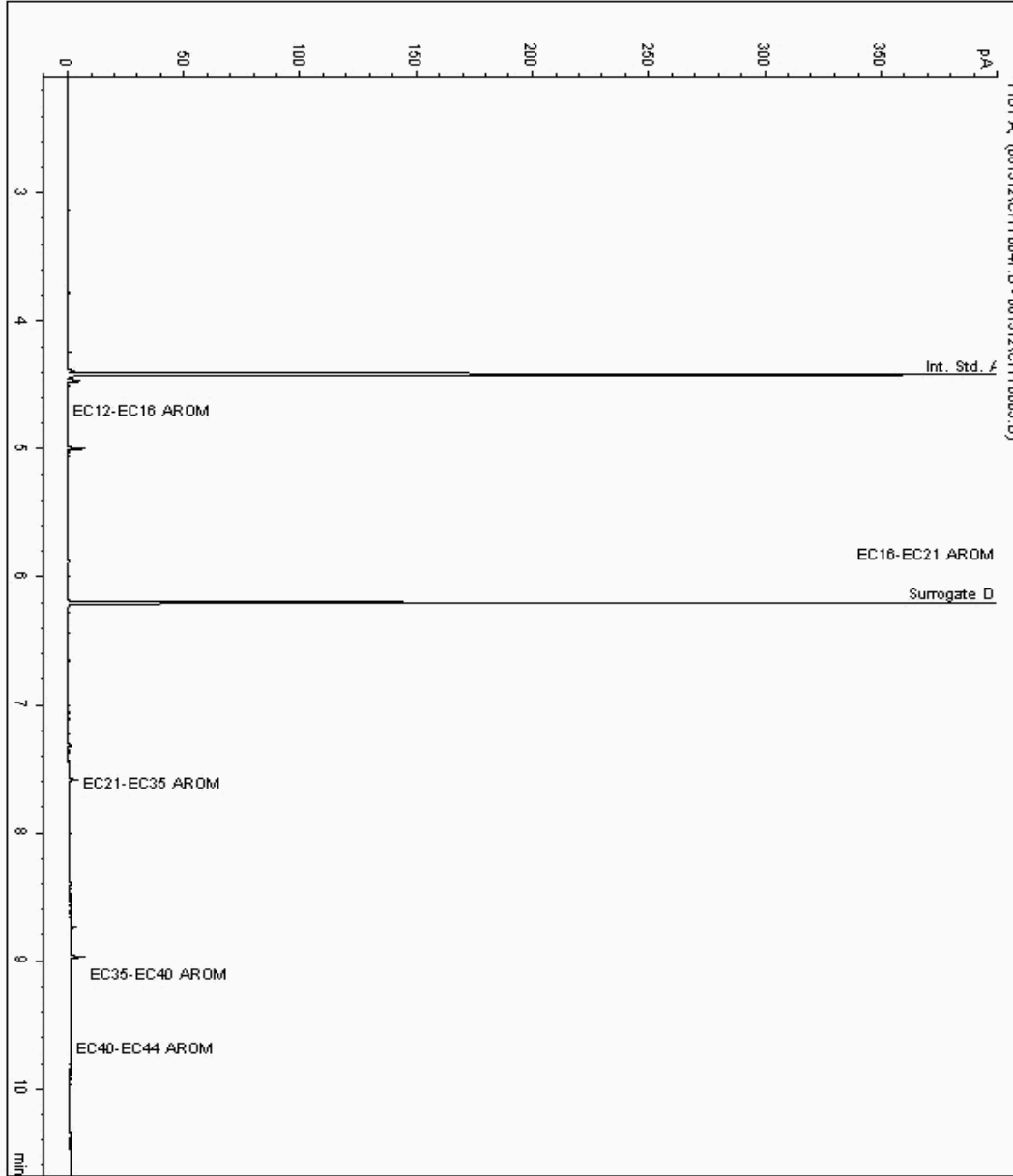
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5738882  
Sample ID : OP10 E1

Depth : 0.80

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

Sample Identity: 5579087-5738882  
Date Acquired : 18/06/12 15:13:55 PM  
Units : ppb  
Dilution:







SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

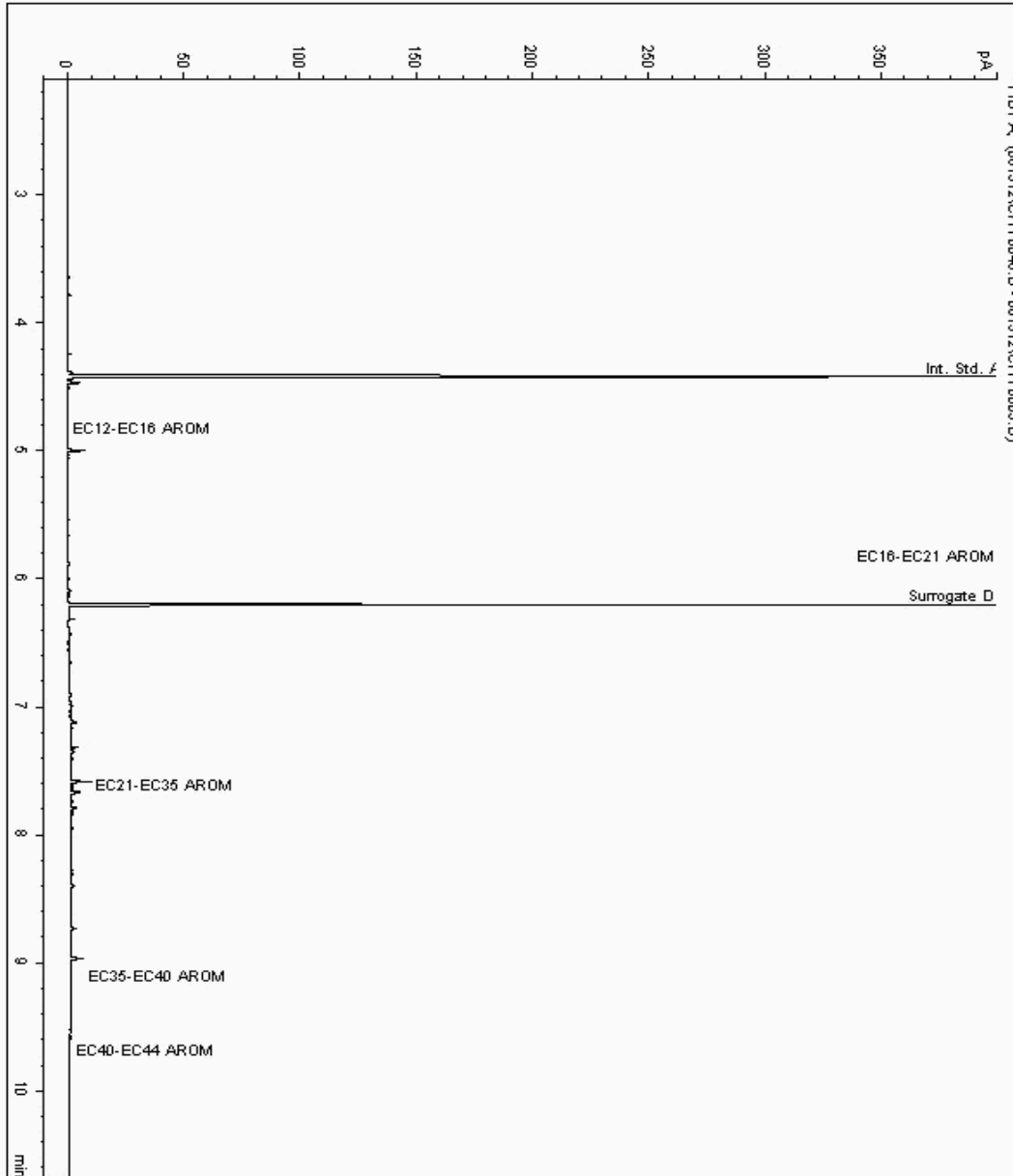
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5740640  
Sample ID : OP10 E3

Depth : 2.00

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

Sample Identity: 5579120-5740640  
Date Acquired : 18/06/12 15:34:19 PM  
Units : ppb  
Dilution:





SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

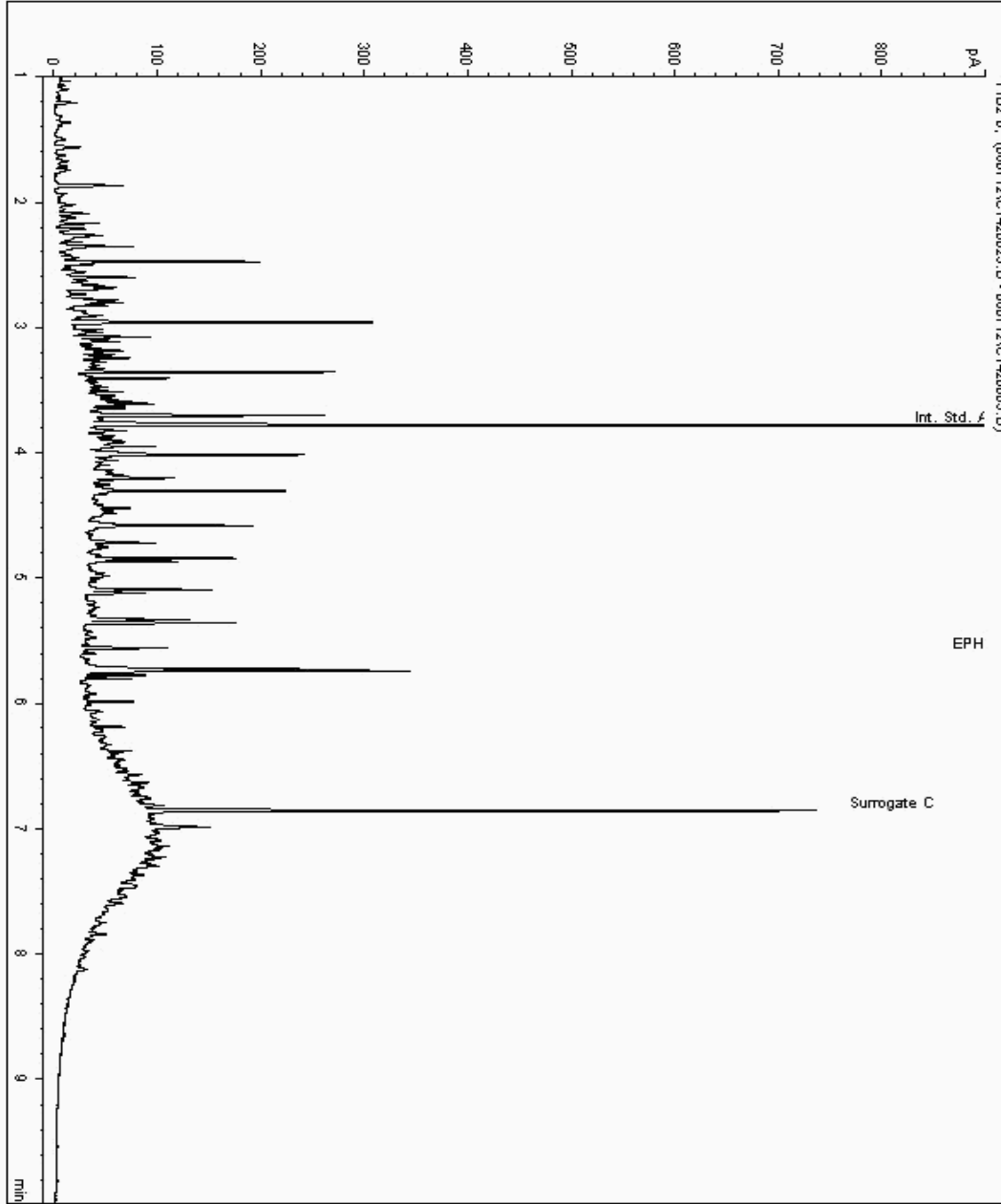
Analysis: Mineral Oil

Sample No : 5738703  
Sample ID : OP10 E5

Depth : 1.10

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5561404-5696141  
Date Acquired : 07/06/12 17:45:48 PM  
Units : mcg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

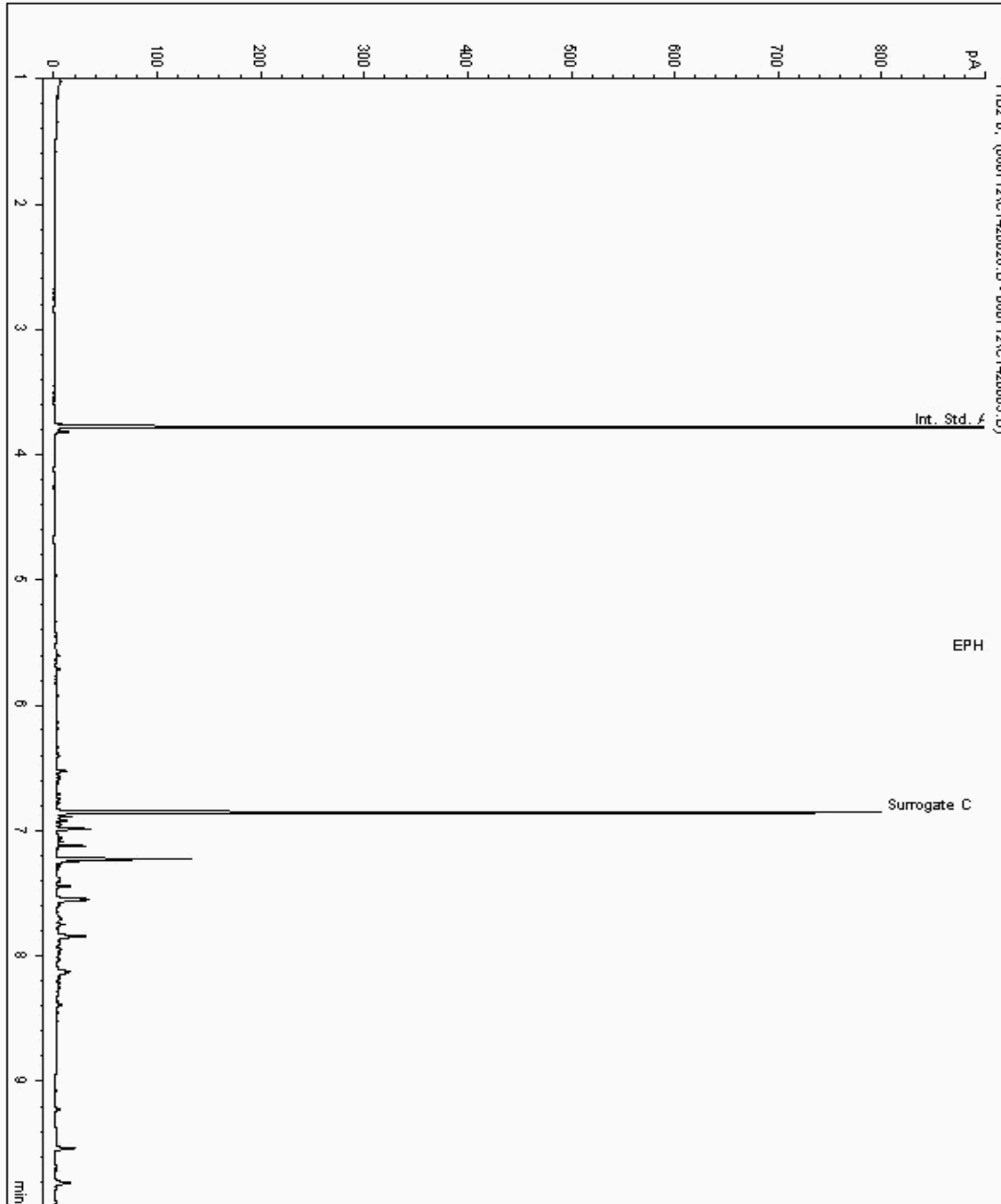
Analysis: Mineral Oil

Sample No : 5738855  
Sample ID : OP10 E1

Depth : 0.80

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5529440-5688080  
Date Acquired : 07/06/12 18:08:20 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

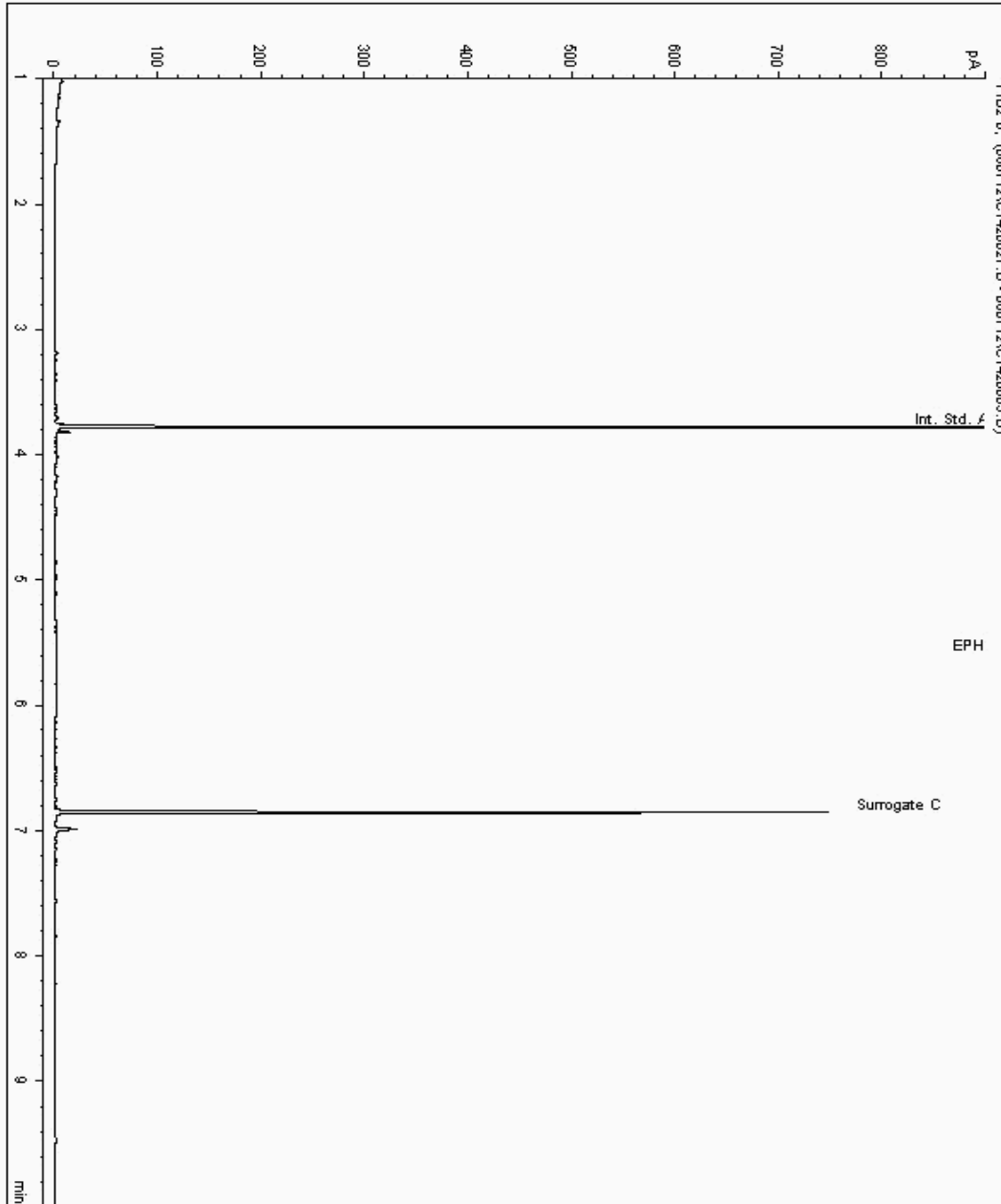
Analysis: Mineral Oil

Sample No : 5740611  
Sample ID : OP10 E3

Depth : 2.00

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5551353-5693057  
Date Acquired : 07/06/12 18:31:01 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

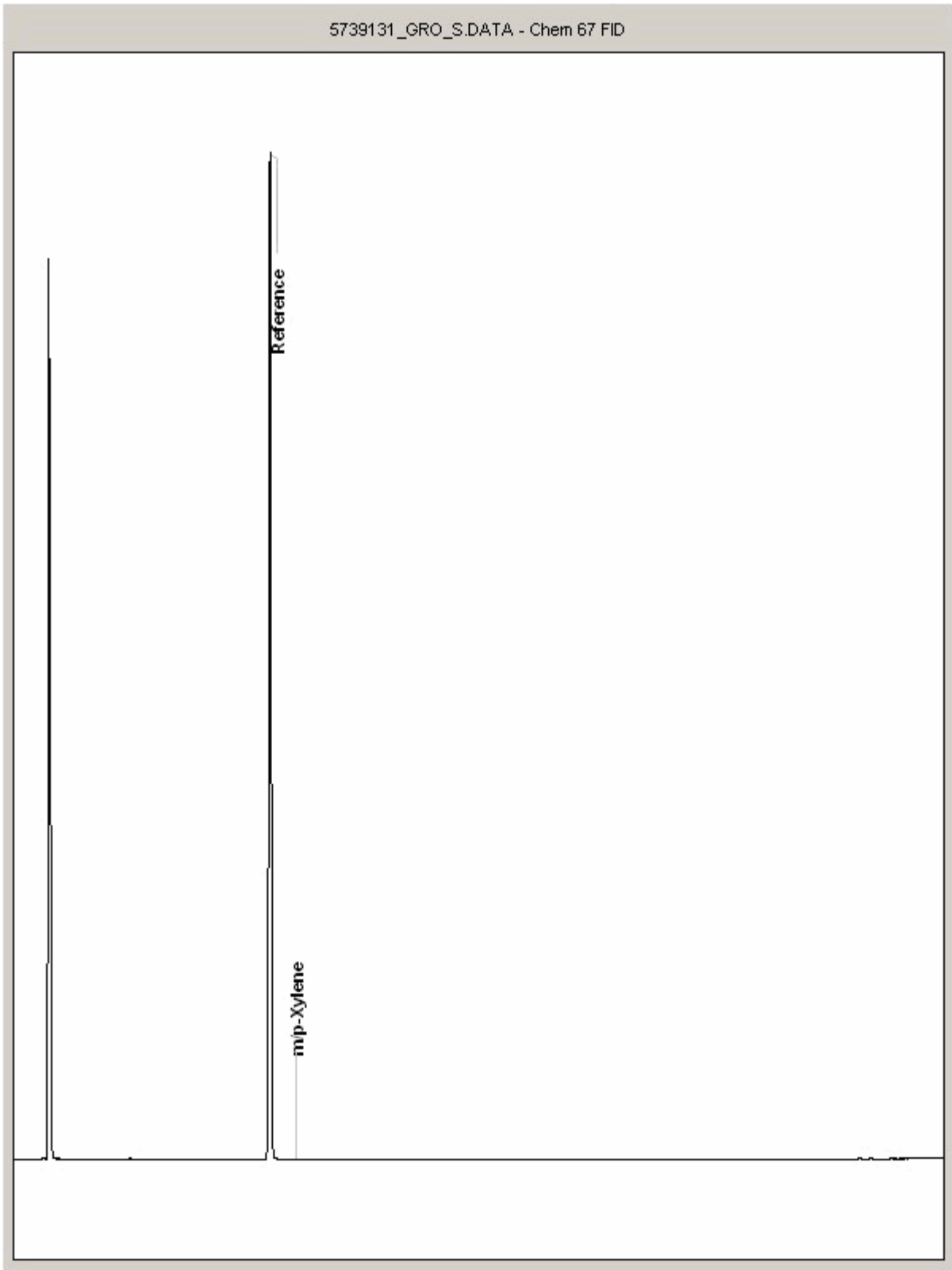
Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5739131  
Sample ID : OP10 E5

Depth : 1.10





SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

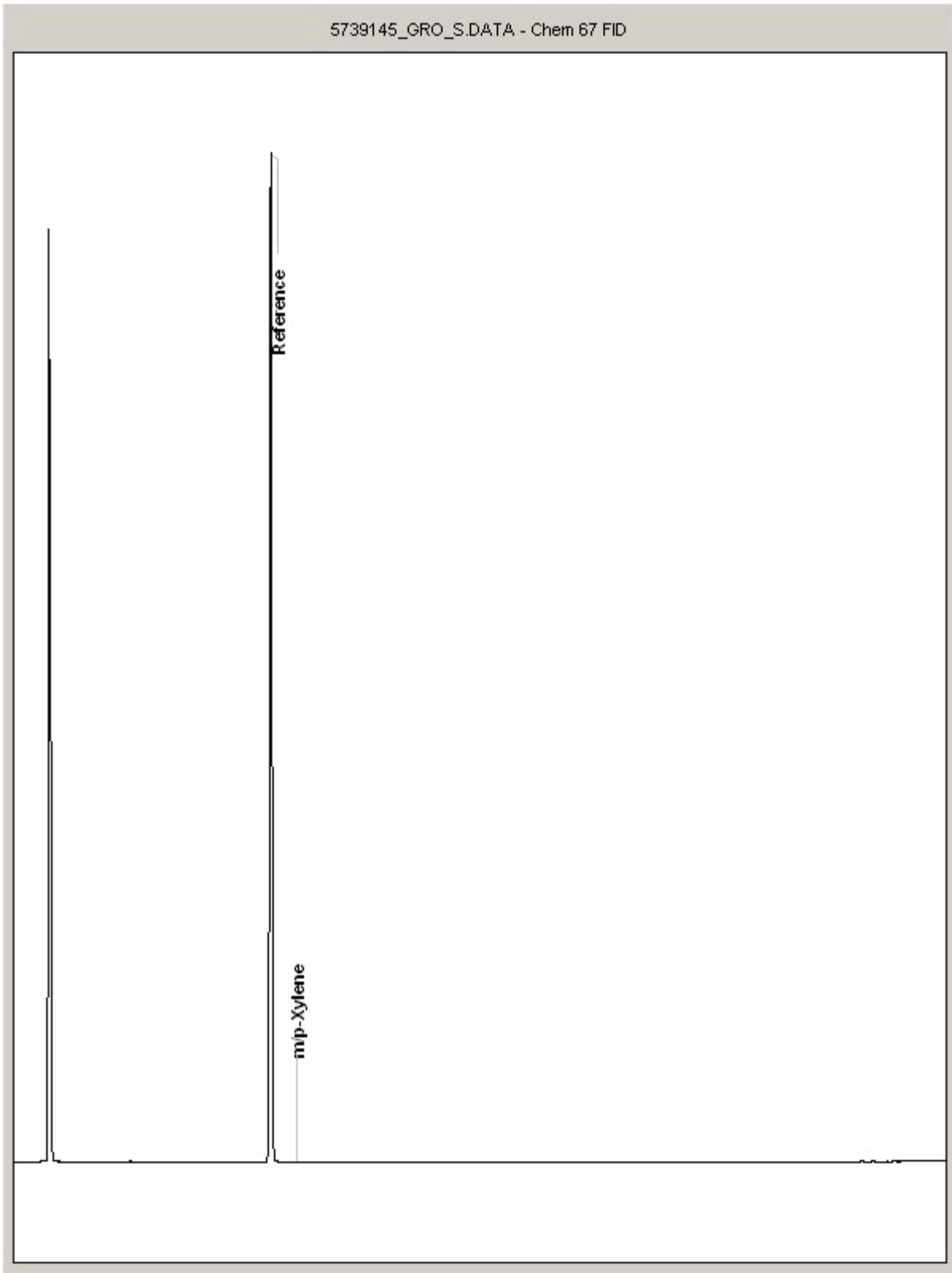
Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5739145  
Sample ID : OP10 E1

