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**HAULBOWLINE EAST TIP –
EXPLORATORY GROUND INVESTIGATION
FACTUAL REPORT
NO. P12030
VOL. 4**

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Cork County Council

Environmental Directorate,
Cork County Council,
Inniscara,
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LABORATORY RESULTS – WATER

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Type:	BH116
Sampling Point:	19/06/2012
Grid Reference:	Groundwater
Standpipe Diameter:	50
Water Level Reference Point:	8.95
Reduced Level of Reference Point:	Top of pvc casing
Base of Well mb datum:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	2.97 @17:47
Tidal Conditions:	Low tide at 12:30; High tide @ 18:28
Well Volume:	0.012
3 Well Volumes:	0.035
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
19/06/2012	17:48	-	-	-	-	-	-	-	-	Start purging
19/06/2012	17:50	-	12	7.87	14.17	-	1.10	9.00	43.88	
19/06/2012	17:52	-	25	7.94	14.25	-330.1	0.00	0.00	42.75	

Sampling Record

Volume purged before sampling (m ³):	0.025
Sample ID (plus duplicates if any)	966673
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	18:00
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH116
Date:	19/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	8.95
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	2.84 @11:51
Tidal Conditions:	Low tide at 12:30; High tide @ 18:28
Well Volume (m ³):	0.012
3 Well Volumes (m ³):	0.036
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
19/06/2012	12:00	-	-	-	-	-	-	-	-	Start purging
19/06/2012	12:15	-	1	8.35	-	-460.5	0.00	0.00	23.97	Dark grey/black discharge with some silt, rotten eggs odour
19/06/2012	-	-	12	7.56	17.10	-362.7	0.50	1.50	43.63	Discharge becoming clearer, still grey/black colour
19/06/2012	-	-	24	7.63	15.96	-348.2	0.53	4.50	43.63	Discharge almost clear, strong odour still present
19/06/2012	-	-	36	7.69	15.59	-343.6	0.18	1.60	43.56	
19/06/2012	-	-	48	7.73	15.68	-341.6	1.52	21.30	43.42	-
19/06/2012	13:36	-	69	7.76	15.06	-339.1	0.00	0.00	42.41	-

Sampling Record

Volume purged before sampling (m ³):	0.069
Sample ID (plus duplicates if any)	782115
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	12:45
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH117
Date:	05/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	12.0
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	2.43 @ 18:26
Tidal Conditions:	High tide at 19:04
Well Volume (m ³):	0.012
3 Well Volumes (m ³):	0.035
Purging Device:	Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
05/06/2012	18:27	-	-	-	-	-	-	-	-	Start purging manually with Waterra tubing
05/06/2012	18:45	-	25	9.28	13.59	-	1.76	10.30	32.84	

Sampling Record

Volume purged before sampling (m ³):	0.025
Sample ID (plus duplicates if any)	221777
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	18:50
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH117
 Date: 05/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 8.40
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Dry, overcast
 Initial Water Level mb reference point: 2.07 @ 11:04
 Tidal Conditions: Low tide @ 13:14
 Well Volume (m³): 0.012
 3 Well Volumes (m³): 0.037
 Purging Device: Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
05/06/2012	11:55	-	-	-	-	-	-	-	-	Start purging manually with Waterra tubing
05/06/2012	12:00	-	5	8.79	12.86	-	4.34	46.60	29.80	-
05/06/2012	12:04	-	20	8.80	12.54	-	4.16	45.40	32.20	-
05/06/2012	12:10	-	40	8.80	12.61	-	4.32	43.90	31.62	Dark brown silty discharge, no odour
05/06/2012	12:25	-	50	8.82	12.58	-	3.75	38.90	31.82	Dark brown silty discharge, no odour
05/06/2012	12:30	-	60	8.76	12.64	-	4.26	42.50	31.37	Dark brown silty discharge, no odour
Stopped purging @ 12:30, commenced purging again @ 12:45										
05/06/2012	12:55	-	70	8.79	13.09	-	4.00	42.60	31.52	Discharge remained dark brown & silty, no odour

Sampling Record

Volume purged before sampling (m³): 0.1
 Sample ID (plus duplicates if any) 118900
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 13:16
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH117R
Date:	26/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	22.50
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Scattered showers, windy, mainly dry
Initial Water Level mb reference point:	3.025 @ 08:46
Tidal Conditions:	Low tide at 17:13; High tide @ 10:44
Well Volume (m ³):	0.038
3 Well Volumes (m ³):	0.115
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
26/06/2012	09:08	0.25	132	9.38	13.39	-32	0.57	6.10	36.17	
26/06/2012	09:12	-	-	9.29	13.51	-22.50	0.57	6.20	36.61	
26/06/2012	09:19	-	-	9.22	13.57	-8.60	0.56	6.30	37.22	
26/06/2012	09:23	-	-	9.21	13.50	-3.50	0.54	6.00	37.22	

Sampling Record

Volume purged before sampling (m ³):	>0.132
Sample ID (plus duplicates if any)	907491
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	09:24
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 132 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise
 First 12 litres purged was light brown in colour (fine grained sand)
 From 60 litres, the water was slightly turbid, grey in colour

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH117R
Date:	26/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	22.50
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Scattered showers, windy, mainly dry
Initial Water Level mb reference point:	4.325 @ 18:06
Tidal Conditions:	Low tide at 17:13; High tide @ 10:44
Well Volume (m ³):	0.036
3 Well Volumes (m ³):	0.108
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
26/06/2012	18:32	0.15	171	8.98	13.77	-7.3	0.00	0.00	37.01	
26/06/2012	18:39	-	-	8.86	13.77	-21.60	0.00	0.00	38.04	

Sampling Record

Volume purged before sampling (m ³):	>0.171
Sample ID (plus duplicates if any)	225370
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	18:40
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 171 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH118
 Date: 25/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 13.10
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Overcast, scattered showers, windy
 Initial Water Level mb reference point: 2.965 @ 08:21
 Tidal Conditions: Low tide at 16:24; High tide @ 09:56
 Well Volume (m³): 0.02
 3 Well Volumes (m³): 0.06
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Waterra tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO ppm	DO %	EC ms/cm	Remarks
25/06/2012	08:42	0.25	72	8.70	13.66	21.7	4.40	44.00	44.59	Brown, turbid, silty
25/06/2012	08:45	-	-	8.73	12.82	22.90	2.69	29.60	44.60	Slightly turbid
25/06/2012	08:46	-	-	8.77	12.77	24.70	2.46	27.30	44.54	Clear
25/06/2012	08:48	-	-	8.76	12.76	26.00	2.33	25.80	44.60	Clear
25/06/2012	08:50	-	-	8.80	12.76	26.90	2.22	24.70	44.70	Clear

Sampling Record

Volume purged before sampling (m³): >0.102
 Sample ID (plus duplicates if any): 475461
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 08:50
 Low/High Tide: High
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Minimum 72 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH118
 Date: 25/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 13.10
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Overcast, scattered showers, windy
 Initial Water Level mb reference point: 4.04 @ 17:20
 Tidal Conditions: Low tide at 16:24; High tide @ 09:56
 Well Volume (m³): 0.018
 3 Well Volumes (m³): 0.054
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Waterra tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
25/06/2012	17:33	0.10	72	9.14	12.97	9.7	0.42	4.70	43.18	
25/06/2012	17:40	-	-	9.04	12.84	15.40	0.40	4.50	43.66	
25/06/2012	17:42	-	-	9.01	12.80	16.90	0.39	4.40	43.58	
25/06/2012	17:45	-	-	8.99	12.78	17.80	0.39	4.40	43.79	
25/06/2012	17:50	-	-	8.94	12.73	19.30	0.38	4.20	43.67	
25/06/2012	17:52	-	-	8.92	12.72	20.10	0.39	4.33	43.71	

Sampling Record

Volume purged before sampling (m³): >0.072
 Sample ID (plus duplicates if any): 543939
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 17:52
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Minimum 72 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH119
Date:	20/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	8.60
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	3.47 @ 12:25
Tidal Conditions:	Low tide at 13:04; High tide @ 19:04
Well Volume (m ³):	0.010
3 Well Volumes (m ³):	0.030
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
20/06/2012	12:31	0.09	-	-	-	-	-	-	-	Start purging
20/06/2012	12:33	0.09	12	-	15.32	68.8	3.24	18.10	40.69	Grey/black cloudy discharge initially, strong rotten eggs odour
20/06/2012	12:35	0.09	23	-	14.99	-25.40	1.81	16.20	40.91	Discharge cleared, odour remained
20/06/2012	12:38	0.08	32	8.11	16.59	-11.20	1.49	15.30	30.13	
20/06/2012	12:42	0.08	51	8.11	16.43	-9.22	1.36	14.20	29.21	

Sampling Record

Volume purged before sampling (m ³):	0.051
Sample ID (plus duplicates if any)	215078
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	12:42
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH119
Date:	20/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	8.60
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	-
Tidal Conditions:	Low tide at 13:04; High tide @ 19:04
Well Volume (m ³):	0.010
3 Well Volumes (m ³):	0.030
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
20/06/2012	17:48	0.09	-	-	-	-	-	-	-	Started purging
20/06/2012	18:00	0.09	37	8.30	15.05	-283.3	1.21	13.80	42.33	Grey/black cloudy discharge initially, cleared after few minutes, strong rotten eggs odour

Sampling Record

Volume purged before sampling (m ³):	0.037
Sample ID (plus duplicates if any):	74622
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	18:00
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH120
 Date: 20/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 10.70
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Dry, overcast
 Initial Water Level mb reference point: 3.54 @ 13:44PM
 Tidal Conditions: Low tide at 13:04; High tide @ 19:04
 Well Volume (m³): 0.014
 3 Well Volumes (m³): 0.042
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	Eh	DO ppm	DO %	EC ms/cm	Remarks
20/06/2012	18:18	0.20	-	-	-	-	-	-	-	Start purging
20/06/2012	18:23	0.20	12	-	-	-	-	-	-	Grey/black cloudy discharge with moderately strong unpleasant odour
20/06/2012	18:25	0.20	36	8.72	14.17	-259.9	0.18	1.10	18.26	Discharge became slightly clearer, odour remained

Sampling Record

Volume purged before sampling (m³): 0.036
 Sample ID (plus duplicates if any): 364540
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 13:56
 Low/High Tide: High
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH120
Date:	20/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	10.70
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	3.54 @13.44
Tidal Conditions:	Low tide at 13:04; High tide @ 19:04
Well Volume (m ³):	0.014
3 Well Volumes (m ³):	0.042
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed at bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
20/06/2012	13:49	0.21	-	-	-	-	-	-	-	Start purging
20/06/2012	13:51	0.21	25	6.83	15.29	-272.6	0.00	0.00	17.23	Discharge dark grey/black in colour with pungent/rotten eggs odour
20/06/2012	13:54	0.20	60	8.19	14.83	-334.60	0.00	0.00	27.71	Discharge becoming slightly clearer, strong odour still present
20/06/2012	14:05	0.20	180	7.10	15.73	-338.40	0.00	0.00	31.68	Discharge almost clear, strong odour still present

Sampling Record

Volume purged before sampling (m ³):	0.180
Sample ID (plus duplicates if any)	282822
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	14:05
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH122
 Date: 20/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 29.9
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Dry, overcast
 Initial Water Level mb reference point: -
 Tidal Conditions: Low tide at 13:04; High tide @ 19:04
 Well Volume (m³): 0.052
 3 Well Volumes (m³): 0.156
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
20/06/2012										
20/06/2012	19:33	0.21	24	-	-	-	-	-	-	Grey/black cloudy discharge initially, moderately strong odour of rotten eggs
20/06/2012	19:35	0.21	36	7.46	13.85	-71.30	1.16	12.20	47.28	Discharge cleared slightly, odour remained

Sampling Record

Volume purged before sampling (m³): 0.036
 Sample ID (plus duplicates if any): 419835
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 19:35
 Low/High Tide: High
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH122
Date:	20/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	29.9
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	3.41 @ 14:30PM
Tidal Conditions:	Low tide at 13:04; High tide @ 19:04
Well Volume (m ³):	0.052
3 Well Volumes (m ³):	0.156
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
20/06/2012	14:56	0.22	60	8.42	16.46	-161.6	0.66	6.30	46.66	Discharge clear from start but with strong rotten eggs odour
20/06/2012	15:00	0.22	120	7.91	15.34	-126.60	1.10	10.40	46.44	
20/06/2012	15:04	0.22	180	7.79	14.92	-115.80	1.05	8.60	46.64	

Sampling Record

Volume purged before sampling (m ³):	0.180
Sample ID (plus duplicates if any)	733743
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	15:04
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH125
 Date: 05/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 10.54
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Light rain
 Initial Water Level mb reference point: 3.23
 Tidal Conditions: High tide @ 19:04
 Well Volume (m³): 0.014
 3 Well Volumes (m³): 0.043
 Purging Device: Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
05/06/2012	17:55	-	-	-	-	-	-	-	-	Start purging manually with Waterra tubing
05/06/2012	18:05	-	15	10.80	12.64	-	0.00	0.00	44.01	
05/06/2012	18:10	-	20	9.88	12.34	-150.00	0.00	0.00	44.37	
05/06/2012	18:20	-	30	9.61	13.02	-121.10	0.00	0.00	41.18	

Sampling Record

Volume purged before sampling (m³): 0.0
 Sample ID (plus duplicates if any): 585333
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 18:22
 Low/High Tide: High
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH125
 Date: 05/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 10.54
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Dry, overcast
 Initial Water Level mb reference point: 3.14
 Tidal Conditions: Low tide @ 13:14
 Well Volume (m³): 0.015
 3 Well Volumes (m³): 0.044
 Purging Device: Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
05/06/2012	13:45	-	-	-	-	-	-	-	-	Start purging manually with Waterra tubing
05/06/2012	13:52	-	5	9.26	13.06	-	0.91	9.70	45.57	Discharge dark grey, moderately silty, no odour
05/06/2012	-	-	15	9.35	12.50	-	0.00	0.00	43.60	-
05/06/2012	-	-	35	9.44	12.40	-136.80	0.00	0.00	43.20	Dark grey silty discharge , odour of coal??
05/06/2012	-	-	55	9.43	12.38	-127.70	0.00	0.00	43.48	-
05/06/2012	-	-	75	9.41	12.47	-123.90	0.00	0.00	43.56	-

Sampling Record

Volume purged before sampling (m³): 0.075
 Sample ID (plus duplicates if any) 731222
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 14:20
 Low/High Tide: Low
 Sample containers:
 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH125R
Date:	02/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	30.0
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	-
Tidal Conditions:	Low tide at 11:06; High tide @ 17:04
Well Volume (m ³):	0.051
3 Well Volumes (m ³):	0.152
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
02/07/2012	15:42	0.15	-	-	-	-	-	-	-	Start purging
02/07/2012	15:50	0.15	72	-	-	-	-	-	-	Discharge v. brown, silty/sandy for first 3 mins, became cloudy with visible suspended solids, no odour
02/07/2012	15:52	0.08	82	8.94	14.61	-194.00	0.30	1.40	38.08	
02/07/2012	15:54	0.08	92	8.65	15.01	-204.50	0.00	0.00	38.24	
02/07/2012	15:58	0.08	112	8.56	14.39	-221.50	0.35	3.80	38.26	Air bubbles visible in Wattera tubing

Sampling Record

Volume purged before sampling (m ³):	0.112
Sample ID (plus duplicates if any)	353699
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	16:00
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH125R
Date:	02/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	30.0
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	4.19 @ 09:51AM
Tidal Conditions:	Low tide at 11:06; High tide @ 17:04
Well Volume (m ³):	0.051
3 Well Volumes (m ³):	0.152
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
02/07/2012	11:58	0.13	-	-	-	-	-	-	-	Start purging
02/07/2012	12:03	0.13	39	-	-	-	-	-	-	Discharge v brown, silty/sandy for first 5 mins, became slightly clearer after this, no odour
02/07/2012	12:22	0.13	172	8.78	13.61	-364.40	0.00	0.00	37.45	Discharge light brown cloudy with visible suspended solids, never cleared
02/07/2012	12:24	0.08	182	8.96	13.59	-410.80	0.00	0.00	37.82	
02/07/2012	12:28	0.08	201	9.00	13.58	-424.30	0.00	0.00	37.96	
02/07/2012	12:31	0.08	215	9.00	13.57	-417.60	0.00	0.00	38.00	

Sampling Record

Volume purged before sampling (m ³):	0.215
Sample ID (plus duplicates if any)	871985
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	12:35
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH126
Date:	20/96/12
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	11.50
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	-
Tidal Conditions:	Low tide at 13:04; High tide @ 19:04
Well Volume (m ³):	0.020
3 Well Volumes (m ³):	0.061
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
20/06/2012	18:53	0.19	-	-	-	-	-	-	-	Strong odour of rotten eggs, discharge slightly cloudy initially
20/06/2012	19:00	0.19	36	7.54	13.84	-334.8	0.21	1.60	40.56	Discharge almost clear, odour remained

Sampling Record

Volume purged before sampling (m ³):	0.036
Sample ID (plus duplicates if any)	345730
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	19:00
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH126
Date:	20/96/12
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	11.50
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	1.12 @ 14:17PM
Tidal Conditions:	Low tide at 13:04; High tide @ 19:04
Well Volume (m ³):	0.020
3 Well Volumes (m ³):	0.061
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
20/06/2012	14:21	0.18	-	-	-	-	-	-	-	Start purging
20/06/2012	14:23	0.18	22	7.66	14.10	-334.2	0.58	5.20	40.03	Strong odour of rotten eggs, discharge slightly cloudy initially
20/06/2012	14:25	0.18	43	7.51	14.20	-342.2	0.87	5.30	39.29	Discharge almost clear, odour remained
20/06/2012	14:29	0.18	97	7.30	14.12	-342.7	0.00	0.00	38.30	

Sampling Record

Volume purged before sampling (m ³):	0.097
Sample ID (plus duplicates if any)	880167
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	14:30
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH127
Date:	19/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	9.28
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	3.65 @ 17:11
Tidal Conditions:	Low tide @ 12:30; High tide at 18:28
Well Volume (m ³):	0.011
3 Well Volumes (m ³):	0.033
Purging Device:	Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
19/06/2012	17:12	-	-	-	-	-	-	-	-	Start purging
19/06/2012	17:15	-	24	9.13	13.60	-288.6	0.00	0.00	46.41	
19/06/2012	17:25	-	60	9.07	13.48	-272.6	0.00	0.00	45.97	

Sampling Record

Volume purged before sampling (m ³):	0.060
Sample ID (plus duplicates if any)	355340
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	17:30
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH127
 Date: 19/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 9.28
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Dry, overcast
 Initial Water Level mb reference point: 4.21 @ 13:14
 Tidal Conditions: Low tide @ 12:30; High tide at 18:28
 Well Volume (m³): 0.010
 3 Well Volumes (m³): 0.030
 Purging Device: Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
19/06/2012	13:27	-	-	-	-	-	-	-	-	Start purging
19/06/2012	13:30	-	10	8.93	14.76	-212.4	2.53	26.10	45.52	Blackish discharge initially, strong pungent odour, became slightly clearer after 10 l
19/06/2012	-	-	36	9.92	13.90	-229.9	1.13	8.20	45.67	Discharge almost clear, no discernible odour
19/06/2012	-	-	60	8.88	13.72	-236.0	0.91	7.60	45.72	
19/06/2012	13:36	-	69	-	-	-	-	-	-	

Sampling Record

Volume purged before sampling (m³): 0.069
 Sample ID (plus duplicates if any): 774814
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 13:45
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH128
 Date: 25/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 11.00
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Overcast, scattered showers, windy
 Initial Water Level mb reference point: 3.63 @ 11:10
 Tidal Conditions: Low tide at 16:24; High tide @ 09:56
 Well Volume (m³): 0.0144
 3 Well Volumes (m³): 0.043
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Waterra tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO ppm	DO %	EC ms/cm	Remarks
25/06/2012	11:21	-	48	9.97	14.16	29.12	0.37	5.10	44.98	
25/06/2012	11:24	-	-	9.65	13.74	38.80	0.62	7.30	44.80	
25/06/2012	11:26	-	-	9.60	13.71	-32.50	0.67	7.90	44.82	
25/06/2012	11:30	-	-	9.52	13.62	-25.70	0.72	8.80	44.90	
25/06/2012	11:32	-	-	9.51	13.61	-23.60	0.75	8.60	44.83	

Sampling Record

Volume purged before sampling (m³): >0.048
 Sample ID (plus duplicates if any): 870938
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 11:32
 Low/High Tide: High
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Minimum 48 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH128
Date:	25/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	11.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, scattered showers, windy
Initial Water Level mb reference point:	5.1 @ 16:29
Tidal Conditions:	Low tide at 16:24; High tide @ 09:56
Well Volume (m ³):	0.012
3 Well Volumes (m ³):	0.036
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO ppm	DO %	EC ms/cm	Remarks
25/06/2012	16:35	0.10	36	9.85	13.60	-36.4	0.91	9.40	45.46	
25/06/2012	16:40	-	-	9.55	13.49	-27.80	0.32	5.30	45.63	
25/06/2012	16:43	-	-	9.45	13.42	-25.10	0.31	3.60	45.68	
25/06/2012	16:45	-	-	9.40	13.42	-23.60	0.31	3.50	45.68	
25/06/2012	16:57	-	-	9.25	13.59	-17.90	0.28	3.10	45.69	

Sampling Record

Volume purged before sampling (m ³):	>0.036
Sample ID (plus duplicates if any)	882654
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	16:58
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 36 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH130
Date:	25/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	7.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, scattered showers, windy
Initial Water Level mb reference point:	3.83 @ 10:18
Tidal Conditions:	Low tide at 16:24; High tide @ 09:56
Well Volume (m ³):	0.0063
3 Well Volumes (m ³):	0.019
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
25/06/2012	10:35	-	72	9.56	13.79	-57.6	0.00	0.00	43.74	Clear
25/06/2012	10:38	-	-	9.45	13.83	-42.00	0.00	0.00	44.96	Clear
25/06/2012	10:40	-	-	9.41	13.81	-33.50	0.01	0.10	44.78	Clear
25/06/2012	10:42	-	-	9.35	13.82	-27.20	0.03	0.40	44.86	Clear
25/06/2012	10:46	-	-	9.34	13.72	-19.40	0.15	1.00	44.95	Clear
25/06/2012	10:48	-	-	9.34	13.68	-17.20	0.06	0.70	44.97	Clear

Sampling Record

Volume purged before sampling (m ³):	>0.072
Sample ID (plus duplicates if any)	345662
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	10:50
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 72 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise
 Water yellow-brown in colour (sediment) initially, cleared after 24 litres.
 Yellow brown in colour (sediment) when sampled

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH130
Date:	25/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	7.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, scattered showers, windy
Initial Water Level mb reference point:	4.395 @ 15:58
Tidal Conditions:	Low tide at 16:24; High tide @ 09:56
Well Volume (m ³):	0.005
3 Well Volumes (m ³):	0.015
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T ^o C	ORP	DO ppm	DO %	EC ms/cm	Remarks
25/06/2012	16:12	0.10	72	9.18	14.12	-17.8	0.48	5.50	45.53	Slightly cloudy
25/06/2012	16:14	-	-	9.15	14.11	-15.80	0.48	5.50	45.54	Clear

Sampling Record

Volume purged before sampling (m ³):	>0.072
Sample ID (plus duplicates if any)	533020
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	16:14
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 72 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH301
Date:	02/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	17.20
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Dry, overcast
Initial Water Level mb reference point:	2.97 @ 16:22AM
Tidal Conditions:	Low tide at 11:06; High tide @ 17:04
Well Volume (m ³):	0.028
3 Well Volumes (m ³):	0.084
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to approx 9.5m below top of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
02/07/2012	16:29	0.12	-	-	-	-	-	-	-	Start purging
02/07/2012	16:38	0.12	65	7.50	17.26	-307.9	0.00	0.00	37.04	Grey/brown v. silty discharge initially
02/07/2012	16:42	0.12	94	7.05	15.98	-397.7	0.00	0.00	36.37	Discharge still brown and v. silty
02/07/2012	16:52	0.12	166	7.07	15.35	-334.2	0.00	0.00	35.82	
02/07/2012	16:56	0.12	194	7.09	15.04	-310.2	0.00	0.00	35.68	

Sampling Record

Volume purged before sampling (m ³):	0.194
Sample ID (plus duplicates if any)	775326
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	17:00
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH301
 Date: 02/07/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 17.20
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Dry, overcast
 Initial Water Level mb reference point: 1.95 @ 10:55AM
 Tidal Conditions: Low tide at 11:06; High tide @ 17:04
 Well Volume (m³): 0.030
 3 Well Volumes (m³): 0.090
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to approx 9.5m below top of casing
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
02/07/2012	12:44	0.11	-	-	-	-	-	-	-	Start purging
										Discharge cloudy with some visible suspended solids, no odour
02/07/2012	12:49	0.11	33	-	-	-	-	-	-	discharge became brown & silty after 5 mins with slight unpleasant odour
02/07/2012	13:05	0.11	132	7.01	17.26	-443.90	0.67	5.80	37.38	Air bubbles visible in sample tubing
02/07/2012	13:09	0.11	165	6.92	17.21	-453.10	0.00	0.00	38.51	V. brown, silty discharge
02/07/2012	13:16	0.11	180	6.90	15.88	-447.70	0.00	0.00	38.41	Water level dropped below reach of pump/tubing, allowed to recharge for 10mins to take sample

Sampling Record

Volume purged before sampling (m³): 0.180
 Sample ID (plus duplicates if any): 364120
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 13:25
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information	
Sampling Point:	BH302
Date:	04/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	20.80
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions	
Weather:	Overcast, with occasional showers
Initial Water Level mb reference point:	
Tidal Conditions:	Low tide at 13:02; High tide @ 18:52
Well Volume (m ³):	0.034
3 Well Volumes (m ³):	0.102
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to 9.5m below top of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record										
Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
04/07/2012	17:50	-	-	-	-	-	-	-	-	Start purging manually with Waterra tubing
04/07/2012	18:20	-	34	8.93	13.08	-205.60	0.00	0.00	38.99	

Sampling Record	
Volume purged before sampling (m ³):	0.034
Sample ID (plus duplicates if any)	963090
Decontamination Method:	Pump & dip meter decontaminated using Decon 90 btween boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	18:20
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH302
Date:	04/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	20.80
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, with occasional showers
Initial Water Level mb reference point:	3.42 @ 10:33AM
Tidal Conditions:	Low tide at 13:02; High tide @ 18:52
Well Volume (m ³):	0.034
3 Well Volumes (m ³):	0.102
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to 9.5m below top of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO ppm	DO %	EC ms/cm	Remarks
04/07/2012	10:33	-	-	-	-	-	-	-	-	Start purging
04/07/2012	10:35	-	4	-	-	-	-	-	-	Water level dropped below reach of pump, purged remainder manually with Waterra tubing
04/07/2012	11:45	-	105	9.12	14.43	-167.00	0.00	0.00	38.87	

Sampling Record

Volume purged before sampling (m ³):	0.105
Sample ID (plus duplicates if any)	770734
Decontamination Method:	Pump & dip meter decontaminated using Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	12:00
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH303
Date:	28/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	6.10
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast with intermittent light rain
Initial Water Level mb reference point:	4.78 @ 09:40AM
Tidal Conditions:	High tide @ 12:38; Low tide at 19:13
Well Volume (m ³):	0.003
3 Well Volumes (m ³):	0.008
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T ^o C	Eh	DO ppm	DO %	EC ms/cm	Remarks
28/06/2012	09:42	0.27	-	-	-	-	-	-	-	Start purging
28/06/2012	10:45	0.27	972	-	-	-	-	-	-	Pump cut out after approx 1 hr
28/06/2012	11:05	0.27	972	-	-	-	-	-	-	Start purging again
28/06/2012	11:35	0.27	1458	10.58	13.18	-269.9	0.00	0.00	46.18	
28/06/2012	11:42	0.10	1500	-	13.10	-282.70	0.00	0.00	45.84	
28/06/2012	11:45	0.10	1518	-	13.12	-288.80	0.00	0.00	45.84	
28/06/2012	11:47	0.10	1530	-	13.12	-292.10	0.00	0.00	45.96	
28/06/2012	11:50	0.10	1548	10.60	13.03	-300.80	0.00	0.00	46.29	

Sampling Record

Volume purged before sampling (m ³):	1.548 (minimum 1500 litres purged from all "pit" boreholes)
Sample ID (plus duplicates if any)	293706
Decontamination Method:	Pump & dip meter decontaminated using Decon 90 btween boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	11:50
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH303
Date:	28/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	6.10
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast with intermittent light rain
Initial Water Level mb reference point:	Difficult to get dipper reading (WL: 4.78 @ 09:40AM)
Tidal Conditions:	High tide @ 12:38; Low tide at 19:13
Well Volume (m ³):	0.003
3 Well Volumes (m ³):	0.008
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
28/06/2012	17:22	0.28	-	-	-	-	-	-	-	Start purging
28/06/2012	17:31	0.28	151	8.08	12.57	-225.0	0.00	0.00	46.68	Silty dark brown discharge initially, no odour
28/06/2012	17:35	0.28	218	9.15	-	-	-	-	-	
28/06/2012	17:42	0.28	336	9.46	12.49	-175.00	0.00	0.00	46.56	
28/06/2012	17:45	0.10	354	9.46	12.49	-178.90	0.00	0.00	46.56	

Sampling Record

Volume purged before sampling (m ³):	0.354
Sample ID (plus duplicates if any)	358151
Decontamination Method:	Pump & dip meter decontaminated using Decon 90 btween boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	17:45
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH304
Date:	28/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	13.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, occasional light rain
Initial Water Level mb reference point:	5.06 @ 9:24AM
Tidal Conditions:	High tide @ 12:38; Low tide at 19:13
Well Volume (m ³):	0.016
3 Well Volumes (m ³):	0.047
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to approx 8m below op of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
28/06/2012	09:24	0.02	-	-	-	-	-	-	-	Start purging
28/06/2012	09:31	0.02	8	-	-	-	-	-	-	Water level dropped below bottom of tubing, purged remainder with bailer, dark brown silty discharge
28/06/2012	12:40	-	53	6.89	13.54	-377.2	0.00	0.00	28.94	Discharge cleared slightly
28/06/2012	13:15	-	55	6.83	13.10	-368.20	0.00	0.00	29.88	

Sampling Record

Volume purged before sampling (m ³):	0.055
Sample ID (plus duplicates if any)	542181
Decontamination Method:	Pump & dip meter decontaminated using Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	13:15
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH304
Date:	28/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	13.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, occasional light rain
Initial Water Level mb reference point:	Difficult to get dipper reading (5.06 @ 9:24AM)
Tidal Conditions:	High tide @ 12:38; Low tide at 19:13
Well Volume (m ³):	0.016
3 Well Volumes (m ³):	0.047
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to approx 8m below op of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
28/06/2012	18:18	-	10	6.21	13.37	-252.4	0.00	0.00	32.95	Purged with bailer, water level below bottom of Waterra tubing, light brown cloudy discharge
28/06/2012	18:28	-	20	6.23	12.81	-276.80	0.00	0.00	32.35	

Sampling Record

Volume purged before sampling (m ³):	0.020
Sample ID (plus duplicates if any):	897297
Decontamination Method:	Pump & dip meter decontaminated using Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	18:28
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH305
Date:	25/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	6.50
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, scattered showers, windy
Initial Water Level mb reference point:	3.075 @ 11:50
Tidal Conditions:	Low tide at 16:24; High tide @ 09:56
Well Volume (m ³):	0.007
3 Well Volumes (m ³):	0.021
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
25/06/2012	12:03	-	1536	10.14	13.76	-153.3	0.00	0.00	41.85	Slightly cloudy
25/06/2012	12:10	-	-	9.69	13.72	-170.50	0.00	0.00	41.73	Slightly cloudy
25/06/2012	12:16	-	-	9.61	13.60	-182.40	0.00	0.00	41.78	Clear
25/06/2012	12:18	-	-	9.60	13.60	-182.40	0.00	0.00	41.78	Clear

Sampling Record

Volume purged before sampling (m ³):	>1.536
Sample ID (plus duplicates if any)	952615
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	12:23
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes
 Minimum 1500 litres purged from all pit borehole prior to final removal of 3No. well volumes and installation of flow-through cell for chemistry stabilisation

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH305
Date:	25/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	6.50
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, scattered showers, windy
Initial Water Level mb reference point:	3.08 @ 18:06
Tidal Conditions:	Low tide at 16:24; High tide @ 09:56
Well Volume (m ³):	0.007
3 Well Volumes (m ³):	0.021
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO ppm	DO %	EC ms/cm	Remarks
25/06/2012	18:21	-	36	9.70	13.08	-1974.5	0.00	0.00	42.19	
25/06/2012	18:24	-	-	9.60	13.08	-203.10	0.00	0.00	42.26	
25/06/2012	18:27	-	-	9.56	13.06	-208.00	0.00	0.00	42.24	
25/06/2012	18:30	-	-	9.55	13.06	-209.10	0.00	0.00	42.26	

Sampling Record

Volume purged before sampling (m ³):	>0.036
Sample ID (plus duplicates if any)	983837 and 932150 (Hexavalent Cr sample)
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	18:30
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 3x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 1500 litres purged from all pit borehole prior to final removal of 3No. well volumes and installation of flow-through cell for chemistry stabilisation

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH306B
Date:	03/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	7.05
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, damp, with frequent showers
Initial Water Level mb reference point:	
Tidal Conditions:	Low tide at 12:11; High tide @ 18:01
Well Volume (m ³):	0.014
3 Well Volumes (m ³):	0.042
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
03/07/2012	16:47	0.35	-	-	-	-	-	-	-	Start purging
03/07/2012	16:50	0.35	60	-	-	-	-	-	-	Switched to low flow
03/07/2012	16:53	0.25	105	9.82	14.16	-59.20	5.00	3.50	36.47	
03/07/2012	16:55	0.25	145	9.55	13.53	-54.90	0.00	0.00	36.69	

Sampling Record

Volume purged before sampling (m ³):	0.145
Sample ID (plus duplicates if any)	438131
Decontamination Method:	Pump & dip meter decontaminated using Decon 90 btween boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	16:55
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH306B
Date:	03/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	7.05
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, damp, with frequent showers
Initial Water Level mb reference point:	-
Tidal Conditions:	Low tide at 12:11; High tide @ 18:01
Well Volume (m ³):	0.014
3 Well Volumes (m ³):	0.042
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
03/07/2012	09:20	0.35	-	-	-	-	-	-	-	Start purging
03/07/2012	10:35	0.35	1500	-	-	-	-	-	-	Switched to low flow
03/07/2012	10:41	0.25	1590	10.17	13.79	-116.00	1.47	15.80	35.48	Discharge clear, no odour
03/07/2012	10:44	0.25	1635	9.93	13.82	-108.20	1.22	10.00	35.70	
03/07/2012	10:46	0.25	1665	9.76	13.75	-103.60	1.53	12.00	35.80	

Sampling Record

Volume purged before sampling (m ³):	1.665 (minimum 1500 litres purged from all "pit" boreholes)
Sample ID (plus duplicates if any)	254414
Decontamination Method:	Pump & dip meter decontaminated using Decon 90 btween boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	10:50
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH306C
Date:	04/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	120
Base of Well mb datum:	42.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast with intermittent light rain
Initial Water Level mb reference point:	
Tidal Conditions:	Low tide at 13:02; High tide @ 18:52
Well Volume (m ³):	0.452
3 Well Volumes (m ³):	1.355
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to 30m below top of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
04/07/2012	17:12	0.12	-	-	-	-	-	-	-	Start purging again
04/07/2012	18:12	0.12	432	-	-	-	-	-	-	Pump cut out after 1hr approx
04/07/2012	19:10	0.12	432							Start purging again
04/07/2012	19:16	0.12	446	6.84	13.61	-39.60	0.90	9.70	19.86	Discharge clear, no odour, borehole is artesian, tide coming in over side of island near borehole

Sampling Record

Volume purged before sampling (m ³):	0.446
Sample ID (plus duplicates if any)	821468
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	19:16
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH306C
Date:	04/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	120
Base of Well mb datum:	42.0
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast with intermittent light rain
Initial Water Level mb reference point:	2.04 @ 14:16 on 03/07/12
Tidal Conditions:	Low tide at 13:02; High tide @ 18:52
Well Volume (m ³):	0.452
3 Well Volumes (m ³):	1.355
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to 30m below top of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
03/07/2012	15:01	0.15	-	-	-	-	-	-	-	Start purging
03/07/2012	16:40	0.15	540	-	-	-	-	-	-	Start purging again, pump had cut out after approx 1 hr
03/07/2012	19:05	0.15	1080	-	-	-	-	-	-	Start purging again, pump had cut out after approx 1 hr
03/07/2012	20:00	0.15	1620	-	-	-	-	-	-	Stop purging
04/07/2012	12:25	0.12	1620	-	-	-	-	-	-	Start purging, discharge clear, no odour
04/07/2012	12:58	0.12	1858	6.94	13.86	-30.00	0.57	6.70	40.10	

Sampling Record

Volume purged before sampling (m ³):	1.858
Sample ID (plus duplicates if any)	966135
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	13:00
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH306D
Date:	05/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	20.5
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, intermittent drizzling rain, occasional showers
Initial Water Level mb reference point:	0.88 @ 17:47
Tidal Conditions:	Low tide at 13:48; High tide @ 19:38
Well Volume (m ³):	0.039
3 Well Volumes (m ³):	0.116
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to approx 13m below ground level
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
05/07/2012	17:48	0.02	-	-	-	-	-	-	-	Start purging, discharge mid-brown and slightly silty, no odour
05/07/2012	17:58	0.02		8.04	15.51	-3.70	2.08	27.00	36.92	
05/07/2012	18:05	0.02	20	8.03	16.19	-4.10	1.56	14.70	37.15	
05/07/2012	18:14	0.02	31	8.05	15.08	-3.90	2.00	24.10	36.55	Discharge becoming slightly clearer
05/07/2012	18:20	0.02	38	8.03	15.73	-4.60	2.28	27.10	36.59	
05/07/2012	18:25	0.02	44	7.96	15.67	-4.70	2.34	27.90	36.72	

Sampling Record

Volume purged before sampling (m ³):	0.044
Sample ID (plus duplicates if any)	685680
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	18:35
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH306D
Date:	05/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	20.5
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, intermittent drizzling rain, occasional showers
Initial Water Level mb reference point:	Approx 0.20-0.30
Tidal Conditions:	Low tide at 13:48; High tide @ 19:38
Well Volume (m ³):	0.040
3 Well Volumes (m ³):	0.120
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to approx 13m below ground level
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
05/07/2012	10:15	0.04	-	-	-	-	-	-	-	Start purging
05/07/2012	10:28	0.04	31	7.80	20.71	-14.50	0.00	0.00	36.53	
05/07/2012	10:31	0.04	36	-	-	-	-	-	-	Water level dropped below reach of pump/tubing
05/07/2012	11:00	0.04	36	-	-	-	-	-	-	Start purging again
05/07/2012	11:06	0.04	51	-	-	-	-	-	-	Water level dropped below reach of pump/tubing
05/07/2012	13:05	0.04	51	-	-	-	-	-	-	Start purging again
05/07/2012	13:06	0.04	53	7.91	19.12	-	0.51	18.00	35.70	Discharge brown silty, no odour
05/07/2012	13:12	0.07	67	8.30	14.43	-17.40	1.96	22.60	34.22	Discharge cleared slightly
05/07/2012	13:22	0.07	109	7.90	14.31	-17.80	2.16	24.20	29.70	
05/07/2012	13:25	0.07	122	7.92	16.18	-18.40	2.34	26.50	30.85	
05/07/2012	13:30	0.07	143	-	-	-	-	-	-	Water level dropped below reach of pump/tubing, allowed to recharge for 10 mins before sampling, discharge never cleared

Sampling Record

Volume purged before sampling (m ³):	0.143
Sample ID (plus duplicates if any)	405311
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	13:40
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH307
 Date: 27/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 9.80
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Damp, drizzling rain
 Initial Water Level mb reference point: 4.88 @ 13:22PM
 Tidal Conditions: High tide @ 11:38; Low tide at 18:09
 Well Volume (m³): 0.010
 3 Well Volumes (m³): 0.029
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
27/06/2012	13:27	0.10	-	-	-	-	-	-	-	Start purging
27/06/2012	13:37	0.10	60	9.90	13.32	42.3	-	-	45.86	
27/06/2012	13:40	0.10	80	8.90	13.30	-	-	-	45.99	
27/06/2012	13:45	0.10	110	8.90	13.39	95.40	-	-	40.08	

Sampling Record

Volume purged before sampling (m³): 0.100
 Sample ID (plus duplicates if any): 865749
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 13:45
 Low/High Tide: High
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH307
Date:	27/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	9.80
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Damp, drizzling rain
Initial Water Level mb reference point:	5.37 @ 17:08PM
Tidal Conditions:	High tide @ 11:38; Low tide at 18:09
Well Volume (m ³):	0.009
3 Well Volumes (m ³):	0.026
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
27/06/2012	17:11	0.10	-	-	-	-	-	-	-	Start purging
27/06/2012	17:15	0.10	20	10.36	13.39	-142.2	-	-	45.78	
27/06/2012	17:20	0.10	50	10.50	13.34	-120.90	-	-	46.47	
27/06/2012	17:23	0.10	68	-	13.35	-115.70	-	-	46.64	
27/06/2012	17:25	0.10	80	10.50	13.29	-111.70	-	-	46.59	

Sampling Record

Volume purged before sampling (m ³):	0.080
Sample ID (plus duplicates if any)	286405
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	17:30
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH308
Date:	26/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	13.50
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Scattered showers, windy, mainly dry
Initial Water Level mb reference point:	3.025 @ 09:41
Tidal Conditions:	Low tide at 17:13; High tide @ 10:44
Well Volume (m ³):	0.021
3 Well Volumes (m ³):	0.063
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to 9.5m below top of PVC casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
26/06/2012	10:02	0.22	92	9.32	13.32	-278.3	0.00	0.00	11.89	Grey, turbid
26/06/2012	10:16	-	-	9.17	13.36	-250.30	0.00	0.00	13.67	Grey, turbid
26/06/2012	10:19	-	-	9.16	13.27	-246.10	0.00	0.00	14.07	Grey, turbid
26/06/2012	10:23	-	-	9.15	13.26	-240.30	0.00	0.00	14.79	Grey, turbid
26/06/2012	10:30	-	-	9.13	13.29	-230.10	0.00	0.00	15.75	Grey, turbid
26/06/2012	10:33	-	-	9.13	13.29	-227.40	0.00	0.00	15.69	Grey, turbid

Sampling Record

Volume purged before sampling (m ³):	>0.092
Sample ID (plus duplicates if any)	292411
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	10:34
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 92 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise
 Water turbid throughout purging

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH308
Date:	26/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	13.50
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Scattered showers, windy, mainly dry
Initial Water Level mb reference point:	4.13 @ 16:37
Tidal Conditions:	Low tide at 17:13; High tide @ 10:44
Well Volume (m ³):	0.018
3 Well Volumes (m ³):	0.055
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to 9.5m below top of PVC casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
26/06/2012	17:00	0.17	122	9.48	13.77	-249.5	0.00	0.00	0.91	
26/06/2012	17:06	-	-	9.11	13.93	-243.10	0.00	0.00	0.82	
26/06/2012	17:21	-	-	8.98	13.68	-229.60	0.00	0.00	0.82	
26/06/2012	17:37	-	-	8.94	13.72	-228.10	0.00	0.00	0.82	

Sampling Record

Volume purged before sampling (m ³):	>0.122
Sample ID (plus duplicates if any)	982927
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	17:38
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 122 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise
 Water turbid throughout purging

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH309
Date:	26/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	17.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Scattered showers, windy, mainly dry
Initial Water Level mb reference point:	2.47 @ 15:32
Tidal Conditions:	Low tide at 17:13; High tide @ 10:44
Well Volume (m ³):	0.028
3 Well Volumes (m ³):	0.085
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to 10.2m below top of PVC casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
26/06/2012	15:53	0.25	120	9.97	13.98	-258.2	0.00	0.00	42.48	Slightly turbid
26/06/2012	15:56	-	-	9.85	13.98	-257.10	0.00	0.00	43.18	Slightly turbid
26/06/2012	15:59	-	-	9.76	14.00	-256.10	0.00	0.00	42.98	Slightly turbid
26/06/2012	16:03	-	-	9.66	14.18	-255.10	0.00	0.00	42.97	Slightly turbid
26/06/2012	16:06	-	-	9.66	14.04	-255.50	0.00	0.00	42.97	Slightly turbid

Sampling Record

Volume purged before sampling (m ³):	>0.100
Sample ID (plus duplicates if any)	685990
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	16:06
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 120 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH309
Date:	26/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	17.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Scattered showers, windy, mainly dry
Initial Water Level mb reference point:	2.525 @ 11:03
Tidal Conditions:	Low tide at 17:13; High tide @ 10:44
Well Volume (m ³):	0.028
3 Well Volumes (m ³):	0.085
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to 10.2m below top of PVC casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
26/06/2012	11:37	0.24	100	9.68	13.89	-284.6	0.00	0.00	42.74	Slight grey colour, slightly turbid
26/06/2012	11:43	-	-	9.59	14.12	-284.60	0.00	0.00	42.48	Slight grey colour, slightly turbid
26/06/2012	11:47	-	-	9.59	14.03	-284.20	0.00	0.00	43.08	Slight grey colour, slightly turbid
26/06/2012	11:58	-	-	9.58	14.00	-284.10	0.00	0.00	43.14	Slight grey colour, slightly turbid
26/06/2012	12:00	-	-	9.56	14.03	-284.10	0.00	0.00	43.14	Slight grey colour, slightly turbid

Sampling Record

Volume purged before sampling (m ³):	>0.100
Sample ID (plus duplicates if any)	932833
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	12:01
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 100 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH310A
 Date: 02/07/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 9.60
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Dry, overcast
 Initial Water Level mb reference point: 4.62 @ 15:06PM
 Tidal Conditions: Low tide at 11:06; High tide @ 17:04
 Well Volume (m³): 0.010
 3 Well Volumes (m³): 0.029
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
02/07/2012										
02/07/2012	15:15	0.21	76	-	-	-	-	-	-	Light brown slightly silty discharge initially, cleared after 2mins
02/07/2012	15:22	0.10	118	9.98	15.72	-222.20	0.00	0.00	39.25	
02/07/2012	15:24	0.10	130	10.05	14.08	-285.40	0.00	0.00	39.55	
02/07/2012	15:27	0.10	148	10.05	14.04	-287.10	0.00	0.00	39.54	

Sampling Record

Volume purged before sampling (m³): 0.148
 Sample ID (plus duplicates if any): 221070
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 15:30
 Low/High Tide: High
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH310A
 Date: 02/07/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 9.60
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Dry, overcast
 Initial Water Level mb reference point: 4.21 @ 09:46AM
 Tidal Conditions: Low tide at 11:06; High tide @ 17:04
 Well Volume (m³): 0.011
 3 Well Volumes (m³): 0.032
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
02/07/2012	08:52	0.22	-	-	-	-	-	-	-	Start purging
02/07/2012	10:52	0.22	1500	-	-	-	-	-	-	Pump cut out after approx 1 hr
02/07/2012	11:26	0.22	1500	10.19	13.15	86.4	0.00	0.00	38.70	Discharge clear, no odour
02/07/2012	11:30	0.10	1574	10.04	13.26	-141.70	0.00	0.00	39.22	
02/07/2012	11:33	0.10	1592	10.03	13.11	-172.20	0.00	0.00	39.25	

Sampling Record

Volume purged before sampling (m³): 1.592 (minimum 1500 litres purged from all "pit" boreholes)
 Sample ID (plus duplicates if any): 564641& 478325 (Cr)
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 11:33
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 3x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH310B
Date:	03/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	22.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, damp, with frequent showers
Initial Water Level mb reference point:	-
Tidal Conditions:	Low tide at 12:11; High tide @ 18:01
Well Volume (m ³):	0.031
3 Well Volumes (m ³):	0.093
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to 9.5m below top of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	ORP	DO ppm	DO %	EC ms/cm	Remarks
03/07/2012	18:03	0.10	-	-	-	-	-	-	-	Start purging, discharge grey/brown cloudy, slight unpleasant odour
03/07/2012	18:11	0.08	48	7.22	13.66	-122.0	0.00	0.00	38.66	-
03/07/2012	18:15	0.08	67	7.05	13.70	-112.0	0.00	0.00	38.71	Discharge never cleared

Sampling Record

Volume purged before sampling (m ³):	0.067
Sample ID (plus duplicates if any)	543284
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	18:20
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH310B
Date:	03/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	22.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, damp, with frequent showers
Initial Water Level mb reference point:	6.17 @ 12:07PM
Tidal Conditions:	Low tide at 12:11; High tide @ 18:01
Well Volume (m ³):	0.031
3 Well Volumes (m ³):	0.093
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to 9.5m below top of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T ^o C	ORP	DO ppm	DO %	EC ms/cm	Remarks
03/07/2012	12:20	0.10	-	-	-	-	-	-	-	Start purging, discharge brown silty initially, cleared slightly after first few mins
03/07/2012	12:41	0.10	126	7.08	14.43	-233.0	0.00	0.00	38.63	Switched to low flow
03/07/2012	12:45	0.07	143	7.06	14.26	-243.1	0.00	0.00	38.78	

Sampling Record

Volume purged before sampling (m ³):	0.143
Sample ID (plus duplicates if any)	198416
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	12:45
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH310C
 Date: 04/07/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 120
 Base of Well mb datum: 47.5
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Overcast with intermittent light rain
 Initial Water Level mb reference point: -
 Tidal Conditions: Low tide at 13:02; High tide @ 18:52
 Well Volume (m³): 0.499
 3 Well Volumes (m³): 1.497
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	ORP	DO ppm	DO %	EC ms/cm	Remarks
04/07/2012	20:45	0.11	-	-	-	-	-	-	-	Start purging
04/07/2012	21:55	0.11	450	7.21	13.29	-27.40	2.32	26.60	40.00	Discharge clear, no odour

Sampling Record

Volume purged before sampling (m³): 0.450
 Sample ID (plus duplicates if any): 798741
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 21:55
 Low/High Tide: High
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH310C
Date:	04/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	120
Base of Well mb datum:	47.5
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast with intermittent light rain
Initial Water Level mb reference point:	3.35 @ 08:42AM
Tidal Conditions:	Low tide at 13:02; High tide @ 18:52
Well Volume (m ³):	0.499
3 Well Volumes (m ³):	1.497
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	ORP	DO ppm	DO %	EC ms/cm	Remarks
04/07/2012	08:46	0.11	-	-	-	-	-	-	-	Start purging, pump cut out after approx 50 mins
04/07/2012	09:47	0.11	330	-	-	-	-	-	-	Start purging again
04/07/2012	12:00	0.11	1,188	-	-	-	-	-	-	Pump cut out
04/07/2012	14:25	0.11	1,188	-	-	-	-	-	-	Start purging again
04/07/2012	14:55	0.11	1,386	8.06	13.63	-50.40	0.00	0.00	39.42	Discharge clear, no odour
04/07/2012	15:02	0.11	1,432	7.76	13.46	-48.10	0.00	0.00	37.89	
04/07/2012	15:05	0.11	1,478	7.52	13.02	-42.70	0.00	0.00	37.94	
04/07/2012	15:10	0.11	1,511	7.61	13.47	-41.20	0.69	7.70	38.44	

Sampling Record

Volume purged before sampling (m ³):	1.511
Sample ID (plus duplicates if any)	266498
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	15:10
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH311
Date:	27/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	5.30
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Damp, drizzling rain
Initial Water Level mb reference point:	4.95 @ 10:17AM
Tidal Conditions:	High tide @ 11:38; Low tide at 18:09
Well Volume (m ³):	0.001
3 Well Volumes (m ³):	0.002
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterrra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	Eh	DO ppm	DO %	EC ms/cm	Remarks
27/06/2012	10:25	0.31								Started purging @ 10:25AM
27/06/2012	11:35	0.31	1,302							Pump ran out of petrol
27/06/2012	12:30	0.31								Start pump again
27/06/2012	13:40	0.31	2,604							Pump ran out of petrol
27/06/2012	13:45	0.31								Start pump again
27/06/2012	13:50	0.15	2,697	9.30	13.17	57.60	0.95	10.40	43.89	

Sampling Record

Volume purged before sampling (m ³):	2.697 (minimum 1500 litres purged from all "pit" boreholes)
Sample ID (plus duplicates if any):	987541
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterrra tubing & foot valve
Sampling Time:	13:50
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH311
 Date: 27/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 5.30
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Damp, drizzling rain
 Initial Water Level mb reference point: 5.19 @ 16:22
 Tidal Conditions: High tide @ 11:38; Low tide at 18:09
 Well Volume (m³): 0.0002
 3 Well Volumes (m³): 0.001
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	Eh	DO ppm	DO %	EC ms/cm	Remarks
27/06/2012	16:35	0.15	186	9.29	13.28	88.6	-	-	44.92	
27/06/2012	16:40	0.15	231	8.36	13.21	97.90	-	-	45.17	

Sampling Record

Volume purged before sampling (m³): 0.231
 Sample ID (plus duplicates if any) 841212 & 627260 (Cr)
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 16:40
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 3x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH312A
 Date: 04/07/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 5.50
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Overcast, occasional light rain
 Initial Water Level mb reference point: -
 Tidal Conditions: Low tide at 13:02; High tide @ 18:52
 Well Volume (m³): 0.006
 3 Well Volumes (m³): 0.018
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks
							ppm		ms/cm	
04/07/2012	20:30	0.25	-	-	-	-	-	-	-	Start purging
04/07/2012	20:33	0.25	50	-	-	-	-	-	-	Water level dropped below reach of pump, purged remainder manually with tubing
04/07/2012	20:45	-	65	12.23	12.89	-44.30	0.00	0.00	30.70	Discharge clear, no odour

Sampling Record

Volume purged before sampling (m³): 0.065
 Sample ID (plus duplicates if any): 261020, 832111 (Duplicate)
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 20:45
 Low/High Tide: High
 Sample containers: 2x1l glass, 2x500ml glass, 2x1l plastic, 4x500ml plastic, 8x40ml vials, 4x250ml plastic (NaOH preservative), 2x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet											
General Information											
Sampling Point: BH312A											
Date: 04/07/2012											
Sample Type: Groundwater											
Standpipe Diameter (mm): 50											
Base of Well mb datum: 5.5											
Water Level Reference Point: Top of pvc casing											
Reduced Level of Reference Point: -											
Initial Conditions											
Weather: Overcast, occasional light rain											
Initial Water Level mb reference point: 2.44 @ 10:12AM											
Tidal Conditions: Low tide at 13:02; High tide @ 18:52											
Well Volume (m ³): 0.006											
3 Well Volumes (m ³): 0.018											
Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)											
Pump Depth: Tubing installed to bottom of borehole											
Instruments Calibrated: Hanna HI 9828 multiparameter field probe											
Purging Record											
Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO	DO %	EC	Remarks	
04/07/2012	10:15	0.29	-	-	-	-	-	-	-	-	Start purging
04/07/2012	12:00	0.29	1,830	-	-	-	-	-	-	-	Stop purging
04/07/2012	13:55	0.29	1,830	-	-	-	-	-	-	-	Start purging again
04/07/2012	14:00	0.29	1,917	10.66	13.88	-38.50	0.40	4.90	29.81		Discharge clear, no odour, air bubbles visible in tubing
Sampling Record											
Volume purged before sampling (m ³): 1.917 (minimum 1500 litres purged from all "pit" boreholes)											
Sample ID (plus duplicates if any) 987654											
Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes											
Sampling Method: Sampled using dedicated Waterra tubing & foot valve											
Sampling Time: 14:00											
Low/High Tide: Low											
Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)											
Notes											

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH312B
Date:	28/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	13.50
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, occasional light rain
Initial Water Level mb reference point:	3.82 @ 13:43PM
Tidal Conditions:	High tide @ 12:38; Low tide at 19:13
Well Volume (m ³):	0.019
3 Well Volumes (m ³):	0.057
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	Eh	DO ppm	DO %	EC ms/cm	Remarks
28/06/2012	14:00	0.07	100	8.95	14.68	-257.20	0.00	0.00	38.31	
28/06/2012	14:05	0.07	120	8.94	14.58	-250.20	0.00	0.00	38.35	
28/06/2012	14:09	0.07	135	-	16.80	-225.80	0.00	0.00	38.70	
28/06/2012	14:15	0.07	160	8.87	14.65	-236.90	0.00	0.00	37.92	

Sampling Record

Volume purged before sampling (m ³):	0.160
Sample ID (plus duplicates if any)	561561
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	14:15
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH312B
 Date: 28/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 13.50
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Overcast, occasional light rain
 Initial Water Level mb reference point: Difficult to get dipper reading
 Tidal Conditions: High tide @ 12:38; Low tide at 19:13
 Well Volume (m³): 0.019
 3 Well Volumes (m³): 0.057
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	Eh	DO ppm	DO %	EC ms/cm	Remarks
28/06/2012	19:01	0.10	20	8.25	-	-	-	-	-	Brown cloudy discharge
28/06/2012	19:05	0.10	40	8.85	13.15	-243.20	0.00	0.00	36.54	
28/06/2012	19:10	0.07	60	9.17	13.21	-239.00	0.00	0.00	37.29	Discharge almost clear when sampled

Sampling Record

Volume purged before sampling (m³): 0.060
 Sample ID (plus duplicates if any): 658920
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 19:10
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH312C
 Date: 05/07/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 120
 Base of Well mb datum: 29.30
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Overcast, intermittent drizzling rain, occasional showers
 Initial Water Level mb reference point: 3.86 @ 11:40AM
 Tidal Conditions: Low tide at 13:48; High tide @ 19:38
 Well Volume (m³): 0.288
 3 Well Volumes (m³): 0.863
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
05/07/2012	10:40	0.13	-	-	-	-	-	-	-	Start purging, discharge clear, no odour
05/07/2012	12:32	0.13	874	8.05	14.20	-15.20	0.00	0.00	39.66	
05/07/2012	12:35	0.13	897	8.00	14.20	-14.70	0.00	0.00	39.67	

Sampling Record

Volume purged before sampling (m³): 0.897
 Sample ID (plus duplicates if any): 984114 & 258131 (Cr)
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 12:48
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 3x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH312C
Date:	05/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	120
Base of Well mb datum:	29.3
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, intermittent drizzling rain, occasional showers
Initial Water Level mb reference point:	-
Tidal Conditions:	Low tide at 13:48; High tide @ 19:38
Well Volume (m ³):	0.288
3 Well Volumes (m ³):	0.863
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	Eh	DO ppm	DO %	EC ms/cm	Remarks
05/07/2012	17:35	0.13	-	-	-	-	-	-	-	Start purging, discharge slightly cloudy for first few mins, then cleared, no odour
05/07/2012	19:00	0.07	741	7.58	14.03	-2.60	0.00	0.00	39.78	Switched to low flow, discharge clear, no odour
05/07/2012	19:05	0.07	762	7.59	14.02	-1.90	0.00	0.00	39.59	

Sampling Record

Volume purged before sampling (m ³):	0.762
Sample ID (plus duplicates if any)	457113
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	19:15
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

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Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH313
Date:	03/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	25.30
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, damp, with frequent showers
Initial Water Level mb reference point:	-
Tidal Conditions:	Low tide at 12:11; High tide @ 18:01
Well Volume (m ³):	0.042
3 Well Volumes (m ³):	0.127
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to 20m below top of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	ORP	DO ppm	DO %	EC ms/cm	Remarks
03/07/2012	18:35	0.16	-	-	-	-	-	-	-	Start purging, discharge v brown silty, slight unpleasant odour
03/07/2012	18:39	0.07	38	-	-	-	-	-	-	Switched to low flow
03/07/2012	18:40	0.07	42	7.02	13.28	-86.80	0.00	0.00	38.51	Discharge cleared slightly
03/07/2012	18:43	0.07	55	7.02	13.46	-93.80	0.00	0.00	38.43	-

Sampling Record

Volume purged before sampling (m ³):	0.055
Sample ID (plus duplicates if any)	987451
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	18:45
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH313
Date:	03/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	25.30
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, damp, with frequent showers
Initial Water Level mb reference point:	3.72 @ 13:04
Tidal Conditions:	Low tide at 12:11; High tide @ 18:01
Well Volume (m ³):	0.042
3 Well Volumes (m ³):	0.127
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to 20m below top of casing
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	ORP	DO ppm	DO %	EC ms/cm	Remarks
03/07/2012	12:10	0.16	-	-	-	-	-	-	-	Start purging, discharge brown silty, cleared a little after 10 mins, slight unpleasant odour
03/07/2012	12:27	0.08	163	-	-	-	-	-	-	Switched to low flow
03/07/2012	12:30	0.08	177	7.00	13.47	-141.60	0.00	0.00	38.14	-
03/07/2012	12:34	0.08	197	7.01	13.49	-141.10	0.00	0.00	38.49	Discharge never cleared

Sampling Record

Volume purged before sampling (m ³):	0.197
Sample ID (plus duplicates if any)	158877 & 310150 (Cr)
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	12:35
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 3x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH314
Date:	28/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	6.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, occasional light rain
Initial Water Level mb reference point:	Couldn't get dipper reading @ 09:08AM
Tidal Conditions:	High tide @ 12:38; Low tide at 19:13
Well Volume (m ³):	0.012
3 Well Volumes (m ³):	0.035
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	Eh	DO ppm	DO %	EC ms/cm	Remarks
28/06/2012	14:40	0.20	1510	8.98	14.54	-40.1	0.46	5.10	45.57	
28/06/2012	14:45	0.10	1540	9.05	14.54	-23.20	0.25	2.80	46.09	Switched to low flow
28/06/2012	14:50	0.10	1570	9.05	14.53	-11.80	0.13	1.40	45.69	

Sampling Record

Volume purged before sampling (m ³):	1.57 (minimum 1500 litres purged from all "pit" boreholes)
Sample ID (plus duplicates if any)	875454
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	15:00
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH314
Date:	28/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	6.00
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, occasional light rain
Initial Water Level mb reference point:	-
Tidal Conditions:	High tide @ 12:38; Low tide at 19:13
Well Volume (m ³):	0.012
3 Well Volumes (m ³):	0.035
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	Eh	DO ppm	DO %	EC ms/cm	Remarks
28/06/2012	19:30	0.25	75	-	-	-	-	-	-	Mid-brown discharge initially, cleared after 1 minute, no odour
28/06/2012	19:32	0.10	87	-	13.34	-145.20	0.00	0.00	44.05	Switched to low flow
28/06/2012	19:35	0.10	105	-	13.44	-122.80	0.00	0.00	44.32	

Sampling Record

Volume purged before sampling (m ³):	0.105
Sample ID (plus duplicates if any)	547994
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	19:35
Low/High Tide:	Low
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH315
Date:	25/06/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	6.40
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, scattered showers, windy
Initial Water Level mb reference point:	3.495 @ 09:14
Tidal Conditions:	Low tide at 16:24; High tide @ 09:56
Well Volume (m ³):	0.006
3 Well Volumes (m ³):	0.018
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Waterra tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
							ppm		ms/cm	
25/06/2012	09:34	0.25	48	9.91	13.25	-239.0	0.00	0.00	43.48	Silty, cloudy
25/06/2012	09:37	-	-	9.78	13.20	-235.10	0.00	0.00	43.46	Silty, cloudy
25/06/2012	09:40	-	-	9.73	13.23	-231.30	0.00	0.00	43.50	Cloudy
25/06/2012	09:43	-	-	9.69	13.26	228.40	0.00	0.00	43.52	Slightly cloudy
25/06/2012	09:48	-	-	9.68	13.21	-225.50	0.00	0.00	43.30	Slightly cloudy
25/06/2012	09:56	-	-	9.65	13.19	-223.20	0.00	0.00	43.31	Slightly cloudy

Sampling Record

Volume purged before sampling (m ³):	>0.048
Sample ID (plus duplicates if any)	974589
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	09:58
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Minimum 48 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point: BH315
 Date: 25/06/2012
 Sample Type: Groundwater
 Standpipe Diameter (mm): 50
 Base of Well mb datum: 6.40
 Water Level Reference Point: Top of pvc casing
 Reduced Level of Reference Point: -

Initial Conditions

Weather: Overcast, scattered showers, windy
 Initial Water Level mb reference point: 3.56 @ 15:16
 Tidal Conditions: Low tide at 16:24; High tide @ 09:56
 Well Volume (m³): 0.006
 3 Well Volumes (m³): 0.018
 Purging Device: Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
 Pump Depth: Waterra tubing installed to bottom of borehole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	ORP	DO	DO %	EC	Remarks
25/06/2012	15:24	0.25	75	9.68	13.87	-105.5	0.00	0.00	40.80	Slightly cloudy
25/06/2012	15:29	-	-	9.52	13.77	-123.90	0.00	0.00	41.13	Clear
25/06/2012	15:32	-	-	9.45	13.77	-128.60	0.00	0.00	41.15	Clear

Sampling Record

Volume purged before sampling (m³): >0.072
 Sample ID (plus duplicates if any) 654684
 Decontamination Method: Pump & dip meter decontaminated with Decon 90 between boreholes
 Sampling Method: Sampled using dedicated Waterra tubing & foot valve
 Sampling Time: 15:32
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Minimum 72 litres purged from borehole before flow-through cell installed and chemistry allowed to stabilise
 Water became cloudy after removal of first purge volume

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH316
Date:	03/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	20.0
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, damp, with frequent showers
Initial Water Level mb reference point:	-
Tidal Conditions:	Low tide at 12:11; High tide @ 18:01
Well Volume (m ³):	0.039
3 Well Volumes (m ³):	0.118
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T °C	ORP	DO ppm	DO %	EC ms/cm	Remarks
03/07/2012	17:20	0.10	-	-	-	-	-	-	-	Start purging
03/07/2012	17:35	0.07	90	-	-	-	-	-	-	Switched to low flow
03/07/2012	17:36	0.07	94	6.79	13.83	-226.3	0.00	0.00	38.01	Dark grey/ brown silty discharge
03/07/2012	17:40	0.07	111	6.84	13.84	-239.7	0.00	0.00	38.24	-

Sampling Record

Volume purged before sampling (m ³):	0.111
Sample ID (plus duplicates if any)	989321
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	17:10
Low/High Tide:	High
Sample containers:	1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H ₂ SO ₄ preservative)

Notes

Groundwater Sampling from Completed Borehole Installation - Field Datasheet

General Information

Sampling Point:	BH316
Date:	03/07/2012
Sample Type:	Groundwater
Standpipe Diameter (mm):	50
Base of Well mb datum:	20.0
Water Level Reference Point:	Top of pvc casing
Reduced Level of Reference Point:	-

Initial Conditions

Weather:	Overcast, damp, with frequent showers
Initial Water Level mb reference point:	-
Tidal Conditions:	Low tide at 12:11; High tide @ 18:01
Well Volume (m ³):	0.039
3 Well Volumes (m ³):	0.118
Purging Device:	Honda WX10 pump & Inertial Pump (Dedicated Waterra tubing & foot valve)
Pump Depth:	Tubing installed to bottom of borehole
Instruments Calibrated:	Hanna HI 9828 multiparameter field probe

Purging Record

Date	Time	Flow Rate (l/s)	Volume Purged (l)	pH	T°C	Eh	DO ppm	DO %	EC ms/cm	Remarks
03/07/2012	09:25	0.10	-	-	-	-	-	-	-	Extremely silty dark brown discharge, viscous, moderately strong odour of rotten eggs.
03/07/2012	09:30	0.10	30	-	-	-	-	-	-	Discharge cleared slightly, odour remained
03/07/2012	09:50	0.10	150	-	-	-	-	-	-	Stopped purging
03/07/2012	11:05	0.10	240	-	-	-	-	-	-	Started purging, discharge brown silty with rotten eggs odour
03/07/2012	11:07	0.07	248	-	-	-	-	-	-	Switched to low flow
03/07/2012	11:10	0.07	261	6.71	13.21	-292.90	0.00	0.00	38.04	Discharge cleared only slightly
03/07/2012	11:13	0.07	274	6.76	13.19	-304.60	0.00	0.00	38.35	-
03/07/2012	11:17	0.07	291	6.82	13.14	-352.00	0.00	0.00	38.59	-

Sampling Record

Volume purged before sampling (m ³):	0.291
Sample ID (plus duplicates if any):	325675, 923033 (Duplicate) & 185036 (Cr)
Decontamination Method:	Pump & dip meter decontaminated with Decon 90 between boreholes
Sampling Method:	Sampled using dedicated Waterra tubing & foot valve
Sampling Time:	11:20
Low/High Tide:	Low
Sample containers:	2x1l glass, 2x500ml glass, 2x1l plastic, 5x500ml plastic, 8x40ml vials, 4x250ml plastic (NaOH preservative), 2x250ml plastic (H ₂ SO ₄ preservative)

Notes

Surface Water Sampling - Field Datasheet

General Information

Sampling Point: SW1 (NW Shallow Lagoon/Excavation)
 Type: Surface Water
 Date: 25/06/2012

Initial Conditions

Weather: Overcast, scattered showers, windy
 Tidal Conditions: Low tide at 16:24; High tide @ 09:56
 Sampling Device: Stainless steel sampling container on extended pole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Unstable Hydrochemical Parameters Record

Date	Time	pH	T°C	ORP	DO	DO	EC	Remarks
					mg/l	%	µs/cm	
25/06/2012	14:40	9.3	20.5	1.5	1.8	24.3	44.56	

Sampling Record

Sample ID (plus duplicates if any) 237415 and 285801 (Hexavalent Cr sample)
 Decontamination Method: Sampler decontaminated with Decon 90 before use
 Sampling Method: Grab sample using surface water sampler
 Sampling Time: 14:30
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 3x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Surface Water Sampling - Field Datasheet

General Information

Sampling Point: SW1 (NW Shallow Lagoon/Excavation)
 Type: Surface Water
 Date: 25/06/2012

Initial Conditions

Weather: Overcast, scattered showers, windy
 Tidal Conditions: Low tide at 16:24; High tide @ 09:56
 Sampling Device: Stainless steel sampling container on extended pole
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Unstable Hydrochemical Parameters Record

Date	Time	pH	T°C	ORP	DO	DO	EC	Remarks
					mg/l	%	µs/cm	
25/06/2012	14:55	9.2	17.5	-	1.1	13.3	45.53	

Sampling Record

Sample ID (plus duplicates if any) 637220 and 860685 (Hexavalent Cr sample)
 Decontamination Method: Sampler decontaminated with Decon 90 before use
 Sampling Method: Grab sample using surface water sampler
 Sampling Time: 14:45
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 3x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Surface Water Sampling - Field Datasheet

General Information

Sampling Point: SP1 (NE)

Type: Seepage

Date: 21/06/2012

Initial Conditions

Weather: Overcast, showery, windy

Tidal Conditions: Low tide at 13:40; High tide @ 19:38

Sampling Device: 0.5m dedicated Waterra tubing extended from seepage source into sampling containers

Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Unstable Hydrochemical Parameters Record

Date	Time	pH	T°C	ORP	DO	DO	EC	Remarks
					mg/l	%	µs/cm	
21/06/2012	14:03	8.2	13.0	-	1.1	12.6	43.09	

Sampling Record

Sample ID (plus duplicates if any) 515251

Decontamination Method: n/a

Sampling Method: Direct seepage to sample bottles using dedicated tubing

Sampling Time: 13:47

Low/High Tide: Low

Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Surface Water Sampling - Field Datasheet

General Information

Sampling Point: SP2 (E)
 Type: Seepage
 Date: 21/06/2012

Initial Conditions

Weather: Overcast, showery, windy
 Tidal Conditions: Low tide at 13:40; High tide @ 19:38
 Sampling Device: 0.5m dedicated Waterra tubing extended from seepage source into sampling containers
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Unstable Hydrochemical Parameters Record

Date	Time	pH	T°C	ORP	DO	DO	EC	Remarks
					mg/l	%	µs/cm	
21/06/2012	15:00	7.8	13.7	-	2.1	24.1	43.08	

Sampling Record

Sample ID (plus duplicates if any) 256404
 Decontamination Method: n/a
 Sampling Method: Direct seepage to sample bottles using dedicated tubing
 Sampling Time: 14:40
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes

Surface Water Sampling - Field Datasheet

General Information

Sampling Point: SP2 (E)
 Type: Seepage
 Date: 26/06/2012

Initial Conditions

Weather: Bright spells, windy
 Tidal Conditions: Low tide at 17:13; High tide @ 10:44
 Sampling Device: 0.5m dedicated Waterra tubing extended from seepage source into sampling containers
 Instruments Calibrated: Hanna HI 9828 multiparameter field probe

Unstable Hydrochemical Parameters Record

Date	Time	pH	T°C	ORP	DO	DO	EC	Remarks
					mg/l	%	µs/cm	
26/06/2012	14:56	9.2	13.7	-85.4	0.5	5.2	48.31	

Sampling Record

Sample ID (plus duplicates if any) 221455
 Decontamination Method: n/a
 Sampling Method: Direct seepage to sample bottles using dedicated tubing
 Sampling Time: 14:40
 Low/High Tide: Low
 Sample containers: 1x1l glass, 1x500ml glass, 1x1l plastic, 2x500ml plastic, 4x40ml vials, 2x250ml plastic (NaOH preservative), 1x250ml plastic (H₂SO₄ preservative)

Notes



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

Attention: Colette Kelly

CERTIFICATE OF ANALYSIS

Date: 20 June 2012
Customer: D_PRIORGEOT_CRK
Sample Delivery Group (SDG): 120608-53
Your Reference: P12030
Location: Haulbowline
Report No: 184855

This report has been revised and directly supersedes 184849 in its entirety.

We received 8 samples on Thursday June 07, 2012 and 8 of these samples were scheduled for analysis which was completed on Wednesday June 20, 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: 120608-53 **Location:** Haulbowline **Order Number:** 4559
Job: D_PRIORGEOT_CRK-44 **Customer:** Priority Geotechnical Ltd **Report Number:** 184855
Client Reference: P12030 **Attention:** Colette Kelly **Superseded Report:** 184849

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5700928	118900			05/06/2012
5700932	221777			05/06/2012
5700936	393447			06/06/2012
5700935	439721			06/06/2012
5700929	585333			05/06/2012
5700931	731222			05/06/2012
5700933	752593			06/06/2012
5700937	998631			06/06/2012

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



SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Table with columns: Lab Sample No(s), Customer Sample Reference, AGS Reference, Depth (m), Container, and various test results (Ammoniacal Nitrogen, Anions by Kone (w), BOD True Total, COD Unfiltered, Conductivity, Cyanide, Dissolved Metals, EPH CWG, Free Sulphur, GRO by GC-FID, Hexavalent Chromium, Low Level Cyanide, Low Level Metals, Mercury Dissolved).

SDG: 120608-53
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 184855
 Superseded Report: 184849

LIQUID Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Tests																	
						5700928	5700932	5700935	5700936	5700929	5700937	5700933	5700931	5700934	5700938	5700939	5700940						
X Test N No Determination Possible																							
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 4				X		X		X		X		X									
Metals Ultra Low	All	NDPs: 0 Tests: 4				X		X		X		X		X									
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 4				X		X		X		X		X									
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 4				X		X		X		X		X									
pH Value	All	NDPs: 0 Tests: 4				X		X		X		X		X									
Phenols by HPLC (W)	All	NDPs: 0 Tests: 4				X		X		X		X		X									
Sulphide	All	NDPs: 0 Tests: 4				X		X		X		X		X									
Total Metals by ICP-MS	All	NDPs: 0 Tests: 4				X		X		X		X		X									
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 4				X		X		X		X		X									
TPH CWG (W)	All	NDPs: 0 Tests: 4				X		X		X		X		X									
VOC MS (W)	All	NDPs: 0 Tests: 4						X		X		X		X									X



CERTIFICATE OF ANALYSIS

SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Results Legend		Customer Sample R	118900	221777	393447	439721	585333	731222
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.		05/06/2012	05/06/2012	06/06/2012	06/06/2012	05/06/2012	05/06/2012
S	Deviating sample.		07/06/2012	07/06/2012	07/06/2012	07/06/2012	07/06/2012	07/06/2012
aq	Aqueous / settled sample.		120608-53	120608-53	120608-53	120608-53	120608-53	120608-53
diss.filt	Dissolved / filtered sample.		5700928	5700932	5700936	5700935	5700929	5700931
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					
BOD, unfiltered	<1 mg/l	TM045			<2	<2		
Organic Carbon, Total	<3 mg/l	TM090	3.21	3.95			<3	<3
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	0.223			0.307	0.412
Sulphide	<0.01 mg/l	TM101	<0.01	<0.05			<0.01	<0.01
COD, unfiltered	<7 mg/l	TM107	382	1990			158	240
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	29	27.8			40	39.6
Aluminium (diss.filt)	<2.9 µg/l	TM152	<29	<29			30.8	<29
Antimony (diss.filt)	<0.16 µg/l	TM152	4.45	6.76			2.67	4.58
Arsenic (diss.filt)	<0.12 µg/l	TM152	20	20.8			27.9	26.6
Barium (diss.filt)	<0.03 µg/l	TM152	77	74.4			61.5	62.8
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.7	<0.7			<0.7	<0.7
Cadmium (diss.filt) (low level)	<0.03 µg/l	TM152	<0.3	<0.3			<0.3	<0.3
Chromium (diss.filt)	<0.22 µg/l	TM152	14.6	4.08			4.01	3
Selenium (diss.filt)	<0.39 µg/l	TM152	68.4	72			101	95.3
Vanadium (diss.filt)	<0.24 µg/l	TM152	5	3.04			<2.4	2.63
Zinc (diss.filt)	<0.41 µg/l	TM152	<4.1	<4.1			12.9	<4.1
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01			<0.01	<0.01
Sulphate	<2 mg/l	TM184	1580	1560			1990	2020
Chloride	<2 mg/l	TM184	12100	11700			16800	17000
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3			<0.3	<0.3
Boron (tot.unfilt)	<135 µg/l	TM191	1980	2010			1820	1730
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.015			0.02	0.08
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015			<0.015	0.03
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015			<0.015	<0.015
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015			<0.015	<0.015
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015			<0.015	<0.015
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015			<0.015	<0.015
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015			<0.015	<0.015
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105			<0.105	0.11
Cyanide, Free	<0.05 mg/l	TM227	<0.05	<0.05			<0.05	<0.05
Cyanide, Complex	<0.05 mg/l	TM227	<0.05	<0.05			<0.05	<0.05
Thiocyanate	<0.05 mg/l	TM227	<0.05	<0.05			<0.05	<0.05
Calcium (diss.filt)	<0.012 mg/l	TM228	344	337			635	615
Sodium (diss.filt)	<0.076 mg/l	TM228	6850	6820			10500	9890
Magnesium (diss.filt)	<0.036 mg/l	TM228	684	636			782	737



CERTIFICATE OF ANALYSIS

SDG: 120608-53	Location: Haulbowline	Order Number: 4559
Job: D_PRIORGEOT_CRK-44	Customer: Priority Geotechnical Ltd	Report Number: 184855
Client Reference: P12030	Attention: Colette Kelly	Superseded Report: 184849

Results Legend			Customer Sample R		118900	221777	393447	439721	585333	731222
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference							
M	mCERTS accredited.			Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
S	Deviating sample.			05/06/2012	05/06/2012	06/06/2012	06/06/2012	06/06/2012	05/06/2012	05/06/2012
aq	Aqueous / settled sample.			07/06/2012	07/06/2012	07/06/2012	07/06/2012	07/06/2012	07/06/2012	07/06/2012
diss.filt	Dissolved / filtered sample.			120608-53	120608-53	120608-53	120608-53	120608-53	120608-53	120608-53
tot.unfilt	Total / unfiltered sample.			5700928	5700932	5700936	5700935	5700929	5700931	5700931
*	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								
Potassium (diss.filt)	<2.335 mg/l	TM228	234	227				327		316
Chromium, Hexavalent	<0.03 mg/l	TM241	<0.03	<0.03				<0.03		<0.03
pH	<1 pH Units	TM256	8.76	8.49				9.24		8.92
Phenol	<0.002 mg/l	TM259	<0.002	<0.002				<0.002		<0.002
Cresols	<0.006 mg/l	TM259	<0.006	<0.006				<0.006		<0.006
Xylenols	<0.008 mg/l	TM259	<0.008	<0.008				<0.008		<0.008
2,3,5-Trimethylphenol	<0.003 mg/l	TM259	<0.003	<0.003				<0.003		<0.003
2-Isopropylphenol	<0.006 mg/l	TM259	<0.006	<0.006				<0.006		<0.006
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259	<0.025	<0.025				<0.025		<0.025
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5				<5		<5
Sulphur, Free	<0.05 mg/l	TM294	<0.05	<0.05				<0.05		<0.05
Copper Ultra low	<0.1 µg/l	TM307	41	49.9				69.7		53.7
Iron Ultra low	<70 µg/l	TM307	<70	<70				<70		<70
Manganese Ultra low	<0.1 µg/l	TM307	<0.1	<0.1				<0.1		<0.1
Nickel Ultra low	<0.1 µg/l	TM307	<0.1	<0.1				<0.1		<0.1
Lead Ultra low	<0.1 µg/l	TM307	1.49	1.83				1.27		1.37



CERTIFICATE OF ANALYSIS

Validated

SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Table with columns for Results Legend, Customer Sample R (752593, 998631), Component (BOD, unfiltered), LOD/Units (<1 mg/l), Method (TM045), and results (<2 #).



CERTIFICATE OF ANALYSIS

SDG: 120608-53	Location: Haulbowline	Order Number: 4559
Job: D_PRIORGEOT_CRK-44	Customer: Priority Geotechnical Ltd	Report Number: 184855
Client Reference: P12030	Attention: Colette Kelly	Superseded Report: 184849

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample R	118900	221777	585333	731222		
#	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.		Water (GW/SW)	Water (GW/SW)	Water (GW/SW)	Water (GW/SW)		
diss.filt	Dissolved / filtered sample.		05/06/2012	05/06/2012	05/06/2012	05/06/2012		
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.		07/06/2012	07/06/2012	07/06/2012	07/06/2012		
**	% 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		120608-53	120608-53	120608-53	120608-53		
(F)	Trigger breach confirmed		5700928	5700932	5700929	5700931		
Component	LOD/Units		Method					
Naphthalene (aq)	<0.1 µg/l	TM178	<0.1 #	<0.1 #	0.7 #	0.678 #		
Acenaphthene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.015 #	0.264 #	0.312 #		
Acenaphthylene (aq)	<0.011 µg/l	TM178	<0.011 #	<0.011 #	0.0191 #	0.0185 #		
Fluoranthene (aq)	<0.017 µg/l	TM178	0.444 #	0.0892 #	0.0573 #	0.142 #		
Anthracene (aq)	<0.015 µg/l	TM178	0.0247 #	<0.015 #	0.0511 #	0.0474 #		
Phenanthrene (aq)	<0.022 µg/l	TM178	0.303 #	0.0701 #	0.261 #	0.312 #		
Fluorene (aq)	<0.014 µg/l	TM178	<0.014 #	<0.014 #	0.174 #	0.173 #		
Chrysene (aq)	<0.013 µg/l	TM178	0.58 #	<0.013 #	<0.013 #	<0.013 #		
Pyrene (aq)	<0.015 µg/l	TM178	0.523 #	0.142 #	0.0391 #	0.118 #		
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178	0.39 #	<0.017 #	<0.017 #	<0.017 #		
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178	0.389 #	<0.023 #	<0.023 #	<0.023 #		
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178	0.647 #	<0.027 #	<0.027 #	<0.027 #		
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178	0.862 #	<0.009 #	<0.009 #	<0.009 #		
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178	0.191 #	<0.016 #	<0.016 #	<0.016 #		
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178	0.478 #	0.0864 #	<0.016 #	<0.016 #		
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178	0.486 #	<0.014 #	<0.014 #	<0.014 #		
PAH, Total Detected USEPA 16 (aq)	<0.247 µg/l	TM178	5.32	0.388	1.57	1.8		



SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

TPH CWG (W)

Results Legend		Customer Sample R	118900	221777	585333	731222		
#	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.							
diss.filt	Dissolved / filtered sample.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)		
tot.unfilt	Total / unfiltered sample.		05/06/2012	05/06/2012	05/06/2012	05/06/2012		
*	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		07/06/2012	07/06/2012	07/06/2012	07/06/2012		
	Trigger breach confirmed		120608-53	120608-53	120608-53	120608-53		
(F)			5700928	5700932	5700929	5700931		
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM245	85	84	86	82		
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	<50	#	#
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3	<3	<3	#	#
Benzene	<7 µg/l	TM245	<7	<7	<7	<7	#	#
Toluene	<4 µg/l	TM245	<4	<4	<4	<4	#	#
Ethylbenzene	<5 µg/l	TM245	<5	<5	<5	<5	#	#
m,p-Xylene	<8 µg/l	TM245	<8	<8	<8	<8	#	#
o-Xylene	<3 µg/l	TM245	<3	<3	<3	<3	#	#
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11	<11	<11		
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28		
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10		
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10		
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10		
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	18	<10	<10	<10		
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	39	<10	<10	<10		
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	398	54	<10	49		
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	455	54	<10	49		
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10		
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10		
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	14	<10	<10	<10		
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	14	<10	<10	<10		
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	471	54	<10	49		



CERTIFICATE OF ANALYSIS

SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

VOC MS (W)

Results Legend		Customer Sample R	118900	221777	585333	731222		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		Water (GW/SW)	Water (GW/SW)	Water (GW/SW)	Water (GW/SW)		
S	Deviating sample.		05/06/2012	05/06/2012	05/06/2012	05/06/2012		
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		07/06/2012	07/06/2012	07/06/2012	07/06/2012		
(F)	Trigger breach confirmed		120608-53	120608-53	120608-53	120608-53		
			5700928	5700932	5700929	5700931		
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM208	110	110	106	112		
Toluene-d8**	%	TM208	102	105	102	105		
4-Bromofluorobenzene**	%	TM208	94.4	101	98.8	92.2		
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Chloromethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Vinyl chloride	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Bromomethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Chloroethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Carbon disulphide	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Dichloromethane	<3 µg/l	TM208	<3	<3	<3	<3	#	#
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1	#	#
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Bromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Chloroform	<1 µg/l	TM208	<1	<1	<1	<1	#	#
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Carbontetrachloride	<1 µg/l	TM208	<1	<1	<1	<1	#	#
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Benzene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Trichloroethene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Dibromomethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Bromodichloromethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Toluene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Tetrachloroethene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Dibromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1	#	#



SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

VOC MS (W)

Results Legend			Customer Sample R			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	118900	221777	585333	731222
M	mCERTS accredited.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
S	Deviating sample.		05/06/2012	05/06/2012	05/06/2012	05/06/2012
aq	Aqueous / settled sample.		07/06/2012	07/06/2012	07/06/2012	07/06/2012
diss.fit	Dissolved / filtered sample.		120608-53	120608-53	120608-53	120608-53
tot.unfilt	Total / unfiltered sample.		5700928	5700932	5700929	5700931
**	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	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #
VOC TIC	-	TM208	No TICs identified	No TICs identified	No TICs identified	No TICs identified
Sum of detected Xylenes	<2 µg/l	TM208	<2	<2	<2	<2



SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Notification of NDPs (No determination possible)

Date Received : 08/06/2012 11:53:42

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5700928	118900		Low Level Metals 1	Sample unsuitable for analysis
5700929	585333		Low Level Metals 1	Sample unsuitable for analysis
5700931	731222		Low Level Metals 1	Sample unsuitable for analysis
5700932	221777		Low Level Metals 1	Sample unsuitable for analysis



CERTIFICATE OF ANALYSIS

SDG:	120608-53	Location:	Haulbowline	Order Number:	4559
Job:	D_PRIORGEOT_CRK-44	Customer:	Priority Geotechnical Ltd	Report Number:	184855
Client Reference:	P12030	Attention:	Colette Kelly	Superseded Report:	184849

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: 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		
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		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
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		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
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		
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		
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		
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				

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



SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Test Completion Dates

Lab Sample No(s)	5700928	5700932	5700936	5700935	5700929	5700931	5700933	5700937
Customer Sample Ref.	118900	221777	393447	439721	585333	731222	752593	998631
AGS Ref.								
Depth								
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	14-Jun-2012	14-Jun-2012			14-Jun-2012	14-Jun-2012		
Anions by Kone (w)	15-Jun-2012	15-Jun-2012			15-Jun-2012	15-Jun-2012		
BOD True Total			14-Jun-2012	14-Jun-2012			14-Jun-2012	14-Jun-2012
COD Unfiltered	09-Jun-2012	09-Jun-2012			09-Jun-2012	09-Jun-2012		
Conductivity (at 20 deg.C)	11-Jun-2012	11-Jun-2012			11-Jun-2012	11-Jun-2012		
Cyanide Comp/Free/Total/Thiocyanate	13-Jun-2012	13-Jun-2012			13-Jun-2012	13-Jun-2012		
Dissolved Metals by ICP-MS	15-Jun-2012	15-Jun-2012			15-Jun-2012	15-Jun-2012		
EPH CWG (Aliphatic) Aqueous GC (W)	13-Jun-2012	13-Jun-2012			13-Jun-2012	13-Jun-2012		
EPH CWG (Aromatic) Aqueous GC (W)	13-Jun-2012	13-Jun-2012			13-Jun-2012	13-Jun-2012		
Free Sulphur	13-Jun-2012	13-Jun-2012			13-Jun-2012	13-Jun-2012		
GRO by GC-FID (W)	14-Jun-2012	14-Jun-2012			14-Jun-2012	14-Jun-2012		
Hexavalent Chromium (w)	11-Jun-2012	11-Jun-2012			11-Jun-2012	11-Jun-2012		
Low Level Cyanide (W)	13-Jun-2012	13-Jun-2012			13-Jun-2012	13-Jun-2012		
Mercury Dissolved	19-Jun-2012	19-Jun-2012			19-Jun-2012	19-Jun-2012		
Metals by iCap-OES Dissolved (W)	15-Jun-2012	15-Jun-2012			15-Jun-2012	15-Jun-2012		
Metals Ultra Low	13-Jun-2012	12-Jun-2012			13-Jun-2012	13-Jun-2012		
Nitrite by Kone (w)	13-Jun-2012	15-Jun-2012			13-Jun-2012	13-Jun-2012		
PAH Spec MS - Aqueous (W)	14-Jun-2012	14-Jun-2012			14-Jun-2012	14-Jun-2012		
PCB Congeners - Aqueous (W)	13-Jun-2012	13-Jun-2012			13-Jun-2012	13-Jun-2012		
pH Value	13-Jun-2012	13-Jun-2012			13-Jun-2012	13-Jun-2012		
Phenols by HPLC (W)	12-Jun-2012	12-Jun-2012			12-Jun-2012	12-Jun-2012		
Sulphide	12-Jun-2012	12-Jun-2012			12-Jun-2012	12-Jun-2012		
Total Metals by ICP-MS	12-Jun-2012	12-Jun-2012			12-Jun-2012	12-Jun-2012		
Total Organic and Inorganic Carbon	11-Jun-2012	11-Jun-2012			11-Jun-2012	11-Jun-2012		
TPH CWG (W)	14-Jun-2012	14-Jun-2012			14-Jun-2012	14-Jun-2012		
VOC MS (W)	14-Jun-2012	14-Jun-2012			14-Jun-2012	14-Jun-2012		



CERTIFICATE OF ANALYSIS

SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

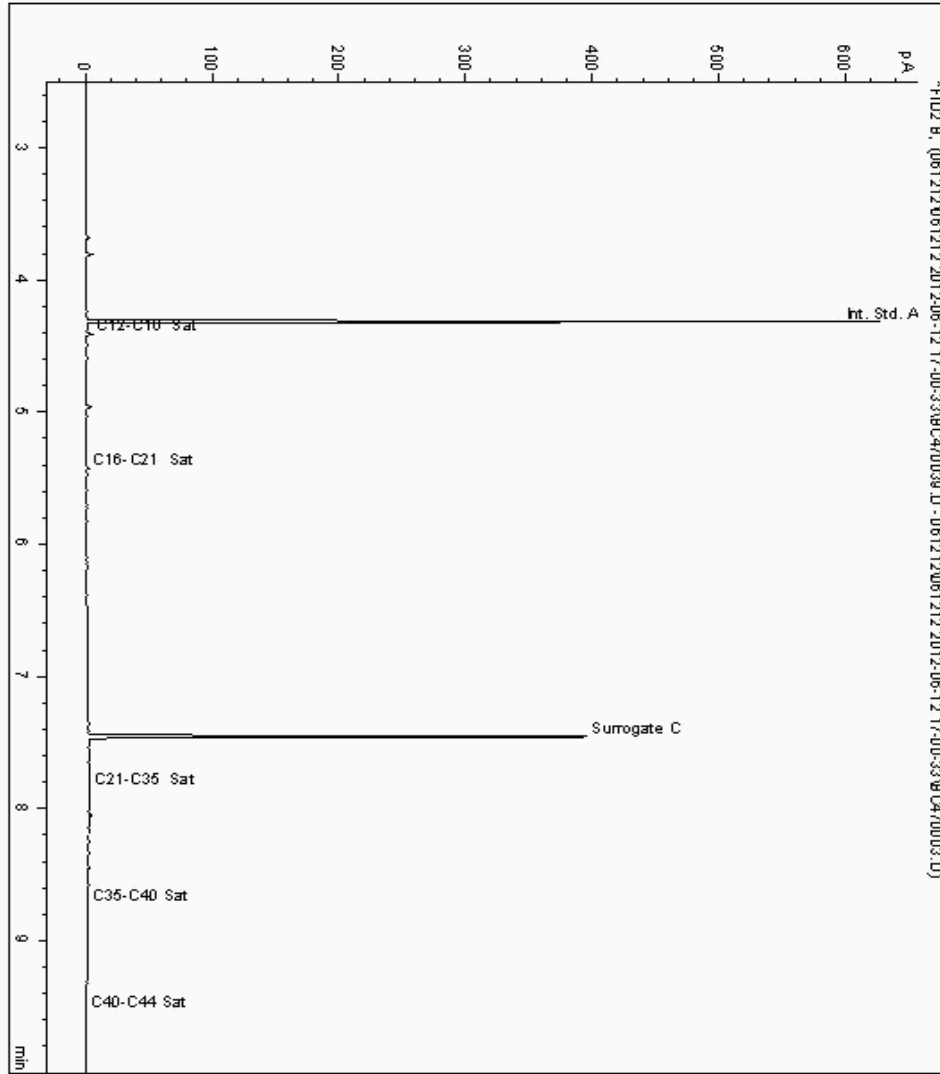
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5708763
Sample ID : 118900

Depth :

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

Sample Identity: 5564931-5708763
Date Acquired : 13/06/12 05:12:40
Units : ppb
Dilution :
CF : 1
Multiplier : 0.018





CERTIFICATE OF ANALYSIS

SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

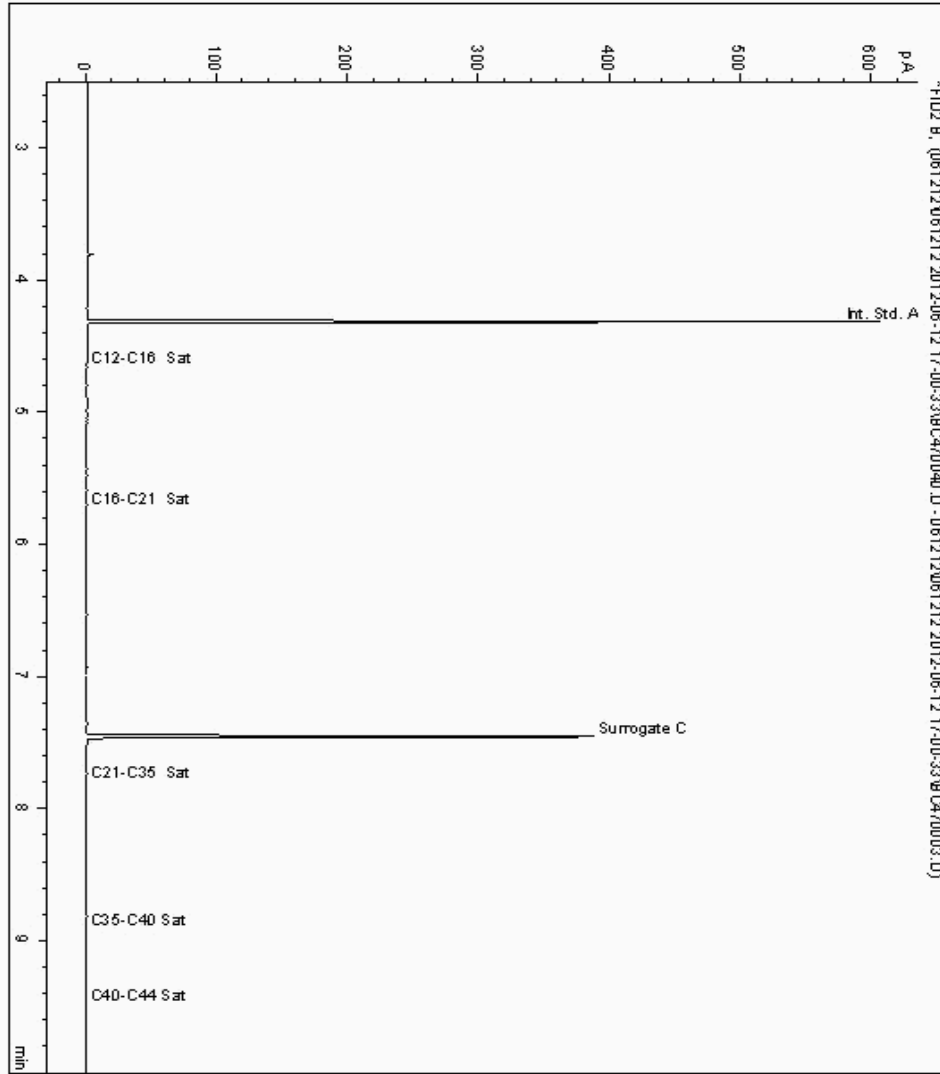
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5708801
Sample ID : 585333