Depth : 0.80





SDG: 120606-7  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

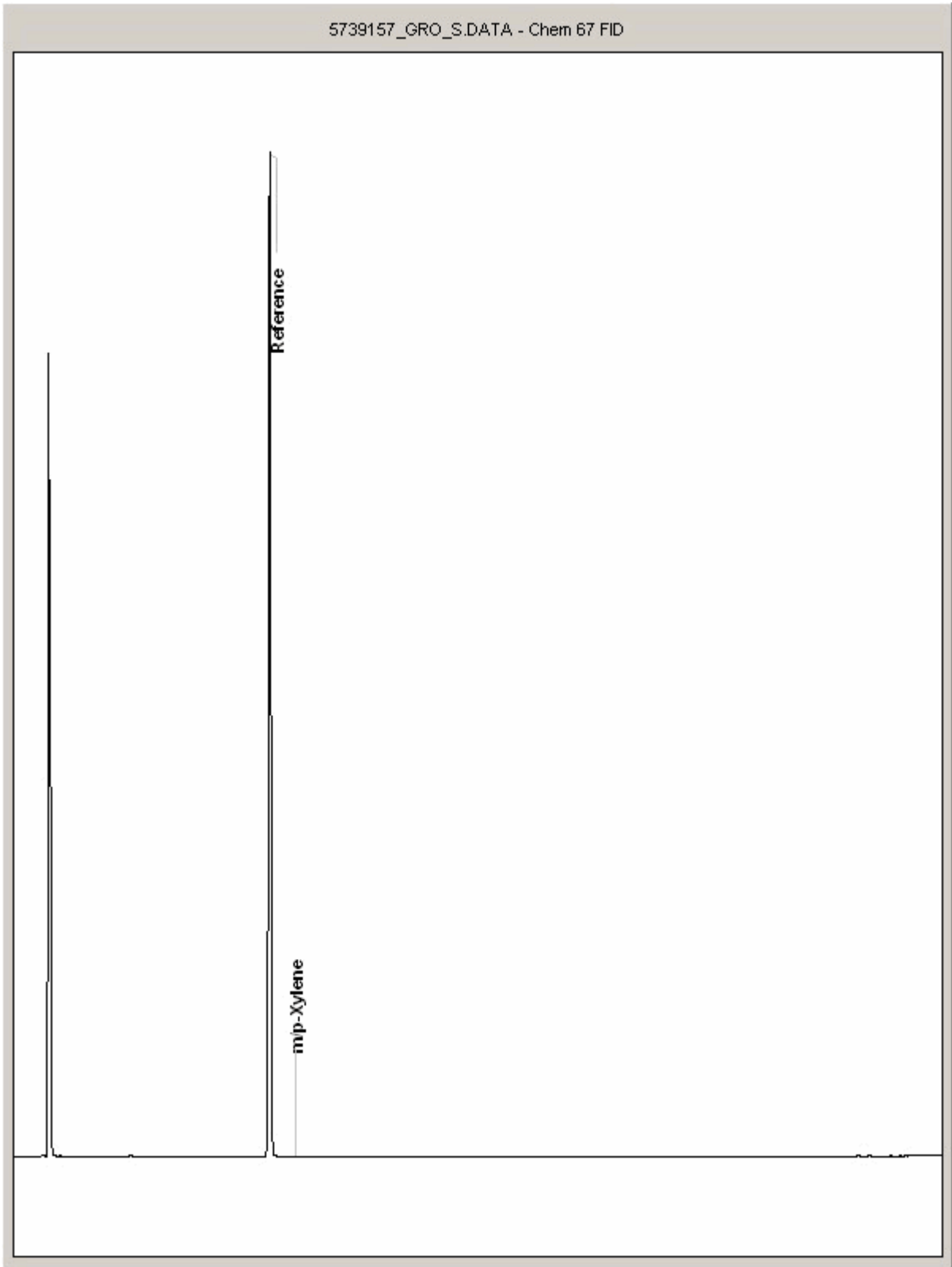
Order Number: 4559  
Report Number: 187223  
Superseded Report:

# Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5739157  
Sample ID : OP10 E3

Depth : 2.00





## ALcontrol AB

Box 1083, 581 10 Linköping, Sweden  
 Tel: +46 13 254 900 · Fax: +46 13 121 728  
 Registered 556152-0916 Registered office: Linköping, Sweden



1006  
 ISO/IEC 17025

## REPORT

issued by an Accredited Laboratory

## Report No. 12200756

Assigner

ALcontrol Laboratories  
 Units 7-8, Hawarden Busin. Prk

Manor Road, Hawarden  
 CH53US Deeside, UK

Applies to

## Information about the project

Solid

Project number : 120606-7

## Information about sample and sampling

Description of sample	: Solid	Date of Arrival	: 2012-06-20
Sampling date	: 2012-06-05	Time of Arrival	: 1200
Sample name	: 5750029		
Reference	: 7825		
Invoice reference	: 120606-7		

## Results of the analyses

Test method	Analysis / Investigation of	Results	Unit	Uncert. of measur.
SS-EN-1948	2378 TCDD	< 2	ng/kg DS	+/-30%
SS-EN-1948	12378 PeCDD	< 2	ng/kg DS	+/-30%
SS-EN-1948	123478 HxCDD	< 2	ng/kg DS	+/-35%
SS-EN-1948	123678 HxCDD	2.5	ng/kg DS	+/-35%
SS-EN-1948	123789 HxCDD	< 2	ng/kg DS	+/-35%
SS-EN-1948	1234678 HpCDD	7.0	ng/kg DS	+/-30%
SS-EN-1948	OCDD	14	ng/kg DS	+/-30%
SS-EN-1948	2378 TCDF	3.6	ng/kg DS	+/-30%
SS-EN-1948	12378 PeCDF	2.5	ng/kg DS	+/-30%
SS-EN-1948	23478 PeCDF	3.3	ng/kg DS	+/-30%
SS-EN-1948	123478 HxCDF	4.5	ng/kg DS	+/-30%
SS-EN-1948	123678 HxCDF	5.1	ng/kg DS	+/-30%
SS-EN-1948	123789 HxCDF	< 2	ng/kg DS	+/-30%
SS-EN-1948	234678 HxCDF	4.9	ng/kg DS	+/-30%
SS-EN-1948	1234678 HpCDF	15	ng/kg DS	+/-30%
SS-EN-1948	1234789 HpCDF	< 2	ng/kg DS	+/-30%
SS-EN-1948	OCDF	13	ng/kg DS	+/-30%
SS-EN-1948	I-PCDD/F-TEQ Lower Bound	4.1	ng/kg DS	+/-35%
SS-EN-1948	I-PCDD/F-TEQ Upper Bound	7.7	ng/kg DS	+/-35%
SS-EN-1948	Rec 2378 TCDD Extr spike	51	%	
SS-EN-1948	Rec 12378 PeCDD Extr spike	70	%	
SS-EN-1948	Rec 123478 HxCDD Extr spike	78	%	
SS-EN-1948	Rec 123678 HxCDD Extr spike	73	%	
SS-EN-1948	Rec 1234678 HpCDD Extr spike	76	%	
SS-EN-1948	Rec OCDD Extr spike	69	%	
SS-EN-1948	Rec 2378 TCDF Extr spike	67	%	
SS-EN-1948	Rec 12378 PeCDF Extr spike	71	%	
SS-EN-1948	Rec 23478 PeCDF Extr spike	70	%	
SS-EN-1948	Rec 123478 HxCDF Extr spike	78	%	

The stated uncertainty of measurement is calculated using a coverage  $k = 2$ . In case interval is set the higher figure refers to measurement uncertainty for results close to the reporting limit.  
 The measurement uncertainties for accredited microbiological analyses are available from the laboratory upon request.

(continued)





**ALcontrol AB**

Box 1083, 581 10 Linköping, Sweden  
 Tel: +46 13 254 900 · Fax: +46 13 121 728  
 Registered 556152-0916 Registered office: Linköping, Sweden



1006  
 ISO/IEC 17025



**REPORT**

issued by an Accredited Laboratory

**Report No. 12200756**

Assigner

ALcontrol Laboratories  
 Units 7-8, Hawarden Busin. Prk

Manor Road, Hawarden  
 CH53US Deeside, UK

Applies to

<b>Information about the project</b>		<b>Solid</b>
Project number	: 120606-7	

<b>Information about sample and sampling</b>			
Description of sample	: Solid	Date of Arrival	: 2012-06-20
Sampling date	: 2012-06-05	Time of Arrival	: 1200
Sample name	: 5750029		
Reference	: 7825		
Invoice reference	: 120606-7		

<b>Results of the analyses</b>				
Test method	Analysis / Investigation of	Results	Unit	Uncert. of measurem.
SS-EN-1948	Rec 123678 HxCDF Extr spike	76	%	
SS-EN-1948	Rec 123789 HxCDF Extr spike	78	%	
SS-EN-1948	Rec 234678 HxCDF Extr spike	75	%	
SS-EN-1948	Rec 1234678 HpCDF Extr spike	73	%	
SS-EN-1948	Rec 1234789 HpCDF Extr spike	77	%	
SS-EN-1948	Rec OCDF Extr spike	70	%	
SS-EN 11465	Dry Substance	96.2	%	+/-10%

The stated uncertainty of measurement is calculated using a coverage  $k = 2$ . In case interval is set the higher figure refers to measurement uncertainty for results close to the reporting limit.  
 The measurement uncertainties for accredited microbiological analyses are available from the laboratory upon request.

Linköping 2012-07-05

The report has been reviewed and approved by

**Therese Tellman**  
 Responsible reviewer

Control numbers 4381 7165 7294 9626



## ALcontrol AB

Box 1083, 581 10 Linköping, Sweden  
 Tel: +46 13 254 900 · Fax: +46 13 121 728  
 Registered 556152-0916 Registered office: Linköping, Sweden



1006  
 ISO/IEC 17025

## REPORT

issued by an Accredited Laboratory

## Report No. 12200755

Assigner

ALcontrol Laboratories  
 Units 7-8, Hawarden Busin. Prk

Manor Road, Hawarden  
 CH53US Deeside, UK

Applies to

## Information about the project

Solid

Project number : 120606-7

## Information about sample and sampling

Description of sample	: Solid	Date of Arrival	: 2012-06-20
Sampling date	: 2012-06-05	Time of Arrival	: 1200
Sample name	: 5750004		
Reference	: 7825		
Invoice reference	: 120606-7		

## Results of the analyses

Test method	Analysis / Investigation of	Results	Unit	Uncert. of measur.
SS-EN-1948	2378 TCDD	< 2	ng/kg DS	+/-30%
SS-EN-1948	12378 PeCDD	< 2	ng/kg DS	+/-30%
SS-EN-1948	123478 HxCDD	< 2	ng/kg DS	+/-35%
SS-EN-1948	123678 HxCDD	2.8	ng/kg DS	+/-35%
SS-EN-1948	123789 HxCDD	4.4	ng/kg DS	+/-35%
SS-EN-1948	1234678 HpCDD	12	ng/kg DS	+/-30%
SS-EN-1948	OCDD	44	ng/kg DS	+/-30%
SS-EN-1948	2378 TCDF	3.7	ng/kg DS	+/-30%
SS-EN-1948	12378 PeCDF	< 2	ng/kg DS	+/-30%
SS-EN-1948	23478 PeCDF	2.4	ng/kg DS	+/-30%
SS-EN-1948	123478 HxCDF	3.8	ng/kg DS	+/-30%
SS-EN-1948	123678 HxCDF	< 2	ng/kg DS	+/-30%
SS-EN-1948	123789 HxCDF	< 2	ng/kg DS	+/-30%
SS-EN-1948	234678 HxCDF	3.8	ng/kg DS	+/-30%
SS-EN-1948	1234678 HpCDF	12	ng/kg DS	+/-30%
SS-EN-1948	1234789 HpCDF	< 2	ng/kg DS	+/-30%
SS-EN-1948	OCDF	6.1	ng/kg DS	+/-30%
SS-EN-1948	I-PCDD/F-TEQ Lower Bound	3.4	ng/kg DS	+/-35%
SS-EN-1948	I-PCDD/F-TEQ Upper Bound	7.1	ng/kg DS	+/-35%
SS-EN-1948	Rec 2378 TCDD Extr spike	42	%	
SS-EN-1948	Rec 12378 PeCDD Extr spike	66	%	
SS-EN-1948	Rec 123478 HxCDD Extr spike	66	%	
SS-EN-1948	Rec 123678 HxCDD Extr spike	73	%	
SS-EN-1948	Rec 1234678 HpCDD Extr spike	68	%	
SS-EN-1948	Rec OCDD Extr spike	64	%	
SS-EN-1948	Rec 2378 TCDF Extr spike	62	%	
SS-EN-1948	Rec 12378 PeCDF Extr spike	64	%	
SS-EN-1948	Rec 23478 PeCDF Extr spike	63	%	
SS-EN-1948	Rec 123478 HxCDF Extr spike	66	%	

The stated uncertainty of measurement is calculated using a coverage  $k = 2$ . In case interval is set the higher figure refers to measurement uncertainty for results close to the reporting limit.  
 The measurement uncertainties for accredited microbiological analyses are available from the laboratory upon request.

(continued)



## ALcontrol AB

Box 1083, 581 10 Linköping, Sweden  
 Tel: +46 13 254 900 · Fax: +46 13 121 728  
 Registered 556152-0916 Registered office: Linköping, Sweden



1006  
 ISO/IEC 17025



## REPORT

Page 2 (2)  
 issued by an Accredited Laboratory

**Report No. 12200755**

Assigner

ALcontrol Laboratories  
 Units 7-8, Hawarden Busin. Prk

Manor Road, Hawarden  
 CH53US Deeside, UK

Applies to

**Information about the project**

**Solid**

Project number : 120606-7

**Information about sample and sampling**

Description of sample	: Solid	Date of Arrival	: 2012-06-20
Sampling date	: 2012-06-05	Time of Arrival	: 1200
Sample name	: 5750004		
Reference	: 7825		
Invoice reference	: 120606-7		

**Results of the analyses**

Test method	Analysis / Investigation of	Results	Unit	Uncert. of measurem.
SS-EN-1948	Rec 123678 HxCDF Extr spike	71	%	
SS-EN-1948	Rec 123789 HxCDF Extr spike	69	%	
SS-EN-1948	Rec 234678 HxCDF Extr spike	68	%	
SS-EN-1948	Rec 1234678 HpCDF Extr spike	66	%	
SS-EN-1948	Rec 1234789 HpCDF Extr spike	64	%	
SS-EN-1948	Rec OCDF Extr spike	64	%	
SS-EN 11465	Dry Substance	90.6	%	+/-10%

The stated uncertainty of measurement is calculated using a coverage  $k = 2$ . In case interval is set the higher figure refers to measurement uncertainty for results close to the reporting limit.  
 The measurement uncertainties for accredited microbiological analyses are available from the laboratory upon request.

**Comment**

The reported results for TCDD are indicative due to low recoveries of internal standards. These recoveries have been taken into account calculating the results.

Linköping 2012-07-05

The report has been reviewed and approved by

Therese Tellman  
 Responsible reviewer

Control numbers 4486 7168 7193 9025



## ALcontrol AB

Box 1083, 581 10 Linköping, Sweden  
 Tel: +46 13 254 900 · Fax: +46 13 121 728  
 Registered 556152-0916 Registered office: Linköping, Sweden



1006  
 ISO/IEC 17025

## REPORT

issued by an Accredited Laboratory

Report No. 12200754

Assigner

ALcontrol Laboratories  
 Units 7-8, Hawarden Busin. Prk

Manor Road, Hawarden  
 CH53US Deeside, UK

Applies to

## Information about the project

Solid

Project number : 120606-7

## Information about sample and sampling

Description of sample	: Solid	Date of Arrival	: 2012-06-20
Sampling date	: 2012-06-05	Time of Arrival	: 1200
Sample name	: 5749962		
Reference	: 7825		
Invoice reference	: 120606-7		

## Results of the analyses

Test method	Analysis / Investigation of	Results	Unit	Uncert. of measur.
SS-EN-1948	2378 TCDD	7.5	ng/kg DS	+/-30%
SS-EN-1948	12378 PeCDD	210	ng/kg DS	+/-30%
SS-EN-1948	123478 HxCDD	120	ng/kg DS	+/-35%
SS-EN-1948	123678 HxCDD	470	ng/kg DS	+/-35%
SS-EN-1948	123789 HxCDD	380	ng/kg DS	+/-35%
SS-EN-1948	1234678 HpCDD	2500	ng/kg DS	+/-30%
SS-EN-1948	OCDD	2500	ng/kg DS	+/-30%
SS-EN-1948	2378 TCDF	400	ng/kg DS	+/-30%
SS-EN-1948	12378 PeCDF	400	ng/kg DS	+/-30%
SS-EN-1948	23478 PeCDF	560	ng/kg DS	+/-30%
SS-EN-1948	123478 HxCDF	780	ng/kg DS	+/-30%
SS-EN-1948	123678 HxCDF	910	ng/kg DS	+/-30%
SS-EN-1948	123789 HxCDF	250	ng/kg DS	+/-30%
SS-EN-1948	234678 HxCDF	1200	ng/kg DS	+/-30%
SS-EN-1948	1234678 HpCDF	2800	ng/kg DS	+/-30%
SS-EN-1948	1234789 HpCDF	470	ng/kg DS	+/-30%
SS-EN-1948	OCDF	2200	ng/kg DS	+/-30%
SS-EN-1948	I-PCDD/F-TEQ Lower Bound	920	ng/kg DS	+/-35%
SS-EN-1948	I-PCDD/F-TEQ Upper Bound	920	ng/kg DS	+/-35%
SS-EN-1948	Rec 2378 TCDD Extr spike	68	%	
SS-EN-1948	Rec 12378 PeCDD Extr spike	70	%	
SS-EN-1948	Rec 123478 HxCDD Extr spike	62	%	
SS-EN-1948	Rec 123678 HxCDD Extr spike	67	%	
SS-EN-1948	Rec 1234678 HpCDD Extr spike	62	%	
SS-EN-1948	Rec OCDD Extr spike	58	%	
SS-EN-1948	Rec 2378 TCDF Extr spike	65	%	
SS-EN-1948	Rec 12378 PeCDF Extr spike	69	%	
SS-EN-1948	Rec 23478 PeCDF Extr spike	68	%	
SS-EN-1948	Rec 123478 HxCDF Extr spike	68	%	

The stated uncertainty of measurement is calculated using a coverage  $k = 2$ . In case interval is set the higher figure refers to measurement uncertainty for results close to the reporting limit.  
 The measurement uncertainties for accredited microbiological analyses are available from the laboratory upon request.

(continued)



**ALcontrol AB**

Box 1083, 581 10 Linköping, Sweden  
 Tel: +46 13 254 900 · Fax: +46 13 121 728  
 Registered 556152-0916 Registered office: Linköping, Sweden



1006  
 ISO/IEC 17025



**REPORT**

issued by an Accredited Laboratory

**Report No. 12200754**

*Assigner*

ALcontrol Laboratories  
 Units 7-8, Hawarden Busin. Prk

Manor Road, Hawarden  
 CH53US Deeside, UK

*Applies to*

<b>Information about the project</b>		<b>Solid</b>
Project number	: 120606-7	

<b>Information about sample and sampling</b>			
Description of sample	: Solid	Date of Arrival	: 2012-06-20
Sampling date	: 2012-06-05	Time of Arrival	: 1200
Sample name	: 5749962		
Reference	: 7825		
Invoice reference	: 120606-7		

<b>Results of the analyses</b>				
<i>Test method</i>	<i>Analysis / Investigation of</i>	<i>Results</i>	<i>Unit</i>	<i>Uncert. of measurem.</i>
SS-EN-1948	Rec 123678 HxCDF Extr spike	64	%	
SS-EN-1948	Rec 123789 HxCDF Extr spike	71	%	
SS-EN-1948	Rec 234678 HxCDF Extr spike	63	%	
SS-EN-1948	Rec 1234678 HpCDF Extr spike	63	%	
SS-EN-1948	Rec 1234789 HpCDF Extr spike	63	%	
SS-EN-1948	Rec OCDF Extr spike	63	%	
SS-EN 11465	Dry Substance	67.7	%	+/-10%

*The stated uncertainty of measurement is calculated using a coverage k = 2. In case interval is set the higher figure refers to measurement uncertainty for results close to the reporting limit. The measurement uncertainties for accredited microbiological analyses are available from the laboratory upon request.*

Linköping 2012-07-06

The report has been reviewed and approved by

**Therese Tellman**  
 Responsible reviewer

Control numbers 4588 7161 7592 9427

**SDG:** 120606-7  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 187223  
**Superseded Report:**

# Appendix

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

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

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 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.

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GOMS	WET	DOM	SOX THERM	GC-MS
HERBICIDES	D&C	HEXANE: ACETONE	SOX THERM	GC-MS
PESTICIDES	D&C	HEXANE: ACETONE	SOX THERM	GC-MS
EPH (DFO)	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 AROCLOR 1254 / PCB CON	D&C	HEXANE: ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE: ACETONE	MICROWAVE TM 218	GC-MS
>C6-C40	WET	HEXANE: ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE: ACETONE	SHAKER	GC-FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM:ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY			
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
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)	GC MS
PCB AROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
SVOC	DOM	LIQUID LIQUID SHAKE	GC MS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PESTOCLOPP	DOM	LIQUID LIQUID SHAKE	GC MS
TRIAZINE HERBS	DOM	LIQUID LIQUID SHAKE	GC MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC MS
TPH BY INFRA RED (R)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL BY IR	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FID

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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.



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

**Attention:** Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 06 August 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120611-19  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 189843

We received 40 samples on Friday June 08, 2012 and 16 of these samples were scheduled for analysis which was completed on Monday August 06, 2012. 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:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5716956	BH302 E29	E29	11.00	05/06/2012
5712474	BH302 E30	E30	12.00	05/06/2012
5712475	BH302 E32	E32	14.00	05/06/2012
5712476	BH302 E33	E33	16.00	06/06/2012
5712477	BH302 E34	E34	18.00	06/06/2012
5712478	BH302 E35	E35	20.00	06/06/2012
5712479	BH304 E19	E19	5.50 - 6.00	06/06/2012
5712481	BH304 E22	E22	6.50 - 7.00	06/06/2012
5712482	BH304 E25	E25	7.50 - 8.00	06/06/2012
5712483	BH304 E28	E28	8.00 - 8.50	07/06/2012
5712484	BH304 E32	E32	9.50 - 10.00	07/06/2012
5712485	BH304 E37	E37	11.50 - 12.00	07/06/2012
5712486	BH304 E42	E42	13.50 - 14.00	07/06/2012
5712487	BH304 E45	E45	16.50 - 17.00	07/06/2012
5712488	BH304 E50	E50	18.50 - 19.00	08/06/2012
5712489	BH309 E19	E19	5.50 - 6.00	06/06/2012
5712490	BH309 E22	E22	6.50 - 7.00	06/06/2012
5712492	BH309 E30	E30	9.50 - 10.00	06/06/2012
5712493	BH309 E35	E35	11.50 - 12.00	07/06/2012
5712494	BH309 E40	E40	13.50 - 14.00	07/06/2012
5712495	BH309 E45	E45	15.50 - 16.00	07/06/2012
5712496	BH309 E49	E49	17.50 - 18.00	07/06/2012
5712491	BH309E25	E25	7.50 - 8.00	06/06/2012
5716955	BH316 E10	E10	4.00	06/06/2012
5716950	BH316 E3	E3	0.20 - 0.50	06/06/2012
5716951	BH316 E4	E4	0.20 - 0.50	06/06/2012
5716952	BH316 E7	E7	2.00	06/06/2012
5714543	DUP 3			
5716928	OP14 E1	E1	0.40 - 0.70	07/06/2012
5716931	OP14 E2	E2	0.40 - 0.70	07/06/2012
5716932	OP14 E3	E3	1.10 - 1.60	07/06/2012
5716933	OP14 E4	E4	1.10 - 1.60	07/06/2012
5716936	OP14 E5	E5	1.70	07/06/2012
5716937	OP14 E6	E6	1.70	07/06/2012
5716943	T2 E1	E1	0.40 - 0.90	05/06/2012
5716944	T2 E2	E2	0.40 - 0.90	05/06/2012
5716945	T2 E3	E3	1.50 - 2.00	05/06/2012
5716947	T2 E4	E4	1.50 - 2.00	05/06/2012
5716948	T2 E5	E5	2.50 - 2.70	05/06/2012
5716949	T2 E6	E6	2.50 - 2.70	05/06/2012

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





SDG: 120611-19  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189843  
 Superseded Report:

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5714543	DUP 3			250g Amber Jar (AL)
		5716932	OP14 E3	E3	1.10 - 1.60	60g VOC (ALEE15) 400g Tub (ALEE14) 250g Amber Jar (AL)
		5716936	OP14 E5	E5	1.70	60g VOC (ALEE15) 250g Amber Jar (AL)
		5716937	OP14 E6	E6	1.70	250g Amber Jar (AL) 400g Tub (ALEE14)
	5716950	BH316 E3	E3	0.20 - 0.50	60g VOC (ALEE15) 400g Tub (ALEE14) 250g Amber Jar (AL)	
	5716956	BH302 E29	E29	11.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
	5712475	BH302 E32	E32	14.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
	5712479	BH304 E19	E19	5.50 - 6.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
	5712481	BH304 E22	E22	6.50 - 7.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
	5712487	BH304 E45	E45	16.50 - 17.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
	5712489	BH309 E19	E19	5.50 - 6.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
	5712490	BH309 E22	E22	6.50 - 7.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
	5712491	BH309E25	E25	7.50 - 8.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
	5712494	BH309 E40	E40	13.50 - 14.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
	5712495	BH309 E45	E45	15.50 - 16.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
	5716955	BH316 E10	E10	4.00	400g Tub (ALEE14) 250g Amber Jar (AL)	
Alcohols and Acetates in Soils	All	NDPs: 0 Tests: 3				
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 13				
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 7				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 13				
Anions by Kone (soil)	All	NDPs: 0 Tests: 13				
Anions by Kone (w)	All	NDPs: 0 Tests: 7				
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 13				
Boron Water Soluble	All	NDPs: 0 Tests: 13				
COD Unfiltered	All	NDPs: 0 Tests: 7				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 16				
Dioxins/Furans (S)*	All	NDPs: 3 Tests: 0				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7				



SDG: 120611-19  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189843  
 Superseded Report:

SOLID	Results Legend		Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
	X	N					
	X	N	5714543	DUP 3			250g Amber Jar (AL)
	X	N	5716932	OP14 E3	E3	1.10 - 1.60	250g Amber Jar (AL)
	X	N	5716936	OP14 E5	E5	1.70	250g Amber Jar (AL)
	X	N	5716937	OP14 E6	E6	1.70	250g Amber Jar (AL)
	X	N	5716950	BH316 E3	E3	0.20 - 0.50	250g Amber Jar (AL)
	X	N	5716956	BH302 E29	E29	11.00	250g Amber Jar (AL)
	X	N	5712475	BH302 E32	E32	14.00	250g Amber Jar (AL)
	X	N	5712479	BH304 E19	E19	5.50 - 6.00	250g Amber Jar (AL)
	X	N	5712481	BH304 E22	E22	6.50 - 7.00	250g Amber Jar (AL)
	X	N	5712487	BH304 E45	E45	16.50 - 17.00	250g Amber Jar (AL)
	X	N	5712489	BH309 E19	E19	5.50 - 6.00	250g Amber Jar (AL)
	X	N	5712490	BH309 E22	E22	6.50 - 7.00	250g Amber Jar (AL)
	X	N	5712491	BH309E25	E25	7.50 - 8.00	250g Amber Jar (AL)
	X	N	5712494	BH309 E40	E40	13.50 - 14.00	250g Amber Jar (AL)
	X	N	5712495	BH309 E45	E45	15.50 - 16.00	250g Amber Jar (AL)
	X	N	5716955	BH316 E10	E10	4.00	250g Amber Jar (AL)
Easily Liberated Sulphide	All	NDPs: 0 Tests: 13	X	X	X		X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 3	X	X		X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 3	X	X		X	
Fluoride	All	NDPs: 0 Tests: 7		X		X	X
Free Sulphur	All	NDPs: 0 Tests: 7		X		X	X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3		X		X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 13	X	X	X		X
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 7		X		X	X
Low Level Cyanide (W)	All	NDPs: 0 Tests: 5		X		X	
Low Level Metals 1	All	NDPs: 4 Tests: 1	N			X	N
Mercury Dissolved	All	NDPs: 0 Tests: 7		X		X	X
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 13	X	X	X		X
	Antimony	NDPs: 0 Tests: 13	X	X	X		X
	Arsenic	NDPs: 0 Tests: 13	X	X	X		X
	Barium	NDPs: 0 Tests: 13	X	X	X		X







## CERTIFICATE OF ANALYSIS

SDG: 120611-19  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189843  
 Superseded Report:

SOLID Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
<b>X</b> Test <b>N</b> No Determination Possible	5714543	DUP 3			250g Amber Jar (AL)
	5716932	OP14 E3	E3	1.10 - 1.60	250g Amber Jar (AL)
	5716936	OP14 E5	E5	1.70	250g Amber Jar (AL)
	5716937	OP14 E6	E6	1.70	250g Amber Jar (AL)
	5716950	BH316 E3	E3	0.20 - 0.50	250g Amber Jar (AL)
	5716956	BH302 E29	E29	11.00	250g Amber Jar (AL)
	5712475	BH302 E32	E32	14.00	250g Amber Jar (AL)
	5712479	BH304 E19	E19	5.50 - 6.00	250g Amber Jar (AL)
	5712481	BH304 E22	E22	6.50 - 7.00	250g Amber Jar (AL)
	5712487	BH304 E45	E45	16.50 - 17.00	250g Amber Jar (AL)
	5712489	BH309 E19	E19	5.50 - 6.00	250g Amber Jar (AL)
	5712490	BH309 E22	E22	6.50 - 7.00	250g Amber Jar (AL)
	5712491	BH309E25	E25	7.50 - 8.00	250g Amber Jar (AL)
	5712494	BH309 E40	E40	13.50 - 14.00	250g Amber Jar (AL)
	5712495	BH309 E45	E45	15.50 - 16.00	250g Amber Jar (AL)
5716955	BH316 E10	E10	4.00	250g Amber Jar (AL)	
Total Sulphur	All	NDPs: 4 Tests: 8			
TPH by IR Oils and Greases	All	NDPs: 0 Tests: 7			
TPH CWG GC (S)	All	NDPs: 0 Tests: 3			
VOC MS (S)	All	NDPs: 0 Tests: 3			

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

## Sample Descriptions

**Grain Sizes**

<b>very fine</b>	<b>&lt;0.063mm</b>	<b>fine</b>	<b>0.063mm - 0.1mm</b>	<b>medium</b>	<b>0.1mm - 2mm</b>	<b>coarse</b>	<b>2mm - 10mm</b>	<b>very coarse</b>	<b>&gt;10mm</b>
------------------	--------------------	-------------	------------------------	---------------	--------------------	---------------	-------------------	--------------------	-----------------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
5716950	BH316 E3	0.20 - 0.50	Black	Sand	0.1 - 2 mm	Stones	Oil/Petroleum
5716956	BH302 E29	11.00	Grey	Sandy Silt Loam	0.1 - 2 mm	Stones	N/A
5712475	BH302 E32	14.00	Grey	Silt Loam	0.063 - 0.1 mm	Stones	N/A
5712479	BH304 E19	5.50 - 6.00	Dark Brown	N/A	> 10 mm	Stones	None
5712481	BH304 E22	6.50 - 7.00	Grey	Silt Loam	<0.063 mm	N/A	N/A
5712487	BH304 E45	16.50 - 17.00	Light Brown	Sandy Silt Loam	0.1 - 2 mm	Stones	N/A
5712489	BH309 E19	5.50 - 6.00	Grey	Gravel	2 - 10 mm	Oil/Petroleum	N/A
5712490	BH309 E22	6.50 - 7.00	Black	Gravel	2 - 10 mm	Stones	None
5712494	BH309 E40	13.50 - 14.00	Grey	Silt Loam	0.063 - 0.1 mm	Stones	N/A
5712495	BH309 E45	15.50 - 16.00	Grey	N/A	<0.063 mm	N/A	N/A
5716955	BH316 E10	4.00	Grey	Gravel	0.1 - 2 mm	Concrete/Aggregate	Crushed Brick
5712491	BH309E25	7.50 - 8.00	Grey	Silt Loam	<0.063 mm	N/A	N/A
5714543	DUP 3		Grey	Silt Loam	0.063 - 0.1 mm	None	None
5716932	OP14 E3	1.10 - 1.60	Black	N/A	0.1 - 2 mm	N/A	N/A
5716936	OP14 E5	1.70	Grey	Loamy Sand	0.1 - 2 mm	Concrete/Aggregate	Stones
5716937	OP14 E6	1.70	Grey	Sand	0.1 - 2 mm	Stones	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 occurring 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.



**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

Results Legend			Customer Sample R					
#	ISO17025 accredited.		BH316 E3	BH302 E29	BH302 E32	BH304 E19	BH304 E22	BH304 E45
M	mCERTS accredited.							
S	Deviating sample.							
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							
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Sampled Time	Date Received	SDG Ref
Moisture content ratio	%	PM024	0.20 - 0.50	Soil/Solid	06/06/2012		08/06/2012	120611-19
Tolulene Extractable Matter	<500 mg/kg	SUB	11.00	Soil/Solid	05/06/2012		08/06/2012	120611-19
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15				08/06/2012	120611-19
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043	23.9				08/06/2012	120611-19
Mineral oil >C10-C40	<1 mg/kg	TM061	1760				08/06/2012	120611-19
Surrogate Value	-	TM061	36.2				08/06/2012	120611-19
Mineral Oil Surrogate % recovery**	%	TM061	72.4				08/06/2012	120611-19
Phenol	<0.01 mg/kg	TM062 (S)	0.0113	M			08/06/2012	120611-19
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M			08/06/2012	120611-19
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M			08/06/2012	120611-19
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	M			08/06/2012	120611-19
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	M			08/06/2012	120611-19
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M			08/06/2012	120611-19
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	M			08/06/2012	120611-19
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090	<3				08/06/2012	120611-19
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099	<0.2				08/06/2012	120611-19
Sulphide NRA leach	<0.01 mg/l	TM101	<0.01				08/06/2012	120611-19
Fluoride NRA leach	<0.5 mg/l	TM104	<0.5				08/06/2012	120611-19
COD, unfiltered NRA leach	<7 mg/l	TM107	<7				08/06/2012	120611-19
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120	0.684				08/06/2012	120611-19
Dissolved solids, Total (meter) NRA leach	<10 mg/l	TM123	547				08/06/2012	120611-19
Sulphur, Total	<0.02 %	TM132		0.676 #	0.909 #		08/06/2012	120611-19
pH	1 pH Units	TM133	9.06	M	8.62 M	8.16 M	08/06/2012	120611-19
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#	<0.6 #	<0.6 #	08/06/2012	120611-19
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152	241			81.3	08/06/2012	120611-19
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152	4.91			1.74	08/06/2012	120611-19
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152	4.78			0.838	08/06/2012	120611-19
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152	72			116	08/06/2012	120611-19
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152	746			628	08/06/2012	120611-19
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152				<0.1	08/06/2012	120611-19
Cadmium (diss.filt) (low level) NRA leach	<0.03 µg/l	TM152	0.075			<0.03	08/06/2012	120611-19
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152	<0.22			0.27	08/06/2012	120611-19
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152	0.071			<0.06	08/06/2012	120611-19
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152				2.87	08/06/2012	120611-19
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152				0.834	08/06/2012	120611-19



## CERTIFICATE OF ANALYSIS

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

Results Legend			Customer Sample R		BH316 E3	BH302 E29	BH302 E32	BH304 E19	BH304 E22	BH304 E45
#	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>	0.20 - 0.50	11.00	14.00	5.50 - 6.00	6.50 - 7.00	16.50 - 17.00	
M	mCERTS accredited.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
§	Deviating sample.			06/06/2012	05/06/2012	05/06/2012	06/06/2012	06/06/2012	07/06/2012	
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			08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012	
(F)	Trigger breach confirmed			120611-19	120611-19	120611-19	120611-19	120611-19	120611-19	
				5716950	5716956	5712475	5712479	5712481	5712487	
			E3	E29	E32	E19	E22	E45		
Component	LOD/Units	Method								
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152						12.5		
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152	45				3.5	19		
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152						0.76		
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152	<6.3				<6.3	173		
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152	1.83				1.21	1.96		
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152	<0.96				<0.96	<0.96		
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152	<0.36				<0.36	<0.36		
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152	1.41				9.62	77.6		
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152	<0.41				<0.41	2.81		
Cyanide, Total	<1 mg/kg	TM153	<1	M	<1	M	<1	M	<1	
Cyanide, Free	<1 mg/kg	TM153	<1	M	<1	M	<1	M	<1	
Cyanide, Complex	<1 mg/kg	TM153	<1		<1		<1		<1	
Thiocyanate	<1 mg/kg	TM153	<1	M	<1	M	<1	M	<1	
PCB congener 28	<3 µg/kg	TM168	7.52	M						
PCB congener 52	<3 µg/kg	TM168	7.81	M						
PCB congener 101	<3 µg/kg	TM168	8.37	M						
PCB congener 118	<3 µg/kg	TM168	5.97	M						
PCB congener 138	<3 µg/kg	TM168	7.76	M						
PCB congener 153	<3 µg/kg	TM168	6.58	M						
PCB congener 180	<3 µg/kg	TM168	<3	M						
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	44							
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	§ #	<15	§ #	72	§ #	<15	
Aluminium	<11 mg/kg	TM181	1700		1380		9750		53900	
Antimony	<0.6 mg/kg	TM181	30.4	#	<0.6	#	<6	#	8.36	
Arsenic	<0.6 mg/kg	TM181	80	M	1.13	M	7.98	M	92.4	
Barium	<0.6 mg/kg	TM181	333	#	24.4	#	33.2	#	160	
Beryllium	<0.01 mg/kg	TM181	<0.25	M	0.0413	M	0.283	M	3.05	
Cadmium	<0.02 mg/kg	TM181	8.94	M	0.0948	M	0.403	M	1.02	
Chromium	<0.9 mg/kg	TM181	854	M	25.3	M	105	M	171	
Copper	<1.4 mg/kg	TM181	1390	M	6.23	M	20.9	M	210	
Lead	<0.7 mg/kg	TM181	425	M	63.1	M	32.3	M	116	
Manganese	<0.13 mg/kg	TM181	2700	M	193	M	1100	M	2950	
Mercury	<0.14 mg/kg	TM181	<0.7	M	<0.14	M	<1.4	M	<0.7	
Nickel	<0.2 mg/kg	TM181	379	M	4.95	M	29.2	M	209	
Selenium	<1 mg/kg	TM181	<25	#	<1	#	<10	#	<5	





## CERTIFICATE OF ANALYSIS

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

Results Legend			Customer Sample R		BH316 E3	BH302 E29	BH302 E32	BH304 E19	BH304 E22	BH304 E45
#	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>							
M	mCERTS accredited.			0.20 - 0.50	11.00	14.00	5.50 - 6.00	6.50 - 7.00	16.50 - 17.00	
S	Deviating sample.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
aq	Aqueous / settled sample.			06/06/2012	05/06/2012	05/06/2012	06/06/2012	06/06/2012	07/06/2012	
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			08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012	
(F)	Trigger breach confirmed			120611-19	120611-19	120611-19	120611-19	120611-19	120611-19	
				5716950	5716956	5712475	5712479	5712481	5712487	
			E3	E29	E32	E19	E22	E45		
Component	LOD/Units	Method								
Vanadium	<0.2 mg/kg	TM181	77.3 #	4.54 #	30.7 #		2.69 #	96.9 #		
Zinc	<1.9 mg/kg	TM181	2460 M	92.8 M	117 M		18.3 M	675 M		
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183	<0.01			<0.01	<0.01			
Sulphate NRA leach	<2 mg/l	TM184	83			40	69.5			
Chloride NRA leach	<2 mg/l	TM184	152			141	333			
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184	<0.3			<0.3	<0.3			
Selenium (tot.unfilt) NRA leach	<1 µg/l	TM191					3.12			
PCB congener 28 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015	<0.015			
PCB congener 52 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015	<0.015			
PCB congener 101 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015	<0.015			
PCB congener 118 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015	<0.015			
PCB congener 138 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015	<0.015			
PCB congener 153 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015	<0.015			
PCB congener 180 NRA leach	<0.015 µg/l	TM197	<0.015			<0.015	<0.015			
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197	<0.105			<0.105	<0.105			
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	<10		<10	<10		
Sulphate, Total	<48 mg/kg	TM221	3740 M	3250 M	3310 M		3090 M	125 M		
Total sulphur	<0.0016 %	TM221	0.125							
Boron, water soluble	<1 mg/kg	TM222	2.5 M	5.74 M	10.4 M		3.67 M	1.43 M		
Calcium	<21 mg/kg	TM224	51000	105000	60800		83600	1660		
Magnesium	<8 mg/kg	TM224	24000	5950	6920		4620	4490		
Cyanide, Total NRA leach	<0.05 mg/l	TM227					<0.05			
Cyanide, Free NRA leach	<0.05 mg/l	TM227	<0.05			<0.05	<0.05			
Cyanide, Complex NRA leach	<0.05 mg/l	TM227	<0.05			<0.05	<0.05			
Thiocyanate NRA leach	<0.05 mg/l	TM227	<0.05			<0.05	<0.05			
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228	91.5			48.6				
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228	56.9			73	216			
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228	1.1			1.47	16.9			
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228	4.16			4.42	17.6			
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228					0.0573			
Acetone	<50 µg/kg	TM232	113							
2-Butanone	<100 µg/kg	TM232	<100							
TPH / Oil & Greases NRA leach	<1 mg/l	TM235	<1			<1	<1			
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241	<0.03			<0.03	<0.03			
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.467 M	0.498 M	0.471 M		0.427 M	0.0162 M		





**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

Results Legend		Customer Sample R	BH309 E19	BH309 E22	BH309 E40	BH309 E45	BH316 E10	BH309E25
#	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>						
M	mCERTS accredited.		5.50 - 6.00	6.50 - 7.00	13.50 - 14.00	15.50 - 16.00	4.00	7.50 - 8.00
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		06/06/2012	06/06/2012	07/06/2012	07/06/2012	06/06/2012	06/06/2012
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		08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012
(F)	Trigger breach confirmed		120611-19	120611-19	120611-19	120611-19	120611-19	120611-19
			5712489	5712490	5712494	5712495	5716955	5712491
		E19	E22	E40	E45	E10	E25	
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	4.3		32	34	5.3	25
Tolulene Extractable Matter	<500 mg/kg	SUB	<500			<500		<500
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15		30.8	36.6	<15	<15
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043		41.9				<2
Phenol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01	0.0304	<0.01	<0.01
Cresols	<0.01 mg/kg	TM062 (S)	<0.01		0.0444	0.0304	<0.01	<0.01
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015		<0.015	<0.015	<0.015	<0.015
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01	<0.01	<0.01	<0.01
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015		<0.015	<0.015	<0.015	<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035		<0.035	0.0608	<0.035	<0.035
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06		<0.06	<0.06	<0.06	<0.06
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090		<3				8.07
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099		<0.2				0.586
Sulphide NRA leach	<0.01 mg/l	TM101		<0.01				<0.01
Fluoride NRA leach	<0.5 mg/l	TM104		<0.5				<0.5
COD, unfiltered NRA leach	<7 mg/l	TM107		<7				32.2
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120		0.603				1.38
Dissolved solids, Total (meter) NRA leach	<10 mg/l	TM123		469				1080
Sulphur, Total	<0.02 %	TM132	0.302			0.85		0.7
pH	1 pH Units	TM133	11.1		9.17	8.98	9.7	8.41
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6		<0.6	<0.6	<0.6	<0.6
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152		35.5				154
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152		1.03				0.967
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152		0.649				4.39
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152		421				3.73
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152		1020				343
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152						<0.1
Cadmium (diss.filt) (low level) NRA leach	<0.03 µg/l	TM152		<0.03				
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152		0.591				1.34
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152		<0.06				<0.06
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152						1.74
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152						3.65
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152						6.32
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152		1.3				32.6
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152						0.551



## CERTIFICATE OF ANALYSIS

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

Results Legend			Customer Sample R		BH309 E19	BH309 E22	BH309 E40	BH309 E45	BH316 E10	BH309E25
#	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>	5.50 - 6.00	6.50 - 7.00	13.50 - 14.00	15.50 - 16.00	4.00	7.50 - 8.00	
M	mCERTS accredited.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
§	Deviating sample.			06/06/2012	06/06/2012	07/06/2012	07/06/2012	06/06/2012	06/06/2012	
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			08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012	
(F)	Trigger breach confirmed			120611-19	120611-19	120611-19	120611-19	120611-19	120611-19	
				5712489	5712490	5712494	5712495	5716955	5712491	
			E19	E22	E40	E45	E10	E25		
Component	LOD/Units	Method								
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152		<6.3					217	
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152		1.25					2.37	
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152		<0.96					<0.96	
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152		<0.36					<0.36	
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152		4.44					134	
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152		0.892					2.45	
Cyanide, Total	<1 mg/kg	TM153	<1		<1		<1	<1	<1	
			#		M		#	M	M	
Cyanide, Free	<1 mg/kg	TM153	<1		<1		<1	<1	<1	
			#		M		#	M	M	
Cyanide, Complex	<1 mg/kg	TM153	<1		<1		<1	<1	<1	
Thiocyanate	<1 mg/kg	TM153	<1		<1		<1	<1	<1	
			#		M		#	M	M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15		<15		70.1	<15	66	
			§ #		§ #		#	§ #	§ #	
Aluminium	<11 mg/kg	TM181	15000		11800		10900	130000	1780	
Antimony	<0.6 mg/kg	TM181	21.1		10.7		<3	<15	<3	
			#		#		#	#	#	
Arsenic	<0.6 mg/kg	TM181	21.6		12.2		7.63	<15	<3	
			#		M		#	M	M	
Barium	<0.6 mg/kg	TM181	917		239		63.9	54.8	20.4	
			#		#		#	#	#	
Beryllium	<0.01 mg/kg	TM181	<0.05		<0.1		0.344	0.76	0.0566	
			#		M		#	M	M	
Cadmium	<0.02 mg/kg	TM181	4.38		1.36		0.349	<0.5	<0.1	
			#		M		#	M	M	
Chromium	<0.9 mg/kg	TM181	2240		889		148	34.6	52.4	
			#		M		#	M	M	
Copper	<1.4 mg/kg	TM181	215		97.8		17	<35	<7	
			#		M		#	M	M	
Lead	<0.7 mg/kg	TM181	264		184		22.7	37.3	<3.5	
			#		M		#	M	M	
Manganese	<0.13 mg/kg	TM181	39500		13000		1970	274	788	
			#		M		#	M	M	
Mercury	<0.14 mg/kg	TM181	<0.7		<1.4		<0.7	<3.5	<0.7	
			#		M		#	M	M	
Nickel	<0.2 mg/kg	TM181	91.1		50		27.2	37	3.59	
			#		M		#	M	M	
Selenium	<1 mg/kg	TM181	15.1		<10		<5	<25	<5	
			#		#		#	#	#	
Vanadium	<0.2 mg/kg	TM181	581		238		57.2	48.8	14.2	
			#		#		#	#	#	
Zinc	<1.9 mg/kg	TM181	1440		789		107	140	15.6	
			#		M		#	M	M	
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183		<0.01					<0.01	
Sulphate NRA leach	<2 mg/l	TM184		28.7					74.7	
Chloride NRA leach	<2 mg/l	TM184		140					391	
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184		0.497					<0.3	
Selenium (tot.unfilt) NRA leach	<1 µg/l	TM191							3.26	
PCB congener 28 NRA leach	<0.015 µg/l	TM197		<0.015					<0.015	
PCB congener 52 NRA leach	<0.015 µg/l	TM197		<0.015					<0.015	
PCB congener 101 NRA leach	<0.015 µg/l	TM197		<0.015					<0.015	
PCB congener 118 NRA leach	<0.015 µg/l	TM197		<0.015					<0.015	



**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

Results Legend			Customer Sample R		BH309 E19	BH309 E22	BH309 E40	BH309 E45	BH316 E10	BH309E25
#	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>	5.50 - 6.00	6.50 - 7.00	13.50 - 14.00	15.50 - 16.00	4.00	7.50 - 8.00	
M	mCERTS accredited.			Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
§	Deviating sample.			06/06/2012	06/06/2012	07/06/2012	07/06/2012	06/06/2012	06/06/2012	
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			08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012	
(F)	Trigger breach confirmed			120611-19	120611-19	120611-19	120611-19	120611-19	120611-19	
				5712489	5712490	5712494	5712495	5716955	5712491	
			E19	E22	E40	E45	E10	E25		
Component	LOD/Units	Method								
PCB congener 138 NRA leach	<0.015 µg/l	TM197		<0.015					<0.015	
PCB congener 153 NRA leach	<0.015 µg/l	TM197		<0.015					<0.015	
PCB congener 180 NRA leach	<0.015 µg/l	TM197		<0.015					<0.015	
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197		<0.105					<0.105	
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10		<10	<10	<10	<10	<10	
Sulphate, Total	<48 mg/kg	TM221	4570	#	4320	M	3290	#	6950	
Total sulphur	<0.0016 %	TM221			0.144				0.232	
Boron, water soluble	<1 mg/kg	TM222	3.4	#	5.56	M	4.98	#	2.59	
Calcium	<21 mg/kg	TM224	166000		92500		57500		173000	
Magnesium	<8 mg/kg	TM224	50800		18200		10200		48800	
Cyanide, Total NRA leach	<0.05 mg/l	TM227							<0.05	
Cyanide, Free NRA leach	<0.05 mg/l	TM227		<0.05					<0.05	
Cyanide, Complex NRA leach	<0.05 mg/l	TM227		<0.05					<0.05	
Thiocyanate NRA leach	<0.05 mg/l	TM227		<0.05					<0.05	
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228		69.4						
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228		52.7					258	
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228		0.76					16	
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228		3.37					19.9	
Iron (diss.filt) NRA leach	<0.019 mg/l	TM228							0.0772	
TPH / Oil & Greases NRA leach	<1 mg/l	TM235		<1					<1	
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241		<0.03					<0.03	
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.149	#	0.409	M	0.318	#	<0.008	
Chloride (soluble)	<5 mg/kg	TM243	1660	#	6200	M	7680	#	2200	
pH NRA leach	<1 pH Units	TM256		10.5					8.71	
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259		<0.016					<0.016	
Cyanide, Total (low level) NRA leach	<5 µg/l	TM279		<5						
Sulphur, Free NRA leach	<0.05 mg/l	TM294		<0.05					<0.05	
Copper Ultra low NRA leach	<0.1 µg/l	TM307		0.348						
Iron Ultra low NRA leach	<70 µg/l	TM307		<70						
Manganese Ultra low NRA leach	<0.1 µg/l	TM307		1.04						
Nickel Ultra low NRA leach	<0.1 µg/l	TM307		<0.1					<1	
Lead Ultra low NRA leach	<0.1 µg/l	TM307		<0.1						