Depth :

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

Sample Identity: 5564966-5708801
Date Acquired : 13/06/12 05:32:19
Units : ppb
Dilution :
CF : 1
Multiplier : 0.018





CERTIFICATE OF ANALYSIS

SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

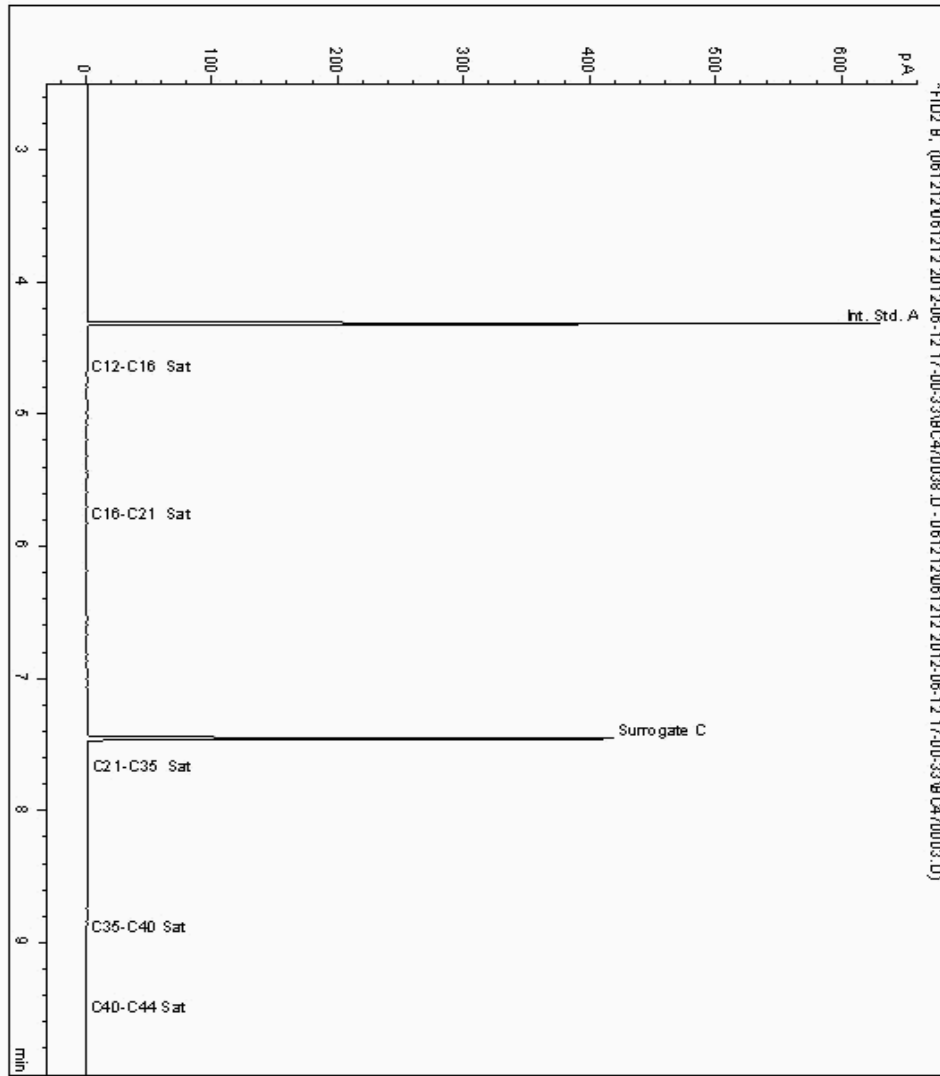
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5708813
Sample ID : 221777

Depth :

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

Sample Identity: 5565018-5708813
Date Acquired : 13/06/12 04:53:12
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

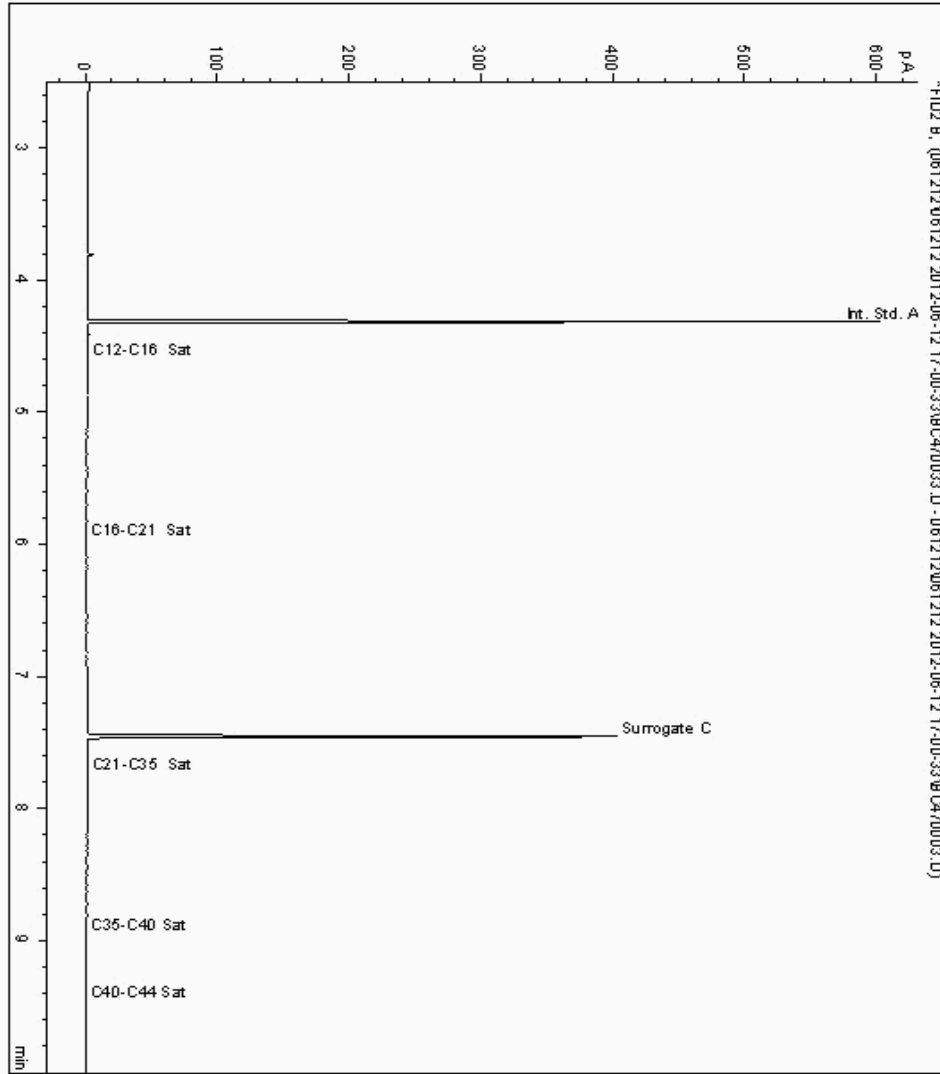
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5708818
Sample ID : 731222

Depth :

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

Sample Identity: 5564992-5708818
Date Acquired : 13/06/12 03:15:58
Units : ppb
Dilution :
CF : 1
Multiplier : 0.019





CERTIFICATE OF ANALYSIS

SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

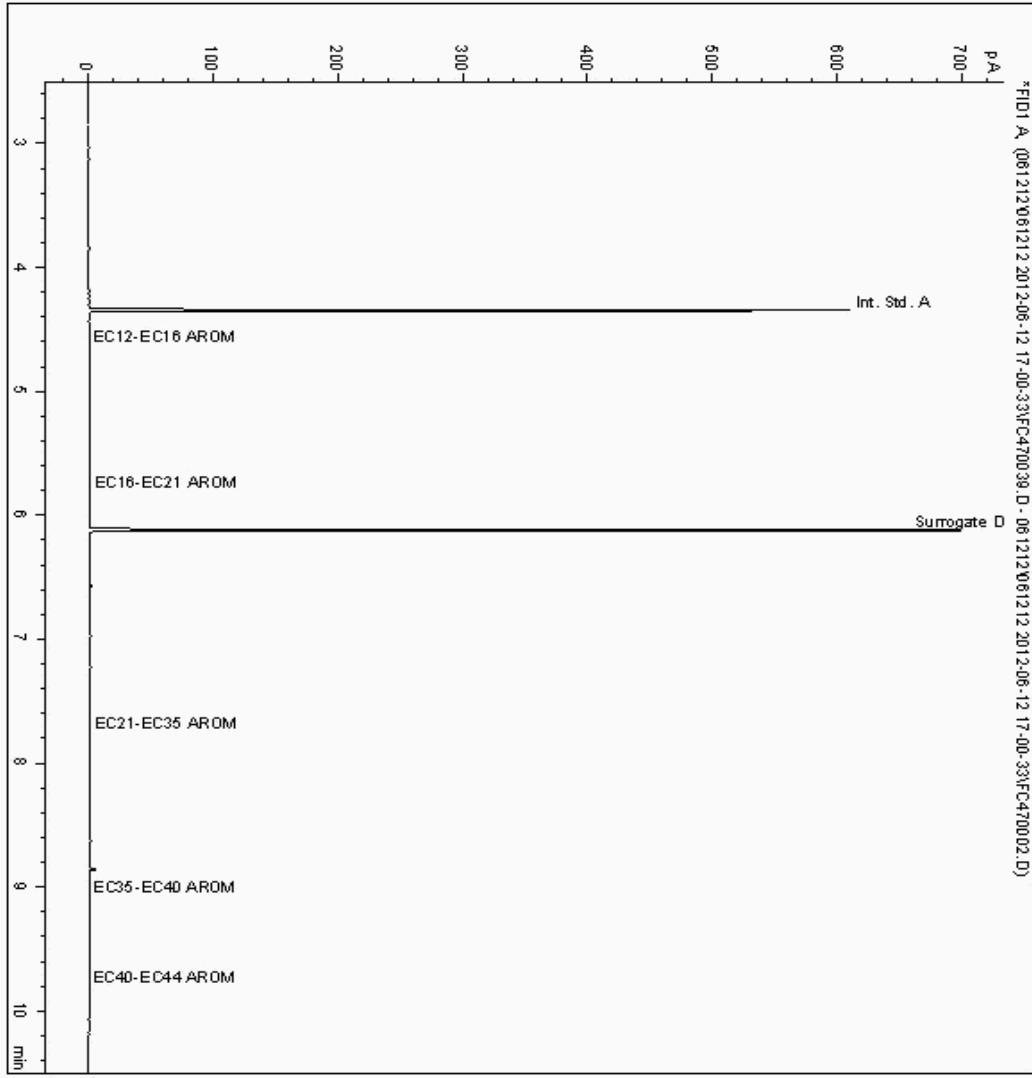
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5708763
Sample ID : 118900

Depth :

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

Sample Identity: 5564932-5708763
Date Acquired : 13/06/12 05:12:40
Units :
Dilution :
CF : 1
Multiplier : 0.018





SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

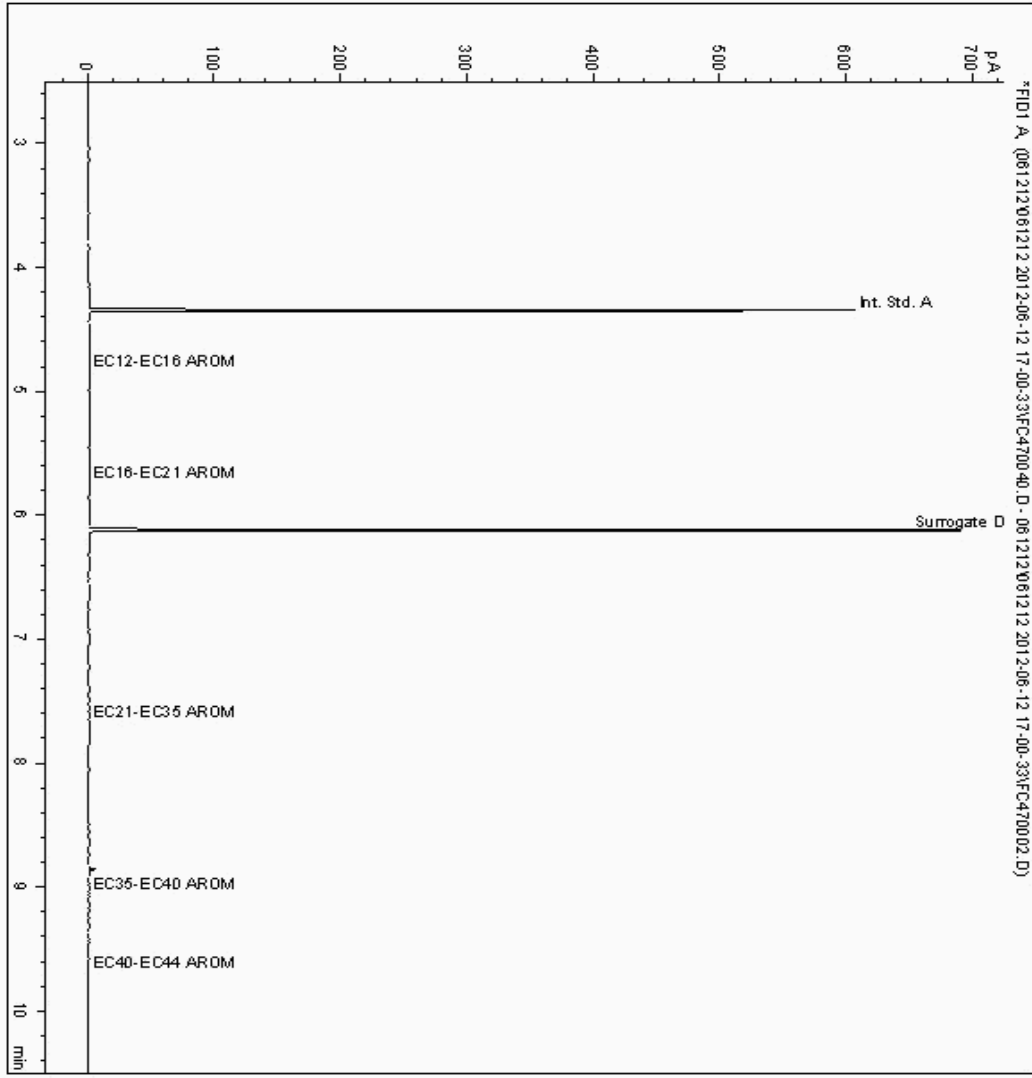
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5708801
Sample ID : 585333

Depth :

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

Sample Identity: 5564967-5708801
Date Acquired : 13/06/12 05:32:19
Units :
Dilution :
CF : 1
Multiplier : 0.018





SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

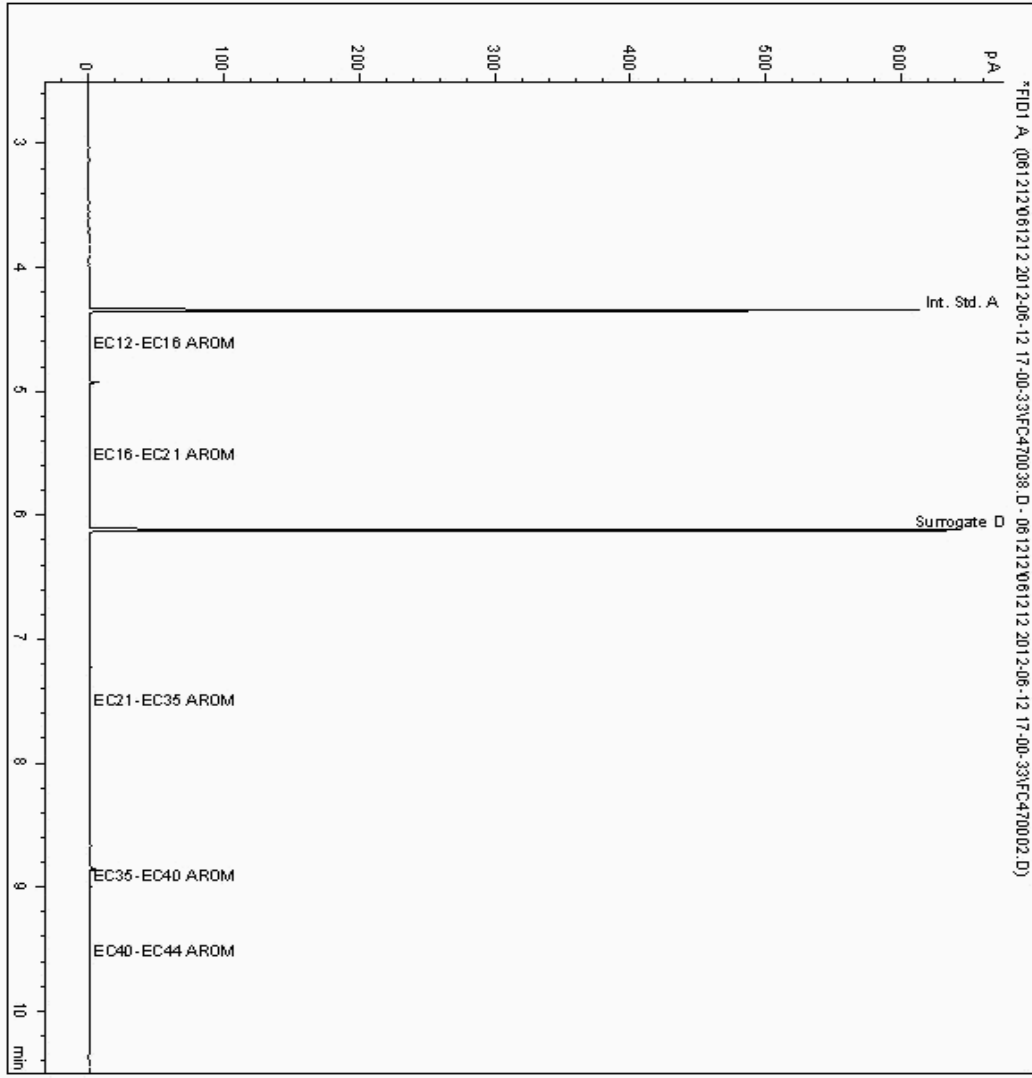
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5708813
Sample ID : 221777

Depth :

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

Sample Identity: 5565019-5708813
Date Acquired : 13/06/12 04:53:12
Units :
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

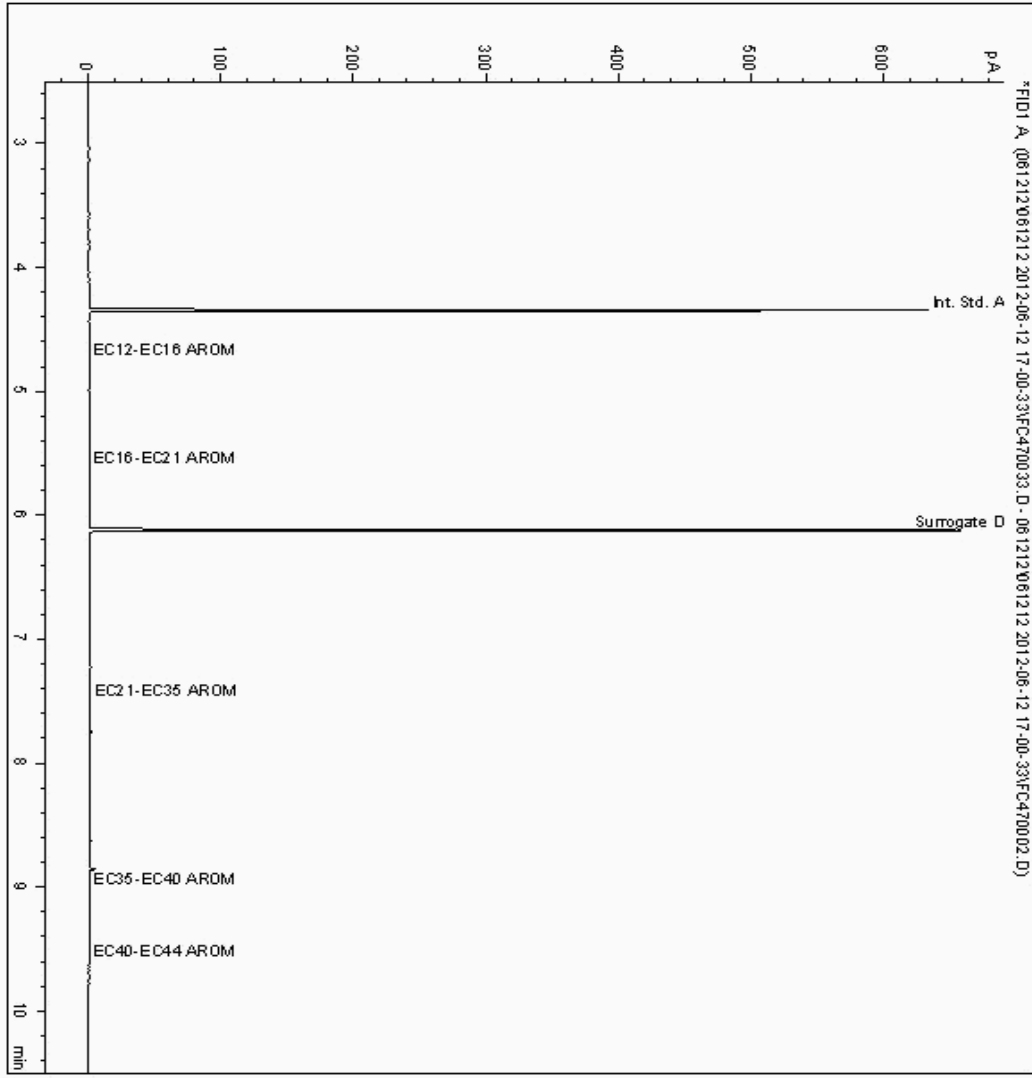
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5708818
Sample ID : 731222

Depth :

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

Sample Identity: 5564993-5708818
Date Acquired : 13/06/12 03:15:58
Units :
Dilution :
CF : 1
Multiplier : 0.019





SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

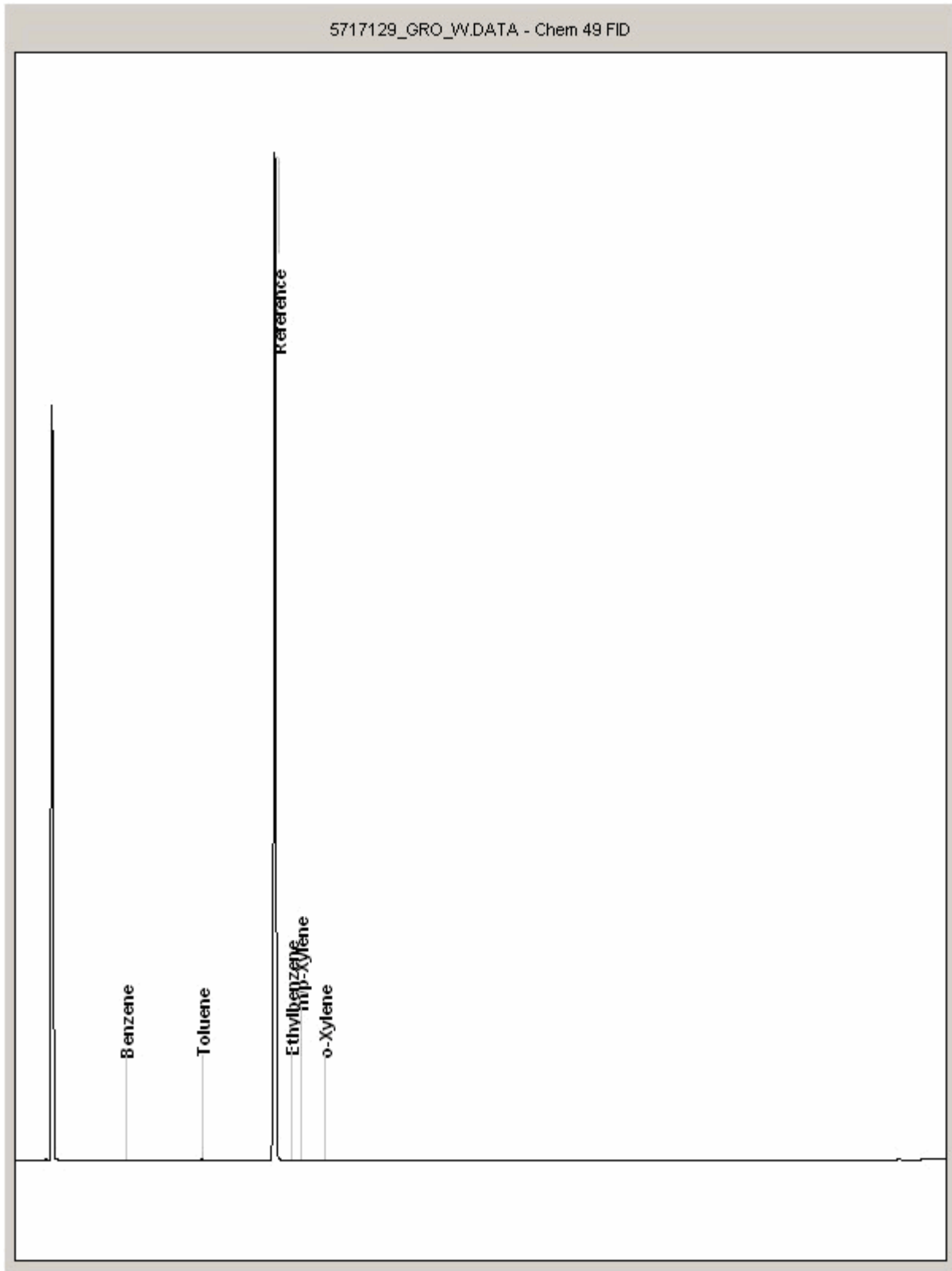
Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5717129
Sample ID : 118900

Depth :





SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

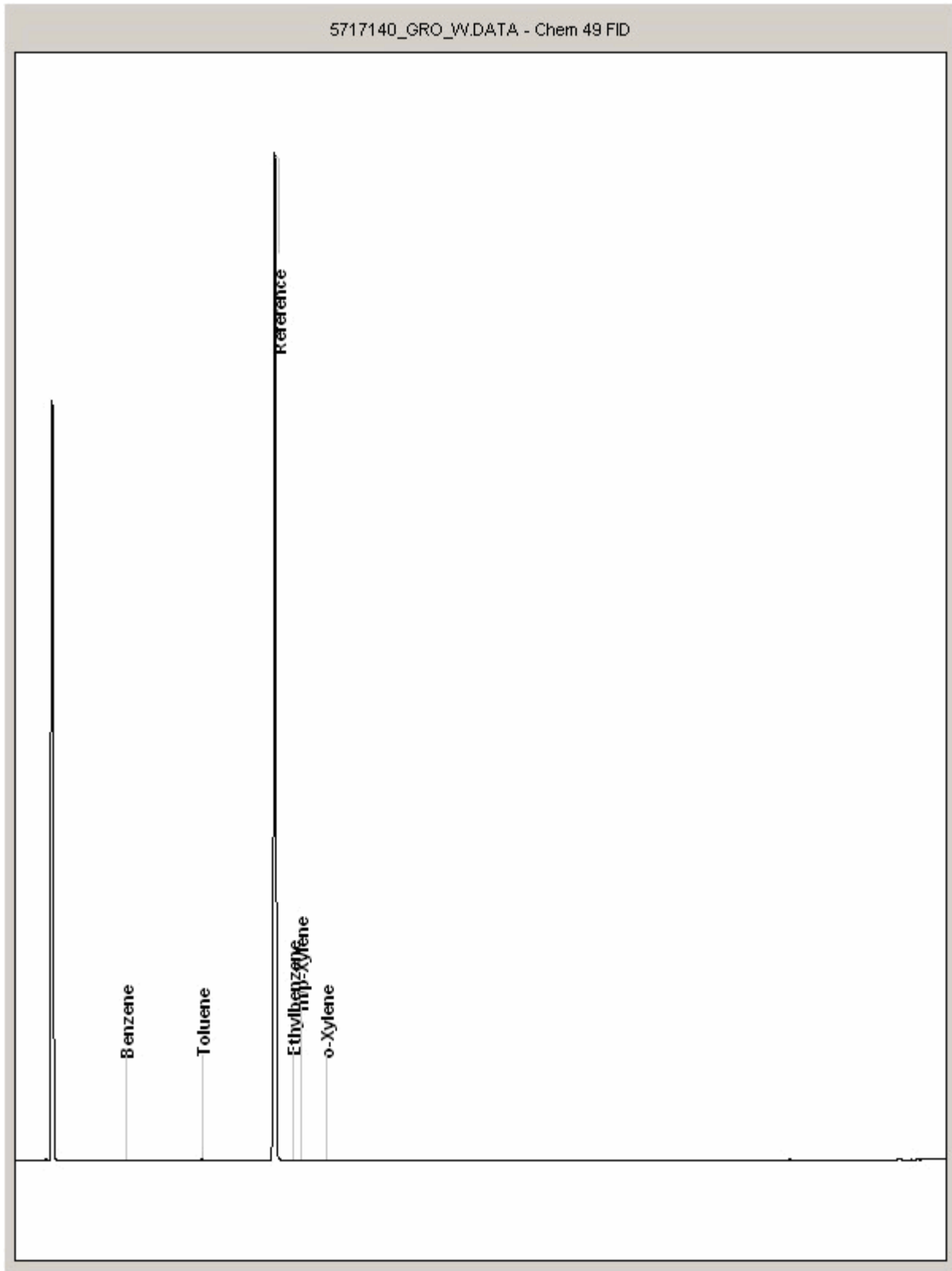
Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5717140
Sample ID : 221777

Depth :





SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

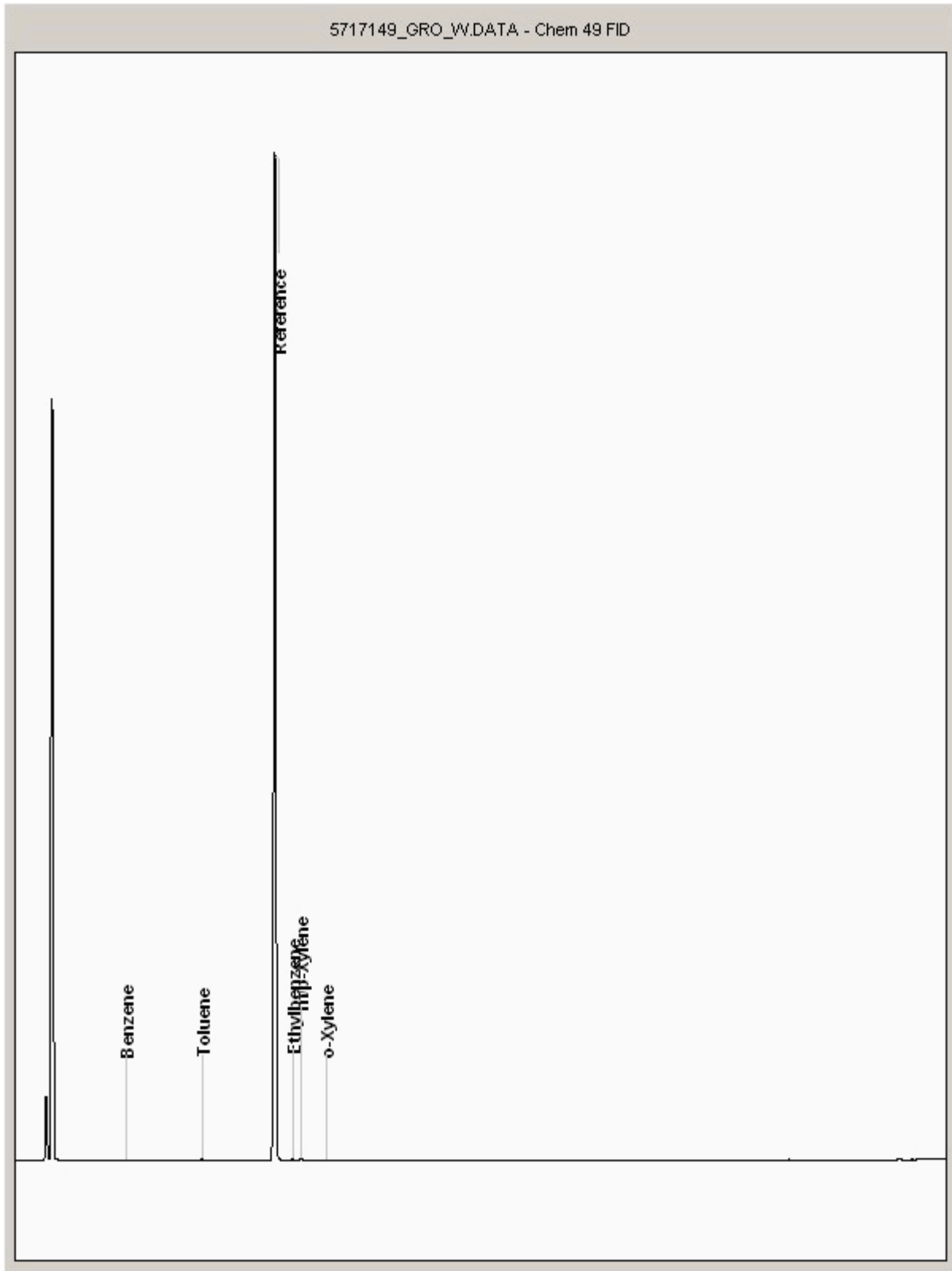
Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5717149
Sample ID : 731222

Depth :





SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

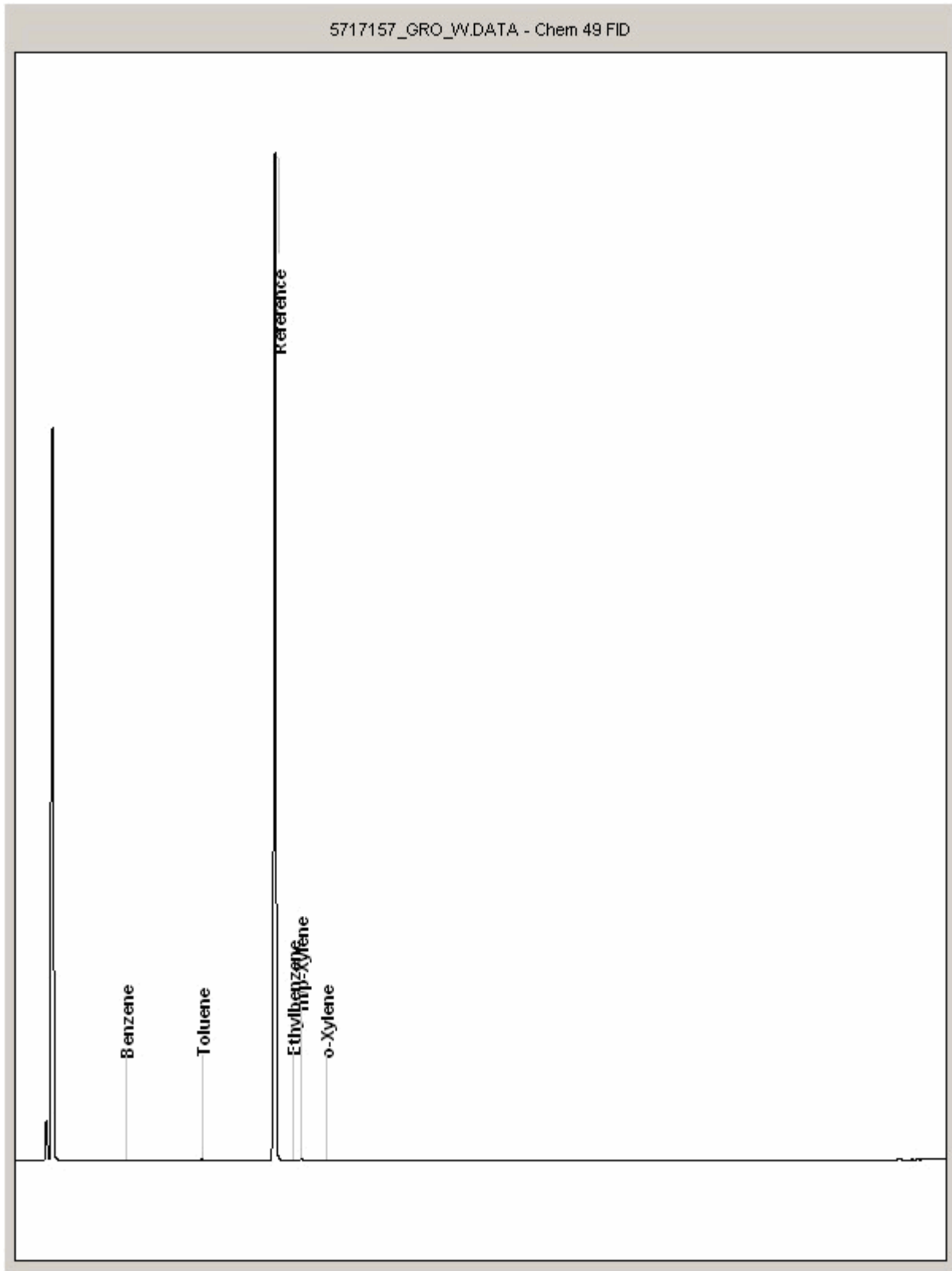
Order Number: 4559
Report Number: 184855
Superseded Report: 184849

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5717157
Sample ID : 585333

Depth :



SDG: 120608-53
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 184855
Superseded Report: 184849

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-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
PESTICOPP	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 (R)	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.



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

Attention: Colette Kelly

CERTIFICATE OF ANALYSIS

Date: 24 July 2012
Customer: D_PRIORGEOT_CRK
Sample Delivery Group (SDG): 120621-83
Your Reference: P12030
Location: Haulbowline
Report No: 188568

This report has been revised and directly supersedes 186916 in its entirety.

We received 10 samples on Wednesday June 20, 2012 and 10 of these samples were scheduled for analysis which was completed on Tuesday July 24, 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: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5764345	355340			19/06/2012
5764347	774814			19/06/2012
5764344	782115			19/06/2012
5764342	966673			19/06/2012
5764348	HW1			19/06/2012
5764349	HW2			19/06/2012
5764350	HW3			19/06/2012
5764351	HW4			19/06/2012
5764352	HW5			19/06/2012
5764353	HW6			19/06/2012

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



CERTIFICATE OF ANALYSIS

SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

LEACH Results Legend X Test N No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5764348	HW1			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11 plastic (ALE221) 11 green glass bottle
		5764349	HW2			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11 plastic (ALE221) 11 green glass bottle
		5764350	HW3			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11 plastic (ALE221) 11 green glass bottle
		5764351	HW4			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11 plastic (ALE221) 11 green glass bottle
	5764345	355340			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11 plastic (ALE221) 11 green glass bottle	
	5764347	774814			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11 plastic (ALE221) 11 green glass bottle	
	5764344	782115			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11 plastic (ALE221) 11 green glass bottle	
	5764342	966673			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11 plastic (ALE221) 11 green glass bottle	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 2				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 10				
Anions by Kone (w)	All	NDPs: 0 Tests: 10				
BOD True Total	All	NDPs: 0 Tests: 10				
COD Unfiltered	All	NDPs: 0 Tests: 10				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 10				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 10				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 10				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 10				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 10				
Fluoride	All	NDPs: 0 Tests: 2				
Free Sulphur	All	NDPs: 0 Tests: 10				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 10				
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 10				
Low Level Cyanide (W)	All	NDPs: 0 Tests: 10				



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

LEACH 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	
		5764348	HW1			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle
		5764349	HW2			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle
		5764350	HW3			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle
		5764351	HW4			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle
	5764345	355340			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle	
	5764347	774814			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle	
	5764344	782115			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle	
	5764342	966673			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle	
Metals analysis (Saline Sample)	All	NDPs: 0 Tests: 10				
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 10				
Nitrite by Kone (w)	All	NDPs: 0 Tests: 10				
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 10				
pH Value	All	NDPs: 0 Tests: 10				
Phenols by ms (w)	All	NDPs: 0 Tests: 6				
Saline TON	All	NDPs: 0 Tests: 10				
Sulphide	All	NDPs: 0 Tests: 10				
TOC (Saline)*	All	NDPs: 0 Tests: 10				
TPH CWG (W)	All	NDPs: 0 Tests: 10				
VOC MS (W)	All	NDPs: 0 Tests: 4				



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

LEACH Results Legend <input checked="" type="checkbox"/> Test <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)		5764352	5764353
	Customer Sample Reference		HW5	HW6
	AGS Reference			
	Depth (m)			
	Container		1l green glass bottle	Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 1l plastic (ALE221) 1l green glass bottle
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Anions by Kone (w)	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
BOD True Total	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
COD Unfiltered	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Free Sulphur	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
GRO by GC-FID (W)	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Low Level Cyanide (W)	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Metals analysis (Saline Sample)	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

LEACH Results Legend X Test N No Determination Possible	Lab Sample No(s)	5764352	5764353							
	Customer Sample Reference	HW5	HW6							
	AGS Reference									
	Depth (m)									
	Container	1l green glass bottle	Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 1l plastic (ALE221) 1l green glass bottle Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 1l plastic (ALE221)							
Nitrite by Kone (w)	All	NDPs: 0 Tests: 10	X	X						
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 10	X		X					
pH Value	All	NDPs: 0 Tests: 10	X			X				
Saline TON	All	NDPs: 0 Tests: 10	X			X				
Sulphide	All	NDPs: 0 Tests: 10	X			X				
TOC (Saline)*	All	NDPs: 0 Tests: 10	X			X				
TPH CWG (W)	All	NDPs: 0 Tests: 10	X			X				



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Results Legend			Customer Sample Ref.		355340	774814	782115	966673	HW1	HW2
#	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)								
		Sample Type	Saline D	Saline D	Saline D	Saline D	Saline D	Saline D	Saline D	Saline D
		Date Sampled	19/06/2012	19/06/2012	19/06/2012	19/06/2012	19/06/2012	19/06/2012	19/06/2012	19/06/2012
		Sampled Time								
		Date Received	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012
		SDG Ref	120621-83	120621-83	120621-83	120621-83	120621-83	120621-83	120621-83	120621-83
		Lab Sample No.(s)	5764345	5764347	5764344		5764342	5764348		5764349
		AGS Reference								
Component	LOD/Units	Method								
TOC (Saline)*	<1 mg/l	SUB	7.45	2.73	12.6	3.92	3.94	3.15		
Saline Carbonate Alkalinity as CaCO3	<5 mg/l	TM043					<5			
BOD, unfiltered	<1 mg/l	TM045	14.3	17.1	89.1	61.3	<2	<2		
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	0.242	<0.2	1.28	1.21	0.222	0.225		
Sulphide	<0.01 mg/l	TM101	<0.01	0.694	<0.01	<0.01	<0.01	<0.01		
Fluoride	<0.5 mg/l	TM104					0.582			
COD, unfiltered	<7 mg/l	TM107	245	253	382	248	194	243		
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	39.6	40.5	38.6	37.7	24.8	28.8		
Barium (diss.filt)	<0.03 µg/l	TM152	77.8	67.6	126	132	11	9.09		
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07		
Cobalt (diss.filt)	<0.06 µg/l	TM152					0.399			
Molybdenum (diss.filt)	<0.24 µg/l	TM152					5.64			
Phosphorus (diss.filt)	<6.3 µg/l	TM152					<6.3			
Thallium (diss.filt)	<0.96 µg/l	TM152					<0.96			
Tin (diss.filt)	<0.36 µg/l	TM152					<0.36			
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	0.075	<0.05	<0.05	0.057	<0.05		
Sulphate	<2 mg/l	TM184	2140	2100	1760	1700	1340	1500		
Chloride	<2 mg/l	TM184	17600	17300	16900	16600	10500	11900		
PCB congener 28	<0.015 µg/l	TM197	0.02	0.02	<0.015	<0.015	<0.015	<0.015		
PCB congener 52	<0.015 µg/l	TM197	0.02	0.02	<0.015	<0.015	<0.015	<0.015		
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105		
Phenol	<0.5 µg/l	TM205	<3	<3	<3	<3	<3	<3		
2-methylphenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
3-methylphenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
4-methylphenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
2-chlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
2,4-dimethylphenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
4-chloro-3-methylphenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
2,6-dichlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
4-Chlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Results Legend		Customer Sample Ref.	355340	774814	782115	966673	HW1	HW2
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Saline D 19/06/2012	Saline D 19/06/2012	Saline D 19/06/2012	Saline D 19/06/2012	Saline D 19/06/2012	Saline D 19/06/2012
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							
2,4-dichlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	
2-nitrophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	
2,4,6-trichlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	
2,4,5-trichlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	
4-nitrophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	
2,3,5,6-tetrachlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	
2,3,4,6-tetrachlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5	<0.5	
2,4-dinitrophenol	<2.5 µg/l	TM205	<12.5	<12.5	<5	<5	<5	
DNOC	<3 µg/l	TM205	<6	<6	<6	<6	<6	
Pentachlorophenol	<2 µg/l	TM205	<2	<2	<2	<2	<2	
Dinoseb	<4 µg/l	TM205	<8	<8	<8	<8	<8	
Cyanide, Free	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cyanide, Complex	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Thiocyanate	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Calcium (diss.filt)	<0.012 mg/l	TM228	529	516	784	765	201	229
Sodium (diss.filt)	<0.076 mg/l	TM228	8500	10700	8790	8530	5110	6730
Magnesium (diss.filt)	<0.036 mg/l	TM228	910	840	572	492	649	712
Potassium (diss.filt)	<2.335 mg/l	TM228	336	328	318	307	193	225
Chromium, Hexavalent	<0.03 mg/l	TM241	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
pH	<1 pH Units	TM256	8.09	7.61	7.09	6.83	7.89	7.99
Arsenic (Saline)	<0.5 µg/l	TM270	1.51	1.13	2.95	2.95	2.08	2
Aluminium (Saline)	<3.7 µg/l	TM270	27	22.8	34.5	30.7	52.2	37.2
Antimony (Saline)	<1 µg/l	TM270	<1	1.49	<1	<1	<1	1.65
Boron (Saline)	<201 µg/l	TM270	3700	2900	1870	1850	2550	2780
Cadmium (Saline)	<0.15 µg/l	TM270	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium (Saline)	<1.5 µg/l	TM270	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Copper (Saline)	<1 µg/l	TM270	<1	<1	<1	<1	<1	<1
Iron (Saline)	<4 µg/l	TM270	<4	<4	<4	<4	4.6	24.2
Lead (Saline)	<0.2 µg/l	TM270	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Manganese (Saline)	<0.3 µg/l	TM270	75.8	<0.3	631	600	12.6	9.12
Mercury (Saline)	<0.15 µg/l	TM270	0.273	<0.15	0.384	0.478	<0.15	<0.15
Nickel (saline)	<1.1 µg/l	TM270	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Selenium (Saline)	<0.5 µg/l	TM270	1.62	1.49	1.1	0.513	1.18	0.893
Vanadium (Saline)	<4 µg/l	TM270	19.8	30.2	17.4	17	23.8	41.2
Zinc (Saline)	<2.1 µg/l	TM270	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1



CERTIFICATE OF ANALYSIS

Validated

SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Table with columns: Results Legend, Customer Sample Ref., 355340, 774814, 782115, 966673, HW1, HW2. Rows include Component, LOD/Units, Method, and various chemical analysis results like Cyanide, Saline TON as NO3, Saline Nitrate as NO3, Sulphur, Free.

SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Results Legend		Customer Sample Ref.	HW3	HW4	HW5	HW6		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		Saline D	Saline D	Saline D	Saline D		
S	Deviating sample.		19/06/2012	19/06/2012	19/06/2012	19/06/2012		
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		20/06/2012	20/06/2012	20/06/2012	20/06/2012		
	Trigger breach confirmed		120621-83	120621-83	120621-83	120621-83		
(F)			5764350	5764351	5764352	5764353		
Component	LOD/Units	Method						
TOC (Saline)*	<1 mg/l	SUB	3.35	3.63	2.34	2.27		
Saline Carbonate Alkalinity as CaCO3	<5 mg/l	TM043		<5				
BOD, unfiltered	<1 mg/l	TM045	<2	<2	<2	<2		
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	0.214	<0.2	<0.2	<0.2	#	#
Sulphide	<0.01 mg/l	TM101	<0.01	<0.01	<0.01	<0.01		
Fluoride	<0.5 mg/l	TM104		0.759				
COD, unfiltered	<7 mg/l	TM107	256	267	274	247		
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	31.5	37.9	39.2	40.7	#	#
Barium (diss.filt)	<0.03 µg/l	TM152	10	7.98	7	6.76		
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	<0.07	<0.07	<0.07		
Cobalt (diss.filt)	<0.06 µg/l	TM152		0.391				
Molybdenum (diss.filt)	<0.24 µg/l	TM152		7.57				
Phosphorus (diss.filt)	<6.3 µg/l	TM152		<6.3				
Thallium (diss.filt)	<0.96 µg/l	TM152		<0.96				
Tin (diss.filt)	<0.36 µg/l	TM152		<0.36				
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	<0.05	<0.05		
Sulphate	<2 mg/l	TM184	1730	2100	2200	2320		
Chloride	<2 mg/l	TM184	13900	17000	17700	18100		
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105	<0.105	<0.105		
Phenol	<0.5 µg/l	TM205		<1.5				
2-methylphenol	<0.5 µg/l	TM205		<0.5				
3-methylphenol	<0.5 µg/l	TM205		<0.5				
4-methylphenol	<0.5 µg/l	TM205		<0.5				
2-chlorophenol	<0.5 µg/l	TM205		<0.5				
2,4-dimethylphenol	<0.5 µg/l	TM205		<0.5				
4-chloro-3-methylphenol	<0.5 µg/l	TM205		<0.5				
2,6-dichlorophenol	<0.5 µg/l	TM205		<0.5				
4-Chlorophenol	<0.5 µg/l	TM205		<0.5				



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Results Legend		Customer Sample Ref.	HW3	HW4	HW5	HW6			
#	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.								
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						
2,4-dichlorophenol	<0.5 µg/l	TM205		<0.5					
2-nitrophenol	<0.5 µg/l	TM205		<0.5					
2,4,6-trichlorophenol	<0.5 µg/l	TM205		<0.5					
2,4,5-trichlorophenol	<0.5 µg/l	TM205		<0.5					
4-nitrophenol	<0.5 µg/l	TM205		<0.5					
2,3,5,6-tetrachlorophenol	<0.5 µg/l	TM205		<0.5					
2,3,4,6-tetrachlorophenol	<0.5 µg/l	TM205		<0.5					
2,4-dinitrophenol	<2.5 µg/l	TM205		<5					
DNOC	<3 µg/l	TM205		<6					
Pentachlorophenol	<2 µg/l	TM205		<2					
Dinoseb	<4 µg/l	TM205		<4					
Cyanide, Free	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05			
Cyanide, Complex	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05			
Thiocyanate	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05			
Calcium (diss.filt)	<0.012 mg/l	TM228	259	311	324	338			
Sodium (diss.filt)	<0.076 mg/l	TM228	6770	7770	10800	11400			
Magnesium (diss.filt)	<0.036 mg/l	TM228	857	1050	1030	1080			
Potassium (diss.filt)	<2.335 mg/l	TM228	255	312	328	343			
Chromium, Hexavalent	<0.03 mg/l	TM241	<0.03	<0.03	<0.03	<0.03	#	#	
pH	<1 pH Units	TM256	8.09	8.13	8.05	8.06			
Arsenic (Saline)	<0.5 µg/l	TM270	2.24	2.5	2.18	2.37	#	#	
Aluminium (Saline)	<3.7 µg/l	TM270	44.4	28.6	28.2	24.2	#	#	
Antimony (Saline)	<1 µg/l	TM270	<1	<1	<1	<1	#	#	
Boron (Saline)	<201 µg/l	TM270	3270	3920	3270	3700	#	#	
Cadmium (Saline)	<0.15 µg/l	TM270	<0.15	<0.15	<0.15	<0.15	#	#	
Chromium (Saline)	<1.5 µg/l	TM270	<1.5	<1.5	<1.5	<1.5	#	#	
Copper (Saline)	<1 µg/l	TM270	<1	<1	<1	<1	#	#	
Iron (Saline)	<4 µg/l	TM270	<4	<4	<4	<4	#	#	
Lead (Saline)	<0.2 µg/l	TM270	<0.2	<0.2	<0.2	<0.2	#	#	
Manganese (Saline)	<0.3 µg/l	TM270	6.62	1.12	<0.3	<0.3	#	#	
Mercury (Saline)	<0.15 µg/l	TM270	<0.15	<0.15	<0.15	<0.15	#	#	
Nickel (saline)	<1.1 µg/l	TM270	<1.1	<1.1	<1.1	<1.1	#	#	
Selenium (Saline)	<0.5 µg/l	TM270	0.901	0.767	1.06	0.816	#	#	
Vanadium (Saline)	<4 µg/l	TM270	25.6	24.5	39.1	39	#	#	
Zinc (Saline)	<2.1 µg/l	TM270	<2.1	<2.1	<2.1	<2.1	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Table with columns: Results Legend, Customer Sample Ref., HW3, HW4, HW5, HW6, Component, LOD/Units, Method. Includes data for Cyanide, Saline TON as NO3, and Sulphur, Free.



CERTIFICATE OF ANALYSIS

Validated

SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

TPH CWG (W)

Results Legend		Customer Sample Ref.	355340	774814	782115	966673	HW1	HW2
#	ISO17025 accredited. mCERTS accredited. Deviating sample.	Depth (m)						
M	Aqueous / settled sample.	Sample Type	Saline D	Saline D	Saline D	Saline D	Saline D	Saline D
S	Dissolved / filtered sample.	Date Sampled	19/06/2012	19/06/2012	19/06/2012	19/06/2012	19/06/2012	19/06/2012
aq	Total / unfiltered sample.	Sampled Time						
diss.filt	Subcontracted test.	Date Received	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012
tot.unfilt	% 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	120621-83	120621-83	120621-83	120621-83	120621-83	120621-83
*	Trigger breach confirmed	Lab Sample No.(s)	5764345	5764347	5764344	5764342	5764348	5764349
**	AGS Reference							
(F)								
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM245	103	106	108	105	104	112
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	<50	<50	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3
Benzene	<7 µg/l	TM245	<7	<7	<7	<7	<7	<7
Toluene	<4 µg/l	TM245	<4	<4	<4	<4	<4	<4
Ethylbenzene	<5 µg/l	TM245	<5	<5	<5	<5	<5	<5
m,p-Xylene	<8 µg/l	TM245	<8	<8	<8	<8	<8	<8
o-Xylene	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11	<11	<11	<11	<11
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28	<28	<28
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10

CERTIFICATE OF ANALYSIS

SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

TPH CWG (W)

Results Legend		Customer Sample Ref.	HW3	HW4	HW5	HW6		
#	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)						
		Sample Type	Saline D	Saline D	Saline D	Saline D		
		Date Sampled	19/06/2012	19/06/2012	19/06/2012	19/06/2012		
		Sampled Time						
		Date Received	20/06/2012	20/06/2012	20/06/2012	20/06/2012		
		SDG Ref	120621-83	120621-83	120621-83	120621-83		
		Lab Sample No.(s)	5764350	5764351	5764352	5764353		
		AGS Reference						
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM245	105	109	105	110		
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	<50		
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3	<3	<3		
Benzene	<7 µg/l	TM245	<7	<7	<7	<7		
Toluene	<4 µg/l	TM245	<4	<4	<4	<4		
Ethylbenzene	<5 µg/l	TM245	<5	<5	<5	<5		
m,p-Xylene	<8 µg/l	TM245	<8	<8	<8	<8		
o-Xylene	<3 µg/l	TM245	<3	<3	<3	<3		
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11	<11	<11		
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28		
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10		
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10		
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10		
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10		
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10		
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10		



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

VOC MS (W)

Results Legend			Customer Sample Ref.	355340	774814	782115	966673		
#	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)							
		Sample Type	Saline D	Saline D	Saline D	Saline D	Saline D		
		Date Sampled	19/06/2012	19/06/2012	19/06/2012	19/06/2012	19/06/2012		
		Sampled Time							
		Date Received	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012		
		SDG Ref	120621-83	120621-83	120621-83	120621-83	120621-83		
		Lab Sample No.(s)	5764345	5764347	5764344	5764342	5764342		
		AGS Reference							
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM208	104	108	104	103			
Toluene-d8**	%	TM208	98.9	100	99.6	101			
4-Bromofluorobenzene**	%	TM208	97.9	98.4	97.3	101			
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1	<1			
Chloromethane	<1 µg/l	TM208	<1	<1	<1	<1			
Vinyl chloride	<1 µg/l	TM208	<1	<1	<1	<1			
Bromomethane	<1 µg/l	TM208	<1	<1	<1	<1			
Chloroethane	<1 µg/l	TM208	<1	<1	<1	<1			
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1	<1	<1			
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1			
Carbon disulphide	<1 µg/l	TM208	<1	<1	<1	<1			
Dichloromethane	<3 µg/l	TM208	<3	<3	<3	<3			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1			
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1			
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1			
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1			
Bromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1			
Chloroform	<1 µg/l	TM208	<1	<1	<1	<1			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1	<1	<1			
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1			
Carbontetrachloride	<1 µg/l	TM208	<1	<1	<1	<1			
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1			
Benzene	<1 µg/l	TM208	<1	<1	<1	<1			
Trichloroethene	<1 µg/l	TM208	<1	<1	<1	<1			
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1			
Dibromomethane	<1 µg/l	TM208	<1	<1	<1	<1			
Bromodichloromethane	<1 µg/l	TM208	<1	<1	<1	<1			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1			
Toluene	<1 µg/l	TM208	<1	<1	<1	<1			
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1	<1	<1			
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1			
Tetrachloroethene	<1 µg/l	TM208	<1	<1	<1	<1			
Dibromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1			

SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

VOC MS (W)

Results Legend		Customer Sample Ref.	355340	774814	782115	966673		
#	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.							
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	<1 µg/l	TM208	<1	<1	<1	<1		
Chlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1		
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1		
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1		
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1		
Styrene	<1 µg/l	TM208	<1	<1	<1	<1		
Bromofom	<1 µg/l	TM208	<1	<1	<1	<1		
Isopropylbenzene	<1 µg/l	TM208	<1	<1	<1	<1		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	<1	<1	<1		
Bromobenzene	<1 µg/l	TM208	<1	<1	<1	<1		
Propylbenzene	<1 µg/l	TM208	<1	<1	<1	<1		
2-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1	<1		
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1		
4-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1	<1		
tert-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1		
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1		
sec-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1		
4-iso-Propyltoluene	<1 µg/l	TM208	<1	<1	<1	<1		
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1		
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1		
n-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1		
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1		
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1	<1	<1		
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1		
Hexachlorobutadiene	<1 µg/l	TM208	<1	<1	<1	<1		
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	<1	<1	<1		
Naphthalene	<1 µg/l	TM208	<1	<1	<1	<1		
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1		
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1		

CERTIFICATE OF ANALYSIS

Validated

SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
SUB		Subcontracted Test		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
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		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
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		
TM205		Determination of Phenols in Waste Waters using Solid Phase Extraction, Acetylation, Gas Chromatography and Mass Selective Detection		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
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		
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		
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		
TM270	Thermo Electron Application Note AN_E0640: X Series ICP-MS: Using automated collision cell ICP-MS with rapid in-sample switching to achieve ultimate performance in environmental analysis.	Dissolved Metals in Saline Matrices by CCT ICP-MS		
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser		
TM281		The Determination of Total Oxidized Nitrogen in Saline Matrices using the Kone Spectrophotometric Analysers		
TM294		Determination of Free Sulphur in liquids by HPLC		

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



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

Location: Haulbowl
Customer: Priority Geotechnical Ltd
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Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	5764345	5764347	5764344	5764342	5764348	5764349	5764350	5764351	5764352	5764353
	355340	774814	782115	966673	HW1	HW2	HW3	HW4	HW5	HW6
AGS Ref.										
Depth										
Type	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D
Alkalinity as CaCO3					27-Jun-2012			27-Jun-2012		
Ammoniacal Nitrogen	30-Jun-2012	29-Jun-2012	30-Jun-2012	28-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	30-Jun-2012	29-Jun-2012
Anions by Kone (w)	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012
BOD True Total	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012
COD Unfiltered	23-Jun-2012	23-Jun-2012	23-Jun-2012	23-Jun-2012	23-Jun-2012	23-Jun-2012	23-Jun-2012	23-Jun-2012	23-Jun-2012	23-Jun-2012
Conductivity (at 20 deg.C)	26-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	26-Jun-2012	25-Jun-2012	26-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012
Cyanide Comp/Free/Total/Thiocyanate	26-Jun-2012	25-Jun-2012	26-Jun-2012	26-Jun-2012	25-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	25-Jun-2012
Dissolved Metals by ICP-MS	25-Jun-2012	26-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	26-Jun-2012	25-Jun-2012	27-Jun-2012	26-Jun-2012	26-Jun-2012
EPH CWG (Aliphatic) Aqueous GC (W)	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012
EPH CWG (Aromatic) Aqueous GC (W)	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012
Fluoride					25-Jun-2012			25-Jun-2012		
Free Sulphur	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012
GRO by GC-FID (W)	27-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012
Hexavalent Chromium (w)	25-Jun-2012	27-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	27-Jun-2012	25-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012
Low Level Cyanide (W)	29-Jun-2012	26-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012
Metals analysis (Saline Sample)	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012
Metals by iCap-OES Dissolved (W)	25-Jun-2012	26-Jun-2012	25-Jun-2012	02-Jul-2012	25-Jun-2012	26-Jun-2012	25-Jun-2012	25-Jun-2012	26-Jun-2012	26-Jun-2012
Nitrite by Kone (w)	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	27-Jun-2012	25-Jun-2012	25-Jun-2012	27-Jun-2012	25-Jun-2012
PCB Congeners - Aqueous (W)	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	27-Jun-2012
pH Value	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012
Phenols by ms (w)	29-Jun-2012	29-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012			03-Jul-2012		
Saline TON	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012
Sulphide	28-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	28-Jun-2012	27-Jun-2012	29-Jun-2012	27-Jun-2012	27-Jun-2012
TOC (Saline)*	09-Jul-2012	09-Jul-2012	09-Jul-2012	09-Jul-2012	09-Jul-2012	09-Jul-2012	09-Jul-2012	09-Jul-2012	09-Jul-2012	09-Jul-2012
TPH CWG (W)	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012
VOC MS (W)	28-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012						

SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

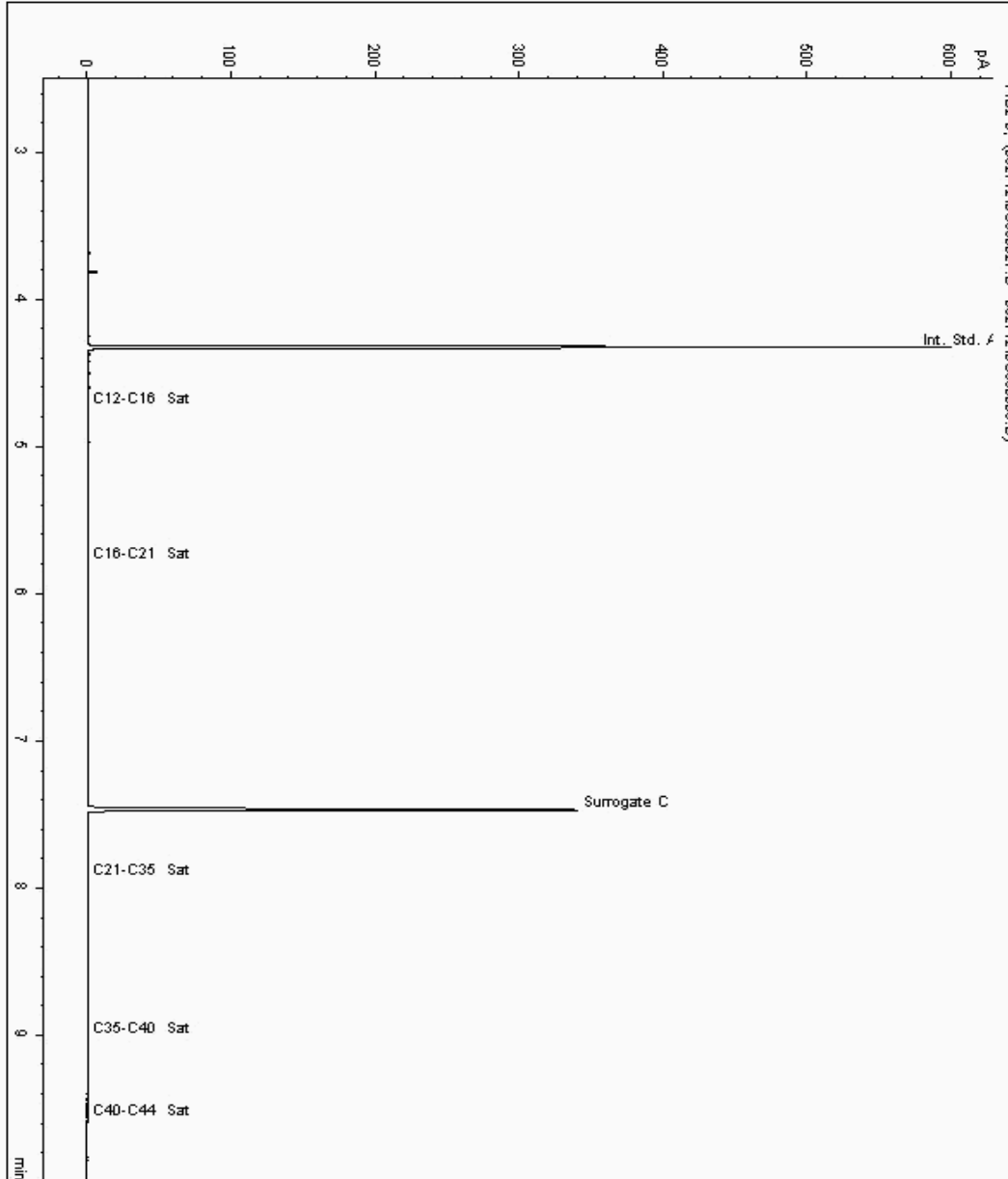
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5770517
 Sample ID : 966673

Depth :

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

Sample Identity: 5626647-5770517
 Date Acquired : 28/06/12 00:18:57 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

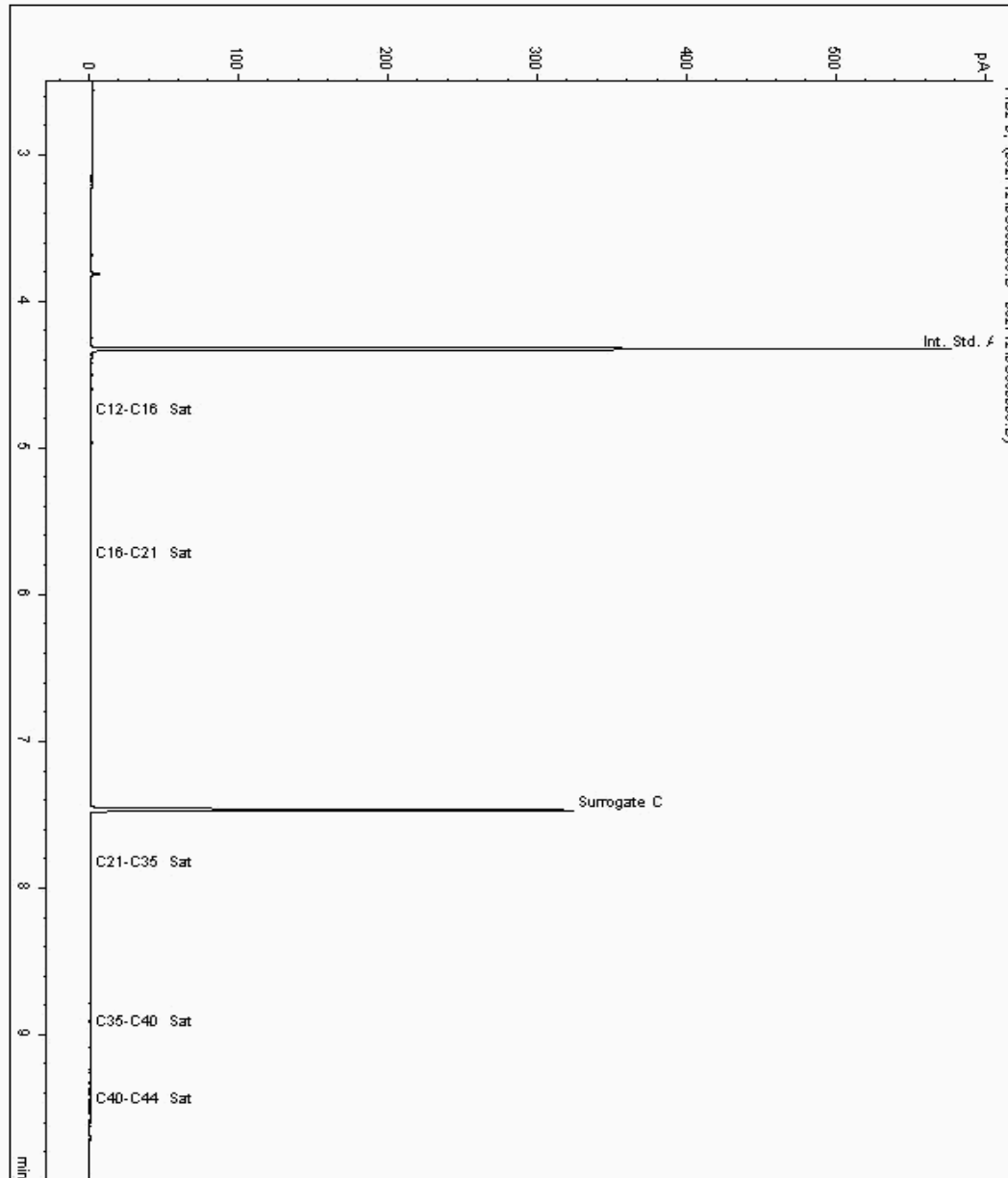
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5771017
 Sample ID : 782115

Depth :

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

Sample Identity: 5626671-5771017
 Date Acquired : 28/06/12 03:39:38 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017





SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

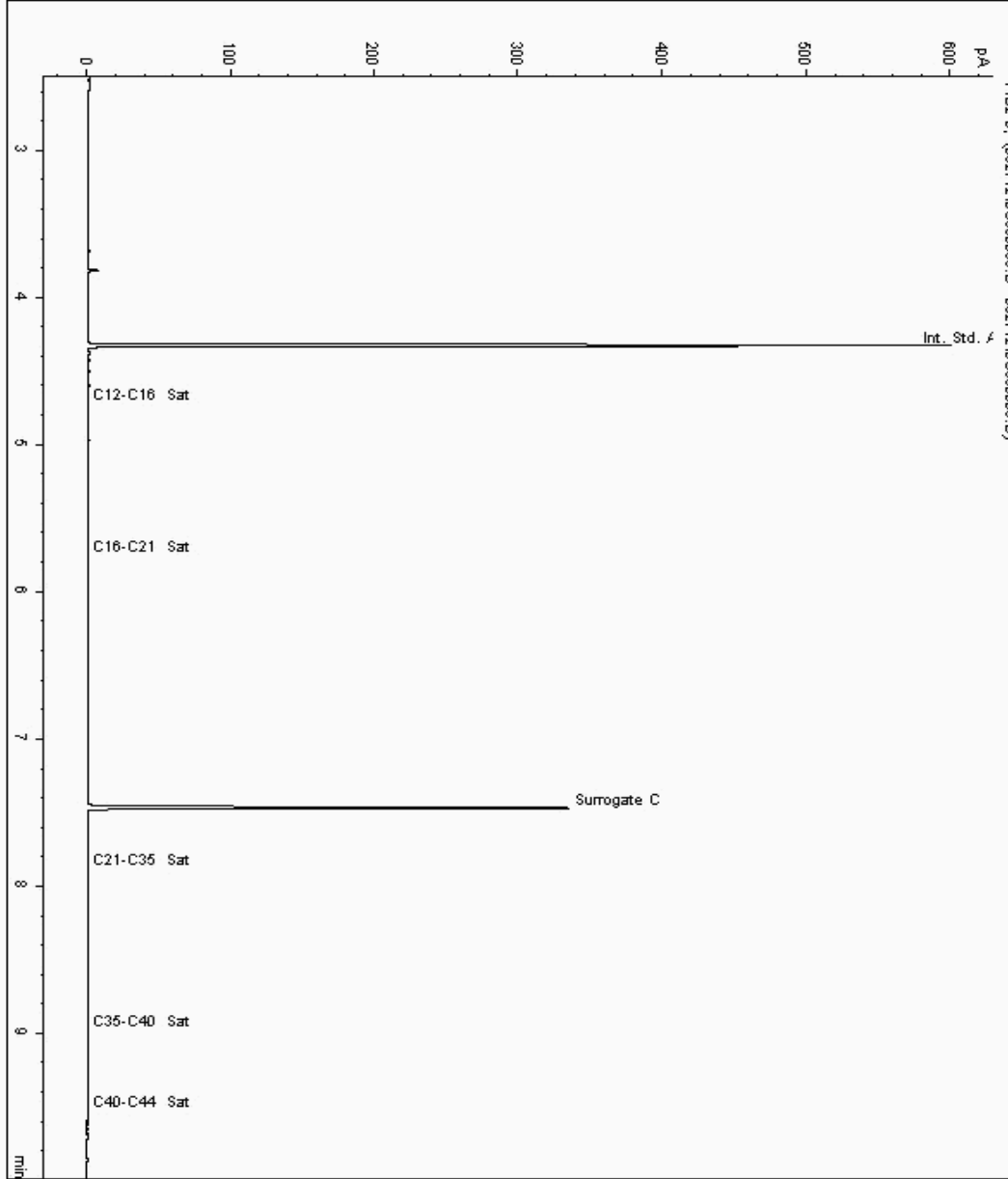
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5771146
Sample ID : 355340

Depth :

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

Sample Identity: 5626694-5771146
Date Acquired : 28/06/12 03:20:18 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

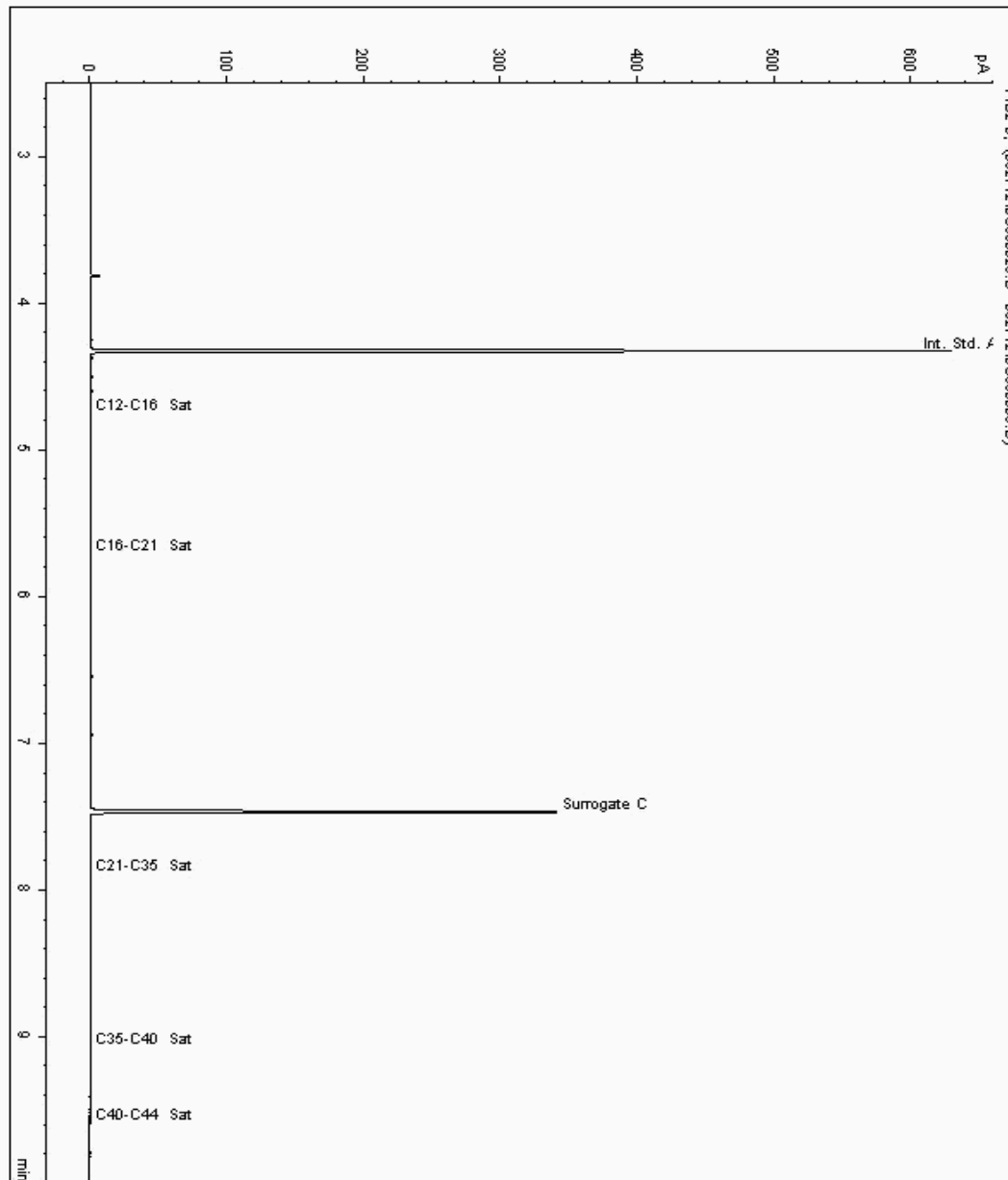
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5771712
 Sample ID : 774814

Depth :

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

Sample Identity: 5626717-5771712
 Date Acquired : 28/06/12 00:57:08 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

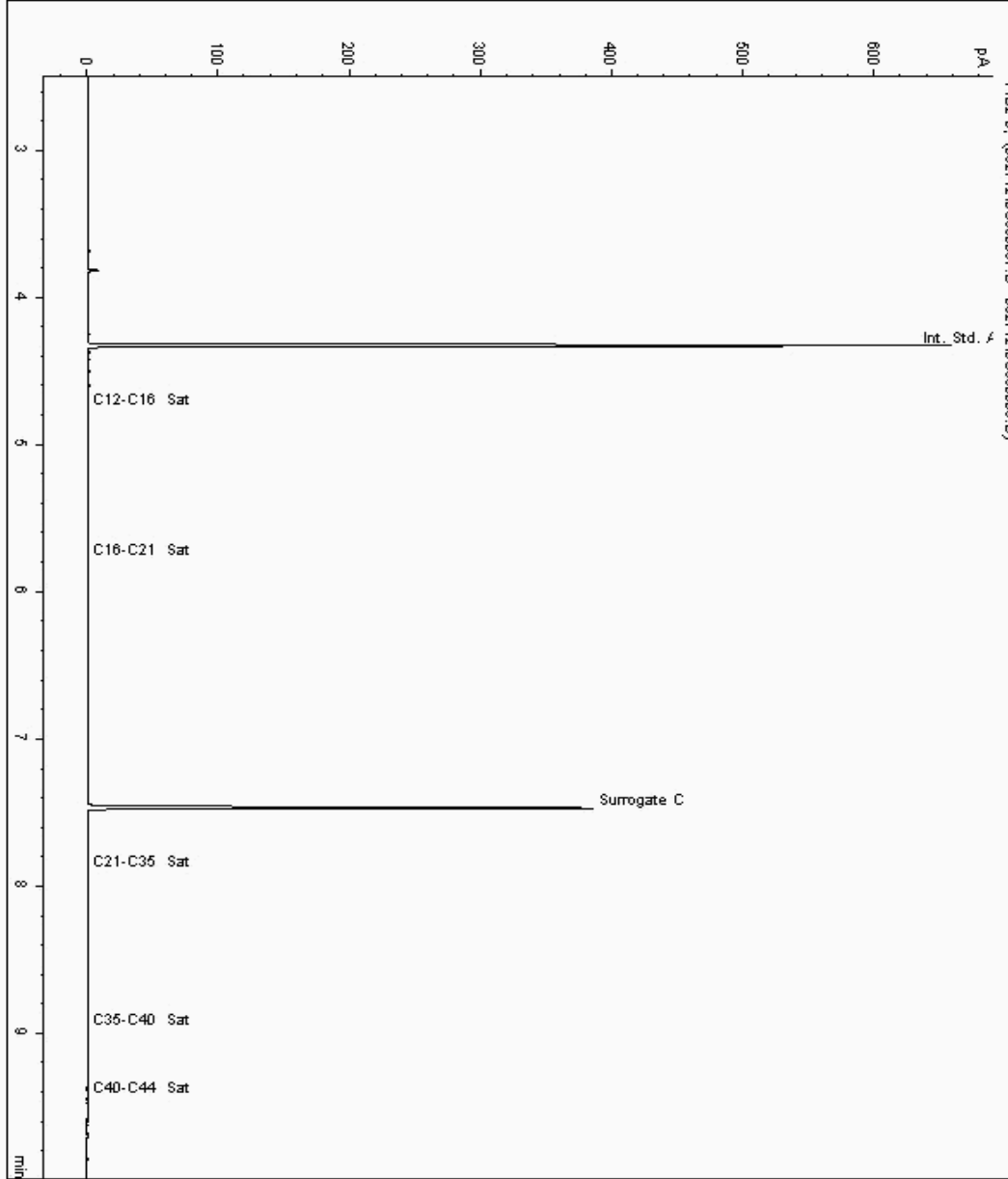
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5771919
 Sample ID : HW1

Depth :

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

Sample Identity: 5626740-5771919
 Date Acquired : 28/06/12 03:01:05 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

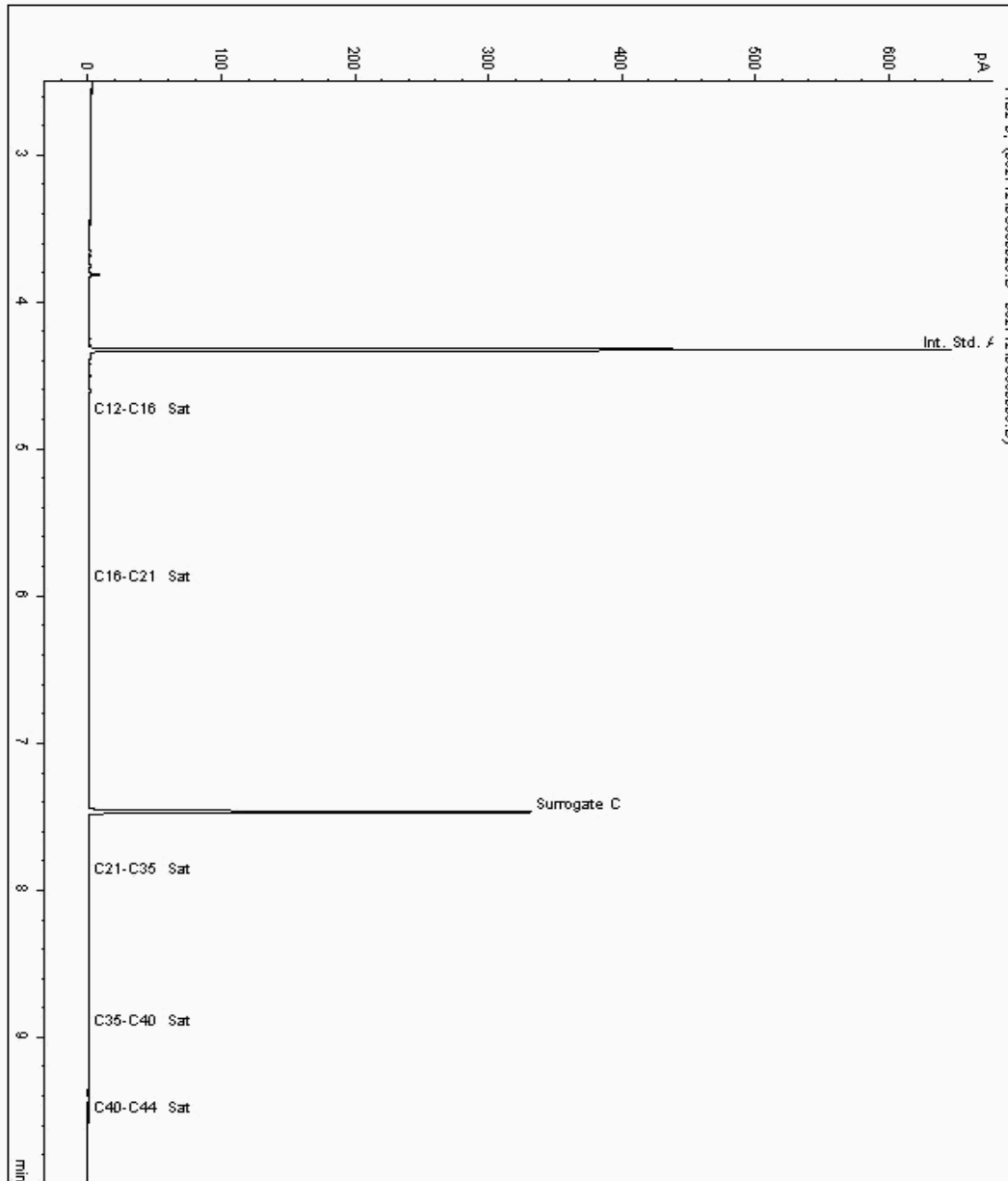
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5773710
 Sample ID : HW6

Depth :

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

Sample Identity: 5626855-5773710
 Date Acquired : 27/06/12 23:02:26 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

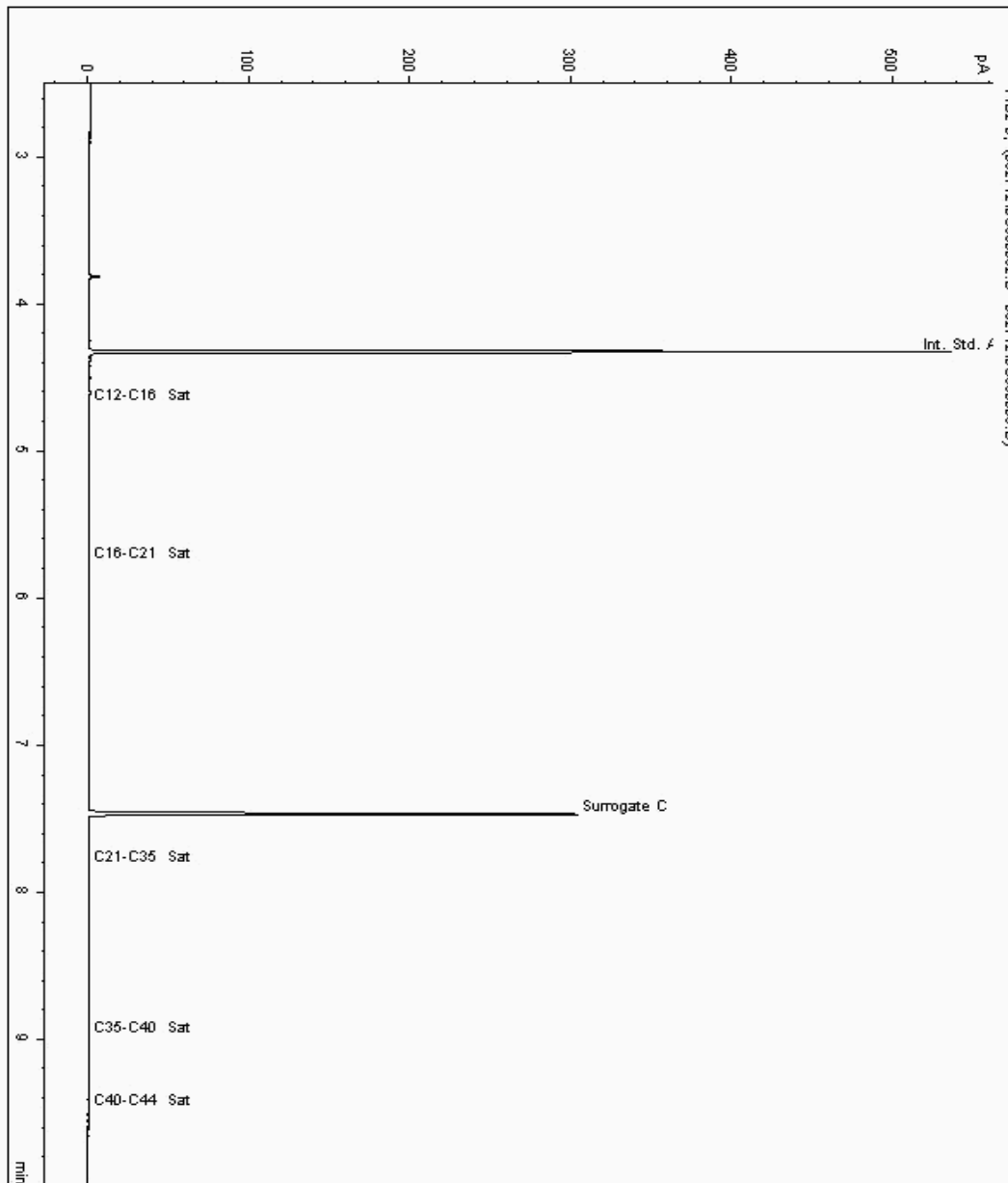
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5773766
 Sample ID : HW3

Depth :

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

Sample Identity: 5626786-5773766
 Date Acquired : 28/06/12 01:54:38 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

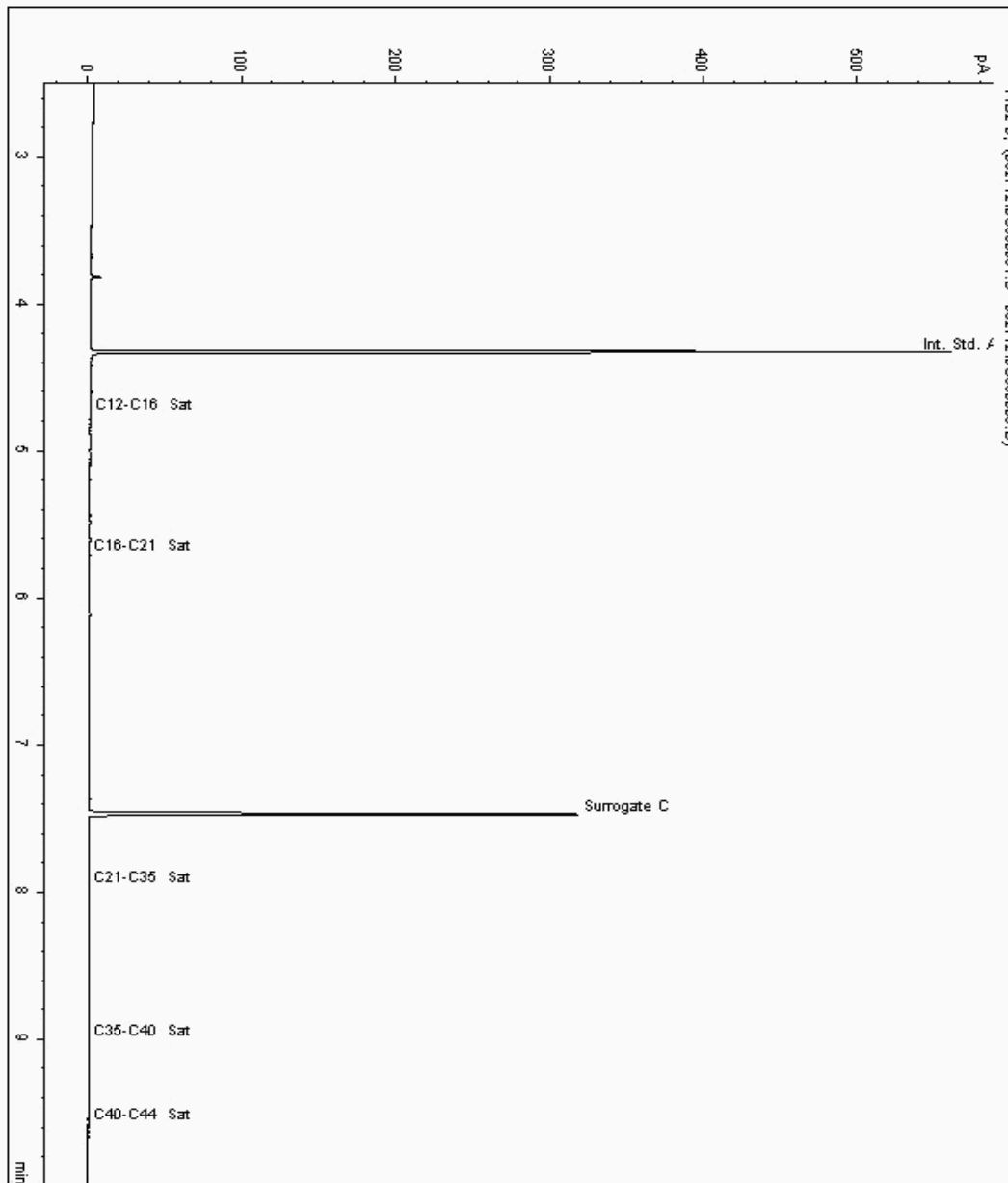
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5773809
 Sample ID : HW4

Depth :

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

Sample Identity: 5626809-5773809
 Date Acquired : 28/06/12 01:35:32 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

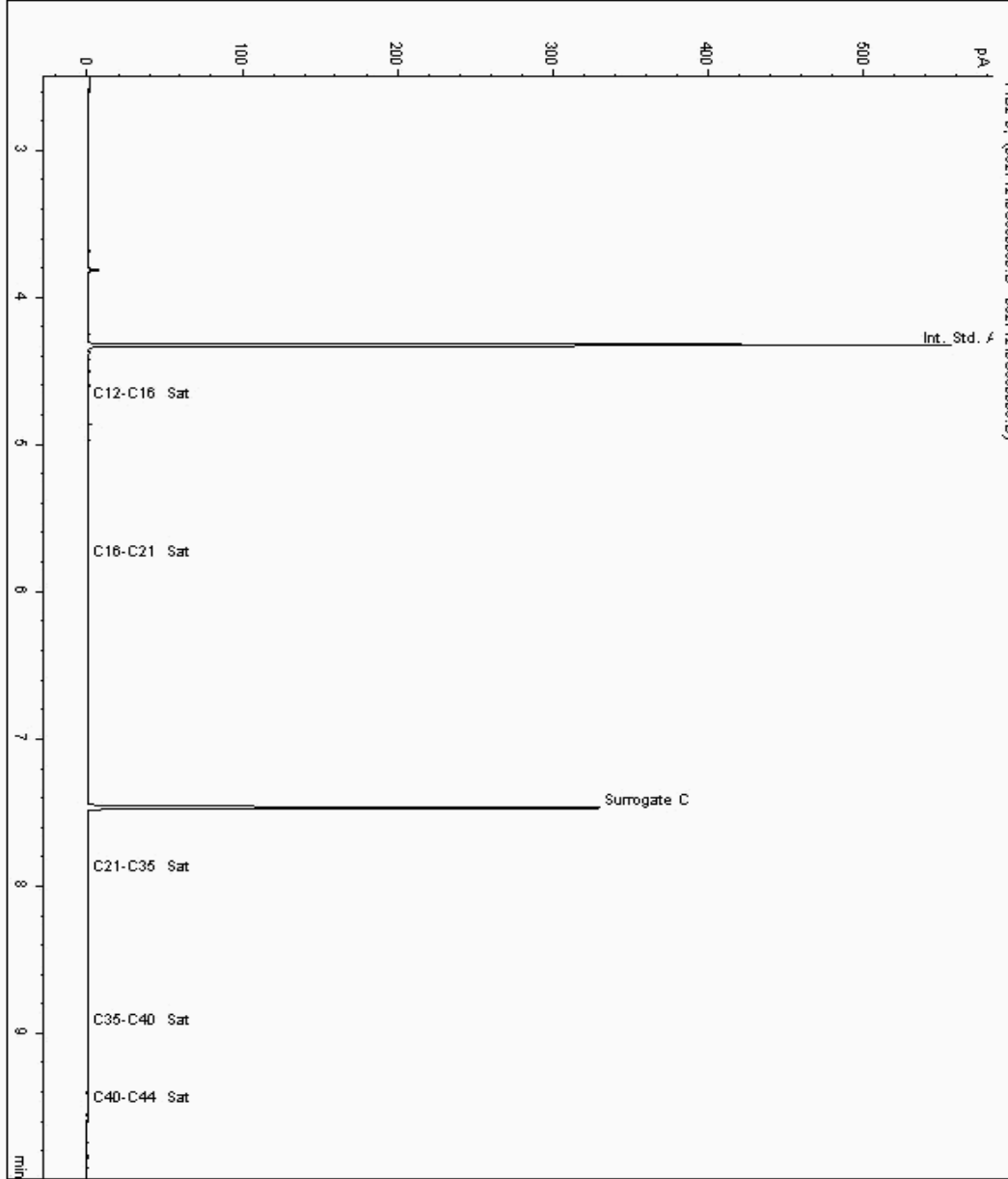
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5773847
 Sample ID : HW2

Depth :

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

Sample Identity: 5626763-5773847
 Date Acquired : 28/06/12 01:16:14 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

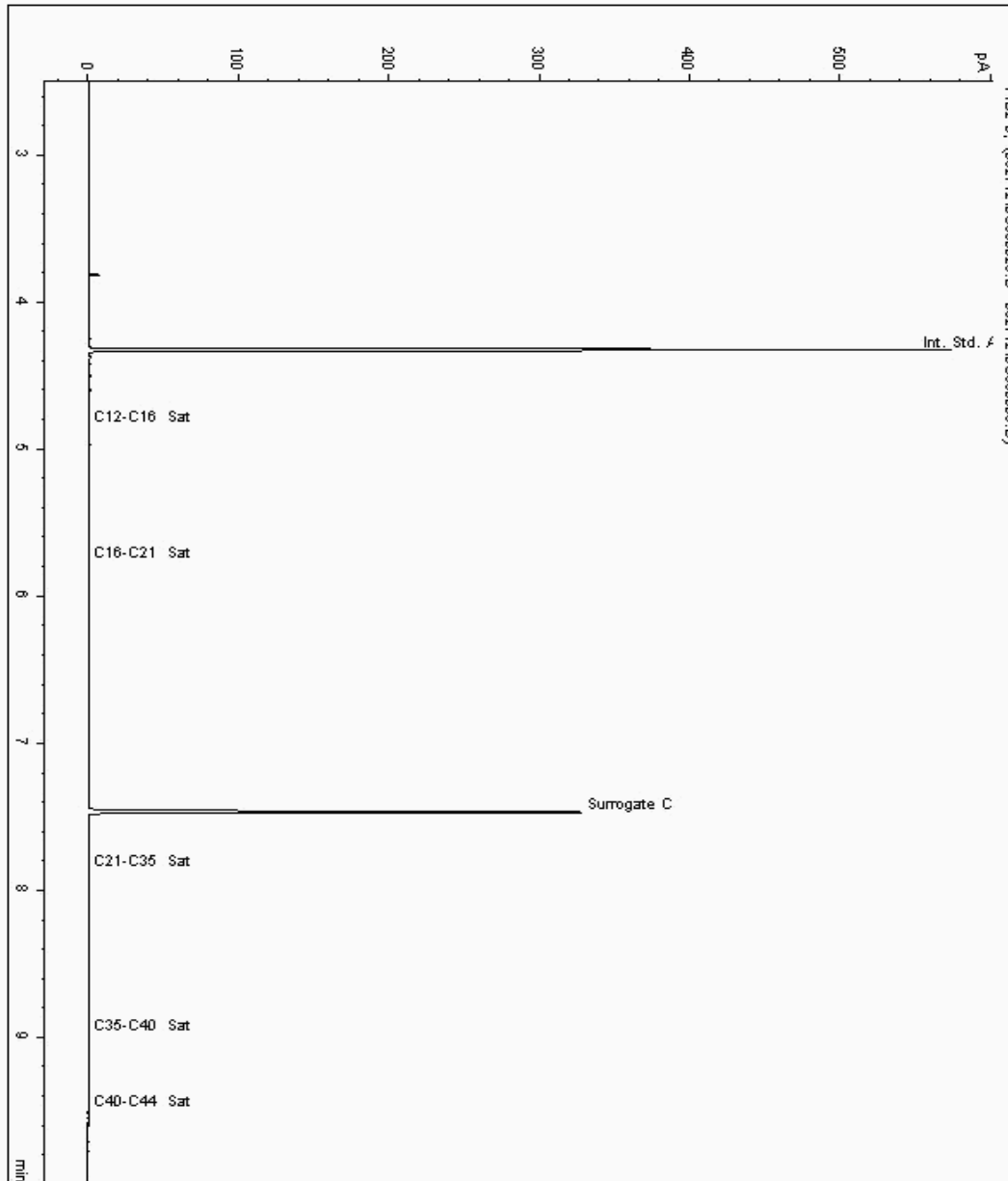
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5778893
 Sample ID : HW5

Depth :

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

Sample Identity: 5626832-5778893
 Date Acquired : 28/06/12 00:38:02 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.024



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

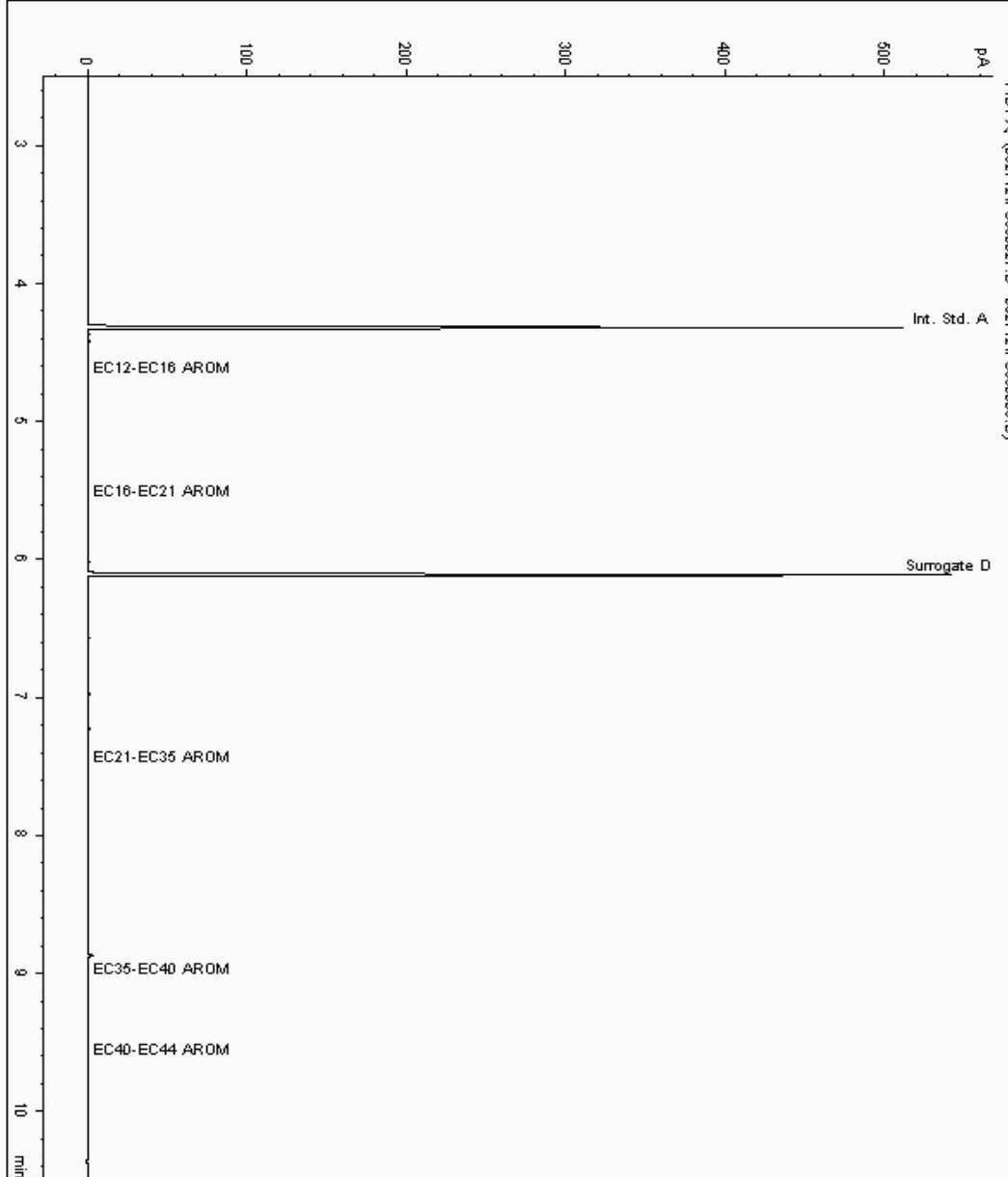
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5770517
 Sample ID : 966673

Depth :

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

Sample Identity: 5626648-5770517
 Date Acquired : 28/06/12 00:18:57 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

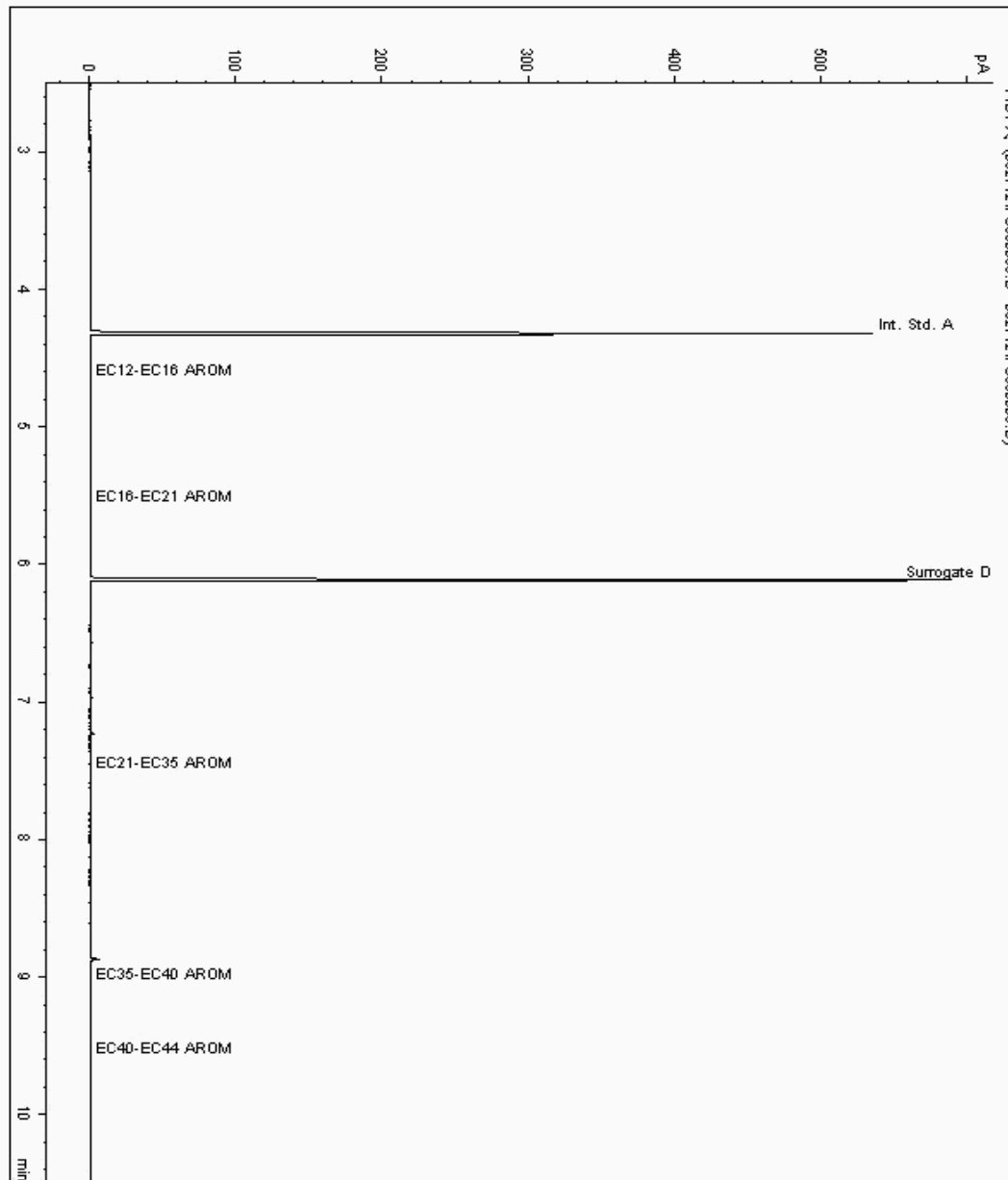
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5771017
 Sample ID : 782115

Depth :

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

Sample Identity: 5626672-5771017
 Date Acquired : 28/06/12 03:39:38 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

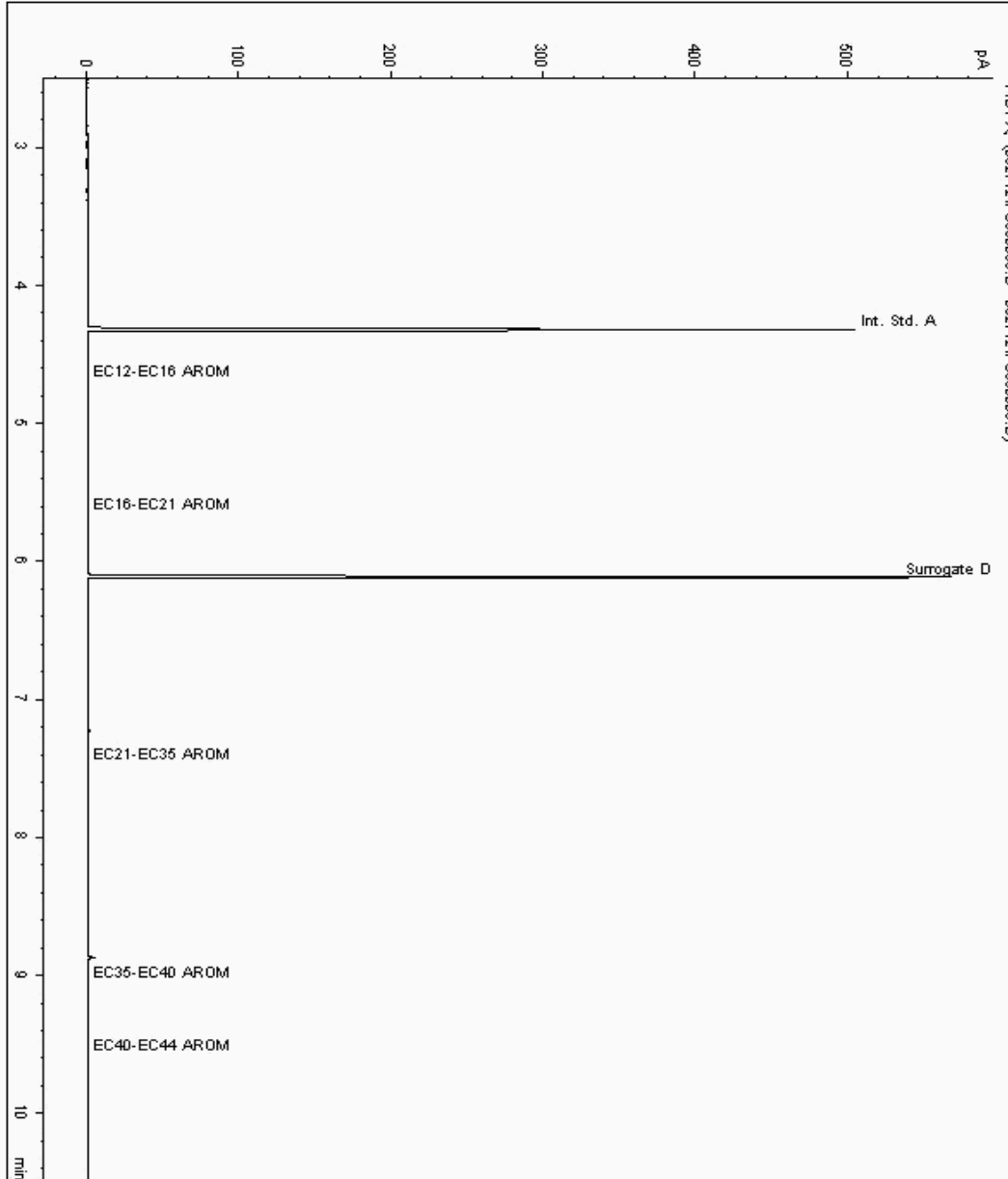
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5771146
 Sample ID : 355340

Depth :

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

Sample Identity: 5626695-5771146
 Date Acquired : 28/06/12 03:20:17 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017





SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

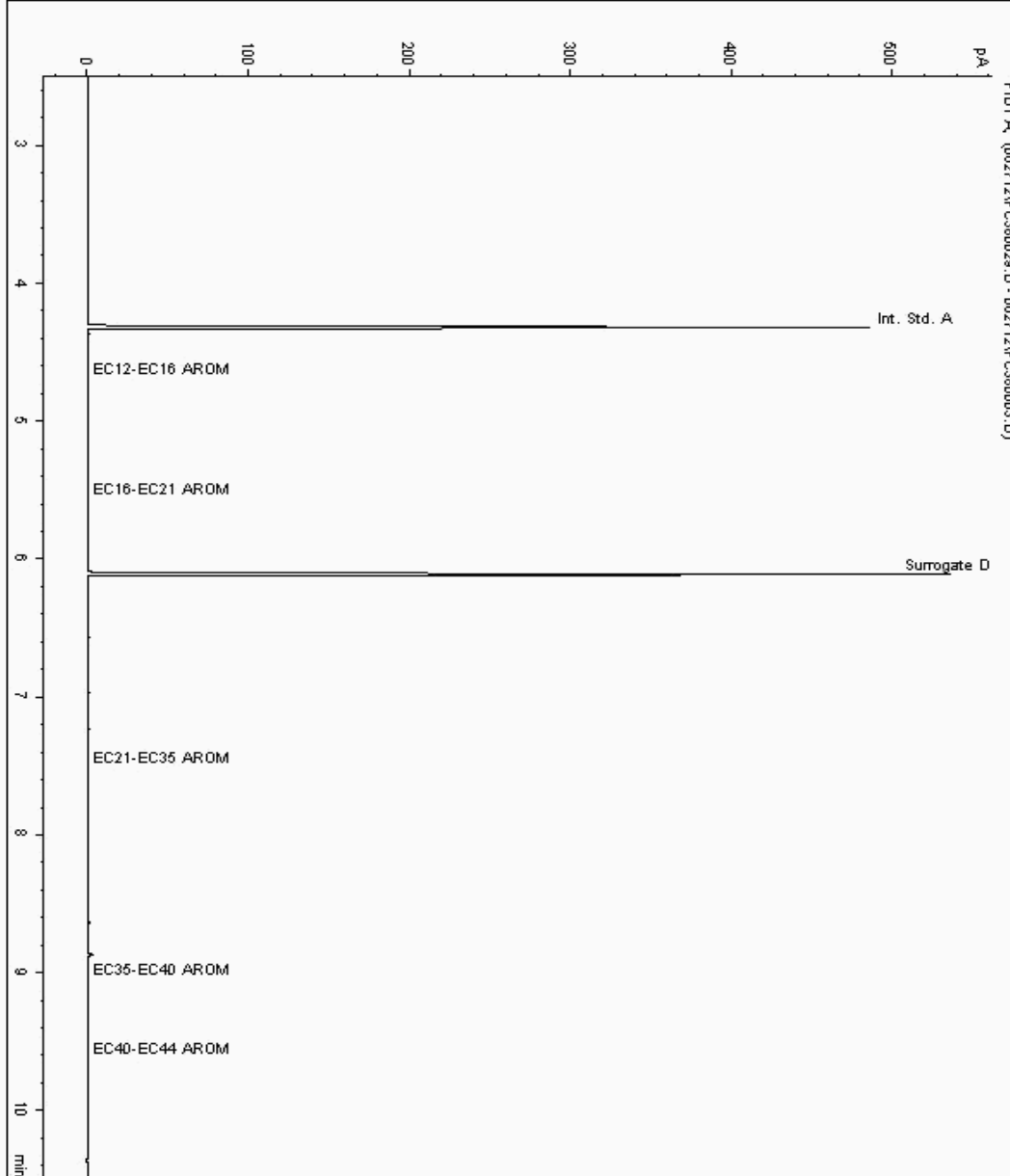
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5771712
Sample ID : 774814

Depth :

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

Sample Identity: 5626718-5771712
Date Acquired : 28/06/12 00:57:08 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

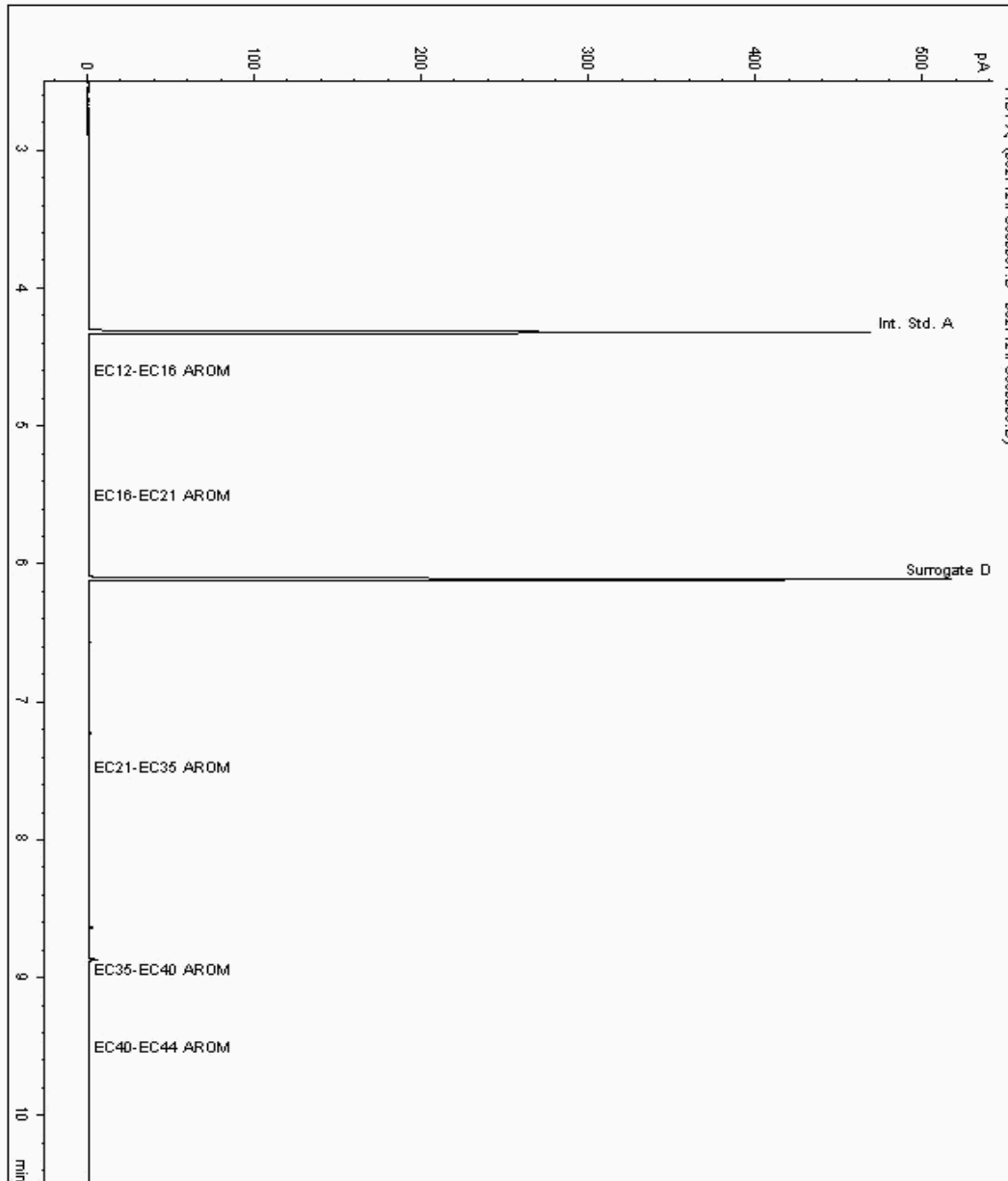
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5771919
 Sample ID : HW1

Depth :

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

Sample Identity: 5626741-5771919
 Date Acquired : 28/06/12 03:01:05 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017





SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

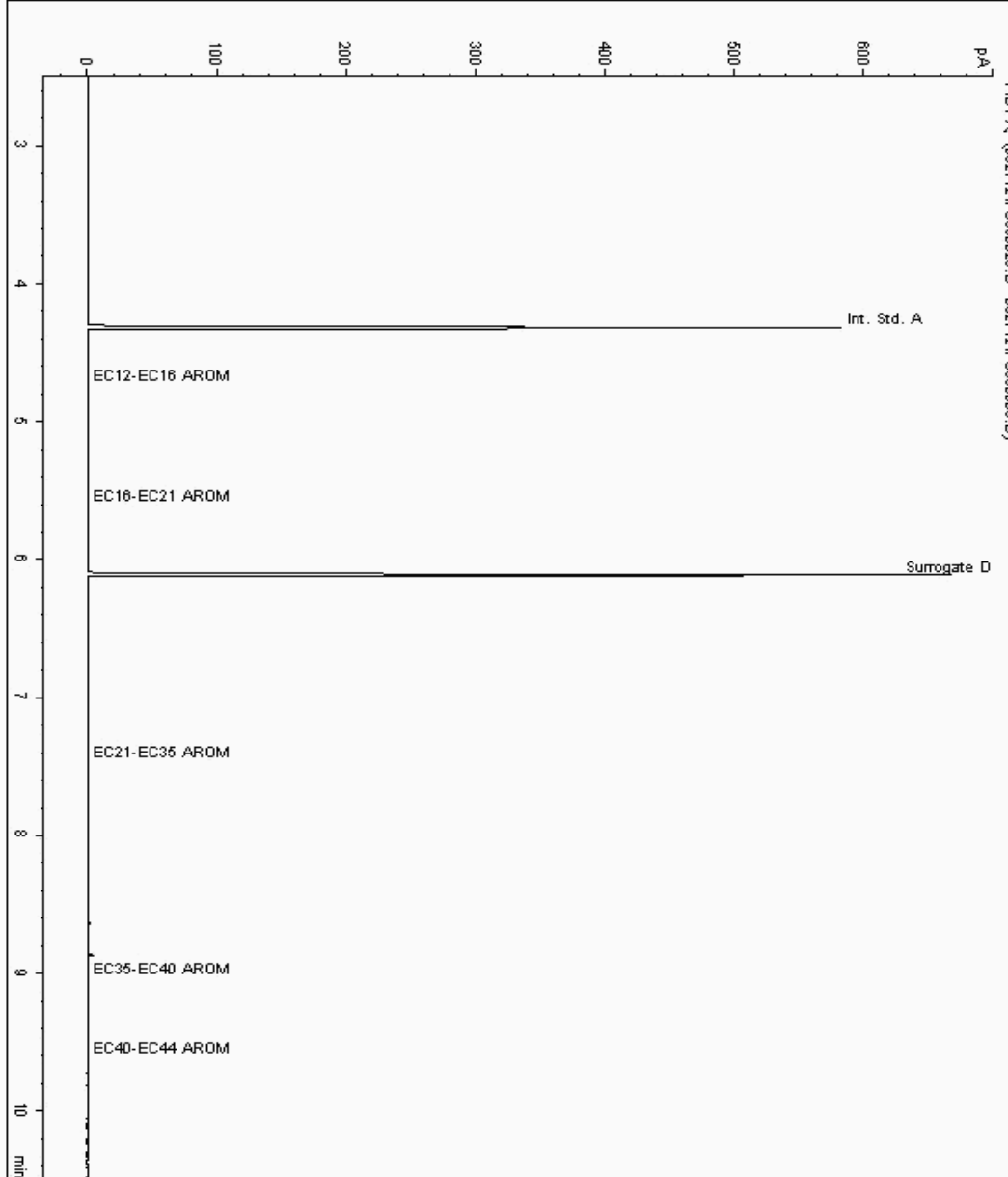
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5773710
Sample ID : HW6

Depth :

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

Sample Identity: 5626856-5773710
Date Acquired : 27/06/12 23:02:26 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

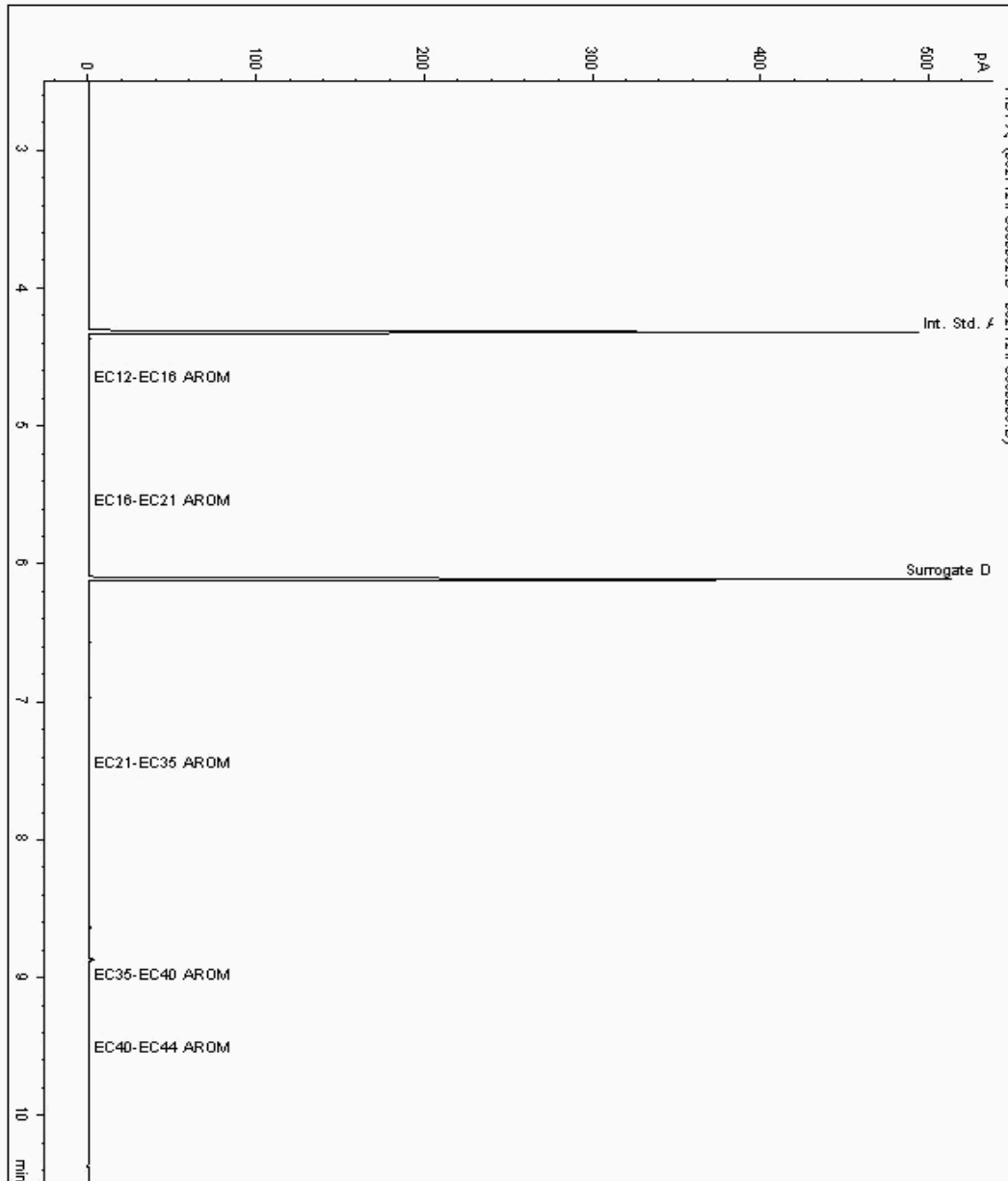
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5773766
 Sample ID : HW3

Depth :

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

Sample Identity: 5626787-5773766
 Date Acquired : 28/06/12 01:54:38 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.017





SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

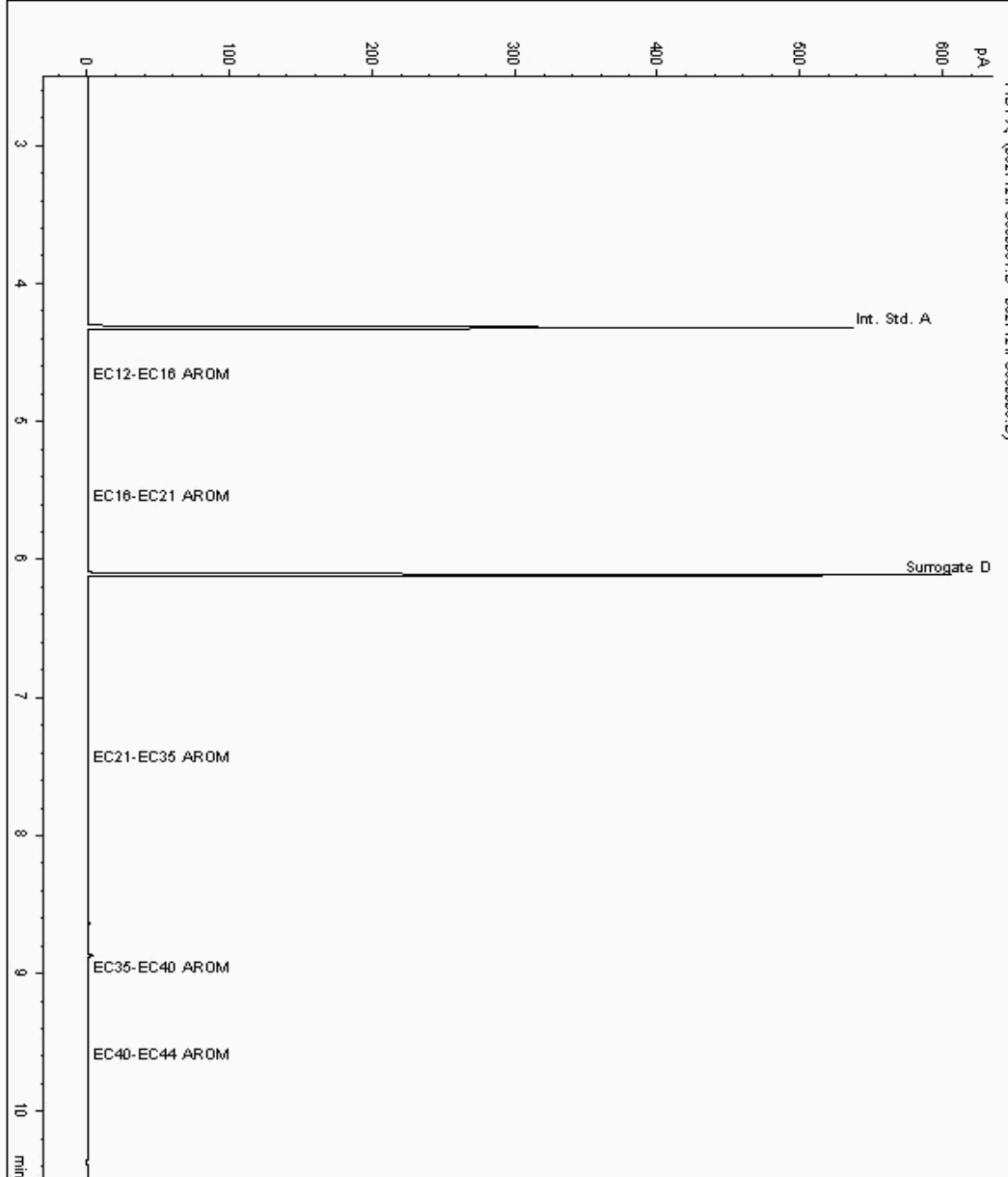
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5773809
Sample ID : HW4

Depth :

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

Sample Identity: 5626810-5773809
Date Acquired : 28/06/12 01:35:32 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

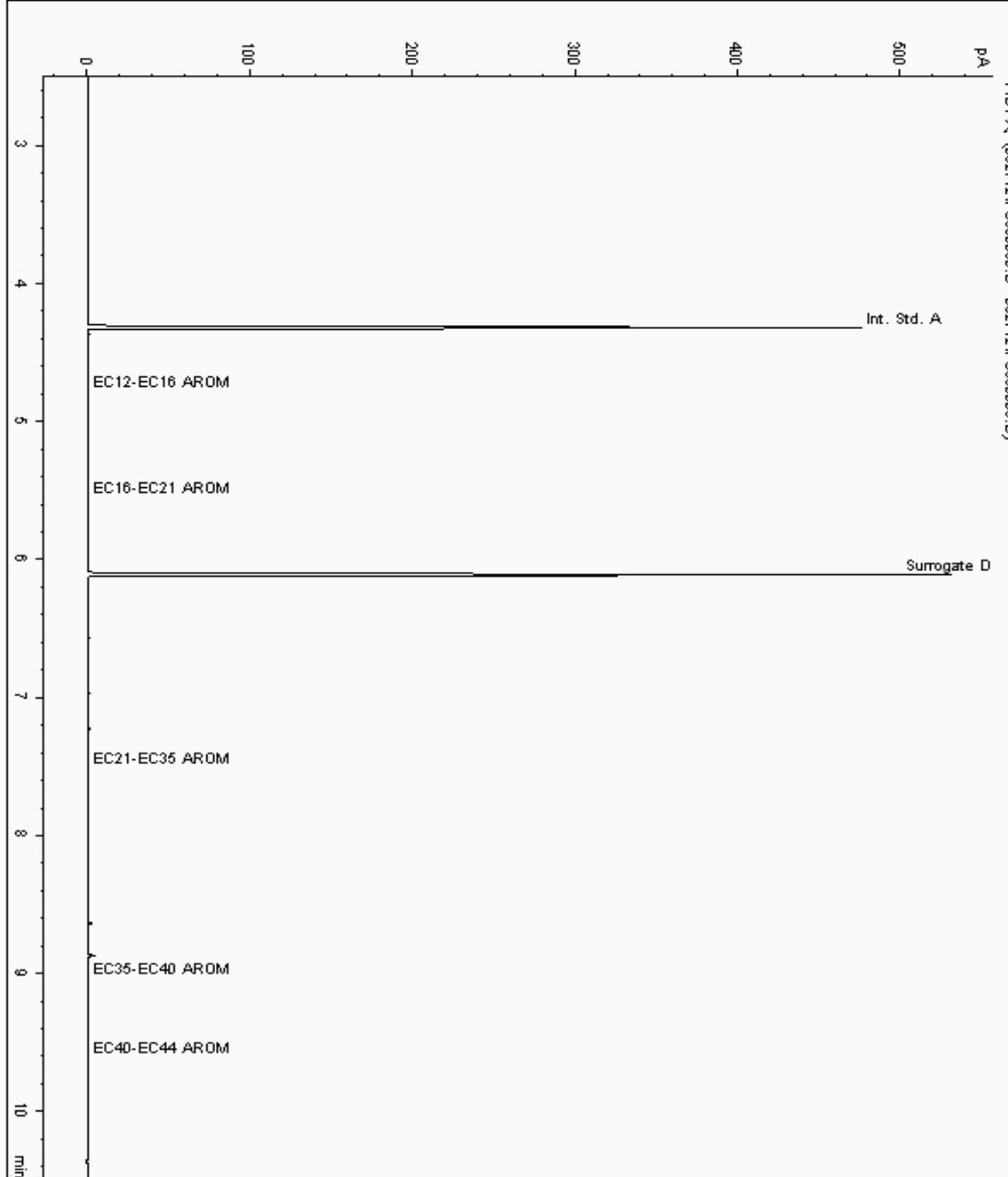
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5773847
Sample ID : HW2

Depth :

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

Sample Identity: 5626764-5773847
Date Acquired : 28/06/12 01:16:14 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

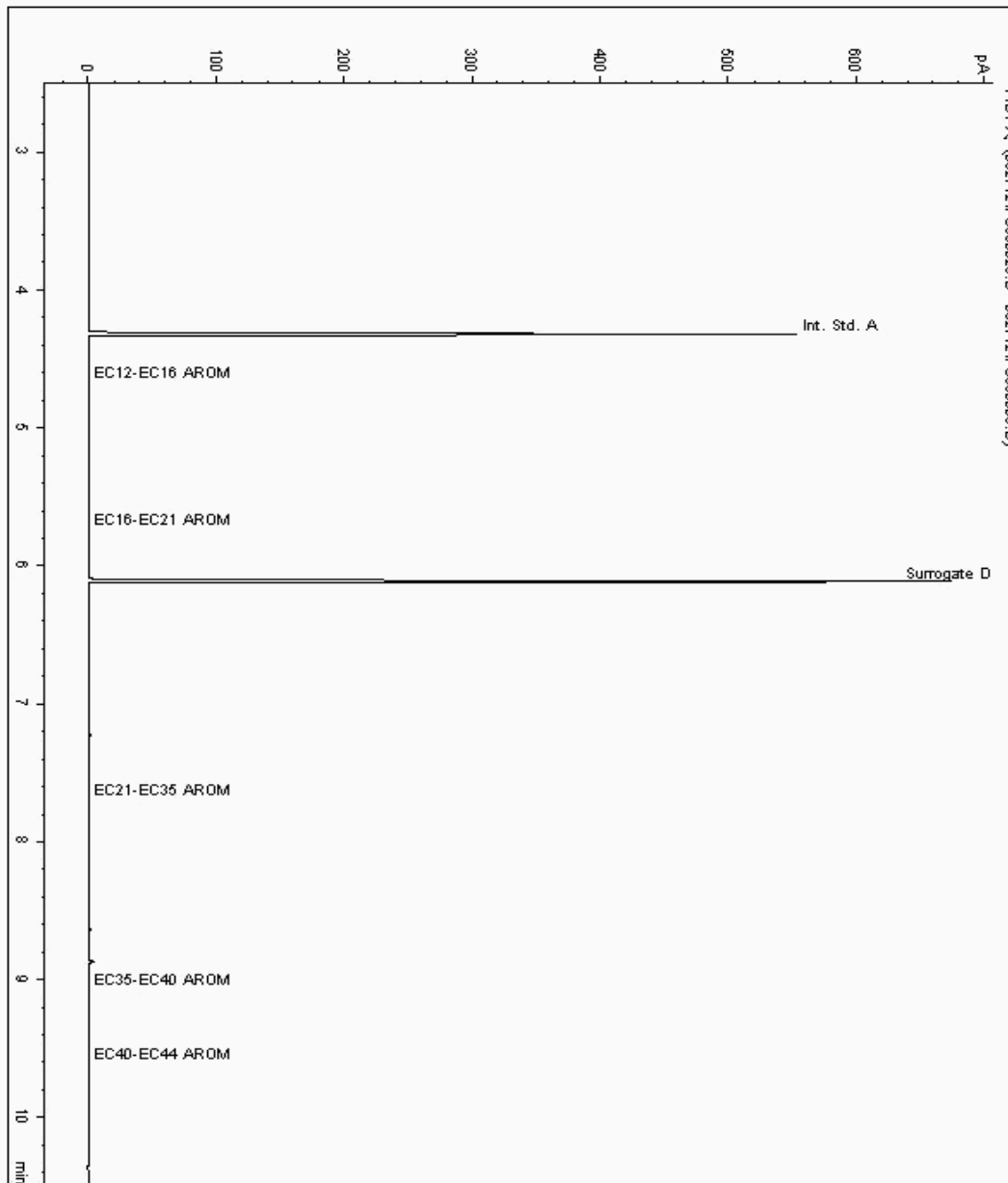
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5778893
 Sample ID : HW5

Depth :

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

Sample Identity: 5626833-5778893
 Date Acquired : 28/06/12 00:38:02 PM
 Units : ppb
 Dilution :
 CF : 1
 Multiplier : 0.024



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

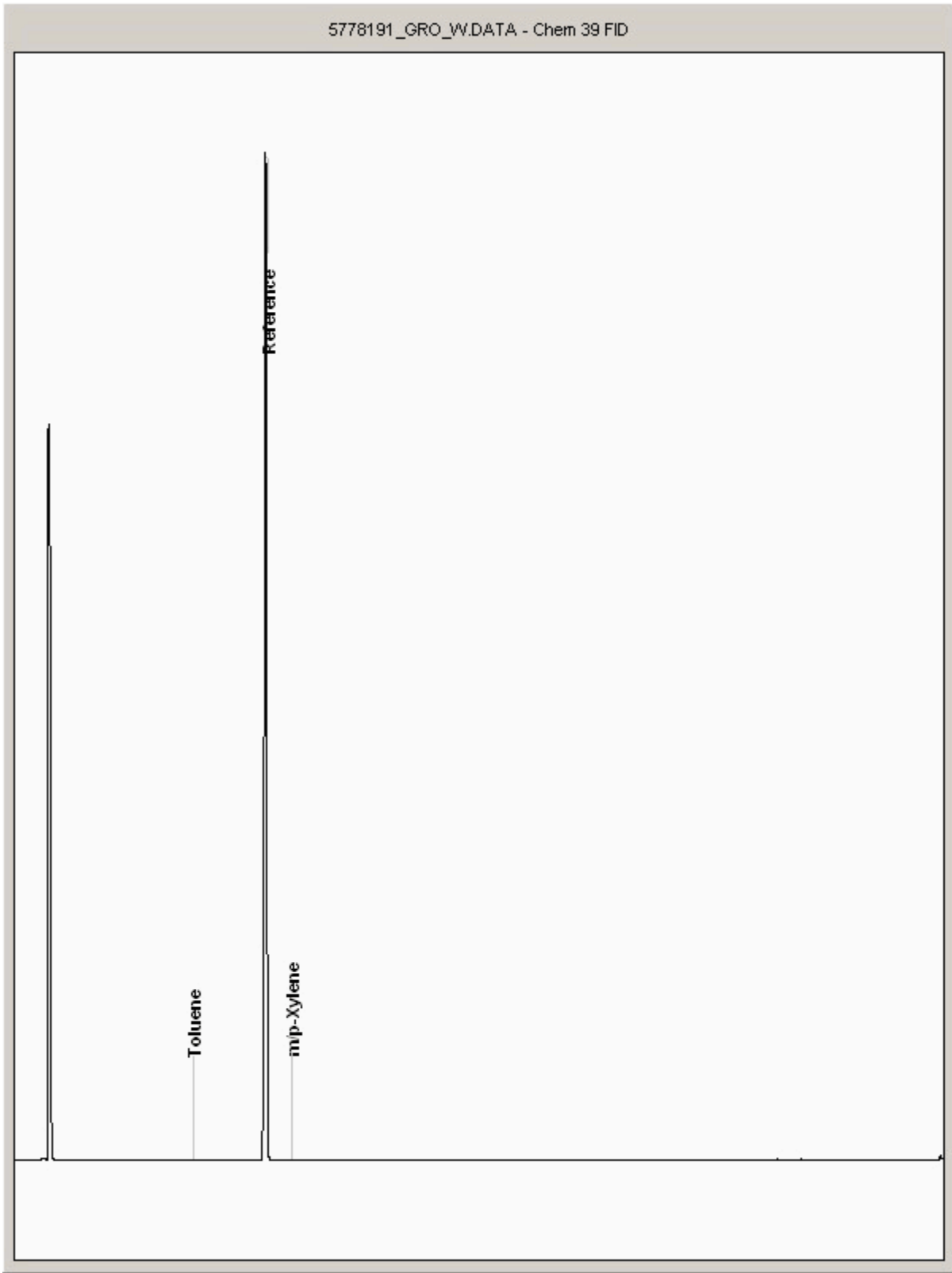
Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5778191
Sample ID : HW3

Depth :