## CERTIFICATE OF ANALYSIS

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

Results Legend		Customer Sample R	DUP 3	OP14 E3	OP14 E5	OP14 E6		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.							
S	Deviating sample.							
aq	Aqueous / settled sample.			1.10 - 1.60	1.70	1.70		
diss.filt	Dissolved / filtered sample.			Soil/Solid	Soil/Solid	Soil/Solid		
tot.unfilt	Total / unfiltered sample.			-	07/06/2012	07/06/2012		
*	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			08/06/2012	08/06/2012	08/06/2012	08/06/2012	
(F)	Trigger breach confirmed			120611-19	120611-19	120611-19	120611-19	
				5714543	5716932 E3	5716936 E5	5716937 E6	
Component	LOD/Units	Method						
Moisture content ratio	%	PM024		5.1	11			
Tolulene Extractable Matter	<500 mg/kg	SUB	<500					
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15	<15			
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043		28		39.7		
Mineral oil >C10-C40	<1 mg/kg	TM061		195 #	925 #			
Surrogate Value	-	TM061		42.6	36.6			
Mineral Oil Surrogate % recovery**	%	TM061		85.2	73.3			
Phenol	<0.01 mg/kg	TM062 (S)	0.0138	<0.01 M	<0.01 #	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)	0.0138	<0.01 M	<0.01 #	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015 M	<0.015 #	<0.015 M		
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01 M	<0.01 #	<0.01 M		
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015 M	<0.015 #	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035 M	<0.035 #	<0.035 M		
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06 M	<0.06 #	<0.06 M		
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090		4.13		<3		
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099		<0.2		<0.2		
Sulphide NRA leach	<0.01 mg/l	TM101		<0.01		<0.01		
Fluoride NRA leach	<0.5 mg/l	TM104		<0.5		<0.5		
COD, unfiltered NRA leach	<7 mg/l	TM107		12.3		<7		
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120		0.15		0.549		
Dissolved solids, Total (meter) NRA leach	<10 mg/l	TM123		128		432		
Sulphur, Total	<0.02 %	TM132	1.03	#				
pH	1 pH Units	TM133	9	M	8.97 #	10.6 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#	<0.6 #	<0.6 #		
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152		8.33		454		
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152		13.4		5.4		
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152		8.39		0.825		
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152		2.47		105		
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152		25.9		238		
Cadmium (diss.filt) (low level) NRA leach	<0.03 µg/l	TM152		<0.03		<0.03		
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152		7.4		30.2		
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152		<0.06		0.062		
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152		12.8		8.05		
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152		<6.3		<6.3		
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152		1.29		1.58		



## CERTIFICATE OF ANALYSIS

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

Results Legend			Customer Sample R			
#	ISO17025 accredited.		DUP 3	OP14 E3	OP14 E5	OP14 E6
M	mCERTS accredited.					
S	Deviating sample.					
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					
		Depth (m)				
		Sample Type				
		Date Sampled				
		Sampled Time				
		Date Received				
		SDG Ref				
		Lab Sample No.(s)				
		AGS Reference				
Component	LOD/Units	Method				
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152		<0.96		<0.96
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152		<0.36		<0.36
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152		0.816		10
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152		0.501		1.13
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 #	<1 M	
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 #	<1 M	
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1	
Thiocyanate	<1 mg/kg	TM153	<1 M	<1 #	<1 M	
PCB congener 28	<3 µg/kg	TM168		<3 #	10.4 M	
PCB congener 52	<3 µg/kg	TM168		<3 #	8.91 M	
PCB congener 101	<3 µg/kg	TM168		<3 #	10.3 M	
PCB congener 118	<3 µg/kg	TM168		<3 #	7.71 M	
PCB congener 138	<3 µg/kg	TM168		<3 #	11.2 M	
PCB congener 153	<3 µg/kg	TM168		<3 #	8.56 M	
PCB congener 180	<3 µg/kg	TM168		<3 #	5.15 M	
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168		<21	62.3	
Sulphide, Easily liberated	<15 mg/kg	TM180	38.9 § #	<15 § #	<15 § #	
Aluminium	<11 mg/kg	TM181	11700	470	3320	
Antimony	<0.6 mg/kg	TM181	0.965 #	32 #	3.72 #	
Arsenic	<0.6 mg/kg	TM181	8.57 M	45.2 #	4.38 M	
Barium	<0.6 mg/kg	TM181	30 #	<15 #	119 #	
Beryllium	<0.01 mg/kg	TM181	0.526 M	<0.25 #	<0.05 M	
Cadmium	<0.02 mg/kg	TM181	0.0979 M	0.811 #	0.544 M	
Chromium	<0.9 mg/kg	TM181	67.8 M	1140 #	369 M	
Copper	<1.4 mg/kg	TM181	13 M	1800 #	66.5 M	
Lead	<0.7 mg/kg	TM181	15.8 M	39.4 #	38.5 M	
Manganese	<0.13 mg/kg	TM181	821 M	27300 #	40000 M	
Mercury	<0.14 mg/kg	TM181	<0.14 M	<3.5 #	<0.7 M	
Nickel	<0.2 mg/kg	TM181	22.6 M	537 #	20.8 M	
Selenium	<1 mg/kg	TM181	<1 #	<25 #	<5 #	
Vanadium	<0.2 mg/kg	TM181	32.7 #	26.2 #	62.8 #	
Zinc	<1.9 mg/kg	TM181	72.2 M	562 #	215 M	
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183		<0.01		<0.01
Sulphate NRA leach	<2 mg/l	TM184		13.9		65.5
Chloride NRA leach	<2 mg/l	TM184		<2		12.4



**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowl  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

Results Legend		Customer Sample R	DUP 3	OP14 E3	OP14 E5	OP14 E6			
#	ISO17025 accredited.								
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference							
S	Deviating sample.								
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								
Component	LOD/Units		Method						
Nitrate as NO3 NRA leach	<0.3 mg/l		TM184		1.35		10.2		
PCB congener 28 NRA leach	<0.015 µg/l	TM197		<0.015		<0.015			
PCB congener 52 NRA leach	<0.015 µg/l	TM197		<0.015		<0.015			
PCB congener 101 NRA leach	<0.015 µg/l	TM197		<0.015		<0.015			
PCB congener 118 NRA leach	<0.015 µg/l	TM197		<0.015		<0.015			
PCB congener 138 NRA leach	<0.015 µg/l	TM197		<0.015		<0.015			
PCB congener 153 NRA leach	<0.015 µg/l	TM197		<0.015		<0.015			
PCB congener 180 NRA leach	<0.015 µg/l	TM197		<0.015		<0.015			
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197		<0.105		<0.105			
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10	<10				
Sulphate, Total	<48 mg/kg	TM221	2690	346	5570				
Total sulphur	<0.0016 %	TM221		0.0115	0.186				
Boron, water soluble	<1 mg/kg	TM222	5.93	<1	2.63				
Calcium	<21 mg/kg	TM224	45200	1450	132000				
Magnesium	<8 mg/kg	TM224	8220	1590	52300				
Cyanide, Free NRA leach	<0.05 mg/l	TM227		<0.05		<0.05			
Cyanide, Complex NRA leach	<0.05 mg/l	TM227		<0.05		<0.05			
Thiocyanate NRA leach	<0.05 mg/l	TM227		<0.05		<0.05			
Calcium (diss.filt) NRA leach	<0.012 mg/l	TM228		5.48		83.6			
Sodium (diss.filt) NRA leach	<0.076 mg/l	TM228		0.742		1.73			
Magnesium (diss.filt) NRA leach	<0.036 mg/l	TM228		22.7					
Potassium (diss.filt) NRA leach	<2.335 mg/l	TM228		<2.34		2.39			
Acetone	<50 µg/kg	TM232		<50	<50				
2-Butanone	<100 µg/kg	TM232		<100	<100				
TPH / Oil & Greases NRA leach	<1 mg/l	TM235		<1		<1			
Chromium, Hexavalent NRA leach	<0.03 mg/l	TM241		<0.03		0.034			
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243	0.297	0.0511	0.258				
Chloride (soluble)	<5 mg/kg	TM243	6820	15.1	152				
pH NRA leach	<1 pH Units	TM256		9.69		11.3			
Phenols, Total Detected monohydric NRA leach	<0.016 mg/l	TM259		<0.016		<0.016			
Cyanide, Total (low level) NRA leach	<5 µg/l	TM279		<5		<5			
Sulphur, Free NRA leach	<0.05 mg/l	TM294		<0.05		<0.05			
Copper Ultra low NRA leach	<0.1 µg/l	TM307		18.8		3.06			
Iron Ultra low NRA leach	<70 µg/l	TM307		<70		<70			
Manganese Ultra low NRA leach	<0.1 µg/l	TM307		2.23		1.22			





CERTIFICATE OF ANALYSIS

Validated

SDG: 120611-19
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 189843
Superseded Report:

Table with columns: Results Legend, Customer Sample R, DUP 3, OP14 E3, OP14 E5, OP14 E6. Rows include Component, LOD/Units, Method, and various chemical analysis results like Nickel, Lead, and Magnesium leach.



SDG: 120611-19  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189843  
 Superseded Report:

## PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample R	BH316 E3	BH304 E19	BH304 E22	BH309 E22	BH309E25	OP14 E3
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		0.20 - 0.50	5.50 - 6.00	6.50 - 7.00	6.50 - 7.00	7.50 - 8.00	1.10 - 1.60
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		06/06/2012	06/06/2012	06/06/2012	06/06/2012	06/06/2012	07/06/2012
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		08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012	08/06/2012
(F)	Trigger breach confirmed		120611-19	120611-19	120611-19	120611-19	120611-19	120611-19
			5716950	5712479	5712481	5712490	5712491	5716932
		E3	E19	E22	E22	E25	E3	
Component	LOD/Units	Method						
Naphthalene (aq) NRA leach	<0.1 µg/l	TM178	0.202	0.129	<0.1	0.161	<0.1	<0.1
Acenaphthene (aq) NRA leach	<0.015 µg/l	TM178	0.0258	0.0646	<0.015	0.0885	<0.015	<0.015
Acenaphthylene (aq) NRA leach	<0.011 µg/l	TM178	<0.011	<0.011	<0.011	0.0244	<0.011	<0.011
Fluoranthene (aq) NRA leach	<0.017 µg/l	TM178	0.0257	0.127	<0.017	0.324	0.0261	<0.017
Anthracene (aq) NRA leach	<0.015 µg/l	TM178	<0.015	0.0292	<0.015	0.207	<0.015	<0.015
Phenanthrene (aq) NRA leach	<0.022 µg/l	TM178	0.0487	0.263	<0.022	0.991	<0.022	0.0286
Fluorene (aq) NRA leach	<0.014 µg/l	TM178	0.019	0.0563	<0.014	0.261	<0.014	<0.014
Chrysene (aq) NRA leach	<0.013 µg/l	TM178	<0.013	<0.013	<0.013	0.0222	<0.013	<0.013
Pyrene (aq) NRA leach	<0.015 µg/l	TM178	0.0243	0.0903	<0.015	0.21	0.0294	<0.015
Benzo(a)anthracene (aq) NRA leach	<0.017 µg/l	TM178	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017
Benzo(b)fluoranthene (aq) NRA leach	<0.023 µg/l	TM178	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023
Benzo(k)fluoranthene (aq) NRA leach	<0.027 µg/l	TM178	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027
Benzo(a)pyrene (aq) NRA leach	<0.009 µg/l	TM178	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Dibenzo(a,h)anthracene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
Benzo(g,h,i)perylene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
Indeno(1,2,3-cd)pyrene (aq) NRA leach	<0.014 µg/l	TM178	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014
PAH, Total Detected USEPA 16 (aq) NRA leach	<0.247 µg/l	TM178	0.345	0.76	<0.247	2.29	<0.247	<0.247





**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

## Semi Volatile Organic Compounds

Results Legend		Customer Sample R	BH316 E3	OP14 E3	OP14 E5		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.		0.20 - 0.50	1.10 - 1.60	1.70		
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		06/06/2012	07/06/2012	07/06/2012		
diss.filt	Dissolved / filtered sample.		.	.	.		
tot.unfilt	Total / unfiltered sample.		08/06/2012	08/06/2012	08/06/2012		
*	Subcontracted test.		120611-19	120611-19	120611-19		
**	% 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		5716950	5716932	5716936		
(F)	Trigger breach confirmed		E3	E3	E5		
Component	LOD/Units	Method					
Phenol	<100 µg/kg	TM157	<100	<100	<100		
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100		
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100		
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100		
Isophorone	<100 µg/kg	TM157	<100	<100	<100		
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100		
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100		
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100		
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100		
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100		
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100		
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100		
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100		
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100		
Carbazole	<100 µg/kg	TM157	<100	<100	<100		
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100		
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	241		
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100		
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100		
Azobenzene	<100 µg/kg	TM157	<100	<100	<100		
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100		
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100		
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100		
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100		
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100		
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100		
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100		
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100		
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100		
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100		
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100		
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100		
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100		
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100		
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100		





## CERTIFICATE OF ANALYSIS

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

## TPH CWG (S)

Results Legend		Customer Sample R	BH316 E3	OP14 E3	OP14 E5			
#	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>						
M	mCERTS accredited.		0.20 - 0.50	1.10 - 1.60	1.70			
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		06/06/2012	07/06/2012	07/06/2012			
diss.filt	Dissolved / filtered sample.		.	.	.			
tot.unfilt	Total / unfiltered sample.		08/06/2012	08/06/2012	08/06/2012			
**	Subcontracted test.		120611-19	120611-19	120611-19			
*	% 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		5716950	5716932	5716936			
(F)	Trigger breach confirmed		E3	E3	E5			
Component	LOD/Units		Method					
GRO Surrogate % recovery**	%	TM089	76	104	125			
GRO >C5-C12	<44 µg/kg	TM089	1100	<44	1330			
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5			
Benzene	<10 µg/kg	TM089	<10	<10	<10			
Toluene	<2 µg/kg	TM089	<2	<2	<2			
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3			
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6			
o-Xylene	<3 µg/kg	TM089	<3	<3	<3			
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9			
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24			
Aliphatics >C5-C6	<10 µg/kg	TM089	99.4	<10	<10			
Aliphatics >C6-C8	<10 µg/kg	TM089	415	<10	19			
Aliphatics >C8-C10	<10 µg/kg	TM089	235	<10	409			
Aliphatics >C10-C12	<10 µg/kg	TM089	113	<10	375			
Aliphatics >C12-C16	<100 µg/kg	TM173	6650	<100	68300			
Aliphatics >C16-C21	<100 µg/kg	TM173	45300	5380	79200			
Aliphatics >C21-C35	<100 µg/kg	TM173	1220000	148000	617000			
Aliphatics >C35-C44	<100 µg/kg	TM173	814000	45700	221000			
Total Aliphatics >C12-C44	<100 µg/kg	TM173	2090000	199000	986000			
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089	159	<10	272			
Aromatics >EC10-EC12	<10 µg/kg	TM089	74.6	<10	251			
Aromatics >EC12-EC16	<100 µg/kg	TM173	5300	<100	11200			
Aromatics >EC16-EC21	<100 µg/kg	TM173	20000	1890	30700			
Aromatics >EC21-EC35	<100 µg/kg	TM173	544000	49800	190000			
Aromatics >EC35-EC44	<100 µg/kg	TM173	575000	26100	99600			
Aromatics >EC40-EC44	<100 µg/kg	TM173	310000	10200	41200			
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	1140000	77800	331000			
Total Aliphatics >C5-35	<100 µg/kg	TM173	1270000	153000	765000			
Total Aromatics >C5-35	<100 µg/kg	TM173	569000	51700	232000			
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	1840000	205000	997000			
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	3230000	277000	1320000			



## CERTIFICATE OF ANALYSIS

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

## VOC MS (S)

Results Legend		Customer Sample R	BH316 E3	OP14 E3	OP14 E5			
#	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>						
M	mCERTS accredited.		0.20 - 0.50	1.10 - 1.60	1.70			
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		06/06/2012	07/06/2012	07/06/2012			
diss.filt	Dissolved / filtered sample.		.	.	.			
tot.unfilt	Total / unfiltered sample.		08/06/2012	08/06/2012	08/06/2012			
*	Subcontracted test.		120611-19	120611-19	120611-19			
**	% 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		5716950	5716932	5716936			
(F)	Trigger breach confirmed		E3	E3	E5			
Component	LOD/Units		Method					
Dibromofluoromethane**	%	TM116	101	102	4.85			
Toluene-d8**	%	TM116	98.1	96.6	99.1			
4-Bromofluorobenzene**	%	TM116	106	123	97.5			
Dichlorodifluoromethane	<4 µg/kg	TM116	<80	<4	<4	M	#	M
Chloromethane	<7 µg/kg	TM116	<140	<7	<7			
Vinyl Chloride	<10 µg/kg	TM116	<200	<10	<10			
Bromomethane	<13 µg/kg	TM116	<260	<13	<13	M	#	M
Chloroethane	<14 µg/kg	TM116	<280	<14	<14	M	#	M
Trichlorofluoromethane	<6 µg/kg	TM116	<120	<6	<6	M	#	M
1.1-Dichloroethene	<10 µg/kg	TM116	<200	<10	<10	#	#	#
Carbon Disulphide	<7 µg/kg	TM116	372	<7	<7	M	#	M
Dichloromethane	<10 µg/kg	TM116	<200	<10	<10	#	#	#
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<220	<11	<11	M	#	M
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<220	<11	<11	M	#	M
1.1-Dichloroethane	<8 µg/kg	TM116	<160	<8	<8	M	#	M
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<100	<5	<5	M	#	M
2.2-Dichloropropane	<12 µg/kg	TM116	<240	<12	<12	M	#	M
Bromochloromethane	<14 µg/kg	TM116	<280	<14	<14	M	#	M
Chloroform	<8 µg/kg	TM116	<160	<8	<8	M	#	M
1.1.1-Trichloroethane	<7 µg/kg	TM116	<140	<7	<7	M	#	M
1.1-Dichloropropene	<11 µg/kg	TM116	<220	<11	<11	M	#	M
Carbontetrachloride	<14 µg/kg	TM116	<280	<14	<14	M	#	M
1.2-Dichloroethane	<5 µg/kg	TM116	<100	<5	<5	M	#	M
Benzene	<9 µg/kg	TM116	<180	<9	<9	M	#	M
Trichloroethene	<9 µg/kg	TM116	<180	<9	<9	M	#	M
1.2-Dichloropropane	<12 µg/kg	TM116	<240	<12	<12	M	#	M
Dibromomethane	<9 µg/kg	TM116	<180	<9	<9	M	#	M
Bromodichloromethane	<7 µg/kg	TM116	<140	<7	<7	M	#	M
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<280	<14	<14	M	#	M
Toluene	<5 µg/kg	TM116	<100	<5	<5	M	#	M
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<280	<14	<14			
1.1.2-Trichloroethane	<10 µg/kg	TM116	<200	<10	<10	M	#	M
1.3-Dichloropropane	<7 µg/kg	TM116	<140	<7	<7	#	#	#
Tetrachloroethene	<5 µg/kg	TM116	<100	<5	<5	M	#	M
Dibromochloromethane	<13 µg/kg	TM116	<260	<13	<13	M	#	M



## CERTIFICATE OF ANALYSIS

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

## VOC MS (S)

Results Legend		Customer Sample R	BH316 E3	OP14 E3	OP14 E5								
#	ISO17025 accredited.												
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.20 - 0.50 Soil/Solid 06/06/2012	1.10 - 1.60 Soil/Solid 07/06/2012	1.70 Soil/Solid 07/06/2012								
S	Deviating sample.												
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												
Component	LOD/Units							Method					
1.2-Dibromoethane	<12 µg/kg							TM116	<240 M	<12 #	<12 M		
Chlorobenzene	<5 µg/kg	TM116	<100 M	<5 #	<5 M								
1.1.1.2-Tetrachloroethane	<10 µg/kg	TM116	<200 M	<10 #	<10 M								
Ethylbenzene	<4 µg/kg	TM116	<80 M	<4 #	<4 M								
p/m-Xylene	<14 µg/kg	TM116	<280 #	<14 #	<14 #								
o-Xylene	<10 µg/kg	TM116	<200 M	<10 #	<10 M								
Styrene	<10 µg/kg	TM116	<200 M	<10 #	<10 M								
Bromoform	<10 µg/kg	TM116	<200 M	<10 #	<10 M								
Isopropylbenzene	<5 µg/kg	TM116	<100 M	<5 #	<5 M								
1.1.2.2-Tetrachloroethane	<10 µg/kg	TM116	<200 #	<10 #	<10 #								
1.2.3-Trichloropropane	<17 µg/kg	TM116	<340 M	<17 #	<17 M								
Bromobenzene	<10 µg/kg	TM116	<200 M	<10 #	<10 M								
Propylbenzene	<11 µg/kg	TM116	<220 M	<11 #	<11 M								
2-Chlorotoluene	<9 µg/kg	TM116	<180 M	<9 #	<9 M								
1.3.5-Trimethylbenzene	<8 µg/kg	TM116	<160 #	<8 #	<8 #								
4-Chlorotoluene	<12 µg/kg	TM116	<240 M	<12 #	<12 M								
tert-Butylbenzene	<12 µg/kg	TM116	<240 #	<12 #	<12 #								
1.2.4-Trimethylbenzene	<9 µg/kg	TM116	<180 #	<9 #	<9 #								
sec-Butylbenzene	<10 µg/kg	TM116	<200 M	<10 #	<10 M								
4-Isopropyltoluene	<11 µg/kg	TM116	<220 M	<11 #	<11 M								
1.3-Dichlorobenzene	<6 µg/kg	TM116	<120 M	<6 #	<6 M								
1.4-Dichlorobenzene	<5 µg/kg	TM116	<100 M	<5 #	<5 M								
n-Butylbenzene	<10 µg/kg	TM116	<200 M	<10 #	<10 M								
1.2-Dichlorobenzene	<12 µg/kg	TM116	<240 M	<12 #	<12 M								
1.2-Dibromo-3-chloropropene	<14 µg/kg	TM116	<280 M	<14 #	<14 M								
Tert-amyl methyl ether	<15 µg/kg	TM116	<300	<15	<15								
1.2.4-Trichlorobenzene	<6 µg/kg	TM116	<120 #	<6 #	<6 #								
Hexachlorobutadiene	<12 µg/kg	TM116	<240	<12	<12								
Naphthalene	<13 µg/kg	TM116	<260 M	<13 #	26.7 M								
1.2.3-Trichlorobenzene	<6 µg/kg	TM116	<120 M	<6 #	<6 M								
VOC TIC	-	TM116	No TICs identified	No TICs identified	No TICs identified								





**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH302 E32 E 32 14.00 SOLID 05/06/2012 00:00:00  120611-19 5712475 TM048	18/6/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH304 E22 E 22 6.50 - 7.00 SOLID 06/06/2012 00:00:00  120611-19 5712481 TM048	18/6/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH304 E45 E 45 16.50 - 17.00 SOLID 07/06/2012 00:00:00  120611-19 5712487 TM048	18/6/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH309 E19 E 19 5.50 - 6.00 SOLID 06/06/2012 00:00:00  120611-19 5712489 TM048	18/6/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH309E25 E 25 7.50 - 8.00 SOLID 06/06/2012 00:00:00  120611-19 5712491 TM048	18/6/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH309 E40 E 40 13.50 - 14.00 SOLID 07/06/2012 00:00:00  120611-19 5712494 TM048	18/6/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	OP14 E3 E 3 1.10 - 1.60 SOLID 07/06/2012 00:00:00  120611-19 5716932 TM048	18/6/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	OP14 E5 E 5 1.70 SOLID 07/06/2012 00:00:00  120611-19 5716936 TM048	18/6/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH316 E3 E 3 0.20 - 0.50 SOLID 06/06/2012 00:00:00  120611-19 5716950 TM048	18/6/12	Chris Swindells	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH316 E10 E 10 4.00 SOLID 06/06/2012 00:00:00  120611-19 5716955 TM048	18/6/12	Chris Swindells	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH302 E29 E 29 11.00 SOLID 05/06/2012 00:00:00  120611-19 5716956 TM048	18/6/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DUP 3  SOLID  120611-19 5714543 TM048	20/6/12	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH309 E45 E 45 15.50 - 16.00 SOLID 07/06/2012 00:00:00 120611-19 5712495 TM048	25/06/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH304 E22 E 22 6.50 - 7.00 SOLID 06/06/2012 00:00:00 120611-19 5712481 TM048	03/08/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH309 E40 E 40 13.50 - 14.00 SOLID 07/06/2012 00:00:00 120611-19 5712494 TM048	03/08/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	OP14 E3 E 3 1.10 - 1.60 SOLID 07/06/2012 00:00:00 120611-19 5716932 TM048	03/08/12	Kevin Bowron	Soil Containing Loose Fibres & ACM Debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	OP14 E5 E 5 1.70 SOLID 07/06/2012 00:00:00 120611-19 5716936 TM048	03/08/12	Kevin Bowron	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189843  
Superseded Report:

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH316 E3 E 3 0.20 - 0.50 SOLID 06/06/2012 00:00:00  120611-19 5716950 TM048	03/08/12	Kevin Bowron	Loose Fibres in Soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH316 E10 E 10 4.00 SOLID 06/06/2012 00:00:00  120611-19 5716955 TM048	03/08/12	Kevin Bowron	Loose Fibres in Soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

## Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5730153	OP14 E5 E5	1.70	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5730289	OP14 E3 E3	1.10 - 1.60	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5730784	BH302 E29 E29	11.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5730893	BH302 E32 E32	14.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5733374	BH304 E45 E45	16.50 - 17.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5733646	BH316 E10 E10	4.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5733835	BH304 E22 E22	6.50 - 7.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5733873	BH316 E3 E3	0.20 - 0.50	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5734056	BH309 E19 E19	5.50 - 6.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5734066	BH309 E40 E40	13.50 - 14.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5735008	BH309E25 E25	7.50 - 8.00	SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded
5748957	DUP 3		SOLID	Easily Liberated Sulphide	Sulphide, Easily liberated	Sample holding time exceeded

**Note : Test results may be compromised**

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

### Notification of NDPs (No determination possible)

Date Received : 11/06/2012 14:36:55

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5716932	OP14 E3 E3	1.10 - 1.60	Dioxins/Furans (S)*	Unsuitable for analysis due to potential Asbestos
5716932	OP14 E3 E3	1.10 - 1.60	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5716932	OP14 E3 E3	1.10 - 1.60	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5716936	OP14 E5 E5	1.70	Dioxins/Furans (S)*	Unsuitable for analysis due to potential Asbestos
5716936	OP14 E5 E5	1.70	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5716936	OP14 E5 E5	1.70	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5716950	BH316 E3 E3	0.20 - 0.50	Dioxins/Furans (S)*	Unsuitable for analysis due to potential Asbestos
5716950	BH316 E3 E3	0.20 - 0.50	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5716950	BH316 E3 E3	0.20 - 0.50	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5716955	BH316 E10 E10	4.00	Total Sulphur	Unsuitable for analysis due to potential Asbestos
5716955	BH316 E10 E10	4.00	Toluene extractable matter*	Unsuitable for analysis due to potential Asbestos
5712479	BH304 E19	5.50 - 6.00	Low Level Metals 1	Sample unsuitable for analysis
5712490	BH309 E22	6.50 - 7.00	Low Level Metals 1	Sample unsuitable for analysis
5716950	BH316 E3	0.20 - 0.50	Low Level Metals 1	Sample unsuitable for analysis
5716932	OP14 E3	1.10 - 1.60	Low Level Metals 1	Sample unsuitable for analysis



## CERTIFICATE OF ANALYSIS

<b>SDG:</b>	120611-19	<b>Location:</b>	Haulbowline	<b>Order Number:</b>	4559
<b>Job:</b>	D_PRIORGEOT_CRK-44	<b>Customer:</b>	Priority Geotechnical Ltd	<b>Report Number:</b>	189843
<b>Client Reference:</b>	P12030	<b>Attention:</b>	Colette Kelly	<b>Superseded Report:</b>	

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
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		
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
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		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		



## CERTIFICATE OF ANALYSIS

<b>SDG:</b> 120611-19	<b>Location:</b> Haulbowline	<b>Order Number:</b> 4559
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 189843
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b>

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM232	USEPA Method No. 8260b 'Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC-MS)'	Determination of Volatile Alcohols, Acetates and Ketones in Waters by Headspace GC-MS		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		
TM243		Mixed Anions In Soils By Kone		
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		
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser		
TM294		Determination of Free Sulphur in liquids by HPLC		
TM307		Ultra Low Metals		
TM309				

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





**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

### Test Completion Dates

Lab Sample No(s) Customer Sample Ref. AGS Ref. Depth Type	5716950	5716956	5712475	5712479	5712481	5712487	5712489	5712490	5712494	5712491
	BH316 E3	BH302 E29	BH302 E32	BH304 E19	BH304 E22	BH304 E45	BH309 E19	BH309 E22	BH309 E40	BH309E25
	E3	E29	E32	E19	E22	E45	E19	E22	E40	E25
	0.20 - 0.50	11.00	14.00	5.50 - 6.00	6.50 - 7.00	16.50 - 17.00	5.50 - 6.00	6.50 - 7.00	13.50 - 14.00	7.50 - 8.00
	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alcohols and Acetates in Soils	19-Jun-2012									
Alkali Metals by iCap-OES (Soil)	19-Jun-2012	19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012
Alkalinity Filtered as CaCO3	20-Jun-2012			20-Jun-2012	25-Jun-2012			20-Jun-2012		25-Jun-2012
Ammoniacal Nitrogen	18-Jun-2012			18-Jun-2012	25-Jun-2012			18-Jun-2012		25-Jun-2012
Ammonium Soil by Titration	18-Jun-2012	18-Jun-2012	18-Jun-2012		18-Jun-2012	18-Jun-2012	18-Jun-2012		18-Jun-2012	18-Jun-2012
Anions by Kone (soil)	18-Jun-2012	18-Jun-2012	19-Jun-2012		18-Jun-2012	18-Jun-2012	18-Jun-2012		19-Jun-2012	18-Jun-2012
Anions by Kone (w)	19-Jun-2012			19-Jun-2012	27-Jun-2012			19-Jun-2012		27-Jun-2012
Asbestos Identification (Soil)	03-Aug-2012	19-Jun-2012	19-Jun-2012		03-Aug-2012	19-Jun-2012	19-Jun-2012		03-Aug-2012	19-Jun-2012
Boron Water Soluble	19-Jun-2012	19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012
COD Unfiltered	18-Jun-2012			16-Jun-2012	22-Jun-2012			16-Jun-2012		22-Jun-2012
Conductivity (at 20 deg.C)	15-Jun-2012			15-Jun-2012	21-Jun-2012			15-Jun-2012		21-Jun-2012
Cyanide Comp/Free/Total/Thiocyanate	18-Jun-2012	18-Jun-2012	18-Jun-2012	18-Jun-2012	22-Jun-2012	18-Jun-2012	18-Jun-2012	18-Jun-2012	18-Jun-2012	22-Jun-2012
Dissolved Metals by ICP-MS	18-Jun-2012			18-Jun-2012	22-Jun-2012			18-Jun-2012		22-Jun-2012
Dissolved Organic/Inorganic Carbon	16-Jun-2012			16-Jun-2012	22-Jun-2012			18-Jun-2012		22-Jun-2012
Easily Liberated Sulphide	18-Jun-2012	18-Jun-2012	18-Jun-2012		18-Jun-2012	18-Jun-2012	18-Jun-2012		18-Jun-2012	18-Jun-2012
EPH CWG (Aliphatic) GC (S)	19-Jun-2012									
EPH CWG (Aromatic) GC (S)	19-Jun-2012									
Fluoride	19-Jun-2012			19-Jun-2012	22-Jun-2012			19-Jun-2012		22-Jun-2012
Free Sulphur	15-Jun-2012			15-Jun-2012	22-Jun-2012			15-Jun-2012		22-Jun-2012
GRO by GC-FID (S)	17-Jun-2012									
Hexavalent Chromium (s)	19-Jun-2012	18-Jun-2012	18-Jun-2012		19-Jun-2012	19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012
Hexavalent Chromium (w)	18-Jun-2012			18-Jun-2012	22-Jun-2012			18-Jun-2012		22-Jun-2012
Low Level Cyanide (W)	19-Jun-2012			19-Jun-2012				19-Jun-2012		
Mercury Dissolved	18-Jun-2012			18-Jun-2012	22-Jun-2012			18-Jun-2012		22-Jun-2012
Metals by iCap-OES (Soil)	19-Jun-2012	19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012
Metals by iCap-OES Dissolved (W)	18-Jun-2012			18-Jun-2012	25-Jun-2012			18-Jun-2012		25-Jun-2012
Metals Ultra Low	20-Jun-2012			20-Jun-2012	27-Jun-2012			20-Jun-2012		27-Jun-2012
Mineral Oil	19-Jun-2012									
Nitrite by Kone (w)	18-Jun-2012			18-Jun-2012	22-Jun-2012			18-Jun-2012		22-Jun-2012
NRA Leachate	13-Jun-2012			13-Jun-2012	19-Jun-2012			13-Jun-2012		19-Jun-2012
PAH Spec MS - Aqueous (W)	19-Jun-2012			19-Jun-2012	26-Jun-2012			19-Jun-2012		26-Jun-2012
PAH Value of soil	19-Jun-2012	19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012
PCB Congeners - Aqueous (W)	19-Jun-2012			19-Jun-2012	25-Jun-2012			19-Jun-2012		25-Jun-2012
PCBs by GCMS	19-Jun-2012									
pH	19-Jun-2012	18-Jun-2012	18-Jun-2012		19-Jun-2012	18-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012
pH Value	15-Jun-2012			15-Jun-2012	21-Jun-2012			15-Jun-2012		21-Jun-2012
Phenols by HPLC (S)	19-Jun-2012	19-Jun-2012	18-Jun-2012		19-Jun-2012	19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012
Phenols by HPLC (W)	18-Jun-2012			19-Jun-2012	22-Jun-2012			19-Jun-2012		22-Jun-2012
Sample description	15-Jun-2012	15-Jun-2012	15-Jun-2012	13-Jun-2012	15-Jun-2012	15-Jun-2012	15-Jun-2012	13-Jun-2012	15-Jun-2012	15-Jun-2012
Semi Volatile Organic Compounds	19-Jun-2012									
Sulphide	19-Jun-2012			19-Jun-2012	21-Jun-2012			19-Jun-2012		21-Jun-2012
Toluene extractable matter*		28-Jun-2012	28-Jun-2012		28-Jun-2012	28-Jun-2012	28-Jun-2012			28-Jun-2012
Total Dissolved Solids on Leachates	18-Jun-2012			18-Jun-2012	21-Jun-2012			18-Jun-2012		21-Jun-2012
Total Metals by ICP-MS					26-Jun-2012					26-Jun-2012
Total Sulphate	18-Jun-2012	18-Jun-2012	19-Jun-2012		18-Jun-2012	18-Jun-2012	20-Jul-2012		19-Jun-2012	18-Jun-2012
Total Sulphur		19-Jun-2012	19-Jun-2012		19-Jun-2012	19-Jun-2012	19-Jun-2012			19-Jun-2012
TPH by IR Oils and Greases	18-Jun-2012			18-Jun-2012	27-Jun-2012			18-Jun-2012		27-Jun-2012
TPH CWG GC (S)	19-Jun-2012									
VOC MS (S)	19-Jun-2012									



## CERTIFICATE OF ANALYSIS

**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

Lab Sample No(s) Customer Sample Ref.	5712495	5716955	5714543	5716932	5716936	5716937
	BH309 E45	BH316 E10	DUP 3	OP14 E3	OP14 E5	OP14 E6
AGS Ref. Depth Type	E45	E10		E3	E5	E6
	15.50 - 16.00	4.00		1.10 - 1.60	1.70	1.70
	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alcohols and Acetates in Soils				19-Jun-2012	19-Jun-2012	
Alkali Metals by iCap-OES (Soil)	27-Jun-2012	19-Jun-2012	25-Jun-2012	19-Jun-2012	19-Jun-2012	
Alkalinity Filtered as CaCO3				20-Jun-2012		20-Jun-2012
Ammoniacal Nitrogen				18-Jun-2012		18-Jun-2012
Ammonium Soil by Titration	26-Jun-2012	18-Jun-2012	21-Jun-2012	15-Jun-2012	18-Jun-2012	
Anions by Kone (soil)	27-Jun-2012	18-Jun-2012	21-Jun-2012	18-Jun-2012	18-Jun-2012	
Anions by Kone (w)				19-Jun-2012		19-Jun-2012
Asbestos Identification (Soil)	25-Jun-2012	03-Aug-2012	20-Jun-2012	03-Aug-2012	03-Aug-2012	
Boron Water Soluble	27-Jun-2012	19-Jun-2012	21-Jun-2012	19-Jun-2012	19-Jun-2012	
COD Unfiltered				18-Jun-2012		16-Jun-2012
Conductivity (at 20 deg.C)				15-Jun-2012		15-Jun-2012
Cyanide Comp/Free/Total/Thiocyanate	25-Jun-2012	18-Jun-2012	20-Jun-2012	18-Jun-2012	18-Jun-2012	18-Jun-2012
Dissolved Metals by ICP-MS				18-Jun-2012		18-Jun-2012
Dissolved Organic/Inorganic Carbon				16-Jun-2012		16-Jun-2012
Easily Liberated Sulphide	25-Jun-2012	18-Jun-2012	21-Jun-2012	18-Jun-2012	18-Jun-2012	
EPH CWG (Aliphatic) GC (S)				19-Jun-2012	19-Jun-2012	
EPH CWG (Aromatic) GC (S)				19-Jun-2012	19-Jun-2012	
Fluoride				19-Jun-2012		19-Jun-2012
Free Sulphur				15-Jun-2012		15-Jun-2012
GRO by GC-FID (S)				17-Jun-2012	16-Jun-2012	
Hexavalent Chromium (s)	25-Jun-2012	19-Jun-2012	21-Jun-2012	18-Jun-2012	18-Jun-2012	
Hexavalent Chromium (w)				18-Jun-2012		18-Jun-2012
Low Level Cyanide (W)				19-Jun-2012		19-Jun-2012
Low Level Metals 1						20-Jun-2012
Mercury Dissolved				18-Jun-2012		18-Jun-2012
Metals by iCap-OES (Soil)	27-Jun-2012	19-Jun-2012	21-Jun-2012	19-Jun-2012	19-Jun-2012	
Metals by iCap-OES Dissolved (W)				18-Jun-2012		18-Jun-2012
Metals Ultra Low				20-Jun-2012		20-Jun-2012
Mineral Oil				19-Jun-2012	19-Jun-2012	
Nitrite by Kone (w)				18-Jun-2012		18-Jun-2012
NRA Leachate				13-Jun-2012		13-Jun-2012
PAH Spec MS - Aqueous (W)				19-Jun-2012		19-Jun-2012
PAH Value of soil	25-Jun-2012	19-Jun-2012	21-Jun-2012	19-Jun-2012	19-Jun-2012	
PCB Congeners - Aqueous (W)				19-Jun-2012		19-Jun-2012
PCBs by GCMS				19-Jun-2012	19-Jun-2012	
pH	26-Jun-2012	18-Jun-2012	21-Jun-2012	18-Jun-2012	18-Jun-2012	
pH Value				15-Jun-2012		15-Jun-2012
Phenols by HPLC (S)	25-Jun-2012	19-Jun-2012	20-Jun-2012	19-Jun-2012	19-Jun-2012	
Phenols by HPLC (W)				18-Jun-2012		18-Jun-2012
Sample description	20-Jun-2012	15-Jun-2012	18-Jun-2012	14-Jun-2012	15-Jun-2012	14-Jun-2012
Semi Volatile Organic Compounds				16-Jun-2012	19-Jun-2012	
Sulphide				19-Jun-2012		19-Jun-2012
Toluene extractable matter*	29-Jun-2012		02-Jul-2012			
Total Dissolved Solids on Leachates				18-Jun-2012		18-Jun-2012
Total Sulphate	26-Jun-2012	18-Jun-2012	22-Jun-2012	20-Jul-2012	18-Jun-2012	
Total Sulphur	26-Jun-2012		22-Jun-2012			
TPH by IR Oils and Greases				18-Jun-2012		18-Jun-2012
TPH CWG GC (S)				19-Jun-2012	19-Jun-2012	
VOC MS (S)				18-Jun-2012	19-Jun-2012	



SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189843  
Superseded Report:

### Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5738591  
Sample ID : OP14 E3

Depth : 1.10 - 1.60

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

Sample Identity: 5577434-5738591  
Date Acquired : 18/06/12 14:32:53 PM  
Units : ppb  
Dilution:





SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189843  
Superseded Report:

### Chromatogram

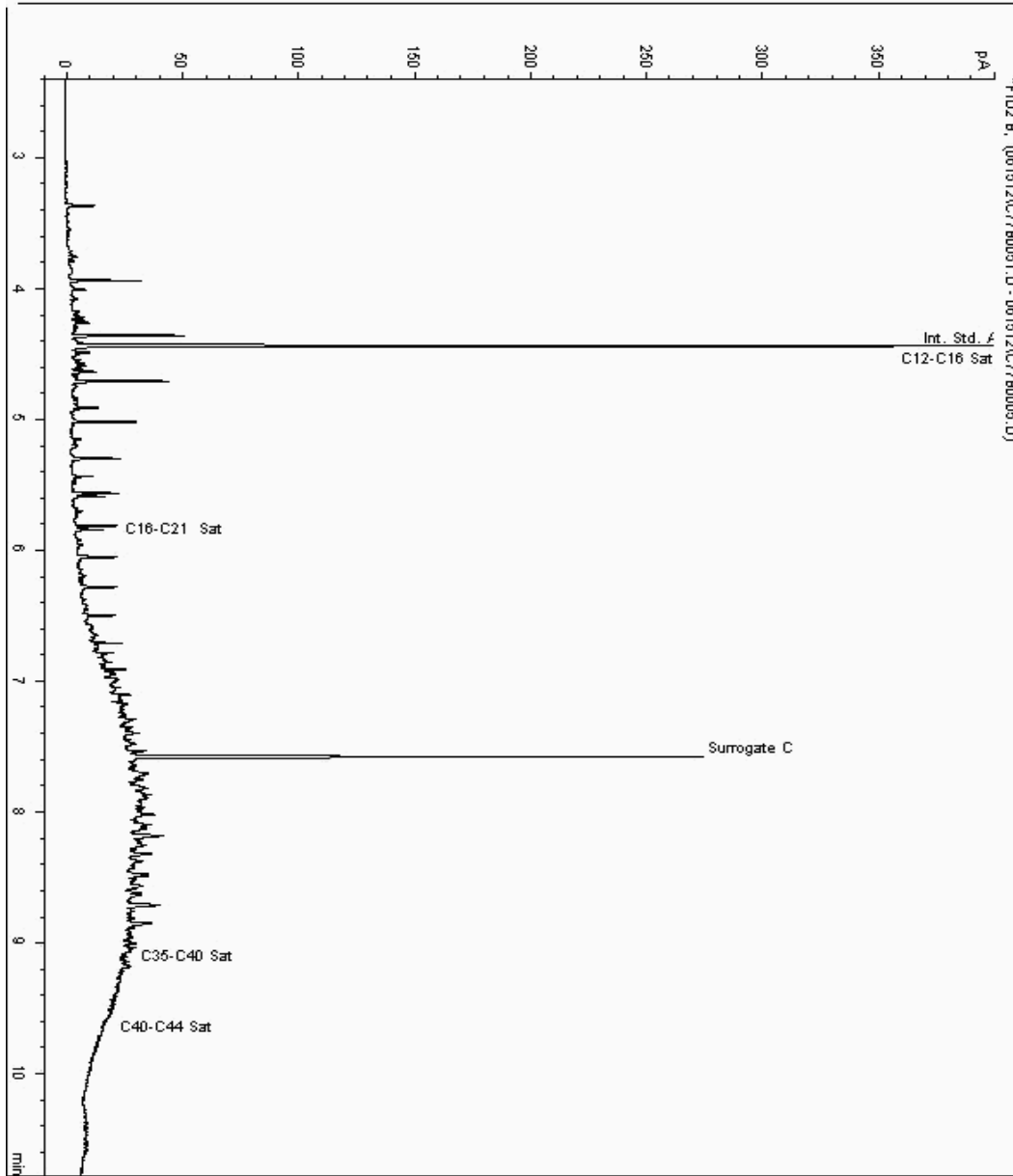
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5742566  
Sample ID : OP14 E5

Depth : 1.70

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

Sample Identity: 5577514-5742566  
Date Acquired : 18/06/12 16:35:37 PM  
Units : ppb  
Dilution:





SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189843  
Superseded Report:

### Chromatogram

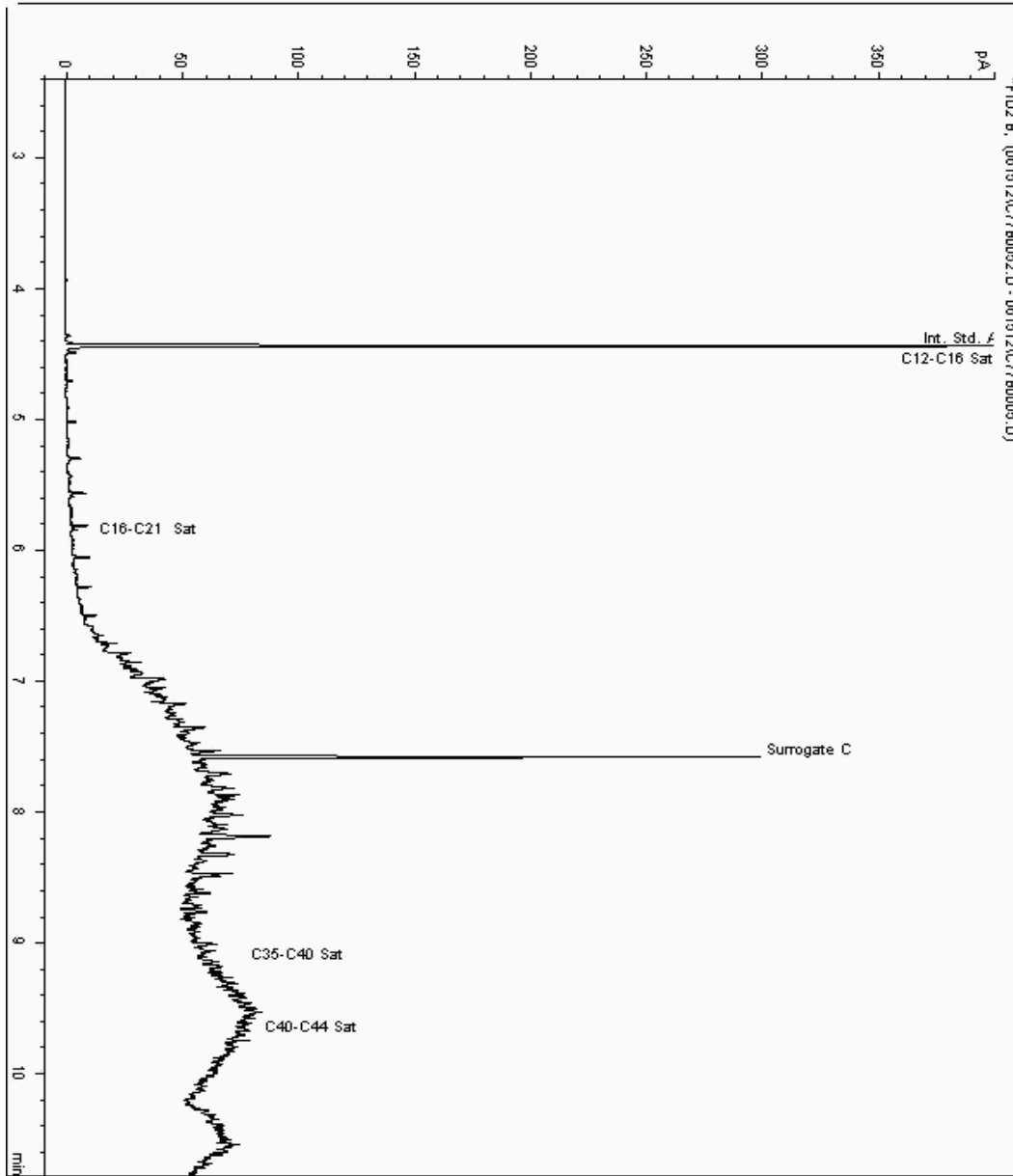
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 5742861  
Sample ID : BH316 E3

Depth : 0.20 - 0.50

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

Sample Identity: 5577603-5742861  
Date Acquired : 18/06/12 16:55:58 PM  
Units : ppb  
Dilution:





SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189843  
Superseded Report:

### Chromatogram

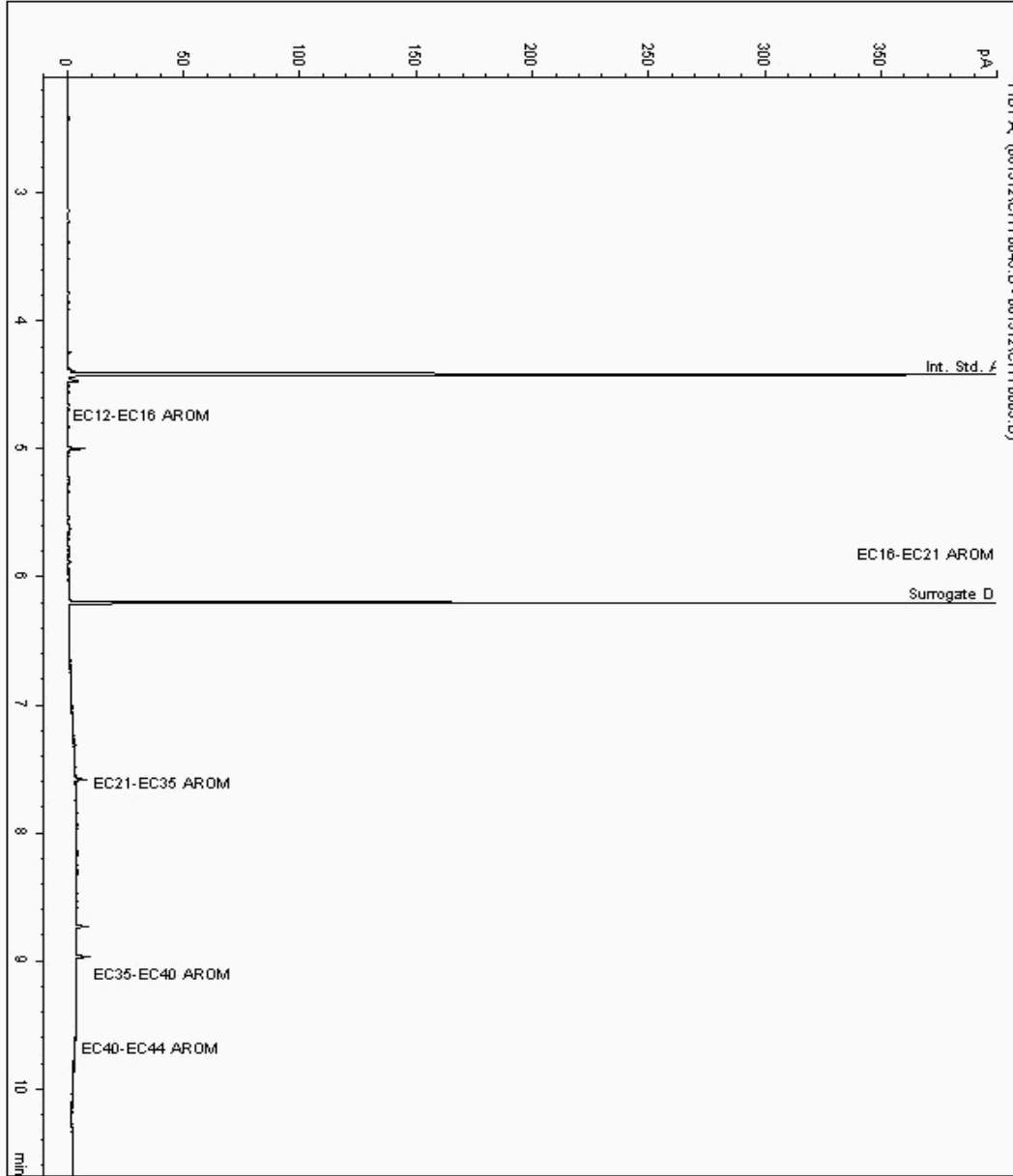
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5738591  
Sample ID : OP14 E3

Depth : 1.10 - 1.60

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

Sample Identity: 5577435-5738591  
Date Acquired : 18/06/12 14:32:53 PM  
Units : ppb  
Dilution:





SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189843  
Superseded Report:

### Chromatogram

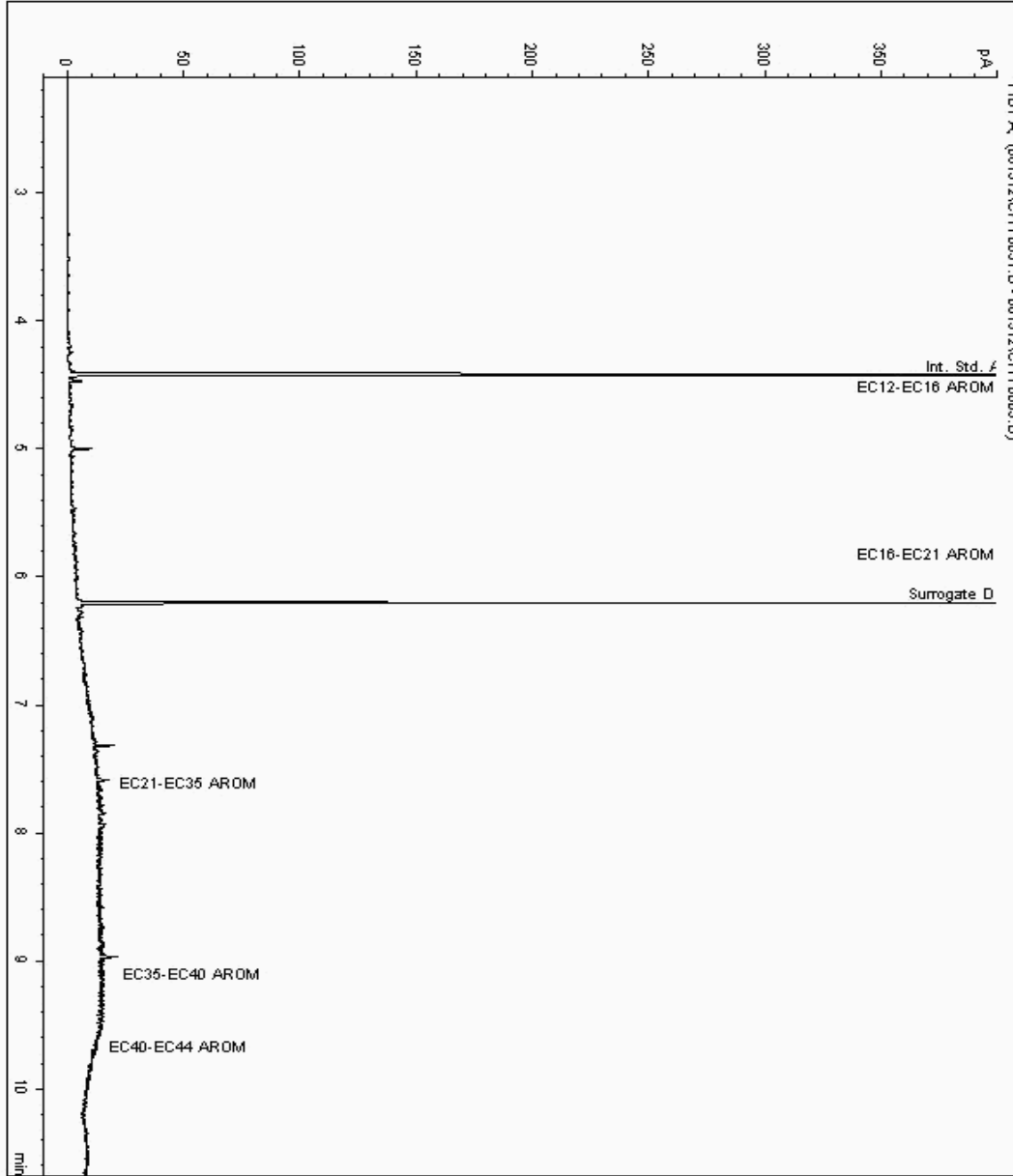
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5742566  
Sample ID : OP14 E5

Depth : 1.70

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

Sample Identity: 5577515-5742566  
Date Acquired : 18/06/12 16:35:37 PM  
Units : ppb  
Dilution:





SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189843  
Superseded Report:

# Chromatogram

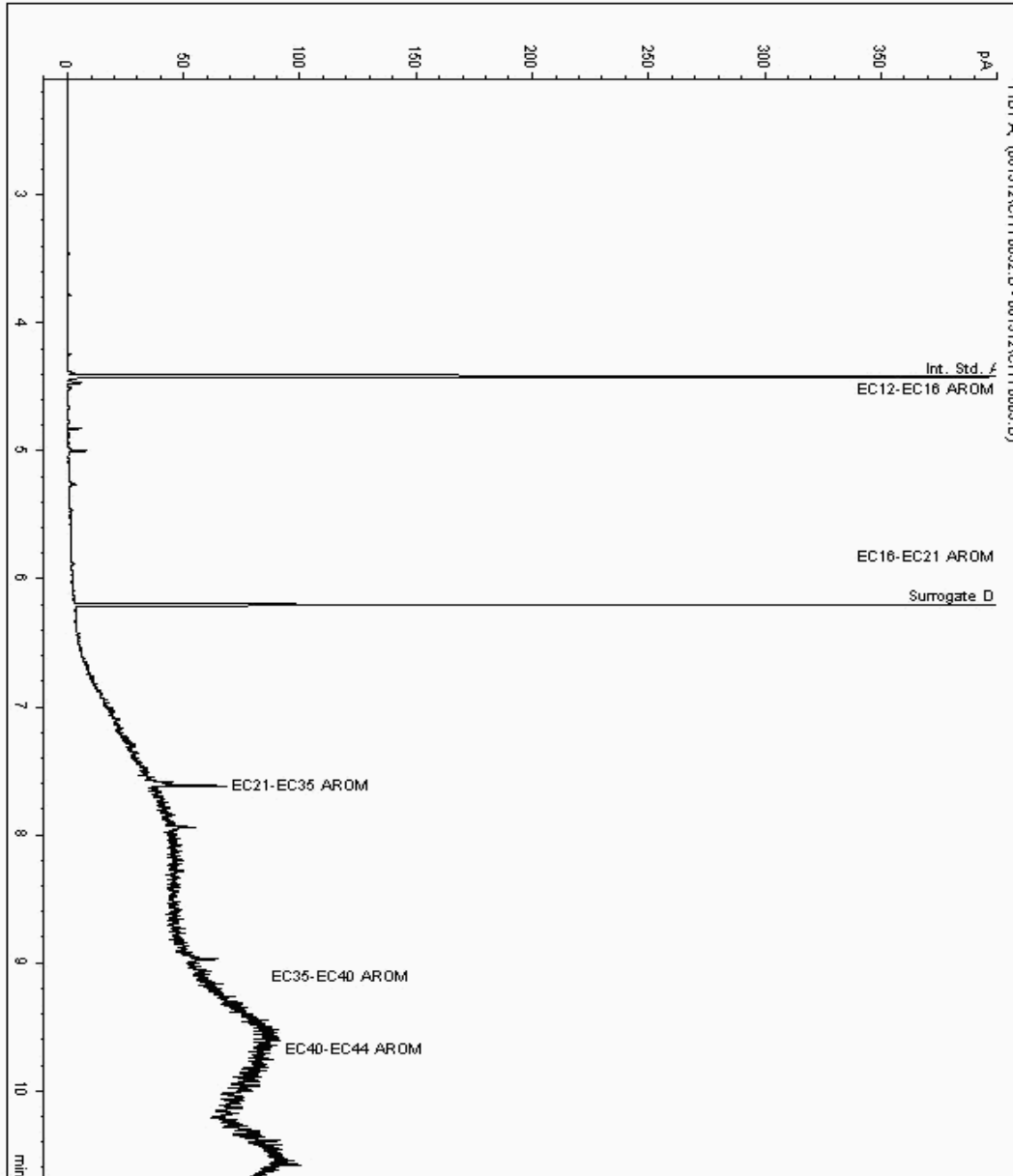
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 5742861  
Sample ID : BH316 E3

Depth : 0.20 - 0.50

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

Sample Identity: 5577604-5742861  
Date Acquired : 18/06/12 16:55:58 PM  
Units : ppb  
Dilution:







SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189843  
Superseded Report:

# Chromatogram

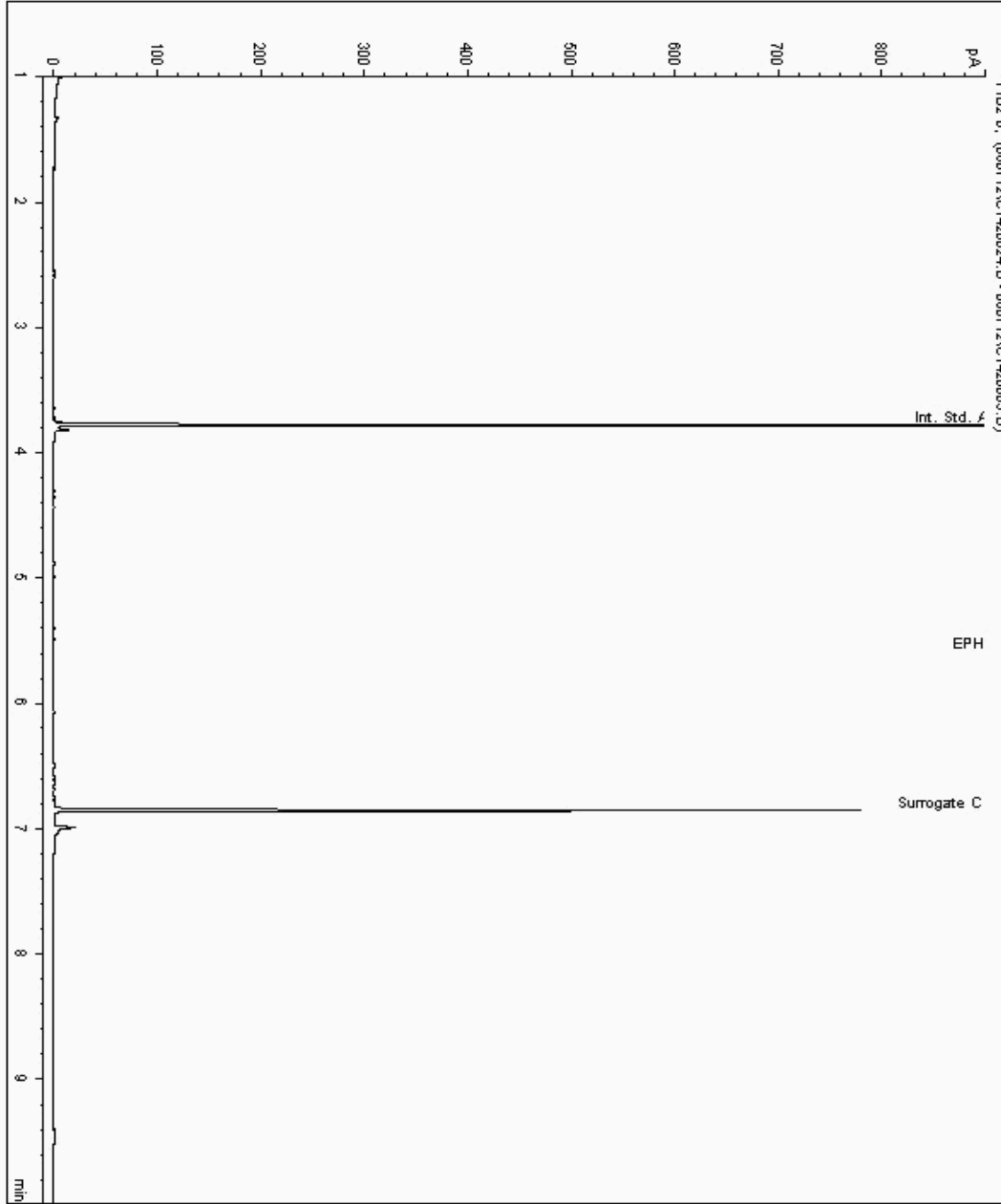
Analysis: Mineral Oil

Sample No : 5738580  
Sample ID : OP14 E3

Depth : 1.10 - 1.60

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5561403-5696140  
Date Acquired : 07/06/12 17:23:58 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189843  
Superseded Report:

# Chromatogram

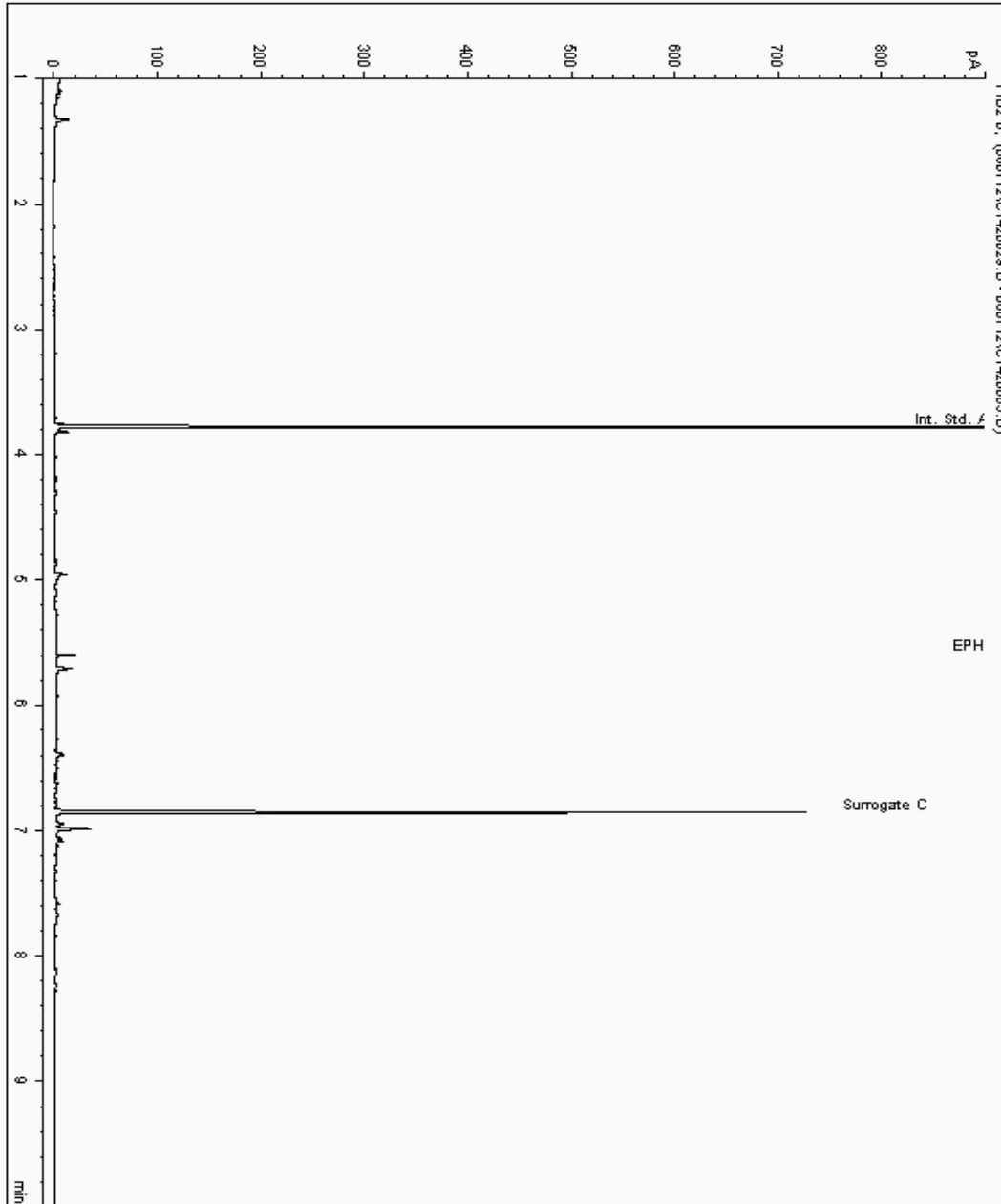
Analysis: Mineral Oil

Sample No : 5742560  
Sample ID : OP14 E5

Depth : 1.70

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5551329-5693158  
Date Acquired : 07/06/12 19:17:04 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

Order Number: 4559  
Report Number: 189843  
Superseded Report:

### Chromatogram

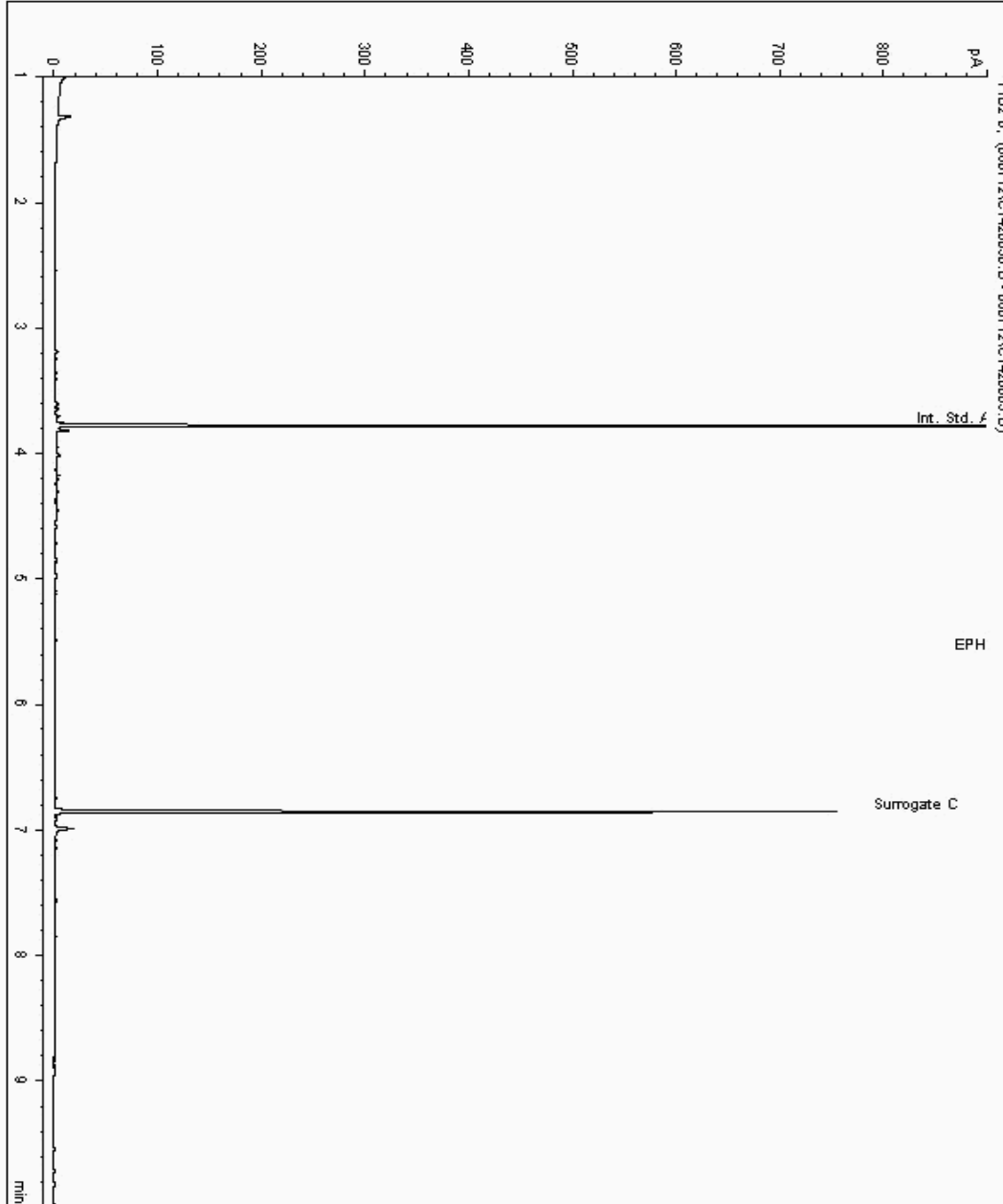
Analysis: Mineral Oil

Sample No : 5742854  
Sample ID : BH316 E3

Depth : 0.20 - 0.50

Alcontrol/Geochem Analytical Services  
EPH Range Organics ( C10 - C40 )

Sample Identity : 5551382-5693202  
Date Acquired : 07/06/12 19:40:10 PM  
Units : mg/kg  
Sample Multiplier : 0.000  
Dilution :





SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

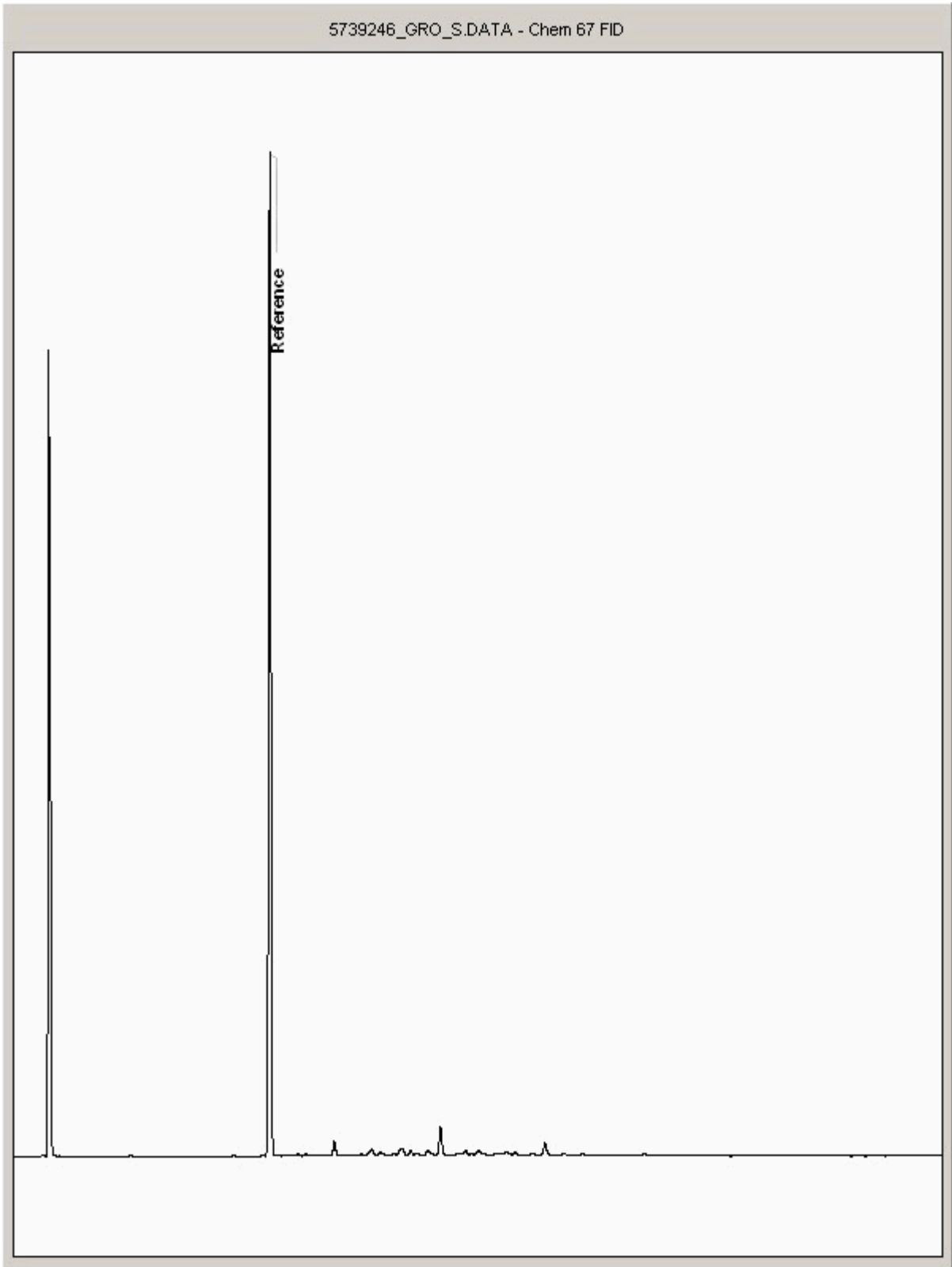
Order Number: 4559  
Report Number: 189843  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5739246  
Sample ID : OP14 E5