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

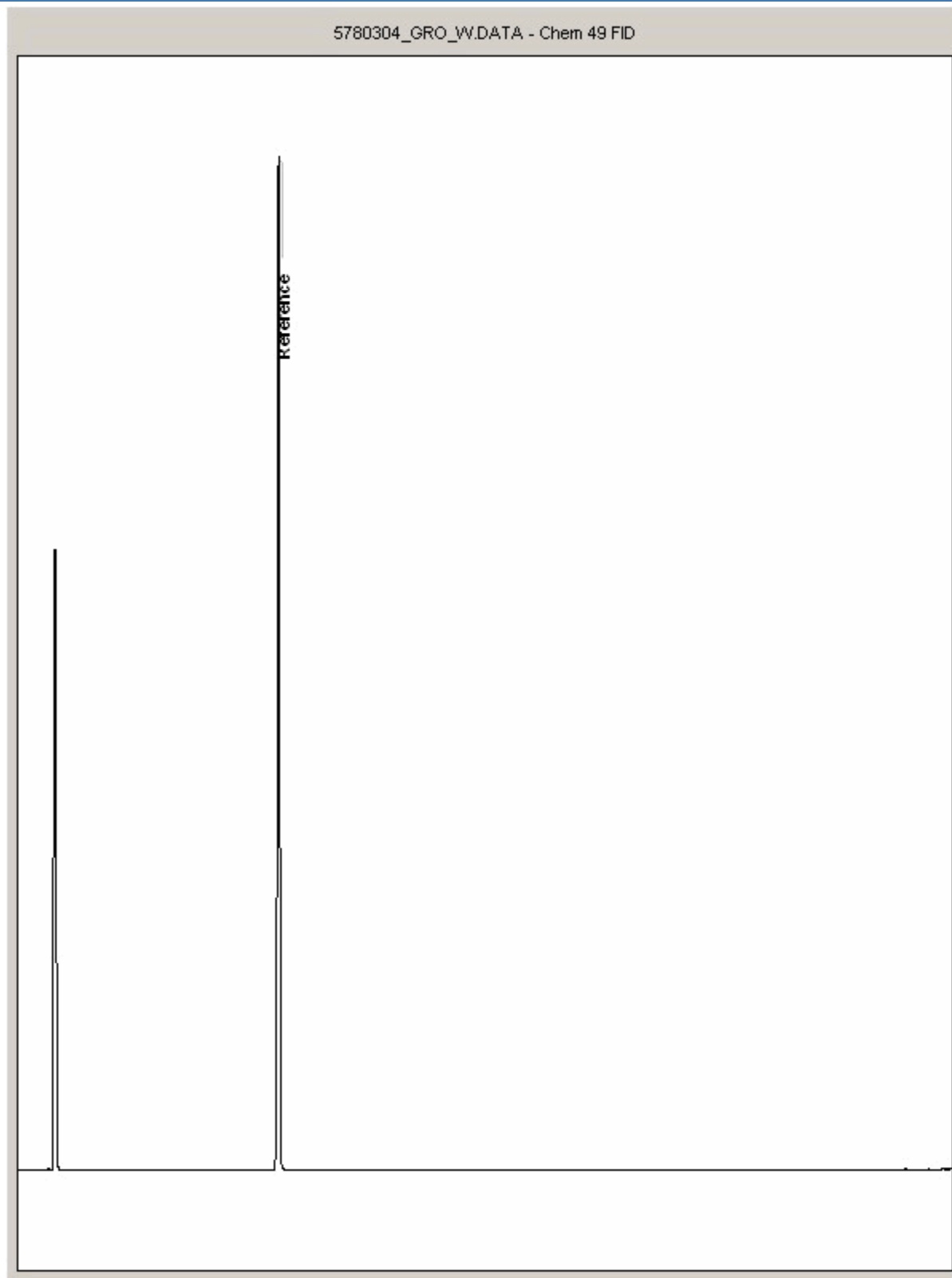
Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5780304
Sample ID : 774814

Depth :



SDG: 120621-83
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

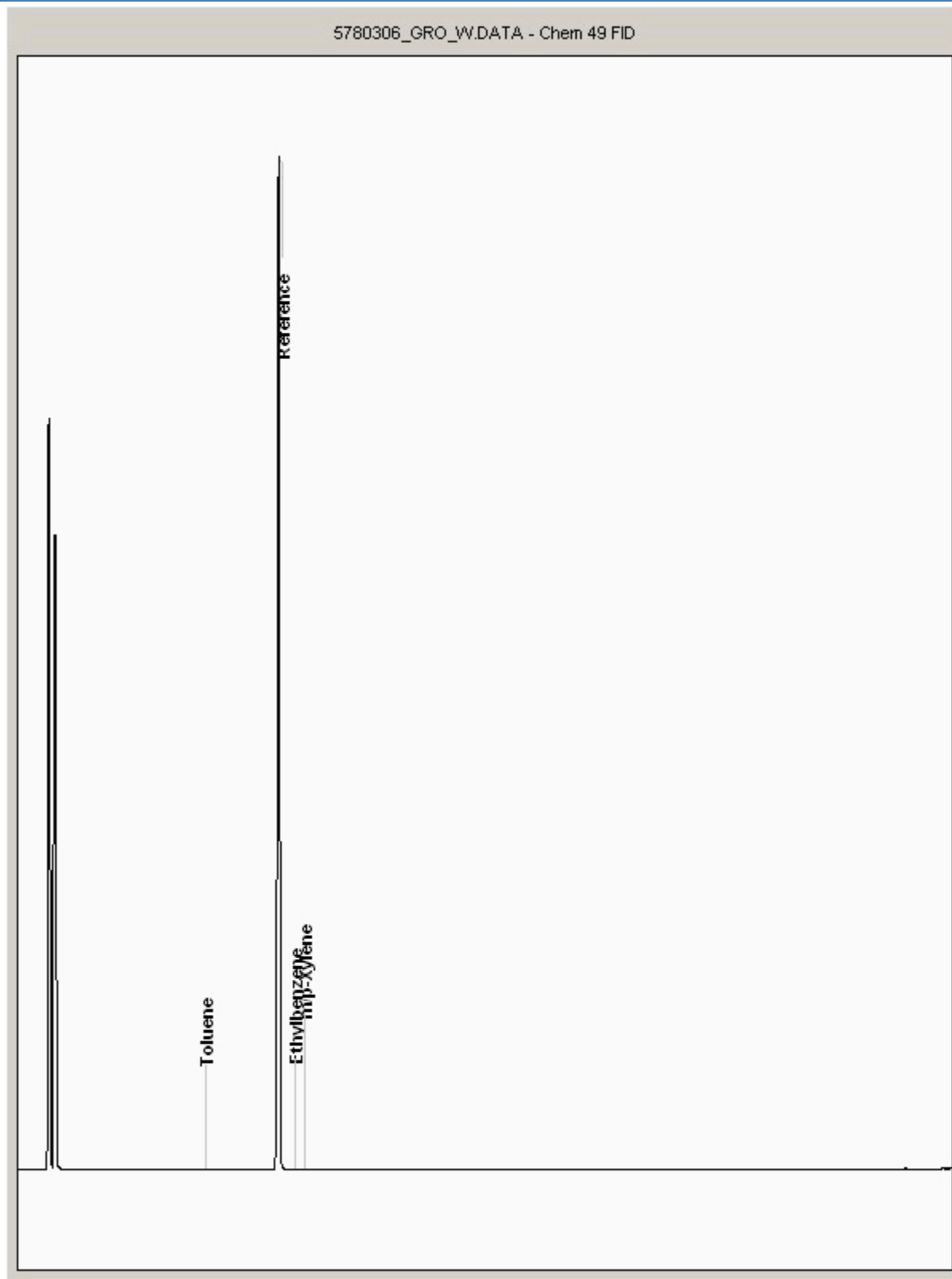
Order Number: 4559
 Report Number: 188568
 Superseded Report: 186916

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5780306
 Sample ID : 966673

Depth :



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

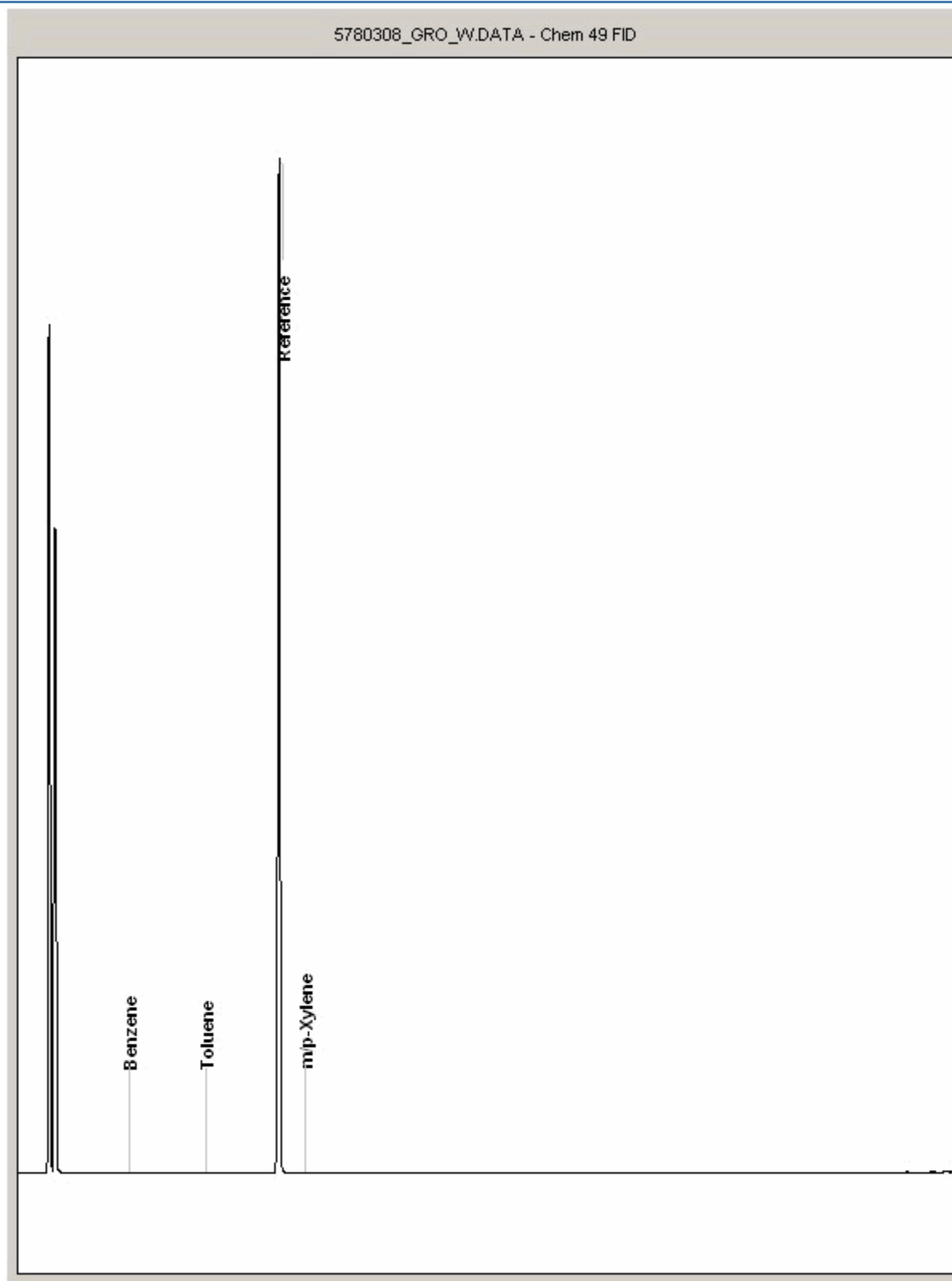
Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5780308
Sample ID : 782115

Depth :



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

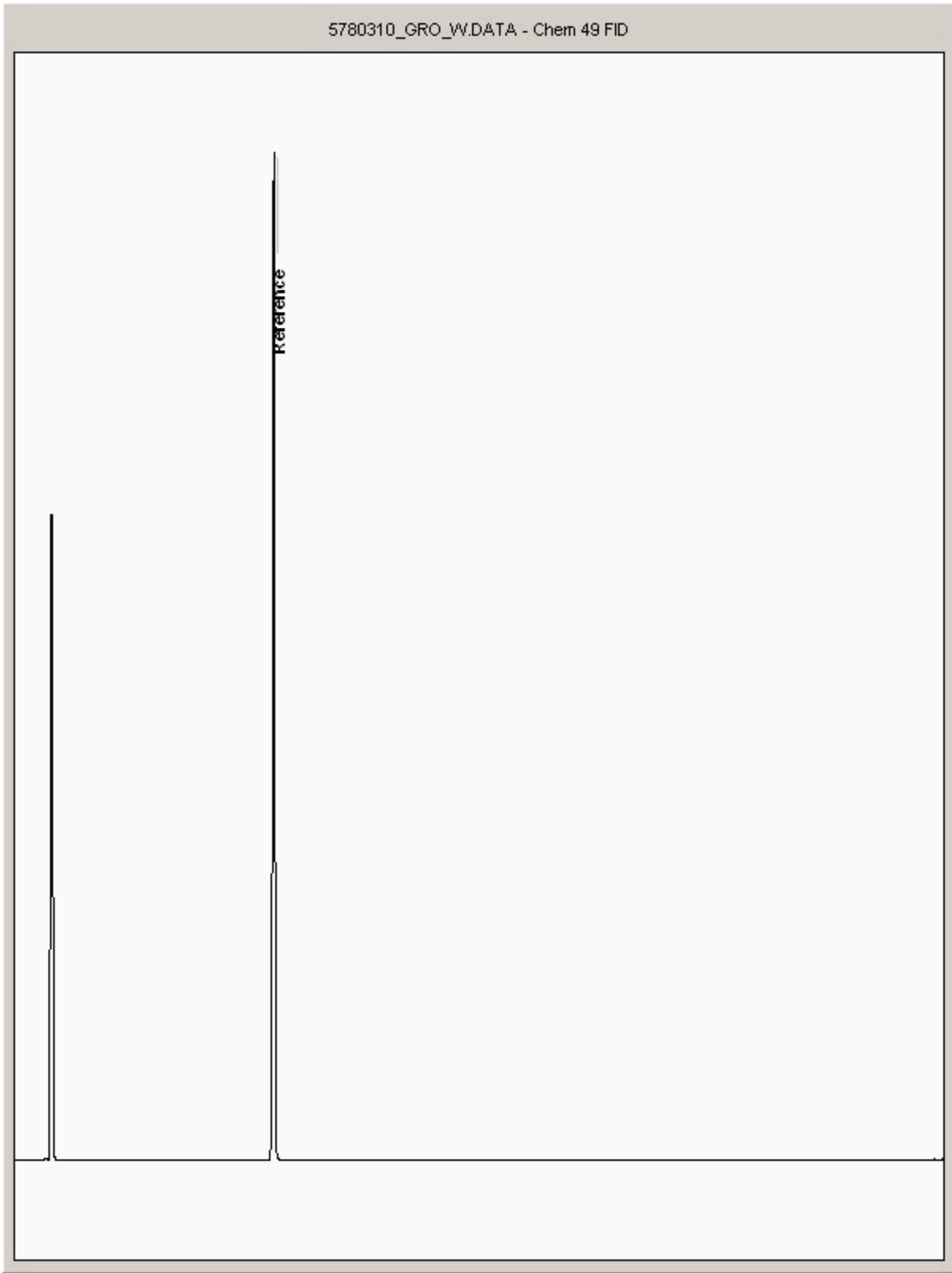
Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5780310
Sample ID : HW6

Depth :



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

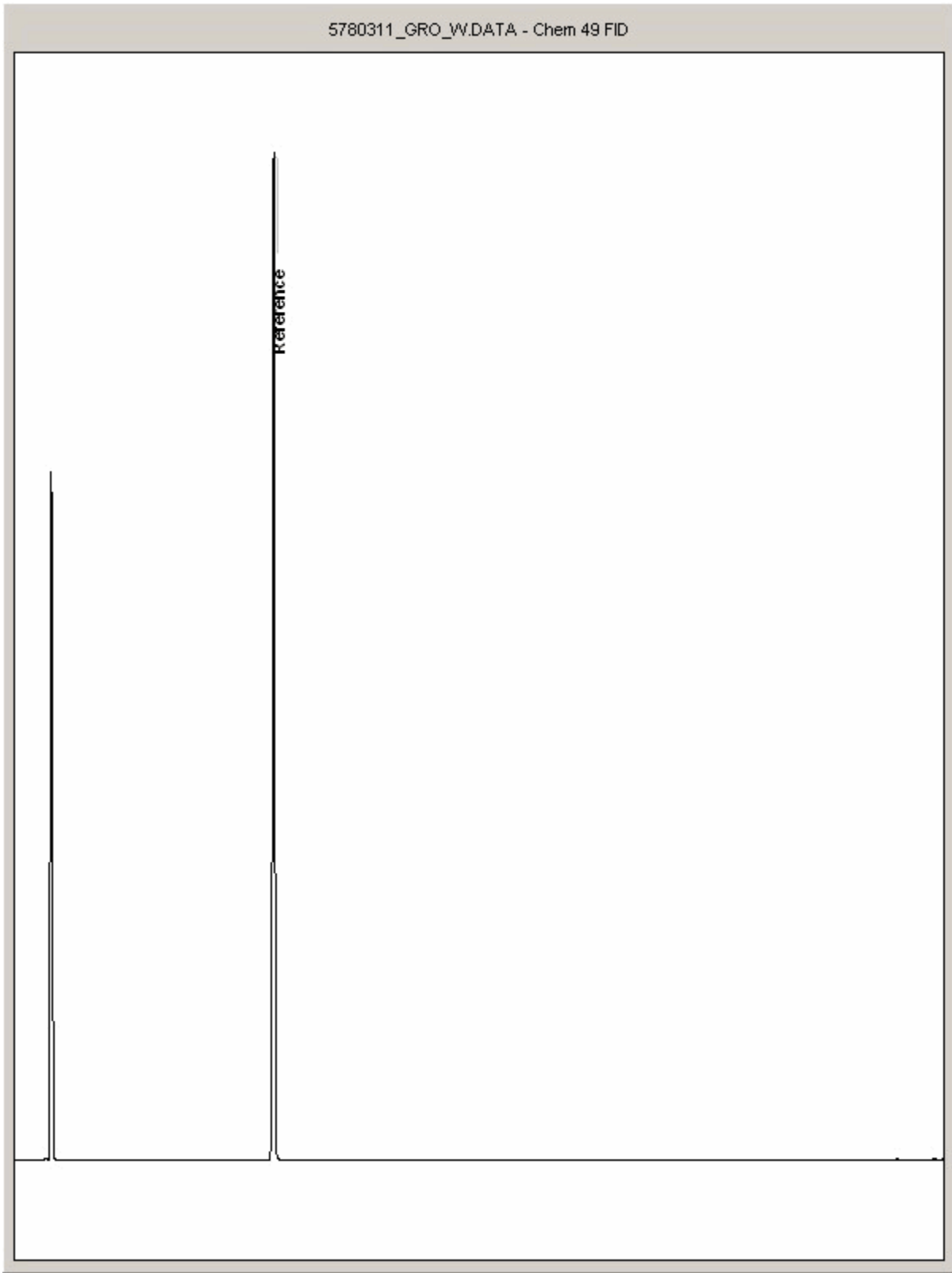
Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5780311
Sample ID : HW1

Depth :



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

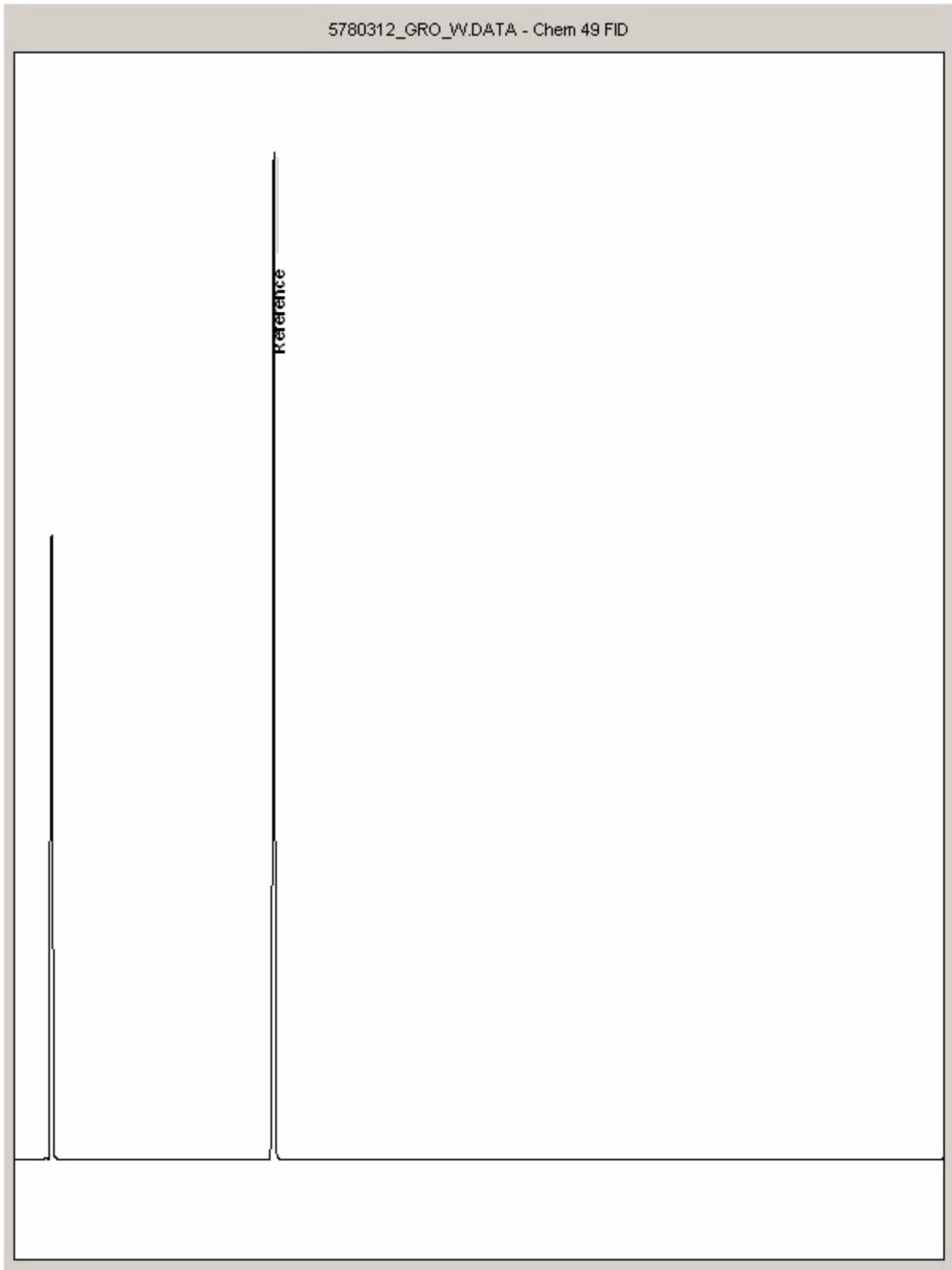
Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5780312
Sample ID : HW5

Depth :



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

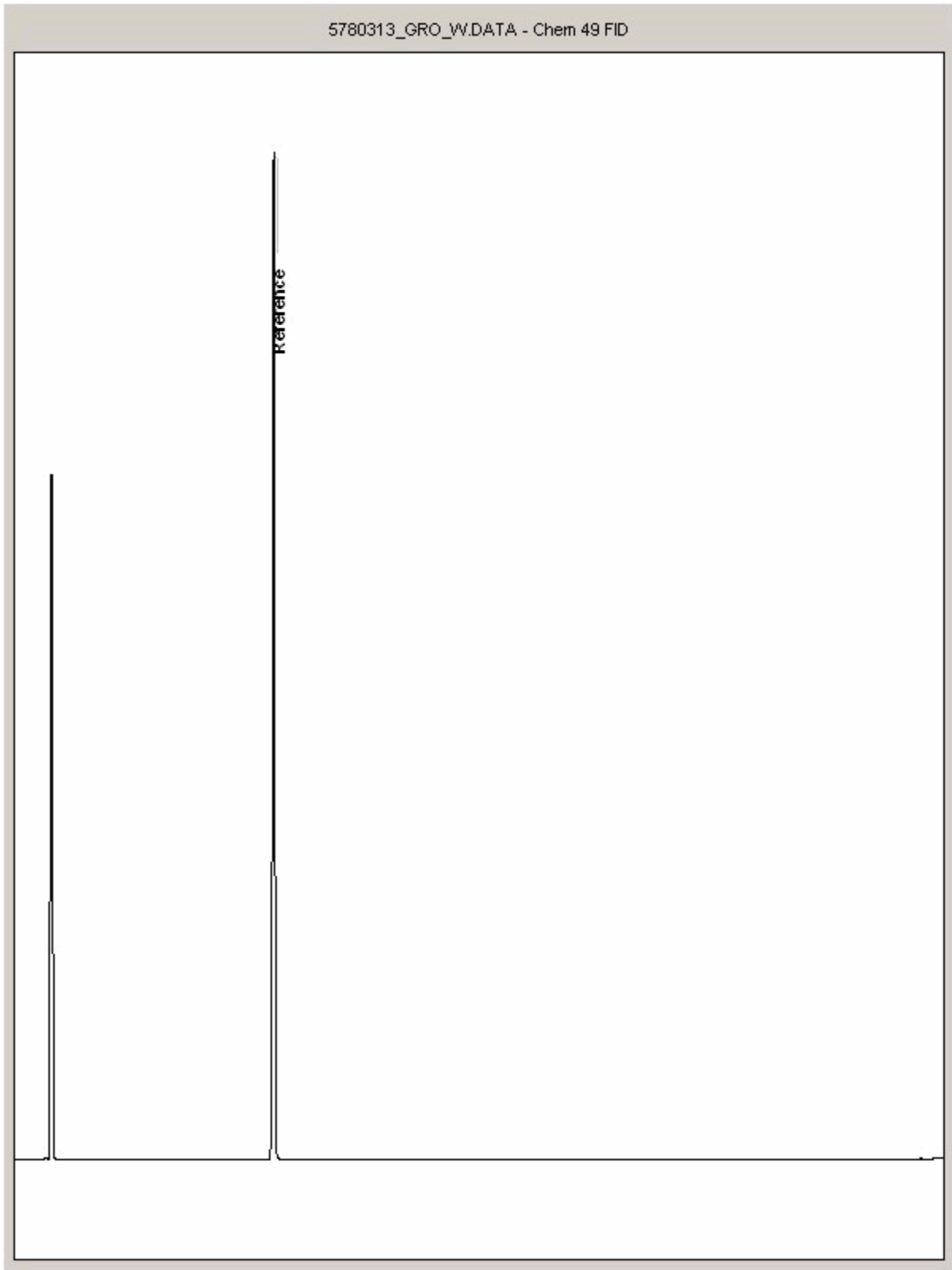
Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5780313
Sample ID : HW4

Depth :



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

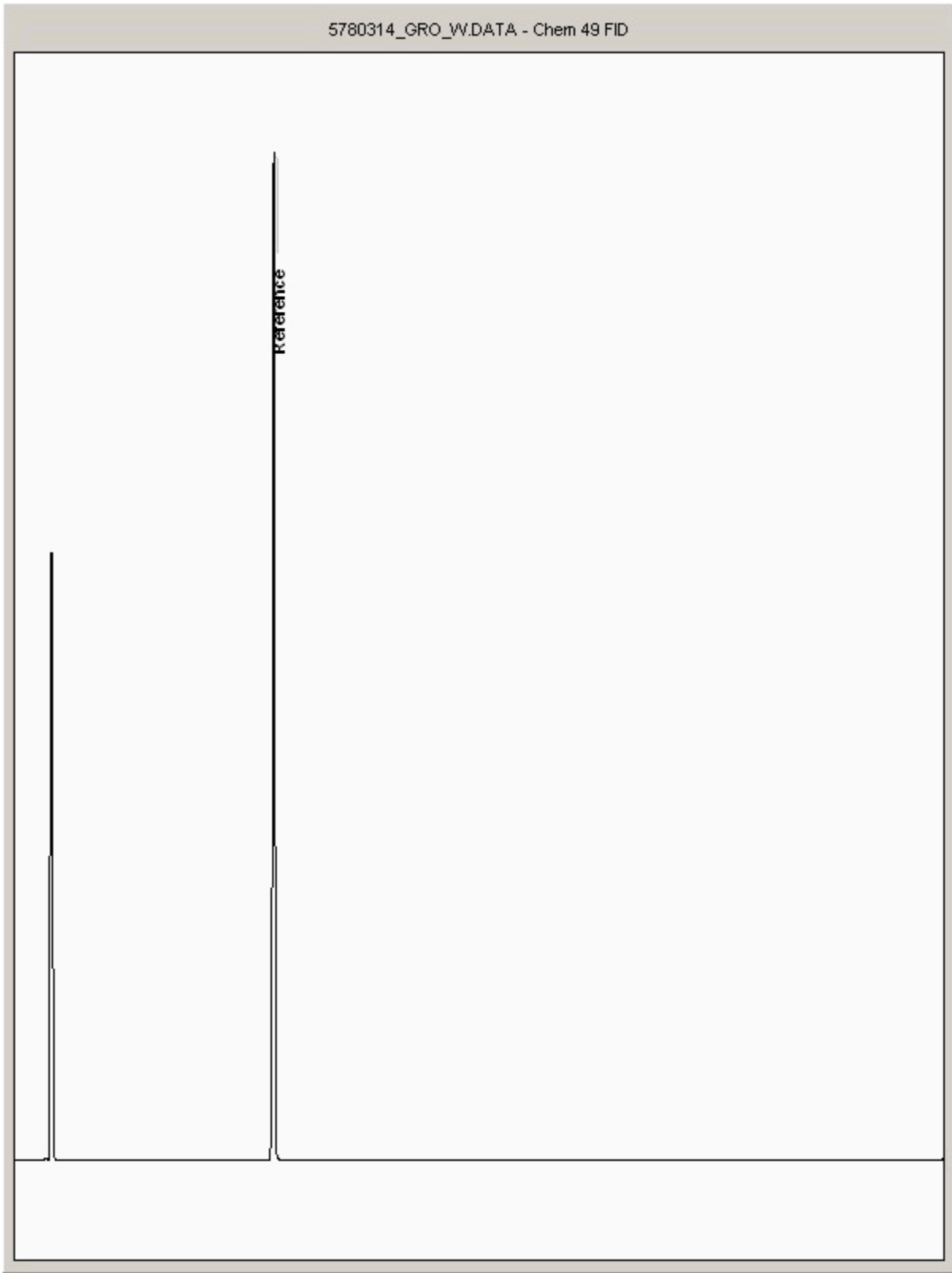
Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5780314
Sample ID : HW2

Depth :



SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

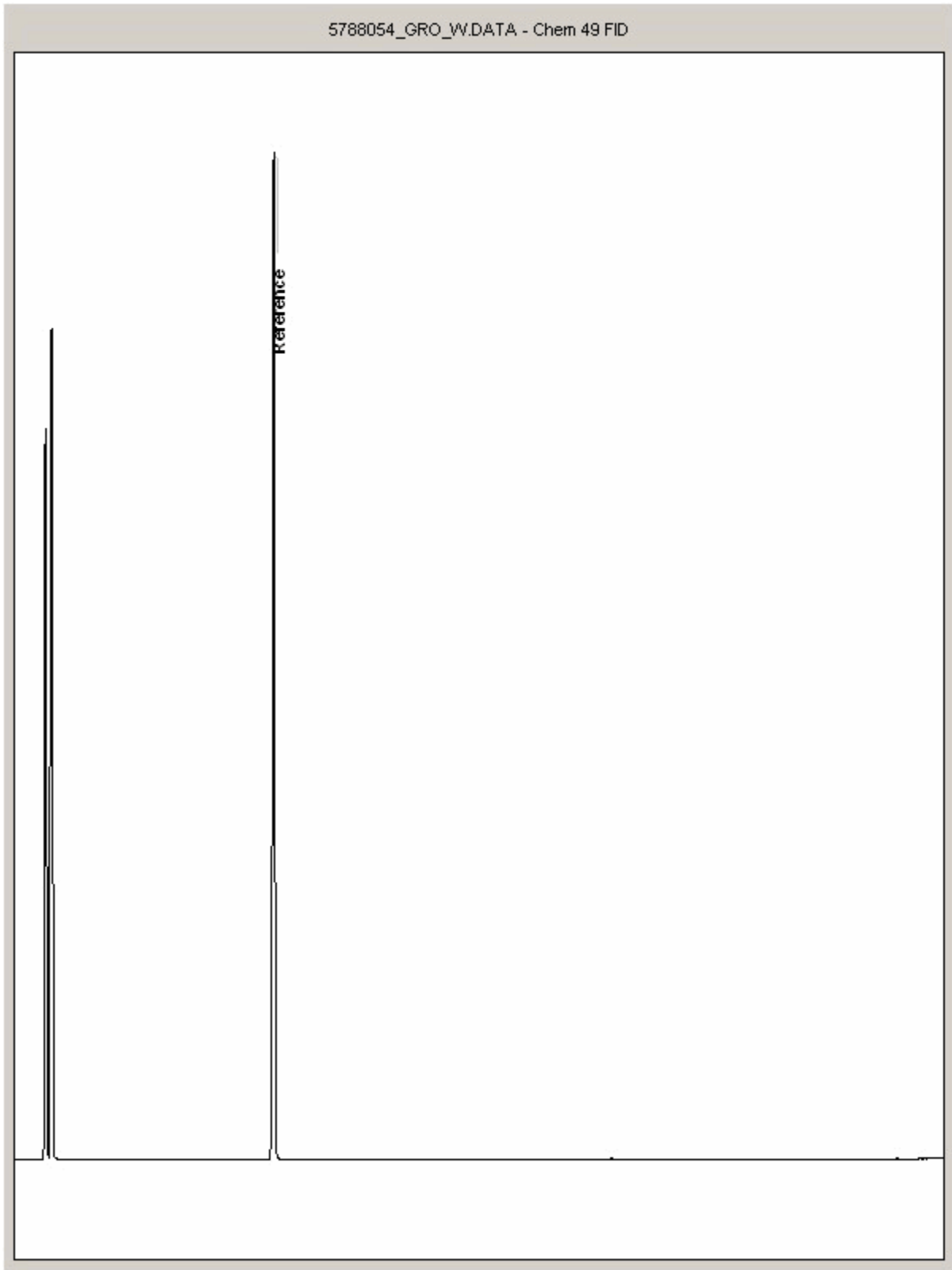
Order Number: 4559
Report Number: 188568
Superseded Report: 186916

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5788066
Sample ID : 355340

Depth :



Hawarden Subcontractors
ALcontrol Laboratories Chester
Units 7 & 8 Hawarden Business Park
Off Manor Lane
Hawarden
Deeside
CH5 3US

Dear Hawarden

Please find attached the results for the batch of 10 samples described below.

Samples Registered on:	25-Jun-2012
Analysis Started on:	06-Jul-2012
Analysis Completed on:	09-Jul-2012
Results for Batch Number	20040938
Your Purchase Order Number:	149648

You will be invoiced shortly by our accounts department.

If we can be of further assistance then please do not hesitate to contact us.

Yours sincerely



William Fardon
Customer Services Team Leader
Tel: (0113) 231 2177
nls@environment-agency.gov.uk

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation. Details of analytical procedures and performance data are available on request. The date of sample analysis is available on request.

The Environment Agency carries out analytical work to high standards and within the scope of its UKAS accreditation, but has no knowledge of whether the circumstances or the validity of the procedures used to obtain the samples provided to the laboratory were representative of the need for which the information was required.

The Environment Agency and/or its staff does not therefore accept any liability for the consequences of any acts or omissions made on the basis of the analysis or advice or interpretation provided.

Final Report

Report ID - 20040938 - 1

Batch description: SDG 120621-83 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985236
Comments: 5770314 - 966673
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 19-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	3.92	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001985237
Comments: 5770706 - 782115
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 19-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	12.6	mg/l	1	None	NM	1102

Final Report

Report ID - 20040938 - 1

Batch description: SDG 120621-83 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985238
Comments: 5770862 - 355340
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 19-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	7.45	mg/l	1	None	NM	1102

Final Report

Report ID - 20040938 - 1

Batch description: SDG 120621-83 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985239
Comments: 5771818 - HW1
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 19-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	3.94	mg/l	1	None	NM	1102

Final Report

Report ID - 20040938 - 1

Batch description: SDG 120621-83 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985240
Comments: 5772048 - HW3
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 19-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	3.35	mg/l	1	None	NM	1102

Final Report

Report ID - 20040938 - 1

Batch description: SDG 120621-83 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985241
Comments: 5772116 - HW4
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 19-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	3.63	mg/l	1	None	NM	1102

Final Report

Report ID - 20040938 - 1

Batch description: SDG 120621-83 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985242
Comments: 5772270 - HW2
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 19-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	3.15	mg/l	1	None	NM	1102

Final Report

Report ID - 20040938 - 1

Batch description: SDG 120621-83 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985243
Comments: 5772538 - 774814
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 19-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	2.73	mg/l	1	None	NM	1102

Final Report

Report ID - 20040938 - 1

Batch description: SDG 120621-83 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985244
Comments: 5773369 - HW5
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 19-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	2.34	mg/l	1	None	NM	1102

Final Report

Report ID - 20040938 - 1

Batch description: SDG 120621-83 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985245
Comments: 5773418 - HW6
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 19-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	2.27	mg/l	1	None	NM 1102

Method Description Summary for all samples in batch Number 20040938

1102 NM I TOC - furnace with IR detection



Mark Gale

Laboratory Site Manager

All reporting limits quoted are those achievable for clean samples of the relevant matrix. No allowance is made for instances when dilutions are necessary owing to the nature of the sample or insufficient volume of the sample being available. In these cases higher reporting limits may be quoted and will be above the MRV.

Solid sample results are determined on a "dried" sample fraction except for parameters where the method description identifies that "as received" sample was used.

Please note all samples will be retained for 10 working days for aqueous samples and 30 working days for solid samples after reporting unless otherwise agreed with Customer Services

Key to Accreditation: UKAS = Methodology accredited to ISO/IEC 17025:2005, MCertS = Methodology accredited to MCertS Performance Standard for testing of soils, none = Methodology not accredited

Key to Lab ID: LE = Leeds, LL = Llanelli, NM = Nottingham, SX = Starcross, SC = Sub-Contracted outside NLS, FI = Field Data, NLS = Calculated

Any subsequent version of this report denoted with a higher version number will supersede this and any previous versions

END OF TEST REPORT

SDG: 120621-83
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 188568
Superseded Report: 186916

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	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
HEBICIDES	D&C	HEXANE:ACETONE	SOX THERM	GC-MS
PESTICIDES	D&C	HEXANE:ACETONE	SOX THERM	GC-MS
EPH (DPO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (MIN QI)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (CLEANED LP)	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	MI CROWA VE 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 (STR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STR-BAR)	GC MS
PCB AROCLOR 1254	HEXANE	STIRRED EXTRACTION (STR-BAR)	GC MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FFESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTICIDES	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBIS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC MS
TPH BY INFRA RED (IR)	TCE	STIRRED EXTRACTION (STR-BAR)	IR
MINERAL OIL BY IR	TCE	STIRRED EXTRACTION (STR-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: 10 July 2012
Customer: D_PRIORGEOT_CRK
Sample Delivery Group (SDG): 120622-50
Your Reference: P12030
Location: Haulbowline
Report No: 187109

We received 8 samples on Thursday June 21, 2012 and 8 of these samples were scheduled for analysis which was completed on Tuesday July 10, 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: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5770458	215078			20/06/2012
5770461	282822			20/06/2012
5770466	345730			20/06/2012
5770460	364540			20/06/2012
5770463	419835			20/06/2012
5770464	733743			20/06/2012
5770456	74622			20/06/2012
5770468	880167			20/06/2012

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



SDG: 120622-50
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 187109
 Superseded Report:

LEACH Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container																								
						5770456	5770458	5770461	5770466	5770460	5770463	5770464	5770468																
X Test																													
N No Determination Possible																													
						74622	215078	282822	345730	364540	419835	733743	880167	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	11plastic (ALE221)	11 green glass bottle	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	11plastic (ALE221)	11 green glass bottle	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	11plastic (ALE221)	11 green glass bottle	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
Anions by Kone (w)	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
BOD True Total	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
COD Unfiltered	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 8					X		X		X		X																
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
Free Sulphur	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8					X		X		X		X																
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8					X		X		X		X																
Metals analysis (Saline Sample)	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 8				X	X	X	X	X	X	X	X																



CERTIFICATE OF ANALYSIS

SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

LEACH Results Legend X Test N No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
	5770456	74622			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle
	5770458	215078			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle
	5770461	282822			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle
	5770466	345730			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2 11 green glass bottle
5770460	364540			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle	
5770463	419836			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle	
5770464	733743			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle	
5770468	880167			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 11plastic (ALE221) 11 green glass bottle	
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8			X X X X X X X X
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 8			X X X X X X X X
pH Value	All	NDPs: 0 Tests: 8			X X X X X X X X
Phenols by ms (w)	All	NDPs: 0 Tests: 2			X X
Saline TON	All	NDPs: 0 Tests: 8			X X X X X X X X
Sulphide	All	NDPs: 0 Tests: 8			X X X X X X X X
TOC (Saline)*	All	NDPs: 0 Tests: 8			X X X X X X X X
TPH CWG (W)	All	NDPs: 0 Tests: 8			X X X X X X X X
VOC MS (W)	All	NDPs: 0 Tests: 2			X X



CERTIFICATE OF ANALYSIS

SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Results Legend		Customer Sample R	74622	215078	282822	345730	364540	419835
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		Saline D	Saline D	Saline D	Saline D	Saline D	Saline D
S	Deviating sample.		20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012
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		21/06/2012	21/06/2012	21/06/2012	21/06/2012	21/06/2012	21/06/2012
	Trigger breach confirmed		120622-50	120622-50	120622-50	120622-50	120622-50	120622-50
(F)			5770456	5770458	5770461	5770466	5770460	5770463
Component	LOD/Units	Method						
TOC (Saline)*	<1 mg/l	SUB	3.11	2.16	25.9	3.32	23.1	1.41
BOD, unfiltered	<1 mg/l	TM045	<2	2.3	26.1	22.7	8.47	<2
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	0.228	<0.2	18.2	0.849	9.47	<0.2
Sulphide	<0.01 mg/l	TM101	<0.01	0.042	<0.01	<0.01	<0.01	<0.01
COD, unfiltered	<7 mg/l	TM107	19.3	251	330	95.7	184	212
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	37.6	36.3	29.6	36	16.9	43.2
Barium (diss.filt)	<0.03 µg/l	TM152	58.9	54	734	73.4	292	35.9
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Nitrite as NO2	<0.05 mg/l	TM184	0.053	<0.05	0.078	<0.05	1.45	<0.05
Sulphate	<2 mg/l	TM184	1930	1990	59	1670	424	2340
Chloride	<2 mg/l	TM184	17000	16000	13100	15700	6730	18900
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105
Phenol	<0.5 µg/l	TM205			6.65		<3	
2-methylphenol	<0.5 µg/l	TM205			<0.5		<0.5	
3-methylphenol	<0.5 µg/l	TM205			<0.5		<0.5	
4-methylphenol	<0.5 µg/l	TM205			<0.5		<0.5	
2-chlorophenol	<0.5 µg/l	TM205			<0.5		<0.5	
2,4-dimethylphenol	<0.5 µg/l	TM205			<0.5		<0.5	
4-chloro-3-methylphenol	<0.5 µg/l	TM205			<0.5		<0.5	
2,6-dichlorophenol	<0.5 µg/l	TM205			<0.5		<0.5	
4-Chlorophenol	<0.5 µg/l	TM205			<0.5		<0.5	
2,4-dichlorophenol	<0.5 µg/l	TM205			<0.5		<0.5	
2-nitrophenol	<0.5 µg/l	TM205			<0.5		<0.5	
2,4,6-trichlorophenol	<0.5 µg/l	TM205			<0.5		<0.5	
2,4,5-trichlorophenol	<0.5 µg/l	TM205			<0.5		<0.5	
4-nitrophenol	<0.5 µg/l	TM205			<0.5		<0.5	
2,3,5,6-tetrachlorophenol	<0.5 µg/l	TM205			<0.5		<0.5	
2,3,4,6-tetrachlorophenol	<0.5 µg/l	TM205			<0.5		<0.5	



SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Results Legend		Customer Sample R	74622	215078	282822	345730	364540	419835	
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Saline D	Saline D	Saline D	Saline D	Saline D	Saline D	
M	mCERTS accredited.		20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012
S	Deviating sample.		21/06/2012	21/06/2012	21/06/2012	21/06/2012	21/06/2012	21/06/2012	21/06/2012
aq	Aqueous / settled sample.		120622-50	120622-50	120622-50	120622-50	120622-50	120622-50	120622-50
diss.filt	Dissolved / filtered sample.		5770456	5770458	5770461	5770466	5770460	5770463	5770463
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								
(F)	Trigger breach confirmed								
Component	LOD/Units		Method						
2,4-dinitrophenol	<2.5 µg/l		TM205			<5		<5	
DNOC	<3 µg/l	TM205			<6		<6		
Pentachlorophenol	<2 µg/l	TM205			<2		<2		
Dinoseb	<4 µg/l	TM205			<8		<8		
Cyanide, Free	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Cyanide, Complex	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Thiocyanate	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Calcium (diss.filt)	<0.012 mg/l	TM228	379	341	539	751	463	383	
Sodium (diss.filt)	<0.076 mg/l	TM228	10800	9470	7490	9190	3830	11200	
Magnesium (diss.filt)	<0.036 mg/l	TM228	1020	940	250	593	36.5	1100	
Potassium (diss.filt)	<2.335 mg/l	TM228	345	312	282	305	159	361	
Chromium, Hexavalent	<0.03 mg/l	TM241	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	
pH	<1 pH Units	TM256	8.8	8.34	7.49	7.06	7.69	8.09	
Arsenic (Saline)	<0.5 µg/l	TM270	1.96	1.92	8.8	1.33	6.49	9.48	
Aluminium (Saline)	<3.7 µg/l	TM270	24	24	37.2	24.8	63.1	163	
Antimony (Saline)	<1 µg/l	TM270	<1	<1	<1	<1	5.97	5.53	
Boron (Saline)	<201 µg/l	TM270	3860	3760	2400	880	1150	4230	
Cadmium (Saline)	<0.15 µg/l	TM270	<0.15	<0.15	<0.15	<0.15	<0.15	12	
Chromium (Saline)	<1.5 µg/l	TM270	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	
Copper (Saline)	<1 µg/l	TM270	<1	<1	<1	<1	<1	7.08	
Iron (Saline)	<4 µg/l	TM270	<4	<4	11.9	<4	<4	11.3	
Lead (Saline)	<0.2 µg/l	TM270	<0.2	<0.2	<0.2	<0.2	<0.2	4.81	
Manganese (Saline)	<0.3 µg/l	TM270	<0.3	<0.3	2970	198	350	25.1	
Mercury (Saline)	<0.15 µg/l	TM270	<0.15	<0.15	1.32	0.192	2.61	0.918	
Nickel (saline)	<1.1 µg/l	TM270	<1.1	<1.1	12.3	<1.1	39.1	9.27	
Selenium (Saline)	<0.5 µg/l	TM270	1.05	1.12	1.05	1.08	1.9	2.84	
Vanadium (Saline)	<4 µg/l	TM270	24.5	27.4	22	27.3	19.1	28	
Zinc (Saline)	<2.1 µg/l	TM270	<2.1	<2.1	<2.1	<2.1	<2.1	58.6	
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	<5	<5	<5	<5	
Saline TON as NO3	<0.3 mg/l	TM281	1.14	1.73	<0.3	<0.3	4.72	1.23	
Saline Nitrate as NO3	<0.3 mg/l	TM281	1.08	1.73	<0.3	<0.3	2.77	1.23	
Sulphur, Free	<0.05 mg/l	TM294	<0.05	<0.05	0.0581	<0.05	<0.05	<0.05	



CERTIFICATE OF ANALYSIS

SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Results Legend		Customer Sample R	733743	880167				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		Saline D	Saline D				
S	Deviating sample.		20/06/2012	20/06/2012				
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		21/06/2012	21/06/2012				
(F)	Trigger breach confirmed		120622-50	120622-50				
			5770464	5770468				
Component	LOD/Units	Method						
TOC (Saline)*	<1 mg/l	SUB	<1	3.85				
BOD, unfiltered	<1 mg/l	TM045	<2	86.7				
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	1.28				
Sulphide	<0.01 mg/l	TM101	<0.01	<0.01	#	#		
COD, unfiltered	<7 mg/l	TM107	264	229				
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	42.7	35.1	#	#		
Barium (diss.filt)	<0.03 µg/l	TM152	37.8	80.5				
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	<0.07				
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05				
Sulphate	<2 mg/l	TM184	2310	1560				
Chloride	<2 mg/l	TM184	17800	15100				
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015				
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105				
Cyanide, Free	<0.05 mg/l	TM227	<0.05	<0.05				
Cyanide, Complex	<0.05 mg/l	TM227	<0.05	<0.05				
Thiocyanate	<0.05 mg/l	TM227	<0.05	<0.05				
Calcium (diss.filt)	<0.012 mg/l	TM228	378	749				
Sodium (diss.filt)	<0.076 mg/l	TM228	11000	8700				
Magnesium (diss.filt)	<0.036 mg/l	TM228	1080	553				
Potassium (diss.filt)	<2.335 mg/l	TM228	351	294				
Chromium, Hexavalent	<0.03 mg/l	TM241	<0.03	<0.03	#	#		
pH	<1 pH Units	TM256	8.11	7.05				
Arsenic (Saline)	<0.5 µg/l	TM270	4.76	2.05	#	#		
Aluminium (Saline)	<3.7 µg/l	TM270	29.7	88.2	#	#		
Antimony (Saline)	<1 µg/l	TM270	<1	<1	#	#		
Boron (Saline)	<201 µg/l	TM270	4180	1450	#	#		
Cadmium (Saline)	<0.15 µg/l	TM270	4.05	<0.15	#	#		
Chromium (Saline)	<1.5 µg/l	TM270	<1.5	<1.5	#	#		
Copper (Saline)	<1 µg/l	TM270	<1	1.8	#	#		



CERTIFICATE OF ANALYSIS

SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Table with columns: Results Legend, Customer Sample R, 733743, 880167, Component, LOD/Units, Method, and data rows for various elements like Iron, Lead, Manganese, Mercury, Nickel, Selenium, Vanadium, Zinc, Cyanide, Saline TON as NO3, Saline Nitrate as NO3, Sulphur, Free.