Depth : 1.70





SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

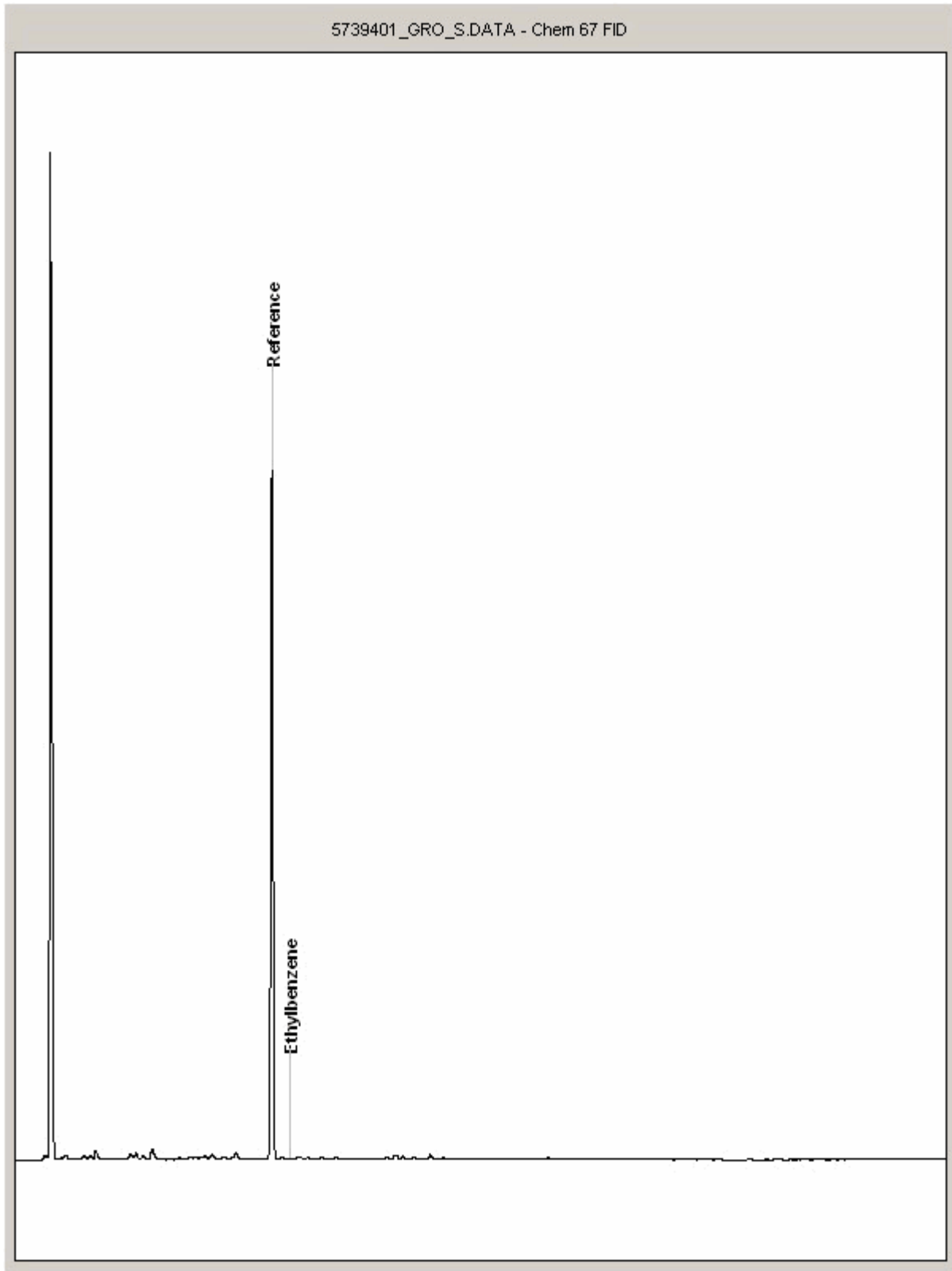
Order Number: 4559  
Report Number: 189843  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5739401  
Sample ID : BH316 E3

Depth : 0.20 - 0.50





SDG: 120611-19  
Job: D\_PRIORGEOT\_CRK-44  
Client Reference: P12030

Location: Haulbowline  
Customer: Priority Geotechnical Ltd  
Attention: Colette Kelly

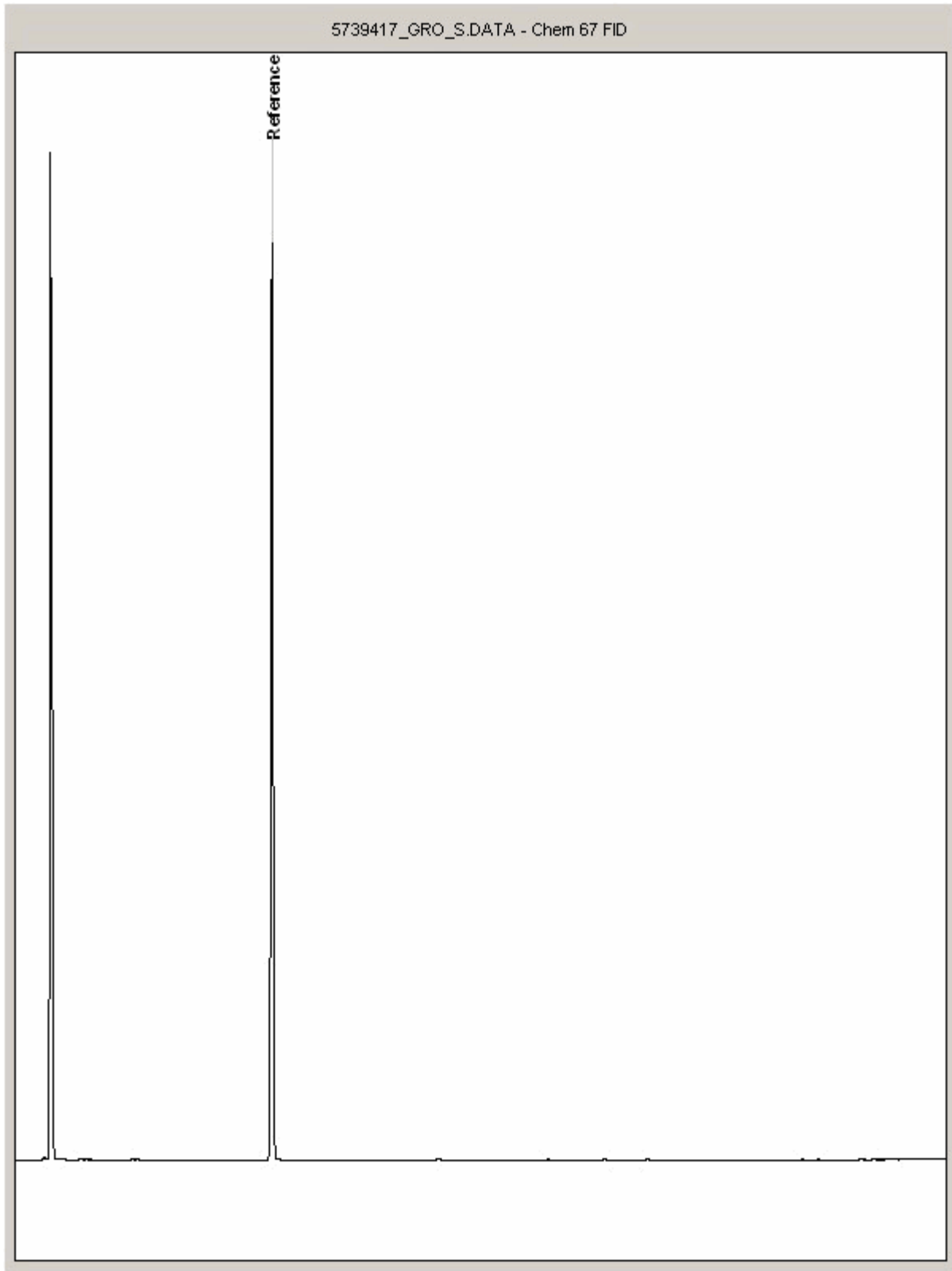
Order Number: 4559  
Report Number: 189843  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 5739417  
Sample ID : OP14 E3

Depth : 1.10 - 1.60



# Alcontrol Laboratories

## SVOC Tentatively Identified Compounds

**SDG** - 120611-19  
**Client** - D\_PRIORGEOT\_CRK  
**Sample Identity** - 5733460 / 5577601-BH316 E3[0.20 - 0.50]  
**Sample Type [Units]** - Soil - µg/kg  
**Date Acquired** - 18/06/12  
**Date Reported** - 19/06/12  
**Analyst** - Y. BRYANT

<b>Tentative Compound Identification</b>	<b>Time min</b>	<b>Concentration µg/kg</b>
Unknown	7.94	2604.04
Nor-alpha-hopane	15.89	2756.59
Unknown	16.25	1625.00
C13 - 23 hydrocarbons: 10% aromatic	6.50 - 13.67	1475869.24

TIC RESULTS ARE REPORTED ON AN AS RECEIVED BASIS AND ARE NOT MOISTURE  
CORRECTED  
MAY INCLUDE PREVIOUSLY QUANTIFIED RESULTS



# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Cornbrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 283777-1

**Date of Report:** 27-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120611-19

**Customer Purchase Order:** 149387

**Date Job Received at SAL:** 20-Jun-2012

**Date Analysis Started:** 20-Jun-2012

**Date Analysis Completed:** 22-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager



<b>SAL Reference:</b> 283777 <b>Customer Reference:</b> 120611-19							
<b>Soil</b> Miscellaneous		Analysed as Soil					
<b>SAL Reference</b>		283777 001	283777 002	283777 003	283777 004	283777 005	283777 006
<b>Customer Sample Reference</b>		5749428	5749432	5749546	5749548	5749552	5750073
<b>Date Sampled</b>		05-JUN-2012	05-JUN-2012	06-JUN-2012	06-JUN-2012	06-JUN-2012	07-JUN-2012
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>			
Toluene extractable matter	T2	AR	500	mg/kg	<500	<500	<500

### Index to symbols used in 283777-1

Value	Description
AR	As Received
N	Analysis is not UKAS accredited

### Method Index

Value	Description
T2	Grav

### Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Toluene extractable matter	T2	AR	500	mg/kg	N	001-006



# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Cornbrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 284524-1

**Date of Report:** 29-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120611-19

**Customer Purchase Order:** 149717

**Date Job Received at SAL:** 26-Jun-2012

**Date Analysis Started:** 27-Jun-2012

**Date Analysis Completed:** 28-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager





# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Cornbrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 283948-1

**Date of Report:** 02-Jul-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120611-19

**Customer Purchase Order:** 149534

**Date Job Received at SAL:** 21-Jun-2012

**Date Analysis Started:** 22-Jun-2012

**Date Analysis Completed:** 28-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager



**SDG:** 120611-19  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189843  
**Superseded Report:**

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GCMS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GCMS
EPH (DRO)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (MIN OIL)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH (CLEANED UP)	D&C	HEXANE ACETONE	END OVER END	GC FD
EPH CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC FD
PCBAROCLOR 1254/PCBCON	D&C	HEXANE ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GCMS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC FD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC FD
SEMIVOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	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)	GC FD
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVCC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL by R	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FD

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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 Anorthophyllite	-
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.



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

**Attention:** Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 01 August 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120613-81  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 189436

**This report has been revised and directly supersedes 189428 in its entirety.**

We received 2 samples on Tuesday June 12, 2012 and 2 of these samples were scheduled for analysis which was completed on Wednesday August 01, 2012. 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:** 120613-81  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189436  
**Superseded Report:** 189428

### Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5721831	BH309	E52	19.50	08/06/2012
5721832	BH316	E15	5.00 - 5.50	11/06/2012

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





SDG: 120613-81  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189436  
 Superseded Report: 189428

SOLID Results Legend  Test  No Determination Possible	Lab Sample No(s)		5721831	5721832
	Customer Sample Reference		BH309	BH316
	AGS Reference		E52	E15
	Depth (m)		19.50	5.00 - 5.50
	Container		400g Tub (ALEZ14) 250g Amber Jar	400g Tub (ALEZ14) 250g Amber Jar
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 2		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2		
Anions by Kone (soil)	All	NDPs: 0 Tests: 2		
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 2		
Boron Water Soluble	All	NDPs: 0 Tests: 2		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2		
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2		
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 2		
	Antimony	NDPs: 0 Tests: 2		
	Arsenic	NDPs: 0 Tests: 2		
	Barium	NDPs: 0 Tests: 2		
	Beryllium	NDPs: 0 Tests: 2		
	Cadmium	NDPs: 0 Tests: 2		
	Chromium	NDPs: 0 Tests: 2		



SDG: 120613-81  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 189436  
 Superseded Report: 189428

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)		5721831	5721832
	Customer Sample Reference		BH309	BH316
	AGS Reference		E52	E15
	Depth (m)		19.50	5.00 - 5.50
	Container		400g Tub (ALEZ14) 250g Amber Jar	400g Tub (ALEZ14) 250g Amber Jar
Metals by iCap-OES (Soil)	Copper	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Lead	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Manganese	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Mercury	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Nickel	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Selenium	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Vanadium	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Zinc	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PAH Value of soil	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
pH	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sample description	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Toluene extractable matter*	All	NDPs: 1 Tests: 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Sulphate	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Sulphur	All	NDPs: 1 Tests: 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**SDG:** 120613-81  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189436  
**Superseded Report:** 189428

## 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
5721831	BH309	19.50	Grey	Silt Loam	0.063 - 0.1 mm	None	None
5721832	BH316	5.00 - 5.50	Dark Brown	Sand	0.1 - 2 mm	Ash/Soot	Stones

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 occurring 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.



**SDG:** 120613-81  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowl  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189436  
**Superseded Report:** 189428

Results Legend		Customer Sample Ref.	BH309	BH316				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		19.50	5.00 - 5.50				
S	Deviating sample.		Soil/Solid	Soil/Solid				
aq	Aqueous / settled sample.		08/06/2012	11/06/2012				
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		12/06/2012	12/06/2012				
(F)	Trigger breach confirmed		120613-81	120613-81				
			5721831	5721832				
		E52	E15					
Component	LOD/Units	Method						
Moisture content ratio	%	PM024	28	3.7				
Toluene Extractable Matter	<10 mg/l	SUB	<10					
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15				
Phenol	<0.01 mg/kg	TM062 (S)	0.014	0.0104				
Cresols	<0.01 mg/kg	TM062 (S)	0.014	<0.01	M	M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	M	M		
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M		
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	M	M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	M	M		
Phenols, Total Detected 5 speciated	<0.06 mg/kg	TM062 (S)	<0.06	<0.06	M	M		
Sulphur, Total	<0.02 %	TM132	0.472					
pH	1 pH Units	TM133	8.86	10	M	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	#	#		
Cyanide, Total	<1 mg/kg	TM153	<1	<1	M	M		
Cyanide, Free	<1 mg/kg	TM153	<1	<1	M	M		
Cyanide, Complex	<1 mg/kg	TM153	<1	<1				
Thiocyanate	<1 mg/kg	TM153	<1	<1	M	M		
Sulphide, Easily liberated	<15 mg/kg	TM180	60.4	<15	#	#		
Aluminium	<11 mg/kg	TM181	9060	19700				
Antimony	<0.6 mg/kg	TM181	<6	19.3	#	#		
Arsenic	<0.6 mg/kg	TM181	<6	23	M	M		
Barium	<0.6 mg/kg	TM181	25.5	622	#	#		
Beryllium	<0.01 mg/kg	TM181	0.325	<0.05	M	M		
Cadmium	<0.02 mg/kg	TM181	0.312	4	M	M		
Chromium	<0.9 mg/kg	TM181	40.5	2140	M	M		
Copper	<1.4 mg/kg	TM181	<14	397	M	M		
Lead	<0.7 mg/kg	TM181	25.2	289	M	M		
Manganese	<0.13 mg/kg	TM181	634	29800	M	M		
Mercury	<0.14 mg/kg	TM181	<1.4	<0.7	M	M		
Nickel	<0.2 mg/kg	TM181	26.6	103	M	M		
Selenium	<1 mg/kg	TM181	<10	16.9	#	#		
Vanadium	<0.2 mg/kg	TM181	23	169	#	#		
Zinc	<1.9 mg/kg	TM181	151	1740	M	M		
Polyaromatic hydrocarbons, Total 17	<10 mg/kg	TM213	<10	<10				
Sulphate, Total	<48 mg/kg	TM221	2820	5080	M	M		



SDG: 120613-81
Job: D\_PRIORGEOT\_CRK-44
Client Reference: P12030

Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 189436
Superseded Report: 189428

Table with columns for Results Legend, Customer Sample Ref., Component, LOD/Units, Method, and data for samples BH309 and BH316. Includes rows for Total sulphur, Boron, Calcium, Magnesium, and Sulphate/Chloride.



**SDG:** 120613-81  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189436  
**Superseded Report:** 189428

## 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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH309 E 52 19.50 SOLID 08/06/2012 00:00:00  120613-81 5721831 TM048	21/06/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH316 E 15 5.00 - 5.50 SOLID 11/06/2012 00:00:00  120613-81 5721832 TM048	21/06/12	Lauren Sargeant	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH316 E 15 5.00 - 5.50 SOLID 11/06/2012 00:00:00  120613-81 5721832 TM048	1/8/12	Lauren Sargeant	Loose fibres in soil & debris typical of asbestos cement	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

**SDG:** 120613-81  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189436  
**Superseded Report:** 189428

**Notification of NDPs (No determination possible)**

Date Received : 13/06/2012 12:23:23

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5721832	BH316 E15	5.00 - 5.50	Total Sulphur	rsuitable for analysis due to potential Asbest
5721832	BH316 E15	5.00 - 5.50	Toluene extractable matter*	rsuitable for analysis due to potential Asbest



**SDG:** 120613-81  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189436  
**Superseded Report:** 189428

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM213	In-house Method	Rapid Determination of PAHs by GC-FID		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM243		Mixed Anions In Soils By Kone		

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





**SDG:** 120613-81  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189436  
**Superseded Report:** 189428

## Test Completion Dates

Lab Sample No(s)	5721831	5721832
Customer Sample Ref.	BH309	BH316
AGS Ref.	E52	E15
Depth	19.50	5.00 - 5.50
Type	SOLID	SOLID

Alkali Metals by iCap-OES (Soil)	21-Jun-2012	25-Jun-2012
Ammonium Soil by Titration	21-Jun-2012	21-Jun-2012
Anions by Kone (soil)	21-Jun-2012	21-Jun-2012
Asbestos Identification (Soil)	21-Jun-2012	01-Aug-2012
Boron Water Soluble	20-Jun-2012	21-Jun-2012
Cyanide Comp/Free/Total/Thiocyanate	20-Jun-2012	20-Jun-2012
Easily Liberated Sulphide	21-Jun-2012	21-Jun-2012
Hexavalent Chromium (s)	21-Jun-2012	21-Jun-2012
Metals by iCap-OES (Soil)	21-Jun-2012	22-Jun-2012
PAH Value of soil	21-Jun-2012	21-Jun-2012
pH	21-Jun-2012	22-Jun-2012
Phenols by HPLC (S)	20-Jun-2012	20-Jun-2012
Sample description	18-Jun-2012	18-Jun-2012
Toluene extractable matter*	11-Jul-2012	
Total Sulphate	21-Jun-2012	22-Jun-2012
Total Sulphur	22-Jun-2012	



# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Combrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 284368-1

**Date of Report:** 02-Jul-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 204888

**Customer Purchase Order:** 149649

**Date Job Received at SAL:** 25-Jun-2012

**Date Analysis Started:** 26-Jun-2012

**Date Analysis Completed:** 02-Jul-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager

SAL Reference: 284368					
Customer Reference: 204888					
Water		Analysed as Water			
Miscellaneous					
SAL Reference					284368 001
Customer Sample Reference					5771064
Date Sampled					08-JUN-2012
Determinand	Method	Test Sample	LOD	Units	
Toluene extractable matter	T2	AR	10	mg/l	<10

### Index to symbols used in 284368-1

Value	Description
AR	As Received
N	Analysis is not UKAS accredited

### Method Index

Value	Description
T2	Grav

### Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Toluene extractable matter	T2	AR	10	mg/l	N	001

**SDG:** 120613-81  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 189436  
**Superseded Report:** 189428

# Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 2 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.

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
ELEMENTAL SULPHUR	D&C	DCM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DCM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANE: ACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANE: ACETONE	SOXTHERM	GC-MS
EPH (DFO)	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 AROCLOR 1254 / PCB CON	D&C	HEXANE: ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE: ACETONE	MICROWAVE TM 218.	GC-MS
>C6-C40	WET	HEXANE: ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE: ACETONE	SHAKER	GC-FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DCM:ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY			
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
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)	GC MS
PCB AROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCLOPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC MS
TPH BY INFRA RED (R)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL BY IR	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FID

**Identification of Asbestos in Bulk Materials & Soils**

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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.



Priority Geotechnical Ltd  
Unit 12  
Owenacurra Business Park  
Midleton  
Co Cork  
Co Cork

**Attention:** Colette Kelly

## CERTIFICATE OF ANALYSIS

**Date:** 29 June 2012  
**Customer:** D\_PRIORGEOT\_CRK  
**Sample Delivery Group (SDG):** 120618-1  
**Your Reference:** P12030  
**Location:** Haulbowline  
**Report No:** 186016

We received 12 samples on Saturday June 16, 2012 and 6 of these samples were scheduled for analysis which was completed on Friday June 29, 2012. 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:** 120618-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186016  
**Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5746326	BH306DE10	E10	18.00	13/06/2012
5746327	BH306DE11	E11	20.00	13/06/2012
5746324	BH306DE8	E8	14.00	11/06/2012
5746325	BH306DE9	E9	16.00	13/06/2012
5746328	BH316E17	E17	6.50 - 7.00	12/06/2012
5746329	BH316E23	E23	8.50 - 9.00	12/06/2012
5746330	BH316E29	E29	10.50 - 11.00	12/06/2012
5746331	BH316E35	E35	12.50 - 13.00	12/06/2012
5746332	BH316E41	E41	14.50 - 15.00	12/06/2012
5746333	BH316E47	E47	16.50 - 17.00	12/06/2012
5746334	BH316E58	E58	20.50 - 21.00	13/06/2012
5746335	BH316E63	E63	22.50 - 23.00	13/06/2012

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



SDG: 120618-1  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 186016  
 Superseded Report:

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 4	X		X	X			X	
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 2		X				X		
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 2		X				X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 4	X		X	X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 4	X		X	X			X	
Anions by Kone (w)	All	NDPs: 0 Tests: 2		X				X		
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 4	X		X	X			X	
Boron Water Soluble	All	NDPs: 0 Tests: 4	X		X	X			X	
COD Unfiltered	All	NDPs: 0 Tests: 2		X				X		
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 2		X				X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 6	X	X	X	X	X	X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2		X				X		
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 2		X				X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 4	X		X	X			X	
Fluoride	All	NDPs: 0 Tests: 2		X				X		



**SDG:** 120618-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186016  
**Superseded Report:**

<b>SOLID</b> Results Legend X Test N No Determination Possible	Lab Sample No(s)		5746324	5746325	5746326	5746328	5746329	5746330
	Customer Sample Reference		BH306DE8	BH306DE9	BH306DE10	BH316E17	BH316E23	BH316E29
	AGS Reference		E8	E9	E10	E17	E23	E29
	Depth (m)		14.00	16.00	18.00	6.50 - 7.00	8.50 - 9.00	10.50 - 11.00
	Container		250g Amber Jar (AL 400g Tub (ALE214))	250g Amber Jar (AL 400g Tub (ALE214))	250g Amber Jar (AL 400g Tub (ALE214))	250g Amber Jar (AL 400g Tub (ALE214))	250g Amber Jar (AL 400g Tub (ALE214))	250g Amber Jar (AL 400g Tub (ALE214))
Free Sulphur	All	NDPs: 0 Tests: 2		X			X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4	X		X	X		X
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2		X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 2		X			X	
Metals by iCap-OES (Soil)	Aluminium	NDPs: 0 Tests: 4	X		X	X		X
	Antimony	NDPs: 0 Tests: 4	X		X	X		X
	Arsenic	NDPs: 0 Tests: 4	X		X	X		X
	Barium	NDPs: 0 Tests: 4	X		X	X		X
	Beryllium	NDPs: 0 Tests: 4	X		X	X		X
	Cadmium	NDPs: 0 Tests: 4	X		X	X		X
	Chromium	NDPs: 0 Tests: 4	X		X	X		X
	Copper	NDPs: 0 Tests: 4	X		X	X		X
	Lead	NDPs: 0 Tests: 4	X		X	X		X
	Manganese	NDPs: 0 Tests: 4	X		X	X		X
Mercury	NDPs: 0 Tests: 4	X		X	X		X	





SDG: 120618-1  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 186016  
 Superseded Report:

SOLID Results Legend  <input checked="" type="checkbox"/> Test  <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	5746324		BH306DE8		E8		14.00		250g Amber Jar (AL)	
	5746325		BH306DE9		E9		16.00		250g Amber Jar (AL)	
	5746326		BH306DE10		E10		18.00		250g Amber Jar (AL)	
	5746328		BH316E17		E17		6.50 - 7.00		250g Amber Jar (AL)	
5746329		BH316E23		E23		8.50 - 9.00		250g Amber Jar (AL)		
5746330		BH316E29		E29		10.50 - 11.00		250g Amber Jar (AL)		
Metals by iCap-OES (Soil)	Nickel	NDPs: 0 Tests: 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Selenium	NDPs: 0 Tests: 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Vanadium	NDPs: 0 Tests: 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Zinc	NDPs: 0 Tests: 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Metals Ultra Low	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
NRA Leachate	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
pH	All	NDPs: 0 Tests: 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
pH Value	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phenols by HPLC (S)	All	NDPs: 0 Tests: 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phenols by HPLC (W)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sample description	All	NDPs: 0 Tests: 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sulphide	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>





**SDG:** 120618-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186016  
**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
5746324	BH306DE8	14.00	Grey	Silty Clay Loam	<0.063 mm	None	None
5746325	BH306DE9	16.00	Grey	Silty Clay Loam	<0.063 mm	N/A	N/A
5746326	BH306DE10	18.00	Grey	Sandy Clay Loam	<0.063 mm	N/A	N/A
5746328	BH316E17	6.50 - 7.00	Grey	Silty Clay Loam	<0.063 mm	Stones	N/A
5746329	BH316E23	8.50 - 9.00	Grey	Silty Clay Loam	<0.063 mm	N/A	N/A
5746330	BH316E29	10.50 - 11.00	Dark Brown	Clay	<0.063 mm	Stones	N/A

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

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring 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.



**SDG:** 120618-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186016  
**Superseded Report:**

Results Legend			Customer Sample R		BH306DE8	BH306DE9	BH306DE10	BH316E17	BH316E23	BH316E29
#	ISO17025 accredited.									
M	mCERTS accredited.									
S	Deviating sample.									
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									
			<b>Depth (m)</b>							
			<b>Sample Type</b>							
			<b>Date Sampled</b>							
			<b>Sample Time</b>							
			<b>Date Received</b>							
			<b>SDG Ref</b>							
			<b>Lab Sample No.(s)</b>							
			<b>AGS Reference</b>							
<b>Component</b>	<b>LOD/Units</b>	<b>Method</b>								
Moisture content ratio	%	PM024			23			33	24	30
Tolulene Extractable Matter	<500 mg/kg	SUB			<500			<500	<500	<500
Ammoniacal Nitrogen as N	<15 mg/kg	TM024			76.8			66.7	25.5	<15
Alkalinity, Carbonate as CaCO3 (diss.filt) NRA	<2 mg/l	TM043				<2			<2	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)			<0.035			<0.035		<0.035
Carbon, Organic (diss.filt) NRA leach	<3 mg/l	TM090				7.99			6.34	
Ammoniacal Nitrogen as N NRA leach	<0.2 mg/l	TM099				5.11			1.28	
Sulphide NRA leach	<0.01 mg/l	TM101				<0.01			<0.01	
Fluoride NRA leach	<0.5 mg/l	TM104				<0.5			<0.5	
COD, unfiltered NRA leach	<7 mg/l	TM107				16.8			15.5	
Conductivity @ 20 deg.C NRA leach	<0.005 mS/cm	TM120				1.92			1.46	
Dissolved solids, Total (meter) NRA leach	<10 mg/l	TM123				1540			1160	
Sulphur, Total	<0.02 %	TM132			1.06			0.396	0.481	0.839
pH	1 pH Units	TM133			7.98			8.55	8.71	8.64
Chromium, Hexavalent	<0.6 mg/kg	TM151			<0.6			<0.6	<0.6	<0.6
Aluminium (diss.filt) NRA leach	<2.9 µg/l	TM152				37.7			42.2	
Antimony (diss.filt) NRA leach	<0.16 µg/l	TM152				7.41			1.51	
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152				12.4			4.51	
Barium (diss.filt) NRA leach	<0.03 µg/l	TM152				4.34			4.49	
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152				320			341	
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152				<0.1			<0.1	
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152				1.52			20.6	
Cobalt (diss.filt) NRA leach	<0.06 µg/l	TM152				0.294			<0.06	
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152				<0.85			1.21	
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152				2.79			0.443	
Manganese (diss.filt) NRA leach	<0.04 µg/l	TM152				34.3			6.86	
Molybdenum (diss.filt) NRA leach	<0.24 µg/l	TM152				26			26.1	
Phosphorus (diss.filt) NRA leach	<6.3 µg/l	TM152				291			138	
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152				4.53			2.13	
Thallium (diss.filt) NRA leach	<0.96 µg/l	TM152				<0.96			<0.96	
Tin (diss.filt) NRA leach	<0.36 µg/l	TM152				0.538			0.753	
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152				17			46.9	
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152				1.49			0.688	
Cyanide, Total	<1 mg/kg	TM153			<1			<1	<1	<1
Cyanide, Free	<1 mg/kg	TM153			<1			<1	<1	<1



## CERTIFICATE OF ANALYSIS

**SDG:** 120618-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186016  
**Superseded Report:**

Results Legend		Customer Sample R	BH306DE8	BH306DE9	BH306DE10	BH316E17	BH316E23	BH316E29
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	14.00	16.00	18.00	6.50 - 7.00	8.50 - 9.00	10.50 - 11.00
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
S	Deviating sample.		11/06/2012	13/06/2012	13/06/2012	12/06/2012	12/06/2012	12/06/2012
aq	Aqueous / settled sample.		16/06/2012	16/06/2012	16/06/2012	16/06/2012	16/06/2012	16/06/2012
diss.filt	Dissolved / filtered sample.		120618-1	120618-1	120618-1	120618-1	120618-1	120618-1
tot.unfilt	Total / unfiltered sample.		5746324	5746325	5746326	5746328	5746329	5746330
**	Subcontracted test.		E8	E9	E10	E17	E23	E29
**	% 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							
Component	LOD/Units		Method					
Cyanide, Complex	<1 mg/kg	TM153	<1		<1	<1		<1
Thiocyanate	<1 mg/kg	TM153	<1	M	<1	M	M	<1
Sulphide, Easily liberated	<15 mg/kg	TM180	67.7	#	51.6	#	37.6	#
Aluminium	<11 mg/kg	TM181	12000		9020		7150	
Antimony	<0.6 mg/kg	TM181	1.22	#	0.964	#	<0.6	#
Arsenic	<0.6 mg/kg	TM181	7.98	M	7.72	M	3.98	M
Barium	<0.6 mg/kg	TM181	22.4	#	20.1	#	7.89	#
Beryllium	<0.01 mg/kg	TM181	0.535	M	0.39	M	0.317	M
Cadmium	<0.02 mg/kg	TM181	0.338	M	0.291	M	0.205	M
Chromium	<0.9 mg/kg	TM181	53.2	M	31	M	16.4	M
Copper	<1.4 mg/kg	TM181	21	M	21.9	M	4.47	M
Lead	<0.7 mg/kg	TM181	31.8	M	29.8	M	9.07	M
Manganese	<0.13 mg/kg	TM181	938	M	528	M	222	M
Mercury	<0.14 mg/kg	TM181	<0.14	M	<0.14	M	<0.14	M
Nickel	<0.2 mg/kg	TM181	25.5	M	22.4	M	13.6	M
Selenium	<1 mg/kg	TM181	<1	#	<1	#	<1	#
Vanadium	<0.2 mg/kg	TM181	26.6	#	19	#	14	#
Zinc	<1.9 mg/kg	TM181	145	M	95	M	65.1	M
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183		<0.01			<0.01	
Sulphate NRA leach	<2 mg/l	TM184		60.1			85.5	
Chloride NRA leach	<2 mg/l	TM184		579			392	
Nitrate as NO3 NRA leach	<0.3 mg/l	TM184		<0.3			<0.3	
PCB congener 28 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015	
PCB congener 52 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015	
PCB congener 101 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015	
PCB congener 118 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015	
PCB congener 138 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015	
PCB congener 153 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015	
PCB congener 180 NRA leach	<0.015 µg/l	TM197		<0.015			<0.015	
Sum of detected EC7 PCB's NRA leach	<0.105 µg/l	TM197		<0.105			<0.105	
Sulphate, Total	<48 mg/kg	TM221	5790	M	2070	M	3410	M
Total sulphur	<0.0016 %	TM221	0.193		0.0691		0.114	
Boron, water soluble	<1 mg/kg	TM222	8.88	M	5.33	M	4.21	M
Calcium	<21 mg/kg	TM224	53300		66800		91100	
Magnesium	<8 mg/kg	TM224	8890		7840		5600	





**CERTIFICATE OF ANALYSIS**

**SDG:** 120618-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186016  
**Superseded Report:**

**PAH Spec MS - Aqueous (W)**

Results Legend		Customer Sample R	BH306DE9	BH316E23				
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>						
M	mCERTS accredited.		16.00	8.50 - 9.00				
S	Deviating sample.		Soil/Solid	Soil/Solid				
aq	Aqueous / settled sample.		13/06/2012	12/06/2012				
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		16/06/2012	16/06/2012				
(F)	Trigger breach confirmed		120618-1	120618-1				
			5746325	5746329				
		E9	E23					
Component	LOD/Units	Method						
Naphthalene (aq) NRA leach	<0.1 µg/l	TM178	0.24	0.154				
Acenaphthene (aq) NRA leach	<0.015 µg/l	TM178	0.203	<0.015				
Acenaphthylene (aq) NRA leach	<0.011 µg/l	TM178	<0.011	<0.011				
Fluoranthene (aq) NRA leach	<0.017 µg/l	TM178	0.0542	0.0312				
Anthracene (aq) NRA leach	<0.015 µg/l	TM178	<0.015	<0.015				
Phenanthrene (aq) NRA leach	<0.022 µg/l	TM178	0.0355	0.0399				
Fluorene (aq) NRA leach	<0.014 µg/l	TM178	0.0322	<0.014				
Chrysene (aq) NRA leach	<0.013 µg/l	TM178	0.0141	<0.013				
Pyrene (aq) NRA leach	<0.015 µg/l	TM178	0.0476	0.0208				
Benzo(a)anthracene (aq) NRA leach	<0.017 µg/l	TM178	<0.017	<0.017				
Benzo(b)fluoranthene (aq) NRA leach	<0.023 µg/l	TM178	<0.023	<0.023				
Benzo(k)fluoranthene (aq) NRA leach	<0.027 µg/l	TM178	<0.027	<0.027				
Benzo(a)pyrene (aq) NRA leach	<0.009 µg/l	TM178	<0.009	<0.009				
Dibenzo(a,h)anthracene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016				
Benzo(g,h,i)perylene (aq) NRA leach	<0.016 µg/l	TM178	<0.016	<0.016				
Indeno(1,2,3-cd)pyrene (aq) NRA leach	<0.014 µg/l	TM178	<0.014	<0.014				
PAH, Total Detected USEPA 16 (aq) NRA leach	<0.247 µg/l	TM178	0.626	<0.247				



SDG: 120618-1  
 Job: D\_PRIORGEOT\_CRK-44  
 Client Reference: P12030

Location: Haulbowline  
 Customer: Priority Geotechnical Ltd  
 Attention: Colette Kelly

Order Number: 4559  
 Report Number: 186016  
 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
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306DE10 E 10 18.00 SOLID 13/06/2012 00:00:00  120618-1 5746326 TM048	25/06/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH306DE8 E 8 14.00 SOLID 11/06/2012 00:00:00 25/06/2012 10:33:18 120618-1 5746324 TM048	25/06/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH316E17 E 17 6.50 - 7.00 SOLID 12/06/2012 00:00:00  120618-1 5746328 TM048	25/06/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH316E29 E 29 10.50 - 11.00 SOLID 12/06/2012 00:00:00  120618-1 5746330 TM048	25/06/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected





**SDG:** 120618-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186016  
**Superseded Report:**

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB		Subcontracted Test		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
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: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water		
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		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
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		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		
TM243		Mixed Anions In Soils By Kone		



## CERTIFICATE OF ANALYSIS

<b>SDG:</b> 120618-1	<b>Location:</b> Haulbowline	<b>Order Number:</b> 4559
<b>Job:</b> D_PRIORGEOT_CRK-44	<b>Customer:</b> Priority Geotechnical Ltd	<b>Report Number:</b> 186016
<b>Client Reference:</b> P12030	<b>Attention:</b> Colette Kelly	<b>Superseded Report:</b>

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
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		
TM294		Determination of Free Sulphur in liquids by HPLC		
TM307		Ultra Low Metals		

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



**SDG:** 120618-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186016  
**Superseded Report:**

### Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	5746324	5746325	5746326	5746328	5746329	5746330
	BH306DE8	BH306DE9	BH306DE10	BH316E17	BH316E23	BH316E29
AGS Ref.	E8	E9	E10	E17	E23	E29
Depth	14.00	16.00	18.00	6.50 - 7.00	8.50 - 9.00	10.50 - 11.00
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkali Metals by iCap-OES (Soil)	26-Jun-2012		26-Jun-2012	26-Jun-2012		26-Jun-2012
Alkalinity Filtered as CaCO3		26-Jun-2012			26-Jun-2012	
Ammoniacal Nitrogen		26-Jun-2012			26-Jun-2012	
Ammonium Soil by Titration	26-Jun-2012		25-Jun-2012	26-Jun-2012		25-Jun-2012
Anions by Kone (soil)	26-Jun-2012		26-Jun-2012	26-Jun-2012		26-Jun-2012
Anions by Kone (w)		27-Jun-2012			27-Jun-2012	
Asbestos Identification (Soil)	25-Jun-2012		25-Jun-2012	25-Jun-2012		25-Jun-2012
Boron Water Soluble	25-Jun-2012		25-Jun-2012	25-Jun-2012		25-Jun-2012
COD Unfiltered		27-Jun-2012			27-Jun-2012	
Conductivity (at 20 deg.C)		26-Jun-2012			26-Jun-2012	
Cyanide Comp/Free/Total/Thiocyanate	25-Jun-2012	26-Jun-2012	25-Jun-2012	25-Jun-2012	26-Jun-2012	25-Jun-2012
Dissolved Metals by ICP-MS		27-Jun-2012			27-Jun-2012	
Dissolved Organic/Inorganic Carbon		27-Jun-2012			27-Jun-2012	
Easily Liberated Sulphide	25-Jun-2012		25-Jun-2012	25-Jun-2012		25-Jun-2012
Fluoride		27-Jun-2012			27-Jun-2012	
Free Sulphur		27-Jun-2012			27-Jun-2012	
Hexavalent Chromium (s)	25-Jun-2012		25-Jun-2012	25-Jun-2012		25-Jun-2012
Hexavalent Chromium (w)		27-Jun-2012			27-Jun-2012	
Mercury Dissolved		27-Jun-2012			27-Jun-2012	
Metals by iCap-OES (Soil)	25-Jun-2012		25-Jun-2012	25-Jun-2012		25-Jun-2012
Metals by iCap-OES Dissolved (W)		27-Jun-2012			27-Jun-2012	
Metals Ultra Low		27-Jun-2012			27-Jun-2012	
Nitrite by Kone (w)		27-Jun-2012			27-Jun-2012	
NRA Leachate		22-Jun-2012			22-Jun-2012	
PAH Spec MS - Aqueous (W)		27-Jun-2012			27-Jun-2012	
PCB Congeners - Aqueous (W)		27-Jun-2012			27-Jun-2012	
pH	22-Jun-2012		22-Jun-2012	22-Jun-2012		22-Jun-2012
pH Value		26-Jun-2012			26-Jun-2012	
Phenols by HPLC (S)	25-Jun-2012		26-Jun-2012	25-Jun-2012		25-Jun-2012
Phenols by HPLC (W)		27-Jun-2012			27-Jun-2012	
Sample description	20-Jun-2012	20-Jun-2012	20-Jun-2012	20-Jun-2012	20-Jun-2012	20-Jun-2012
Sulphide		27-Jun-2012			27-Jun-2012	
Toluene extractable matter*	29-Jun-2012		29-Jun-2012	29-Jun-2012		29-Jun-2012
Total Dissolved Solids on Leachates		26-Jun-2012			26-Jun-2012	
Total Sulphate	25-Jun-2012		25-Jun-2012	25-Jun-2012		25-Jun-2012
Total Sulphur	26-Jun-2012		27-Jun-2012	26-Jun-2012		26-Jun-2012
TPH by IR Oils and Greases		27-Jun-2012			27-Jun-2012	



# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

Hadfield House  
Hadfield Street  
Cornbrook  
Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

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

**Report Number:** 284519-1

**Date of Report:** 29-Jun-2012

**Customer:** ALcontrol Laboratories Ltd  
Units 7-8 Hawarden Business Park  
Manor Road  
(Off Manor Lane)  
Hawarden  
Deeside  
Flintshire  
CH5 3US

**Customer Contact:** Hawarden Subcontracts

**Customer Job Reference:** 120618-1

**Date Job Received at SAL:** 26-Jun-2012

**Date Analysis Started:** 27-Jun-2012

**Date Analysis Completed:** 28-Jun-2012

The results reported relate to samples received in the laboratory  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs

Report checked  
and authorised by :  
Annie Hennis  
Project Manager

Issued by :  
Annie Hennis  
Project Manager



**SDG:** 120618-1  
**Job:** D\_PRIORGEOT\_CRK-44  
**Client Reference:** P12030

**Location:** Haulbowline  
**Customer:** Priority Geotechnical Ltd  
**Attention:** Colette Kelly

**Order Number:** 4559  
**Report Number:** 186016  
**Superseded Report:**

## Appendix

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

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

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 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.

## SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOX THERM	GC-MS
HERBICIDES	D&C	HEXANE ACETONE	SOX THERM	GC-MS
PESTICIDES	D&C	HEXANE ACETONE	SOX THERM	GC-MS
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 CWGBY GC	D&C	HEXANE ACETONE	END OVER END	GC-FID
PCBAROCLOR 1254/PCB CON	D&C	HEXANE ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE ACETONE	MICROWAVE TM218.	GC-MS
>C6C40	WET	HEXANE ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE ACETONE	SHAKER	GC-FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM ACETONE	SONICATE	GC-MS

## LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
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
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC-MS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOPOPP	DCM	LIQUID/LIQUID SHAKE	GC-MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC-MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC-MS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	R
MINERAL OIL BY R	TCE	STIRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DIRECT INJECTION	GC-FID

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description 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).

### 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.

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

Column Test in accordance to NEN 7373 / CMA/2/II/A.9.1



SDG  
Customer  
Client reference  
Date

120627-67  
Priority Geotechnical  
Sample BH310C  
18th September 2012

Column Data

Fraction	Fraction Date	L/S fraction	L/S cumulative	pH
1	11/07/2012	0.1	0.10	12.76
2	12/07/2012	0.1	0.20	12.70
3	13/07/2012	0.3	0.50	12.73
4	16/07/2012	0.5	1.00	12.72
5	18/07/2012	1.0	2.00	12.71
6	25/07/2012	3.0	5.00	12.85
7	06/08/2012	5.0	10.00	12.58

Data Analysis

Fraction	1	2	3	4	5	6	7	Report limit (µg/L)
Component	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Arsenic	0.7	0.614	0.437	0.291	0.167	0.0	0	0.12
Boron	93.4	101	91.6	62.6	73	65.8	109	9.4
Cadmium	0.0	0.112	0	0	0.00	0.00	0.00	0.1
Chromium	48.4	39.1	32.4	25	11	3	5	0.22
Copper	17.8	12.50	8.62	7.31	4.35	4.03	2.14	0.85
Lead	376	356	268	175	76.3	24.8	57.9	0.02
Mercury	0.00	0.00	0.00	0.0102	0.00	0.01	0.00	0.01
Nickel	7.21	7	7	7.01	7.11	6.15	4	0.15
Selenium	3	3	2	2	3	3	2.44	0.39
Vanadium	0	0	0	0	0	0	0	0.24
Zinc	26.2	18	14	16.5	10	9	4	0.41

Lower Emission Limit Calculation

Fraction	1	2	3	4	5	6	7
Component	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds
Arsenic	0.000	0.000	0.000	0.00	0.00	0.00	0.00
Boron	0.01	0.01	0.03	0.03	0.07	0.20	0.55
Cadmium	0.00	0.000	0.000	0.000	0.000	0.00	0.00
Chromium	0.00	0.00	0.01	0.01	0.01	0.01	0.02
Copper	0.00	0.001	0.003	0.004	0.004	0.012	0.011
Lead	0.04	0.04	0.08	0.09	0.08	0.07	0.29
Mercury	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nickel	0.0	0.0	0	0.0	0	0	0
Selenium	0.00	0.00	0.0	0.0	0.0	0.0	0.0
Vanadium	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zinc	0	0	0	0	0	0	0.0

Upper Emission Limit Calculation

Fraction	1	2	3	4	5	6	7
Component	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds
Arsenic	0.000	0.000	0.000	0.000	0.00	0.00	0.00
Boron	0.01	0.01	0.03	0.03	0.07	0.20	0.55
Cadmium	0.000	0.000	0.000	0.000	0.000	0.00	0.00
Chromium	0.00	0.00	0.01	0.01	0.01	0.01	0.02
Copper	0.002	0.001	0.003	0.004	0.00	0.01	0.01
Lead	0.04	0.04	0.08	0.09	0.08	0.07	0.29
Mercury	0.000	0.000	0.000	0.00	0.00	0.00	0.00
Nickel	0.0	0.0	0	0.0	0	0	0
Selenium	0.00	0.00	0.0	0.0	0.0	0.0	0.0
Vanadium	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zinc	0	0	0	0	0	0	0.0

Cumulative Emissions

Component	Emission L/S=10 (lower) mg/Kgds	Emission L/S=10 (upper) mg/Kgds
Arsenic	0.00	0.00
Boron	0.89	0.89
Cadmium	0.00	0.00
Chromium	0.07	0.07
Copper	0.036	0.04
Lead	0.68	0.68
Mercury	0.000	0.00
Nickel	0	0
Selenium	0	0
Vanadium	0	0
Zinc	0	0

Column Test in accordance to NEN 7373 / CMA/2/II/A.9.1



SDG **120627-67**  
 Customer Priority Geotechnical  
 Client reference Sample BH307  
 Date 18th September 2012

Column Data

Fraction	Fraction Date	L/S fraction	L/S cumulative	pH
1	11/07/2012	0.1	0.10	11.84
2	12/07/2012	0.1	0.20	11.89
3	13/07/2012	0.3	0.50	11.92
4	16/07/2012	0.5	1.00	11.97
5	18/07/2012	1.0	2.00	11.99
6	23/07/2012	3.0	5.00	12.04
7	01/08/2012	5.0	10.00	12.02

Data Analysis

Fraction	1	2	3	4	5	6	7	Report limit (µg/L)
Component	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Arsenic	3.7	2.71	1.77	1.24	0.399	0.2	0.164	0.12
Boron	273	294	232	249	227	239	200	9.4
Cadmium	1.6	1.01	0.589	0.186	0.00	0.00	0.00	0.1
Chromium	118	74.9	45.2	27	15	11	11	0.22
Copper	13.8	7.93	5.17	3.54	1.79	1.61	1.74	0.85
Lead	2	2	1	1	1.1	1.4	1.1	0.02
Mercury	0.02	0.01	0.00	0	0.00	0.00	0.00	0.01
Nickel	6.85	6	4	2.65	1.79	1.28	1	0.15
Selenium	14	10	6	4	2	3	3.84	0.39
Vanadium	2.62	1.6	1.13	1.36	1.83	4	9	0.24
Zinc	3.39	4	1	1.27	0	0	1	0.41

Lower Emission Limit Calculation

Fraction	1	2	3	4	5	6	7
Component	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds
Arsenic	0.000	0.000	0.001	0.00	0.00	0.00	0.00
Boron	0.03	0.03	0.07	0.12	0.23	0.72	1.00
Cadmium	0.00	0.000	0.000	0.000	0.000	0.00	0.00
Chromium	0.01	0.01	0.01	0.01	0.01	0.03	0.06
Copper	0.00	0.001	0.002	0.002	0.002	0.005	0.009
Lead	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Mercury	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nickel	0.0	0.0	0	0.0	0	0	0
Selenium	0.00	0.00	0.0	0.0	0.0	0.0	0.0
Vanadium	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zinc	0	0	0	0	0	0	0.0

Upper Emission Limit Calculation

Fraction	1	2	3	4	5	6	7
Component	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds	mg/Kgds
Arsenic	0.000	0.000	0.001	0.001	0.00	0.00	0.00
Boron	0.03	0.03	0.07	0.12	0.23	0.72	1.00
Cadmium	0.000	0.000	0.000	0.000	0.000	0.00	0.00
Chromium	0.01	0.01	0.01	0.01	0.01	0.03	0.06
Copper	0.001	0.001	0.002	0.002	0.00	0.00	0.01
Lead	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Mercury	0.000	0.000	0.000	0.00	0.00	0.00	0.00
Nickel	0.0	0.0	0	0.0	0	0	0
Selenium	0.00	0.00	0.0	0.0	0.0	0.0	0.0
Vanadium	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zinc	0	0	0	0	0	0	0.0

Cumulative Emissions

Component	Emission L/S=10 (lower) mg/Kgds	Emission L/S=10 (upper) mg/Kgds
Arsenic	0.00	0.00
Boron	2.19	2.19
Cadmium	0.00	0.00
Chromium	0.15	0.15
Copper	0.021	0.02
Lead	0.01	0.01
Mercury	0.000	0.00
Nickel	0	0
Selenium	0	0
Vanadium	0	0
Zinc	0	0