SDG: 120622-50
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 187109
 Superseded Report:

TPH CWG (W)

Results Legend		Customer Sample R	74622	215078	282822	345730	364540	419835
#	ISO17025 accredited.	Depth (m)						
M	mCERTS accredited.	Sample Type	Saline D	Saline D	Saline D	Saline D	Saline D	Saline D
S	Deviating sample.	Date Sampled	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012	20/06/2012
aq	Aqueous / settled sample.	Sampled Time						
diss.filt	Dissolved / filtered sample.	Date Received	21/06/2012	21/06/2012	21/06/2012	21/06/2012	21/06/2012	21/06/2012
tot.unfilt	Total / unfiltered sample.	SDG Ref	120622-50	120622-50	120622-50	120622-50	120622-50	120622-50
*	Subcontracted test.	Lab Sample No.(s)	5770456	5770458	5770461	5770466	5770460	5770463
**	% 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	AGS Reference						
(F)	Trigger breach confirmed							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM245	93	99	97	95	95	93
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	<50	<50	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3
Benzene	<7 µg/l	TM245	<7	<7	<7	<7	<7	<7
Toluene	<4 µg/l	TM245	<4	<4	<4	<4	<4	<4
Ethylbenzene	<5 µg/l	TM245	<5	<5	<5	<5	<5	<5
m,p-Xylene	<8 µg/l	TM245	<8	<8	<8	<8	<8	<8
o-Xylene	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11	<11	<11	<11	<11
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28	<28	<28
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	15	<10



CERTIFICATE OF ANALYSIS

SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

TPH CWG (W)

Table with columns for Results Legend, Customer Sample R (733743, 880167), Depth (m), Sample Type, Date Sampled, Sampled Time, Date Received, SDG Ref, Lab Sample No.(s), AGS Reference, Component, LOD/Units, Method, and numerical results for various chemical components like GRO Surrogate %, Methyl tertiary butyl ether (MTBE), Benzene, etc.



SDG: 120622-50
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Location: Haulbowline
Customer: Priority Geotechnical Ltd
Attention: Colette Kelly

Order Number: 4559
Report Number: 187109
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample R	282822	364540			
#	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.						
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						
				Saline D 20/06/2012	Saline D 20/06/2012		
			21/06/2012 120622-50 5770461	21/06/2012 120622-50 5770460			
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM208	122	121			
Toluene-d8**	%	TM208	100	99.6			
4-Bromofluorobenzene**	%	TM208	99.8	98.6			
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1			
Chloromethane	<1 µg/l	TM208	<1	<1			
Vinyl chloride	<1 µg/l	TM208	<1	<1			
Bromomethane	<1 µg/l	TM208	<1	<1			
Chloroethane	<1 µg/l	TM208	<1	<1			
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1			
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1			
Carbon disulphide	<1 µg/l	TM208	<1	<1			
Dichloromethane	<3 µg/l	TM208	<3	<3			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1			
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1			
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1			
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1			
Bromochloromethane	<1 µg/l	TM208	<1	<1			
Chloroform	<1 µg/l	TM208	<1	<1			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1			
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1			
Carbontetrachloride	<1 µg/l	TM208	<1	<1			
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1			
Benzene	<1 µg/l	TM208	<1	<1			
Trichloroethene	<1 µg/l	TM208	<1	<1			
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1			
Dibromomethane	<1 µg/l	TM208	<1	<1			
Bromodichloromethane	<1 µg/l	TM208	<1	<1			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1			
Toluene	<1 µg/l	TM208	<1	<1			
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1			
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1			
Tetrachloroethene	<1 µg/l	TM208	<1	<1			
Dibromochloromethane	<1 µg/l	TM208	<1	<1			



SDG: 120622-50
 Job: D_PRIORGEOT_CRK-44
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Location: Haulbowline
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Order Number: 4559
 Report Number: 187109
 Superseded Report:

VOC MS (W)

Results Legend		Customer Sample R	282822	364540			
#	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.						
diss.fit	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	<1 µg/l	TM208	<1	<1			
Chlorobenzene	<1 µg/l	TM208	<1	<1			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1			
Ethylbenzene	<1 µg/l	TM208	<1	<1			
m,p-Xylene	<1 µg/l	TM208	<1	<1			
o-Xylene	<1 µg/l	TM208	<1	<1			
Styrene	<1 µg/l	TM208	<1	<1			
Bromoform	<1 µg/l	TM208	<1	<1			
Isopropylbenzene	<1 µg/l	TM208	<1	<1			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1			
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	<1			
Bromobenzene	<1 µg/l	TM208	<1	<1			
Propylbenzene	<1 µg/l	TM208	<1	<1			
2-Chlorotoluene	<1 µg/l	TM208	<1	<1			
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	<1			
4-Chlorotoluene	<1 µg/l	TM208	<1	<1			
tert-Butylbenzene	<1 µg/l	TM208	<1	<1			
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	<1			
sec-Butylbenzene	<1 µg/l	TM208	<1	<1			
4-iso-Propyltoluene	<1 µg/l	TM208	<1	<1			
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	<1			
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	<1			
n-Butylbenzene	<1 µg/l	TM208	<1	<1			
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	<1			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1			
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	<1			
Hexachlorobutadiene	<1 µg/l	TM208	<1	<1			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	<1			
Naphthalene	<1 µg/l	TM208	<1	<1			
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	<1			
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1			



CERTIFICATE OF ANALYSIS

SDG: 120622-50	Location: Haulbowline	Order Number: 4559
Job: D_PRIORGEOT_CRK-44	Customer: Priority Geotechnical Ltd	Report Number: 187109
Client Reference: P12030	Attention: Colette Kelly	Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
SUB		Subcontracted Test		
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
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		
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		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
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		
TM205		Determination of Phenols in Waste Waters using Solid Phase Extraction, Acetylation, Gas Chromatography and Mass Selective Detection		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
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		
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		
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		
TM270	Thermo Electron Application Note AN_E0640: X Series ICP-MS: Using automated collision cell ICP-MS with rapid in-sample switching to achieve ultimate performance in environmental analysis.	Dissolved Metals in Saline Matrices by CCT ICP-MS		
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser		
TM281		The Determination of Total Oxidized Nitrogen in Saline Matrices using the Kone Spectrophotometric Analysers		
TM294		Determination of Free Sulphur in liquids by HPLC		

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



SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

Location: Haulbowline
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Attention: Colette Kelly

Order Number: 4559
Report Number: 187109
Superseded Report:

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	5770456	5770458	5770461	5770466	5770460	5770463	5770464	5770468
	74622	215078	282822	345730	364540	419835	733743	880167
AGS Ref.								
Depth								
Type	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D
Ammoniacal Nitrogen	29-Jun-2012	29-Jun-2012	29-Jun-2012	28-Jun-2012	29-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012
Anions by Kone (w)	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012
BOD True Total	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012
COD Unfiltered	24-Jun-2012	24-Jun-2012	24-Jun-2012	26-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012
Conductivity (at 20 deg.C)	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012
Cyanide Comp/Free/Total/Thiocyanate	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012
Dissolved Metals by ICP-MS	27-Jun-2012	27-Jun-2012	27-Jun-2012	26-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012
EPH CWG (Aliphatic) Aqueous GC (W)	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012
EPH CWG (Aromatic) Aqueous GC (W)	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012
Free Sulphur	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012
GRO by GC-FID (W)	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012	24-Jun-2012
Hexavalent Chromium (w)	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012	25-Jun-2012
Low Level Cyanide (W)	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012
Metals analysis (Saline Sample)	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012
Metals by iCap-OES Dissolved (W)	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012	26-Jun-2012
Nitrite by Kone (w)	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012
PCB Congeners - Aqueous (W)	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012
pH Value	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012
Phenols by ms (w)			29-Jun-2012		28-Jun-2012			
Saline TON	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012
Sulphide	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012	27-Jun-2012
TOC (Saline)*	09-Jul-2012	09-Jul-2012	09-Jul-2012	10-Jul-2012	09-Jul-2012	09-Jul-2012	09-Jul-2012	09-Jul-2012
TPH CWG (W)	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012	28-Jun-2012
VOC MS (W)			26-Jun-2012		26-Jun-2012			



SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

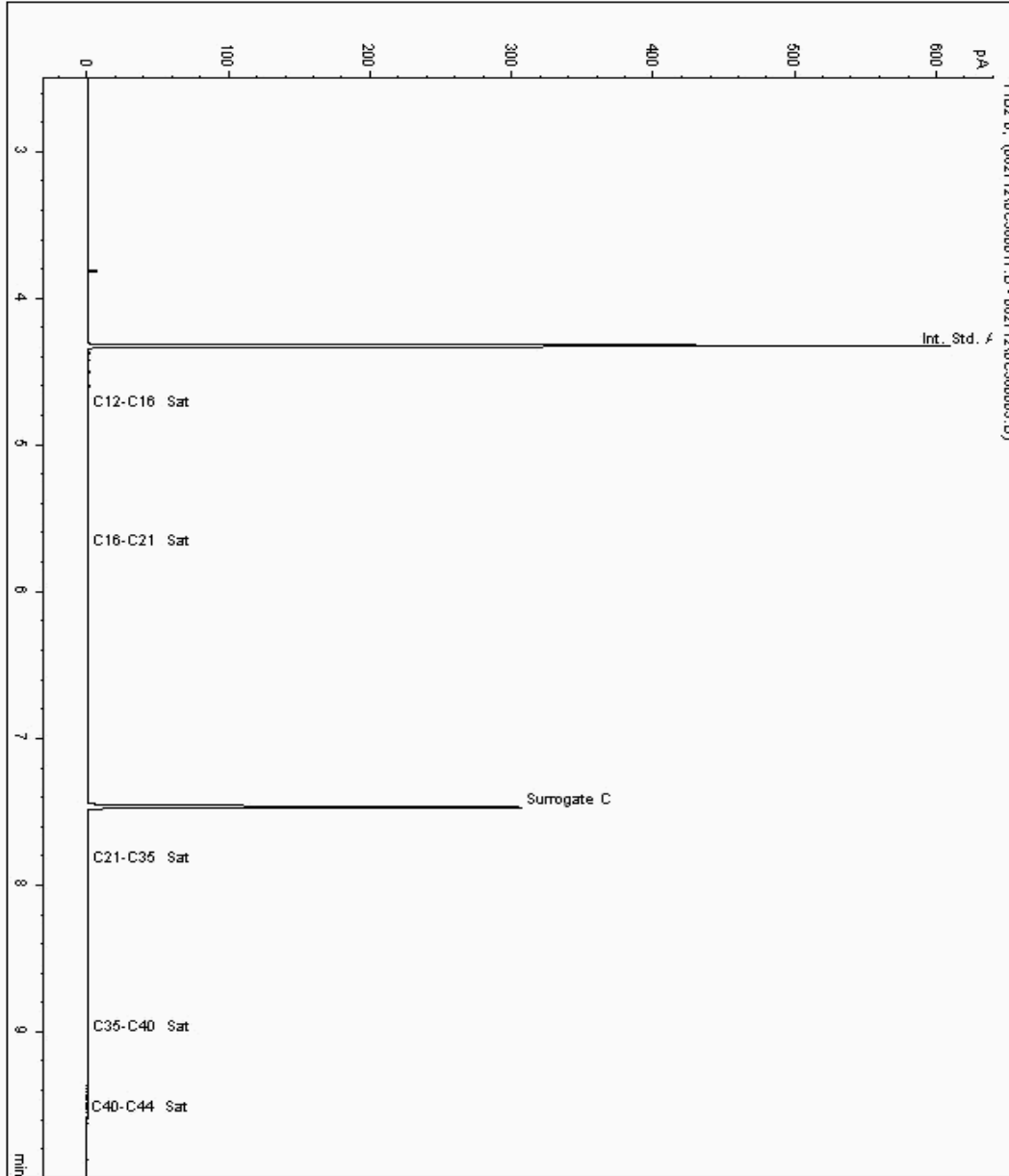
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5779593
Sample ID : 880167

Depth :

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

Sample Identity: 5631448-5779593
Date Acquired : 27/06/12 21:08:03 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
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Chromatogram

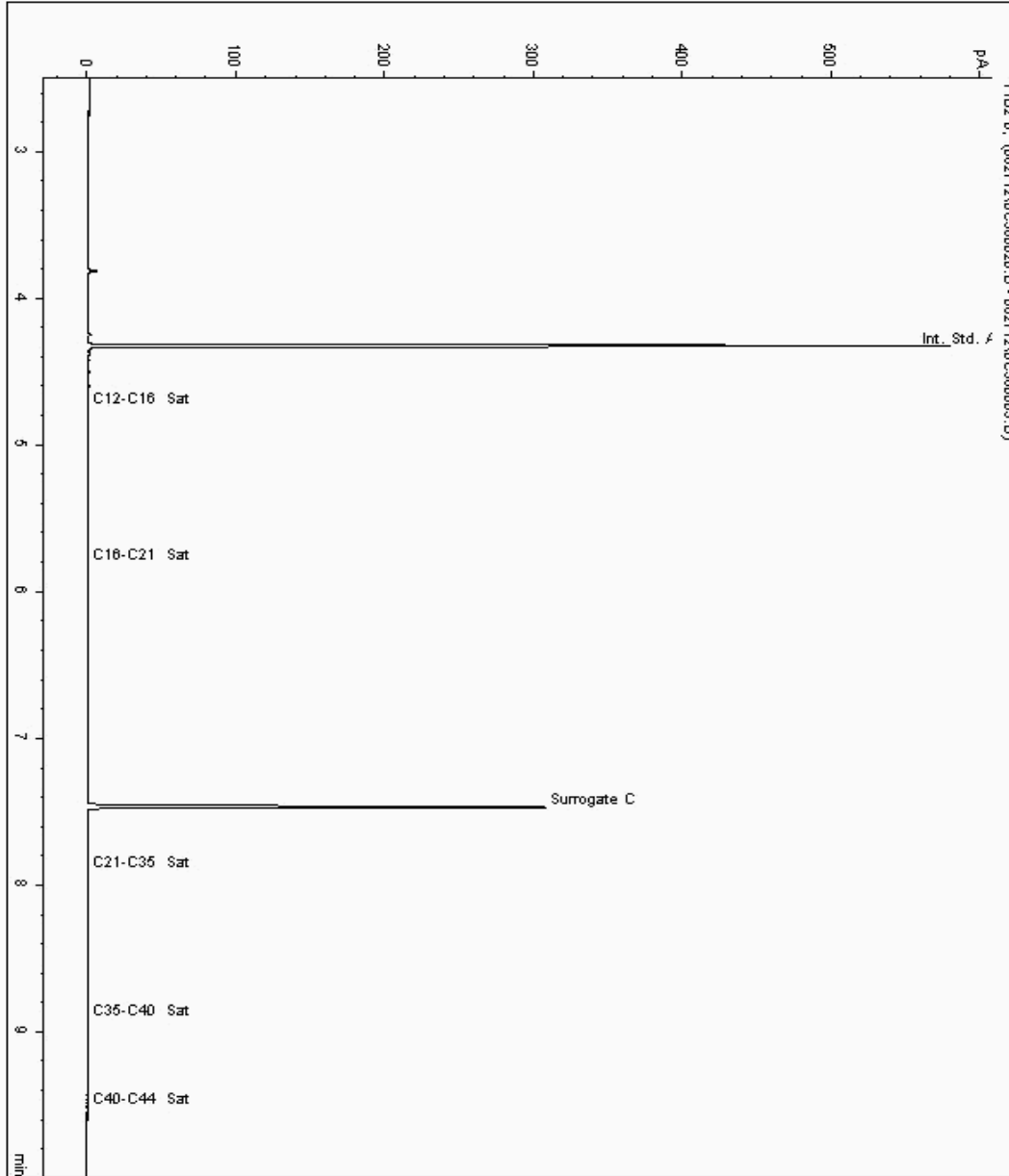
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5779619
Sample ID : 345730

Depth :

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

Sample Identity: 5631417-5779619
Date Acquired : 27/06/12 22:05:13 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

Location: Haulbowline
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Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

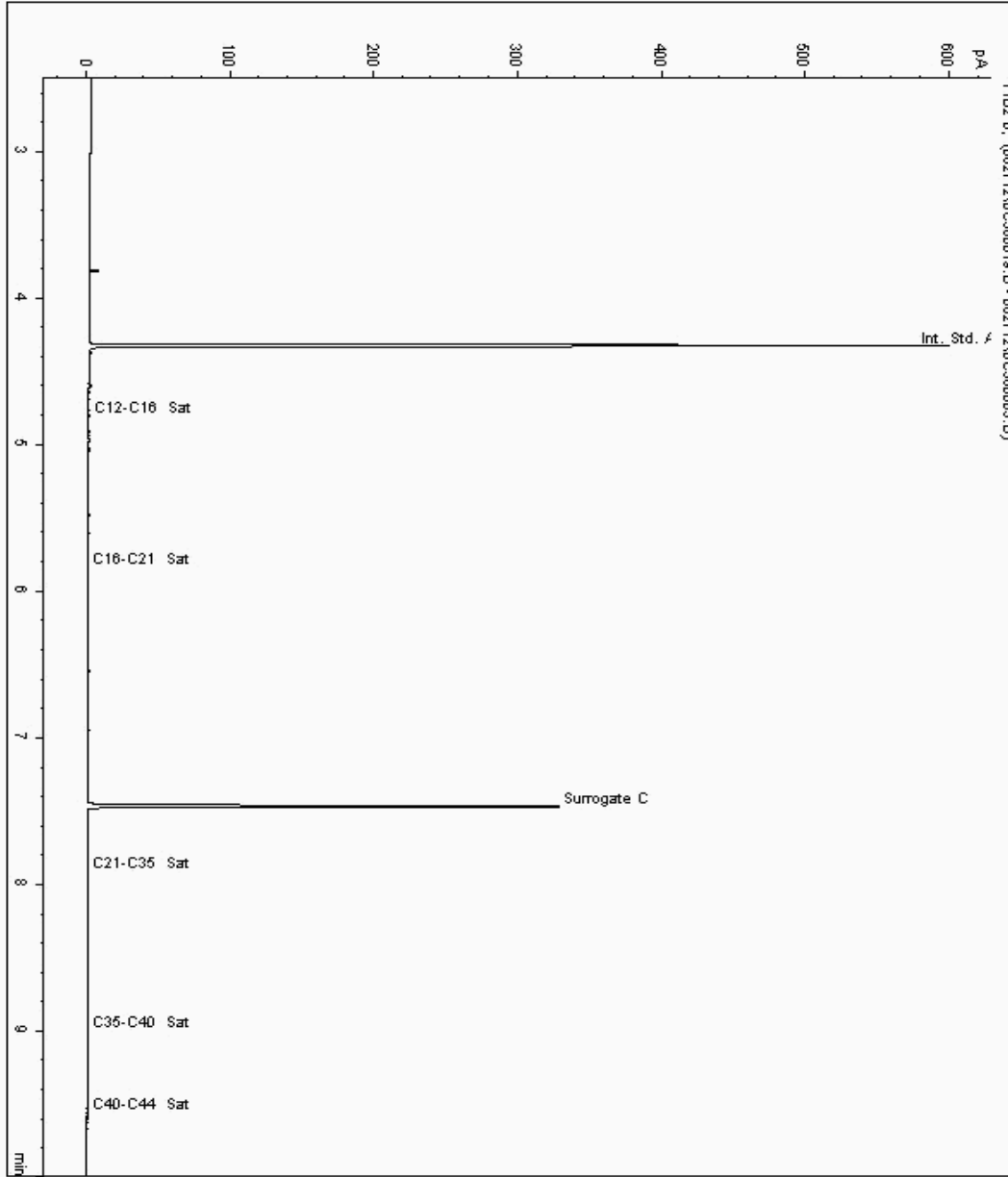
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5779641
Sample ID : 733743

Depth :

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

Sample Identity: 5631353-5779641
Date Acquired : 27/06/12 21:46:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

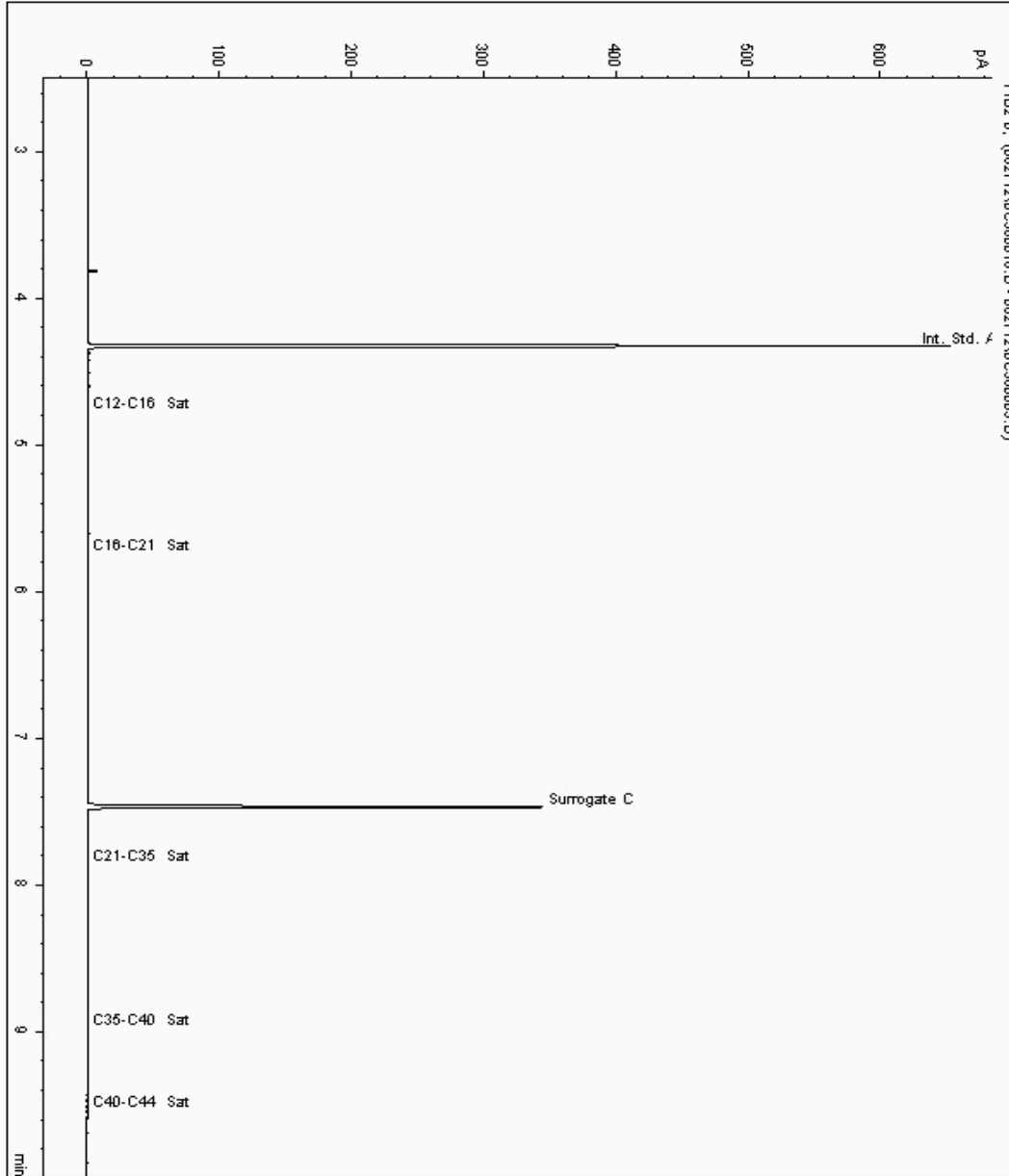
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5779657
Sample ID : 419835

Depth :

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

Sample Identity: 5631309-5779657
Date Acquired : 27/06/12 21:27:06 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

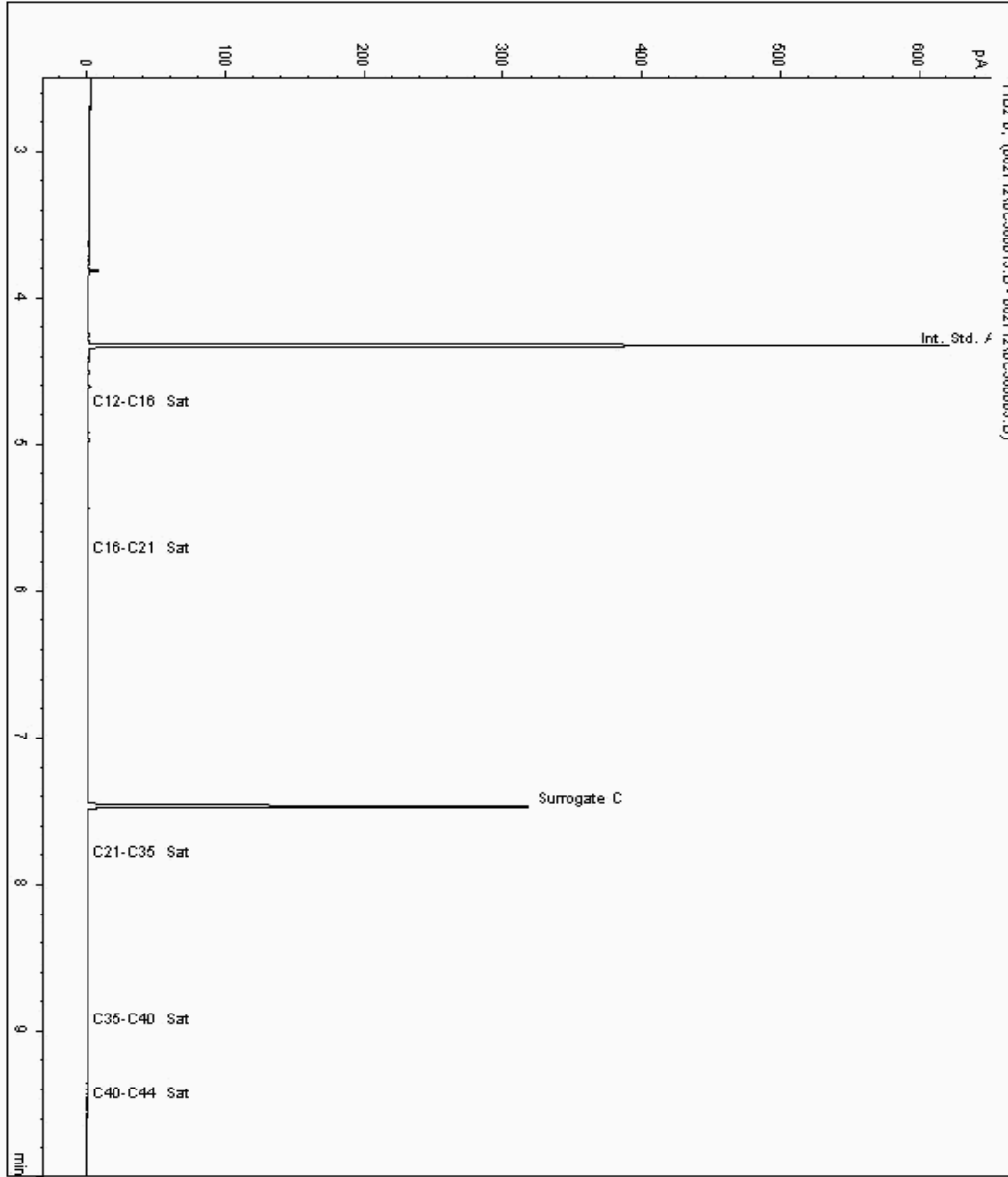
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5780120
Sample ID : 74622

Depth :

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

Sample Identity: 5631184-5780120
Date Acquired : 27/06/12 20:29:54 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

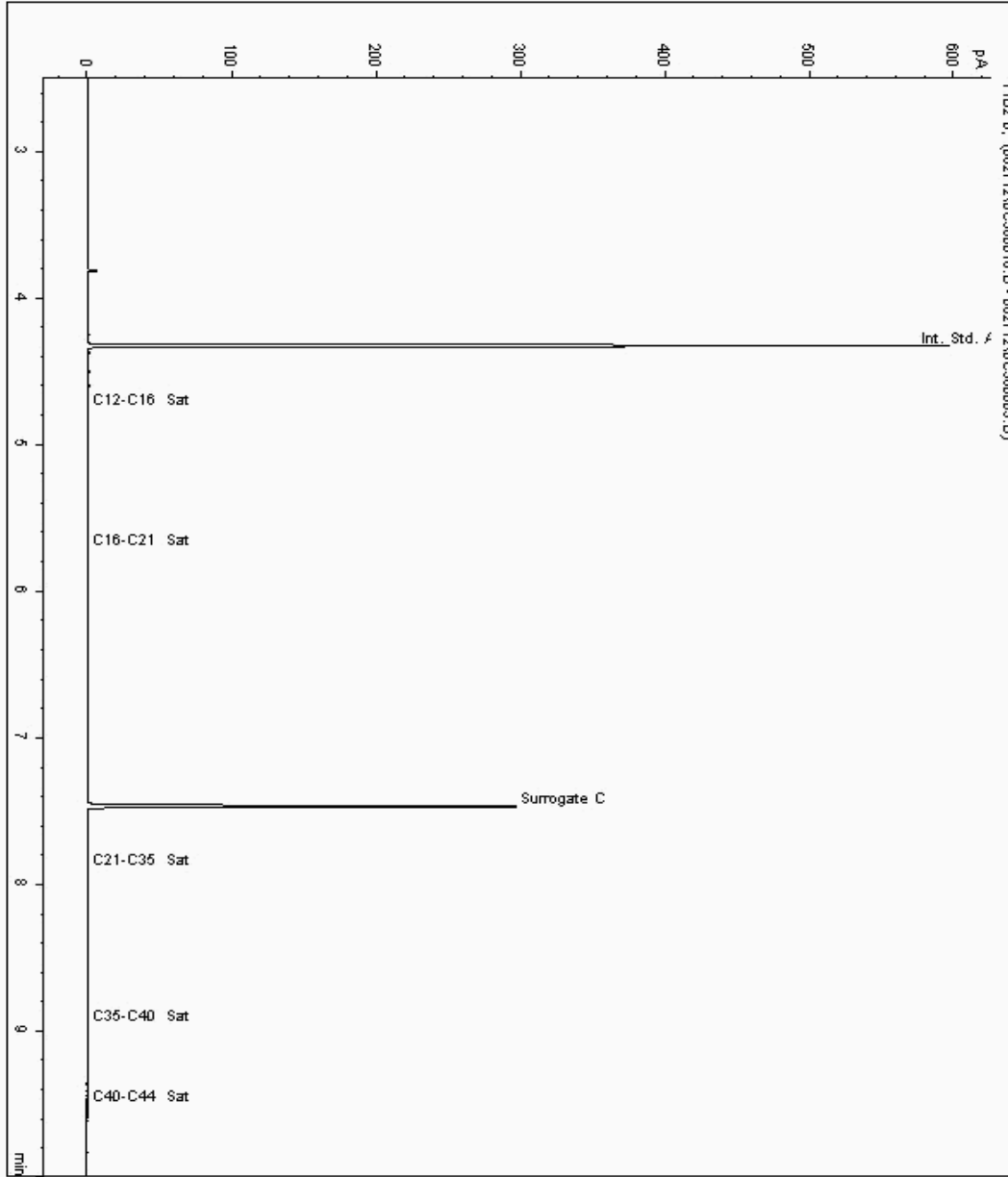
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5780123
Sample ID : 215078

Depth :

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

Sample Identity: 5631222-5780123
Date Acquired : 27/06/12 20:48:51 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

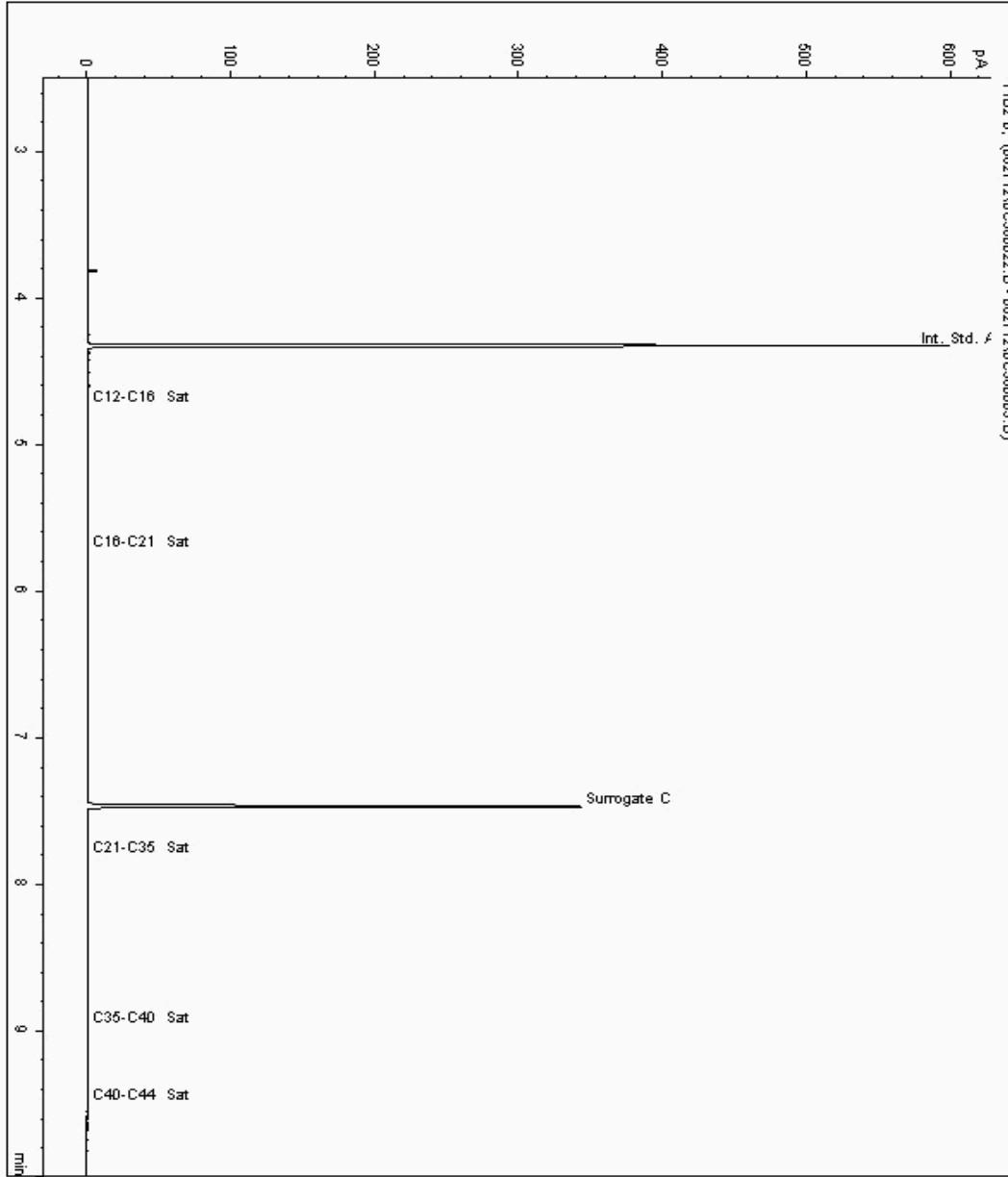
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5780133
Sample ID : 282822

Depth :

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

Sample Identity: 5631279-5780133
Date Acquired : 27/06/12 22:43:20 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

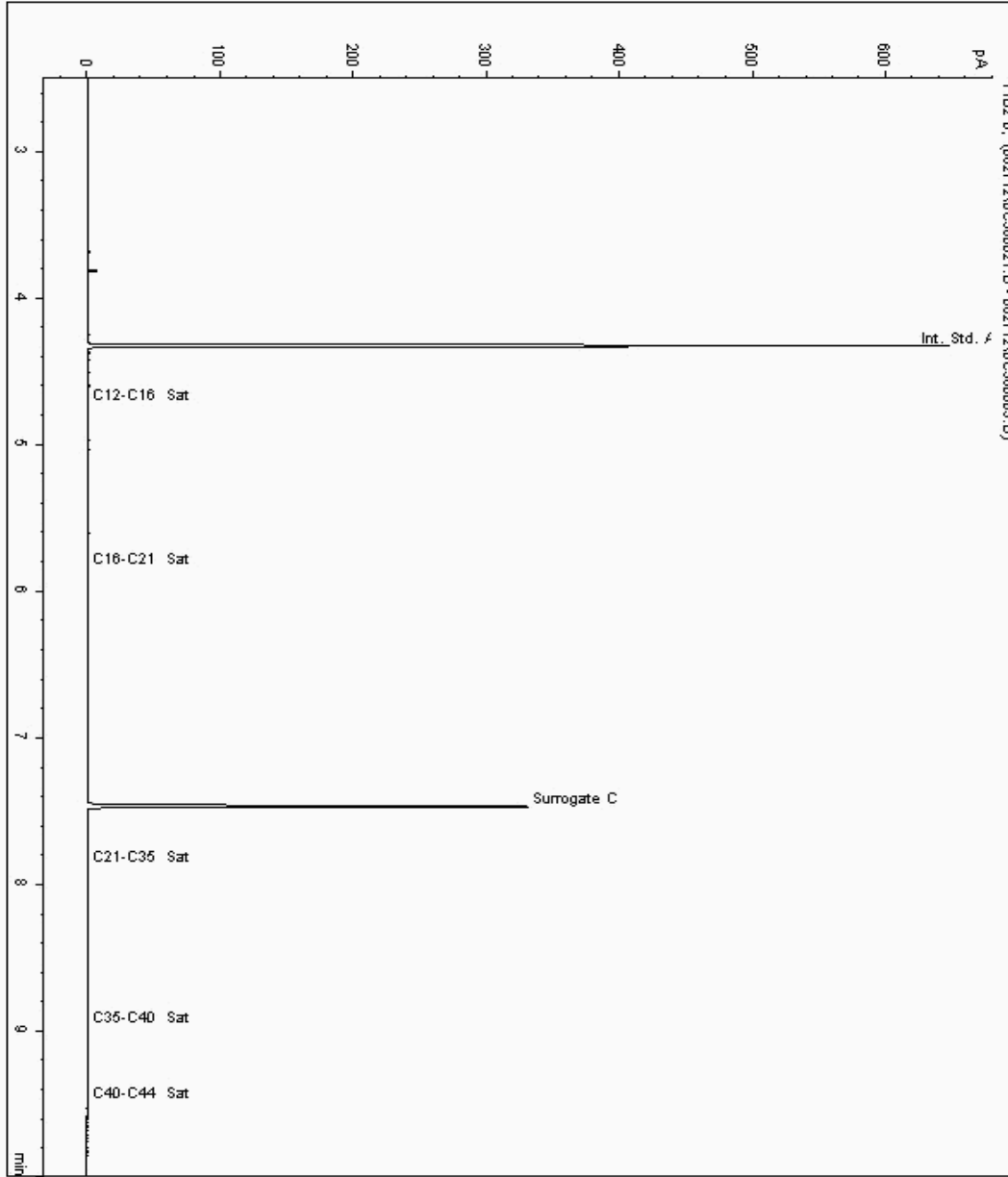
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5780139
Sample ID : 364540

Depth :

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

Sample Identity: 5631249-5780139
Date Acquired : 27/06/12 22:24:16 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

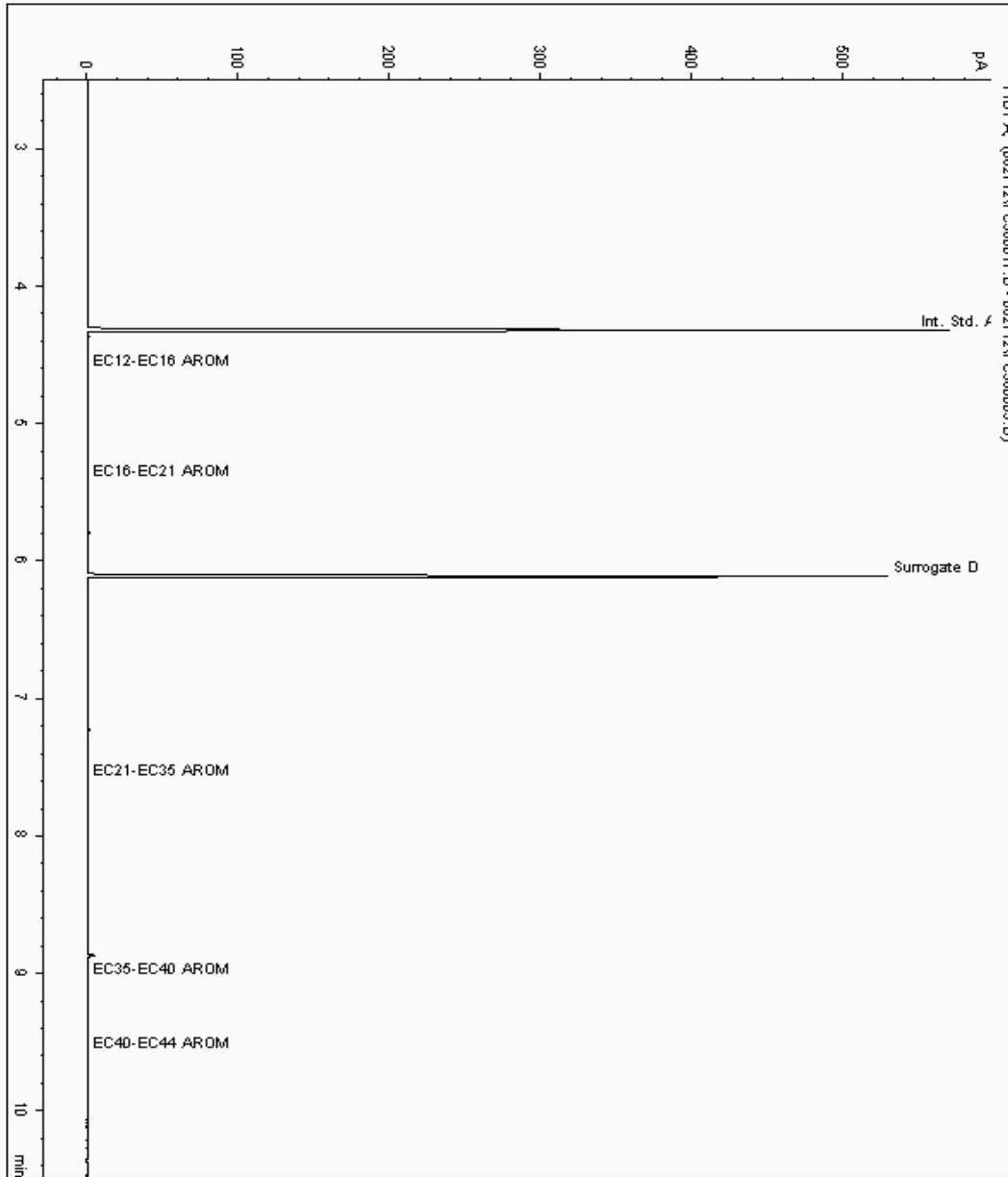
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5779593
Sample ID : 880167

Depth :

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

Sample Identity: 5631449-5779593
Date Acquired : 27/06/12 21:08:03 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

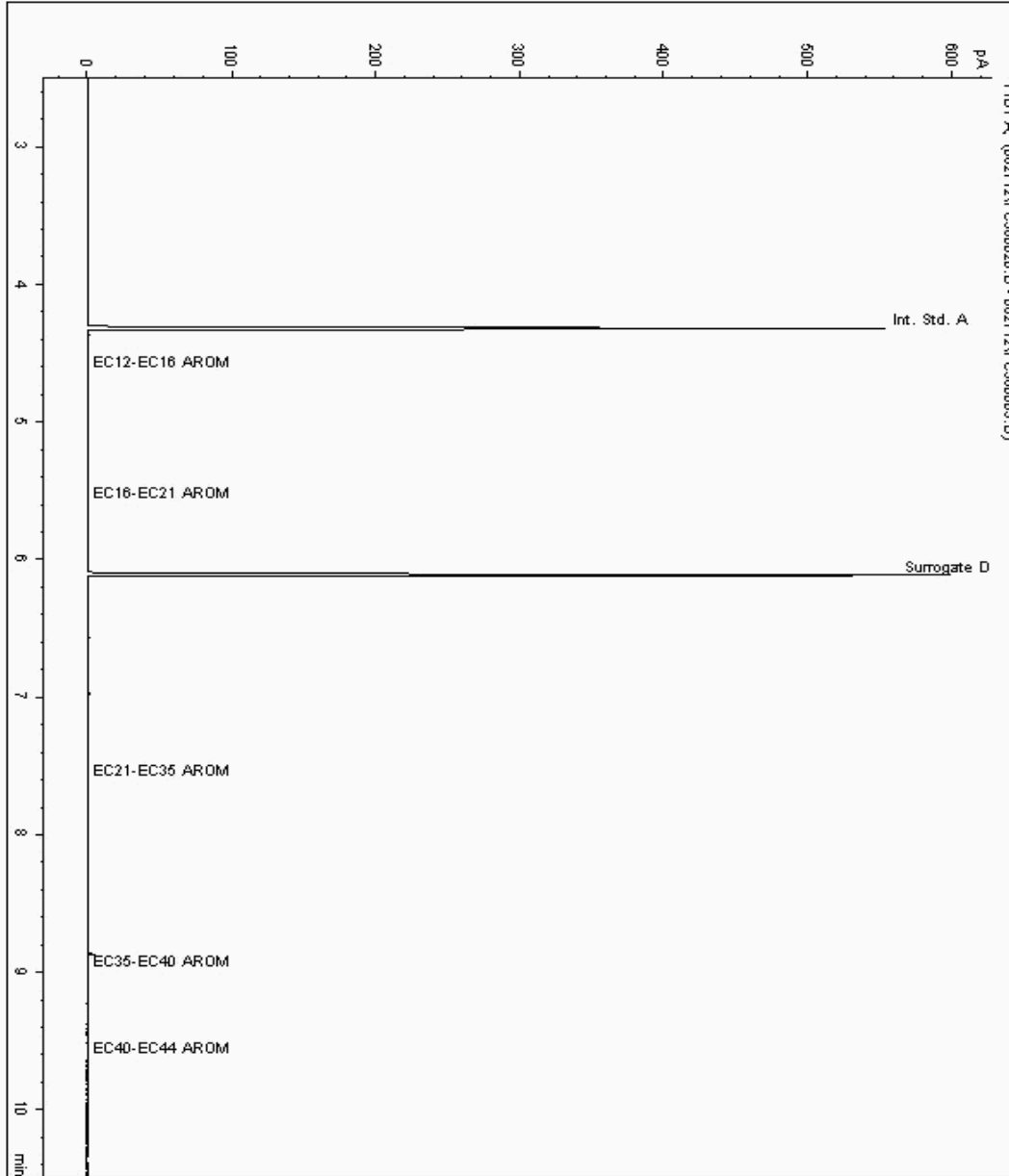
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5779619
Sample ID : 345730

Depth :

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

Sample Identity: 5631418-5779619
Date Acquired : 27/06/12 22:05:14 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

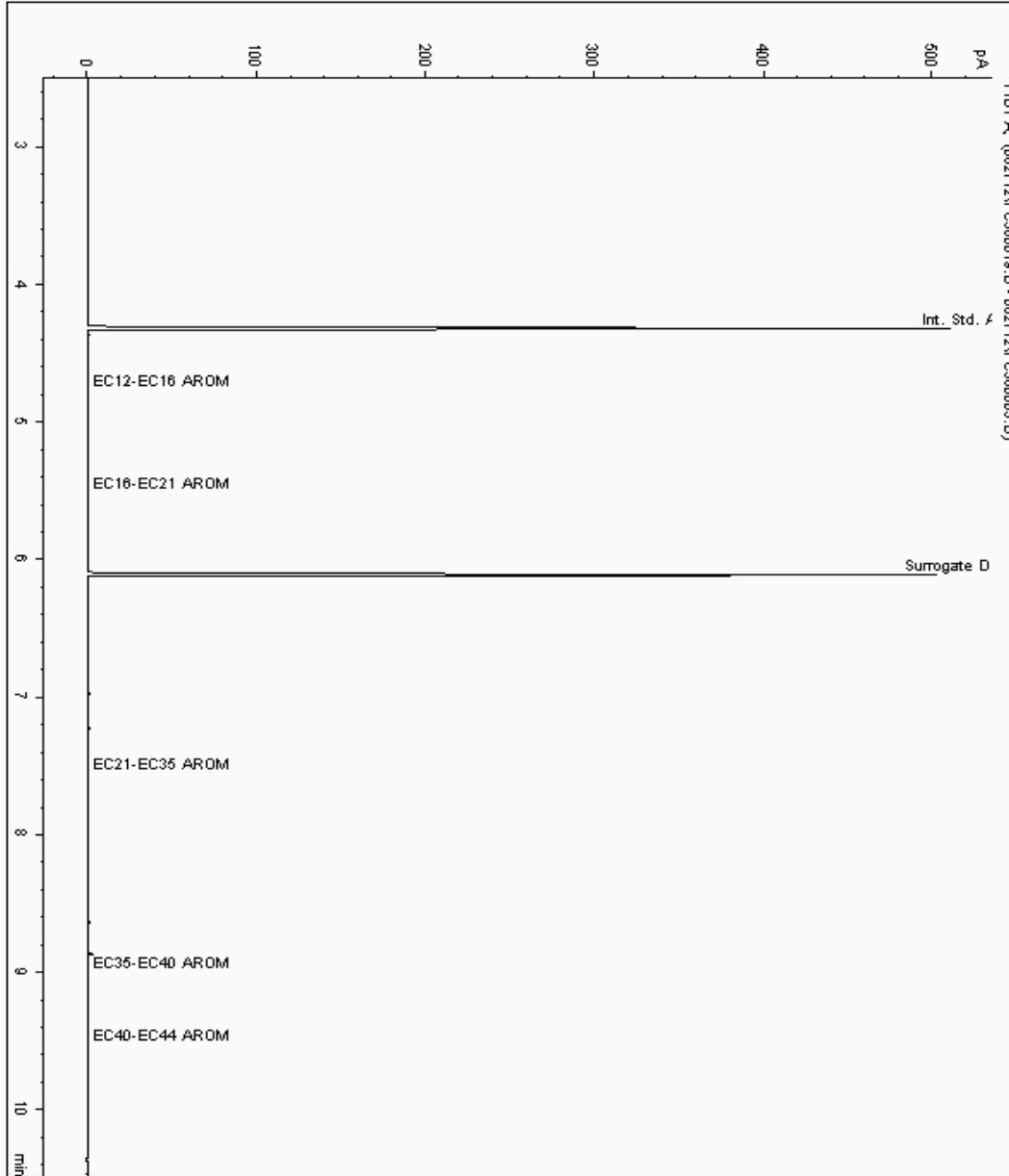
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5779641
Sample ID : 733743

Depth :

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

Sample Identity: 5631354-5779641
Date Acquired : 27/06/12 21:46:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

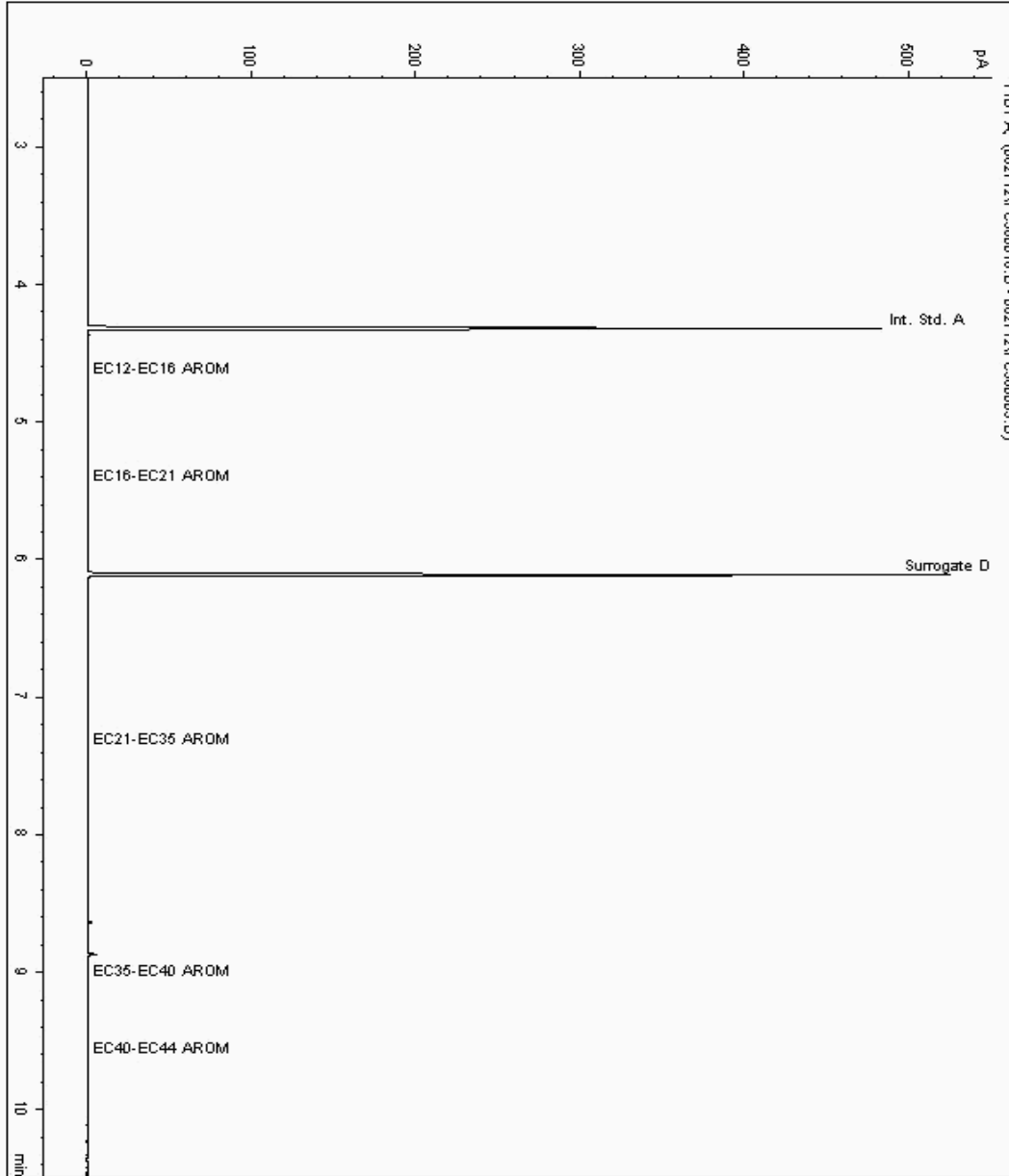
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5779657
Sample ID : 419835

Depth :

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

Sample Identity: 5631310-5779657
Date Acquired : 27/06/12 21:27:05 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

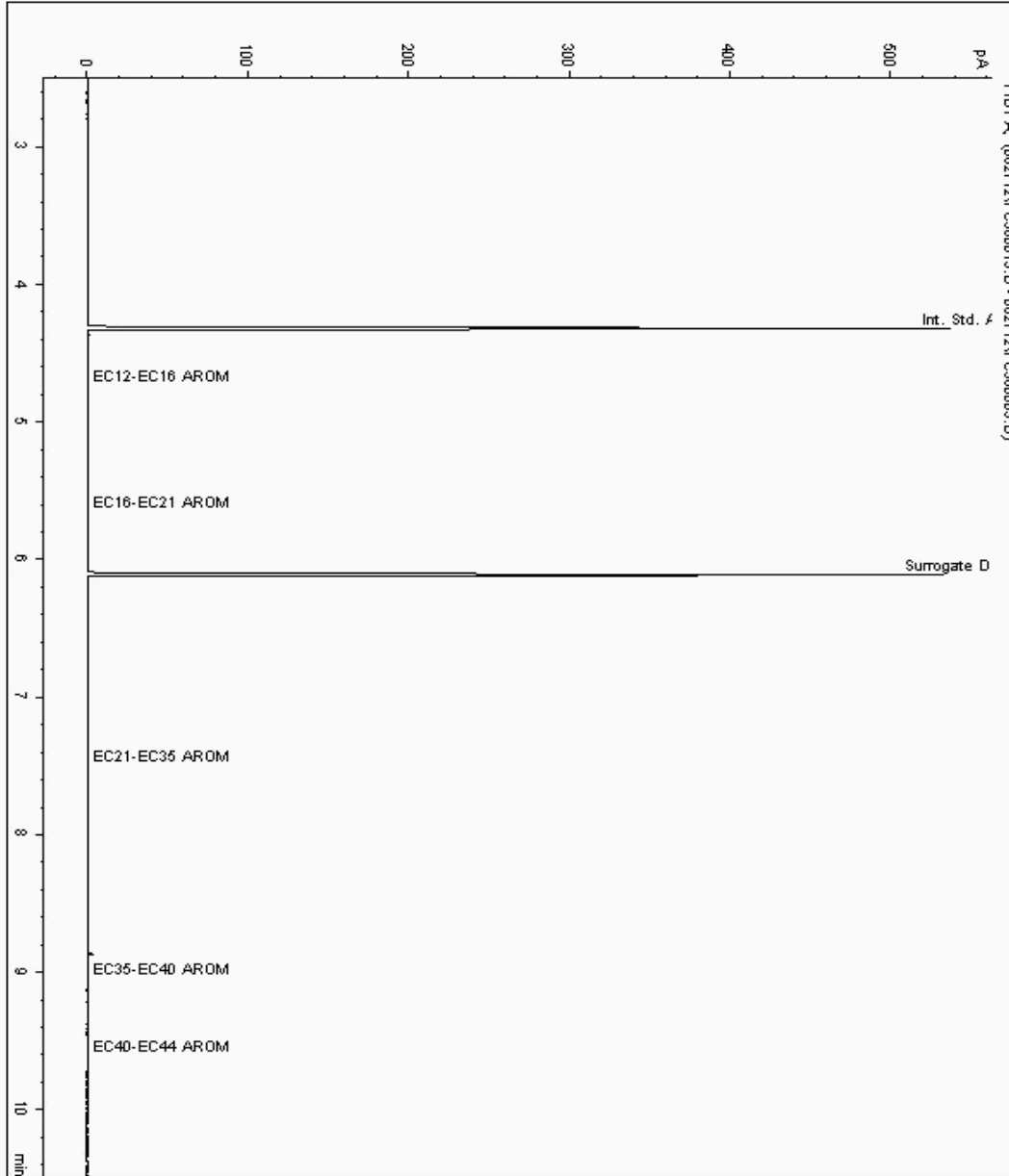
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5780120
Sample ID : 74622

Depth :

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

Sample Identity: 5631185-5780120
Date Acquired : 27/06/12 20:29:54 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

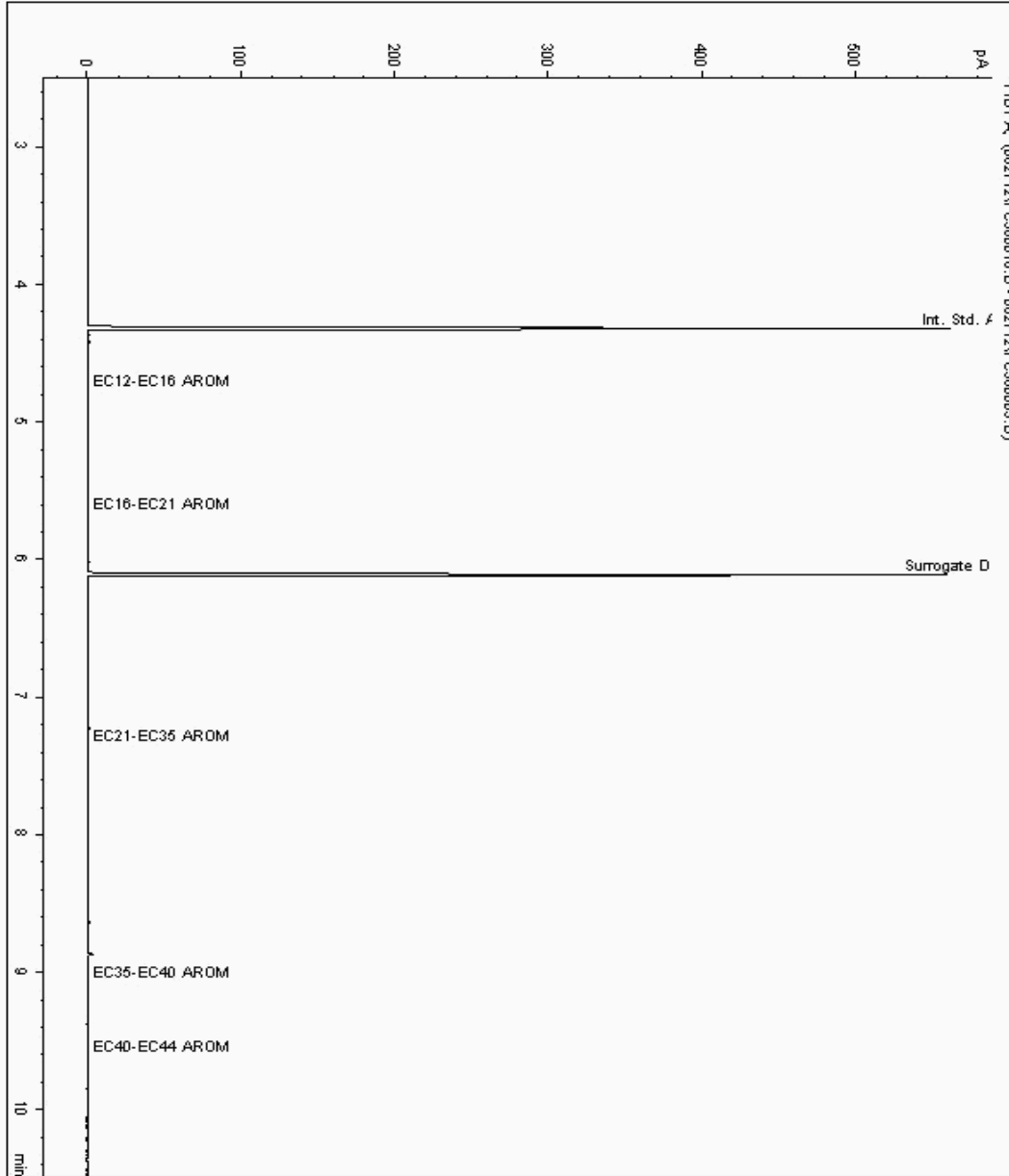
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5780123
Sample ID : 215078

Depth :

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

Sample Identity: 5631223-5780123
Date Acquired : 27/06/12 20:48:51 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

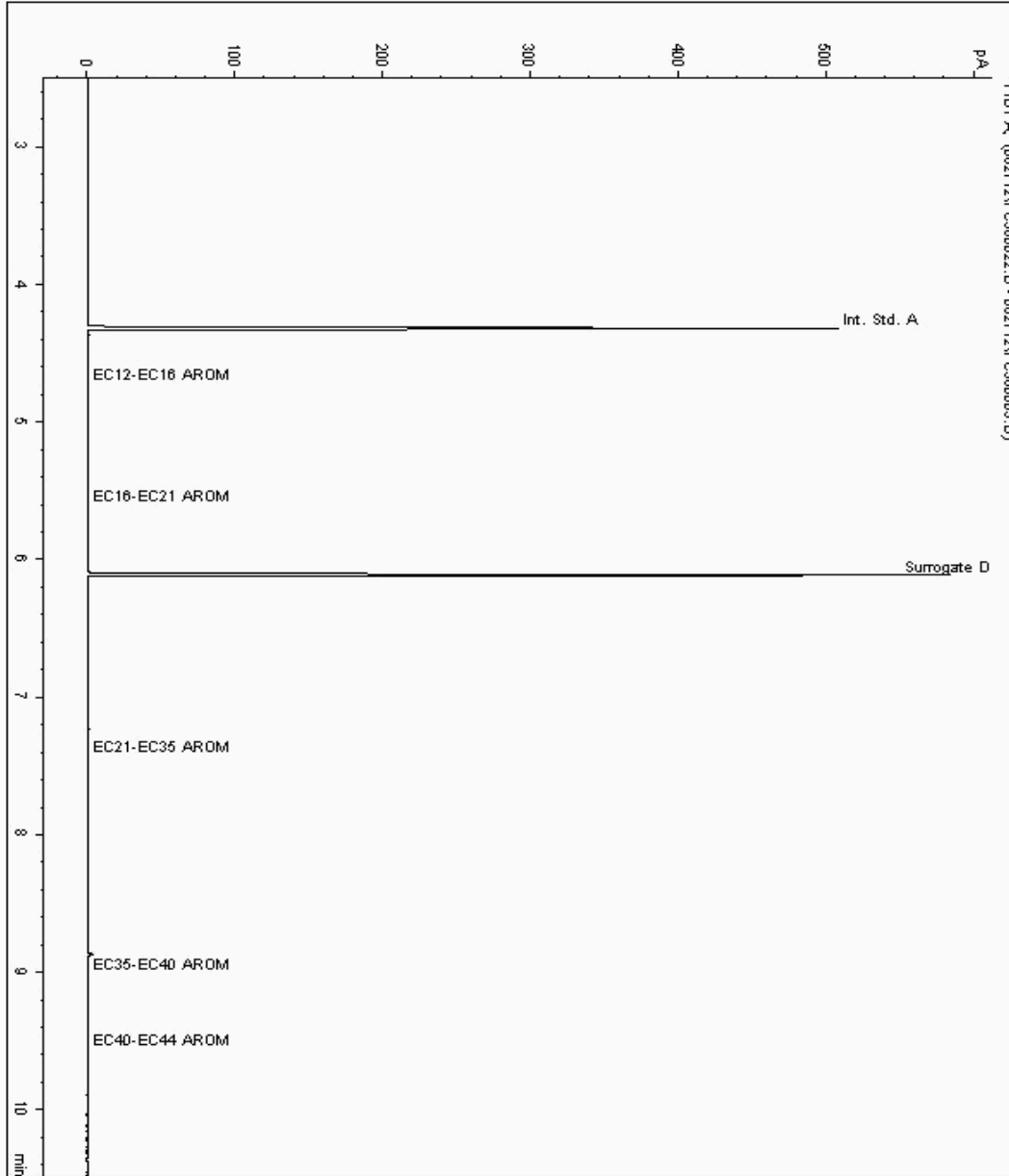
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5780133
Sample ID : 282822

Depth :

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

Sample Identity: 5631280-5780133
Date Acquired : 27/06/12 22:43:20 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

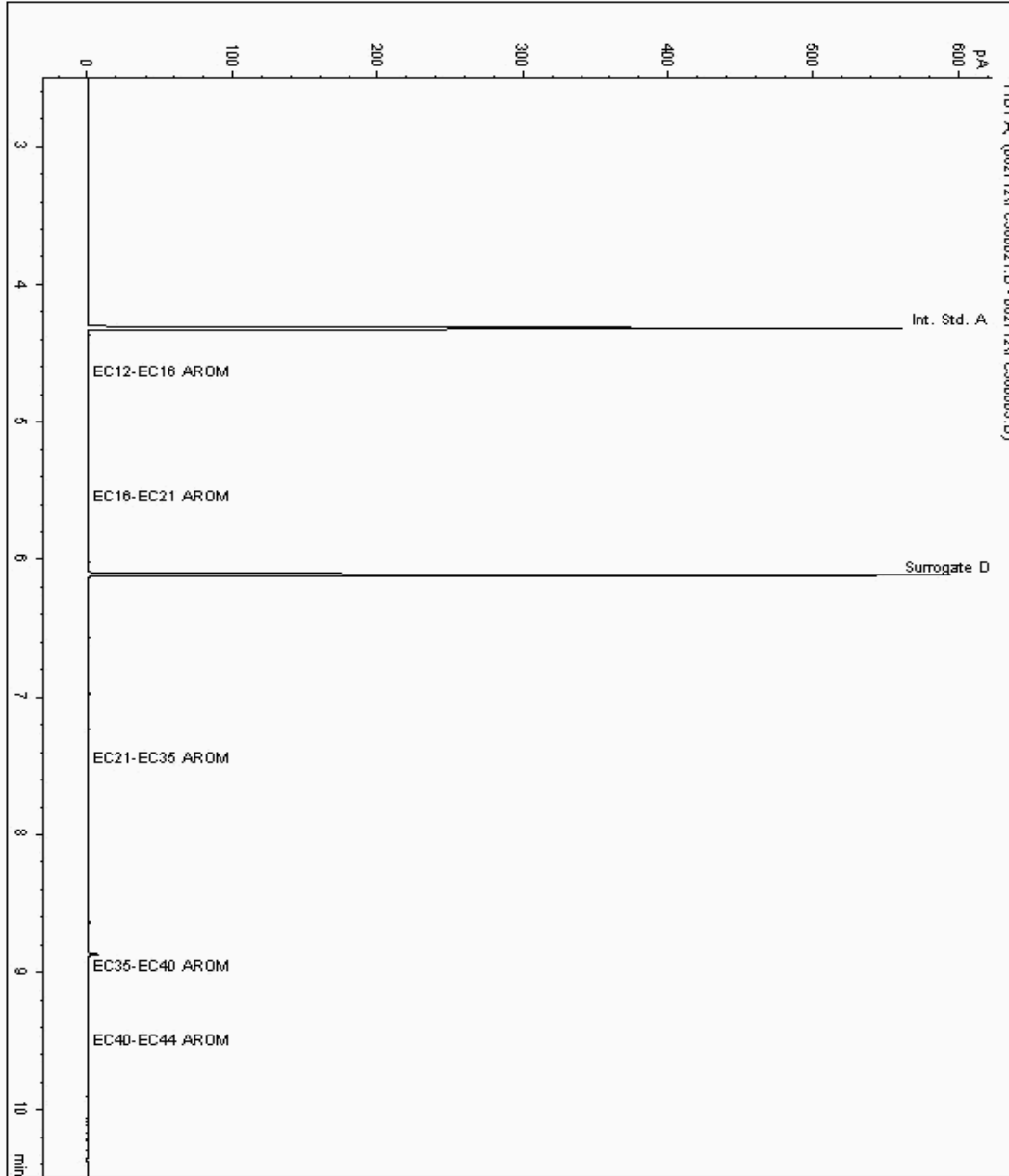
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5780139
Sample ID : 364540

Depth :

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

Sample Identity: 5631250-5780139
Date Acquired : 27/06/12 22:24:16 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

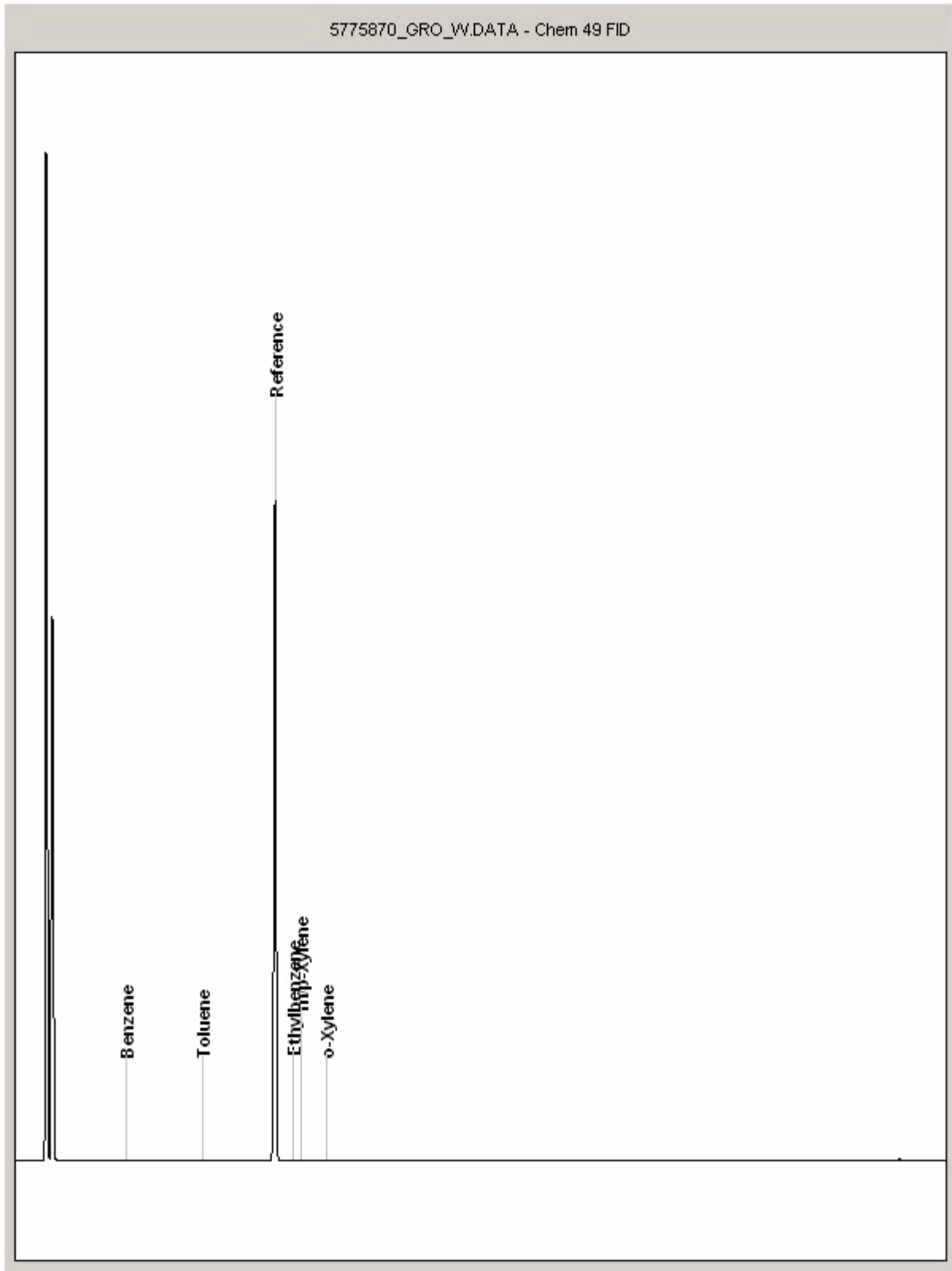
Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5775870
Sample ID : 282822

Depth :





CERTIFICATE OF ANALYSIS

SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

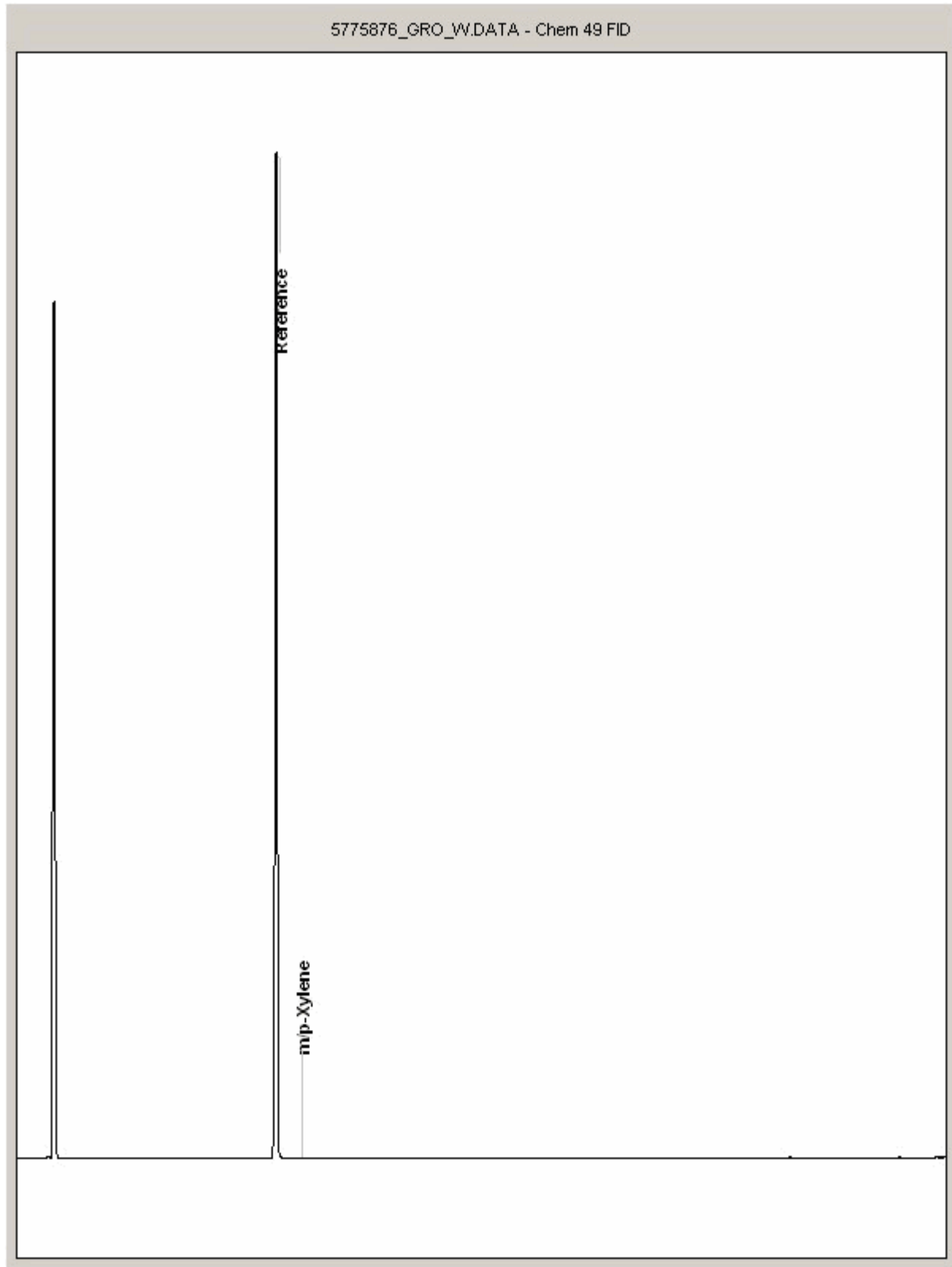
Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5775876
Sample ID : 419835

Depth :





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

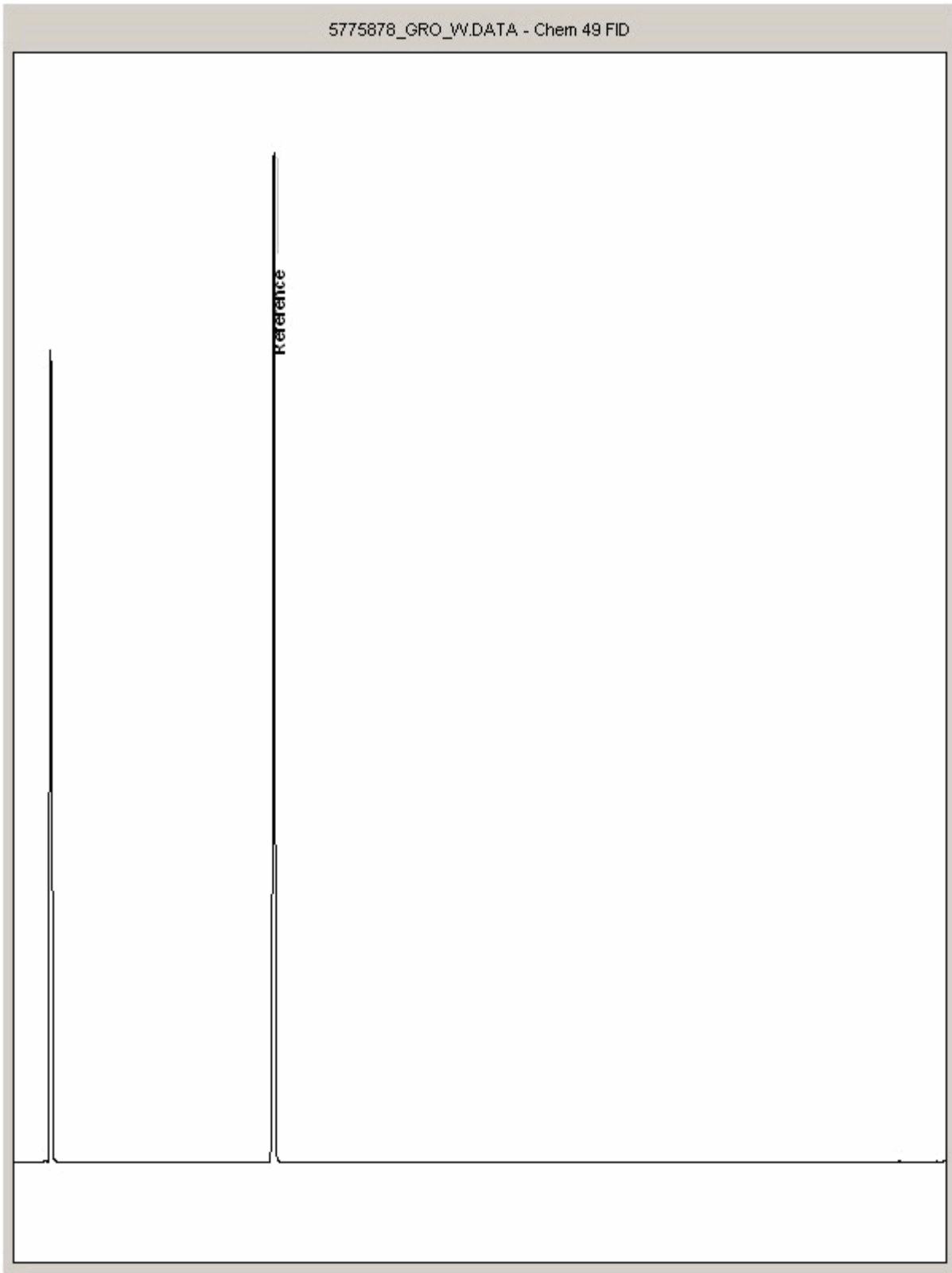
Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5775878
Sample ID : 733743

Depth :





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

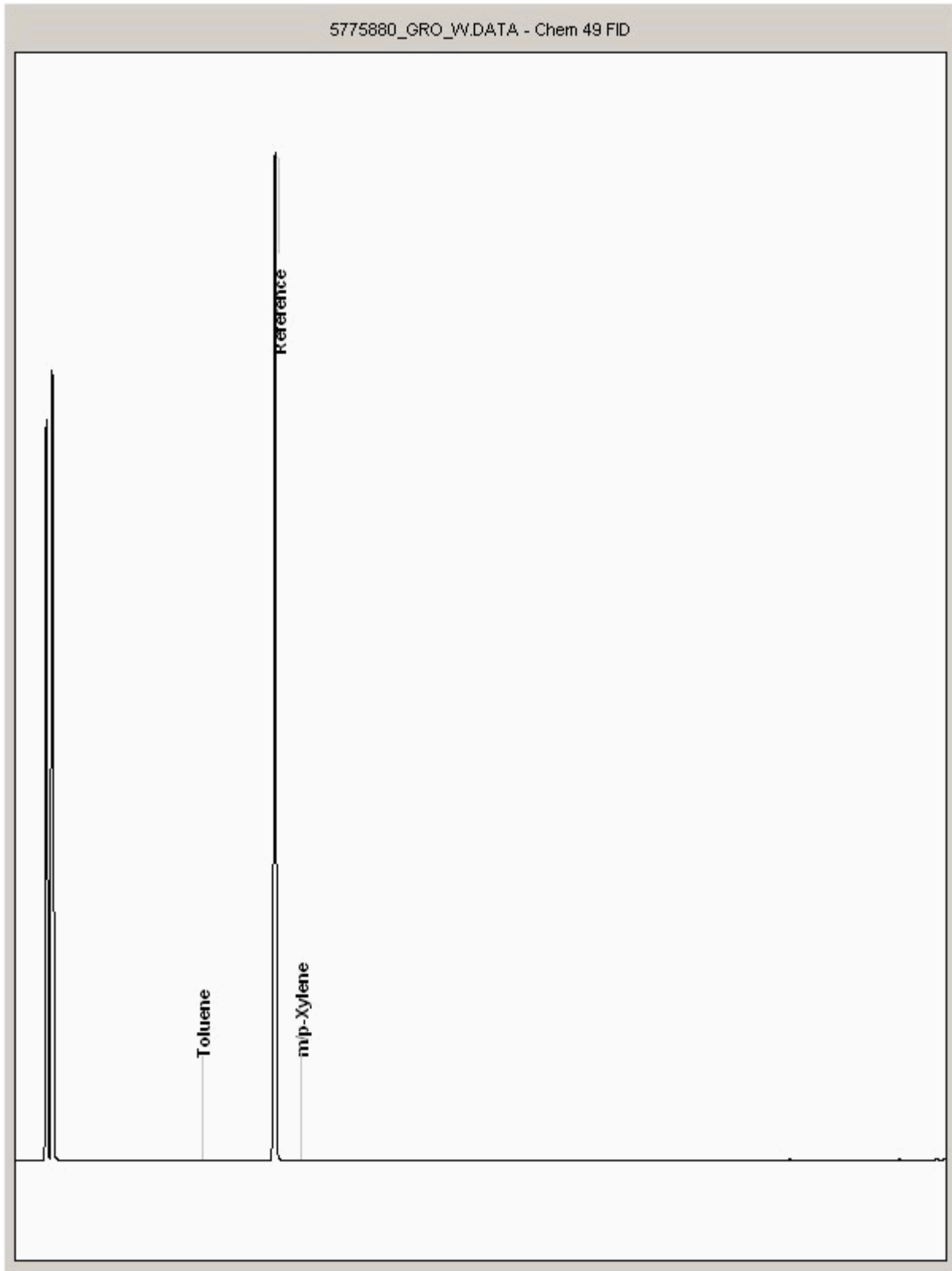
Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5775880
Sample ID : 345730

Depth :





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

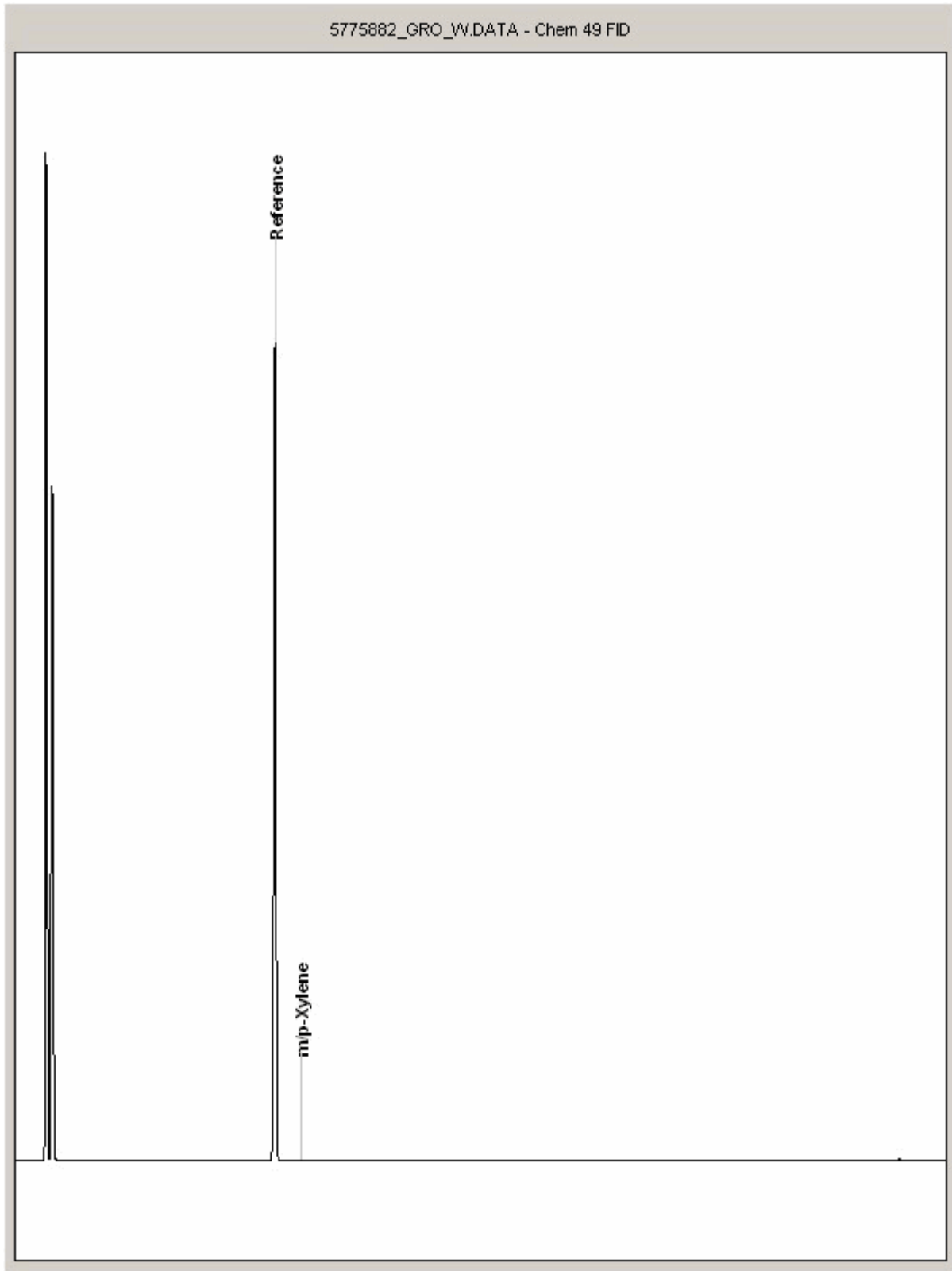
Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5775882
Sample ID : 880167

Depth :





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

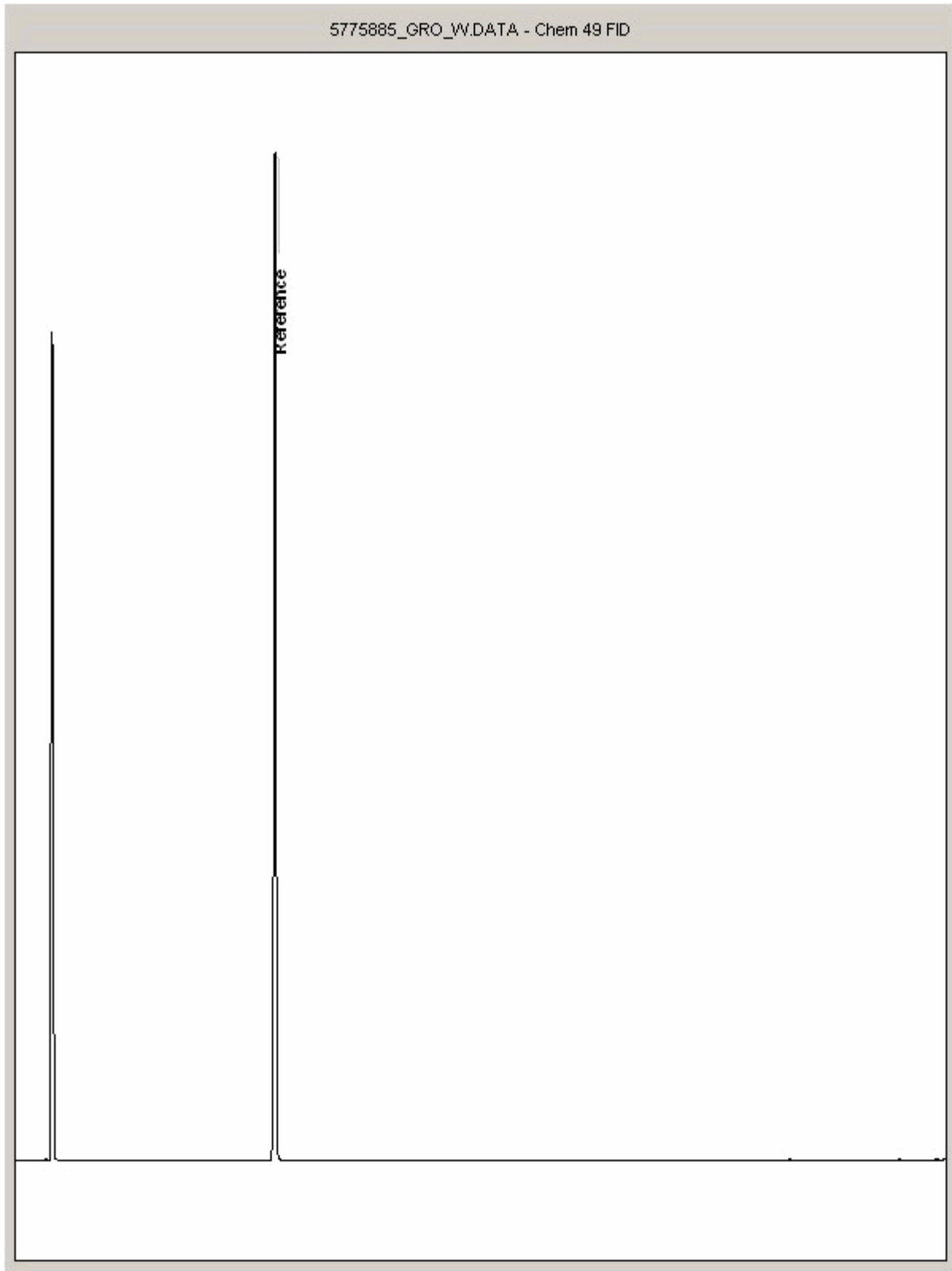
Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5775885
Sample ID : 74622

Depth :





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

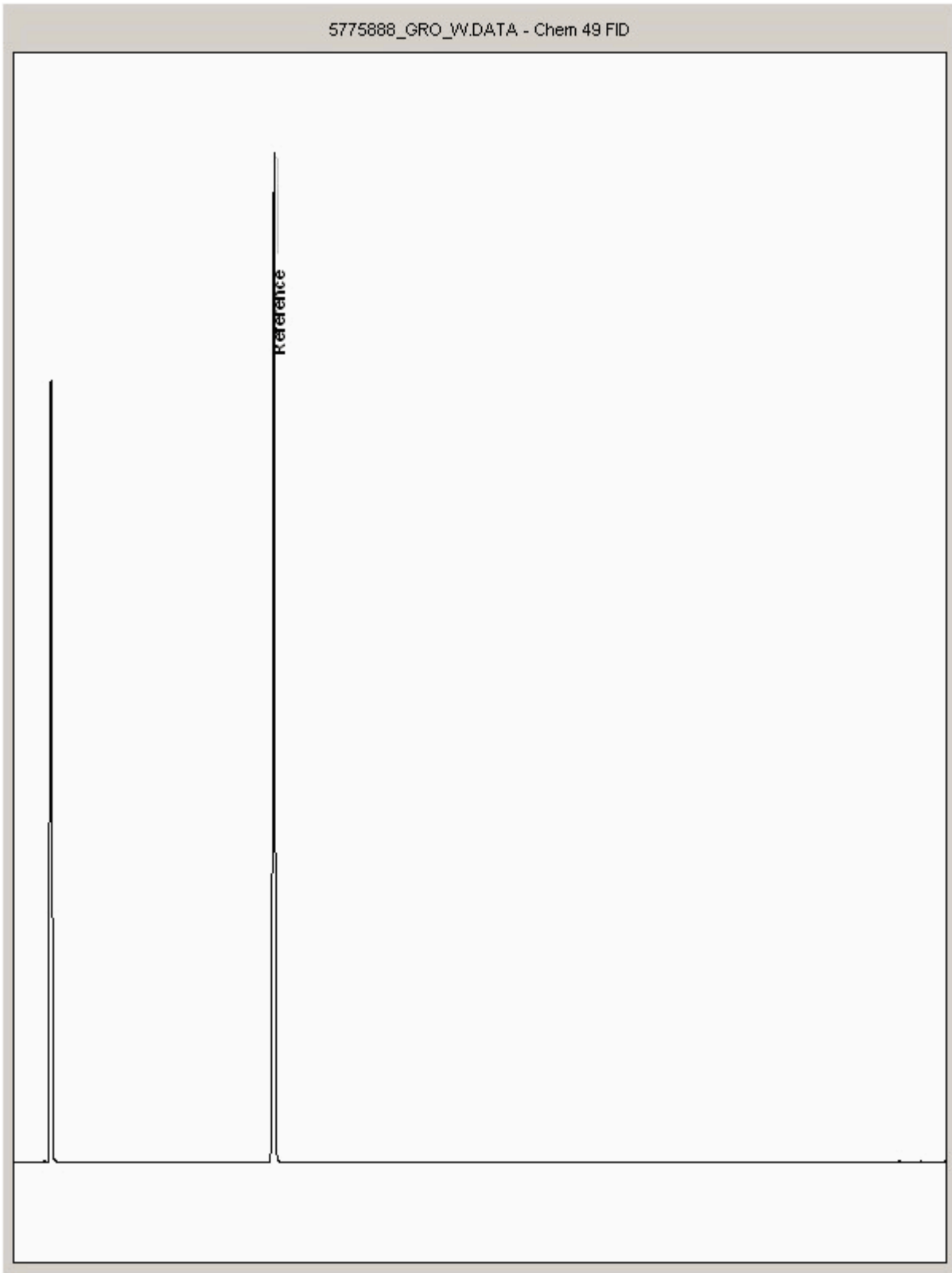
Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5775888
Sample ID : 215078

Depth :





SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

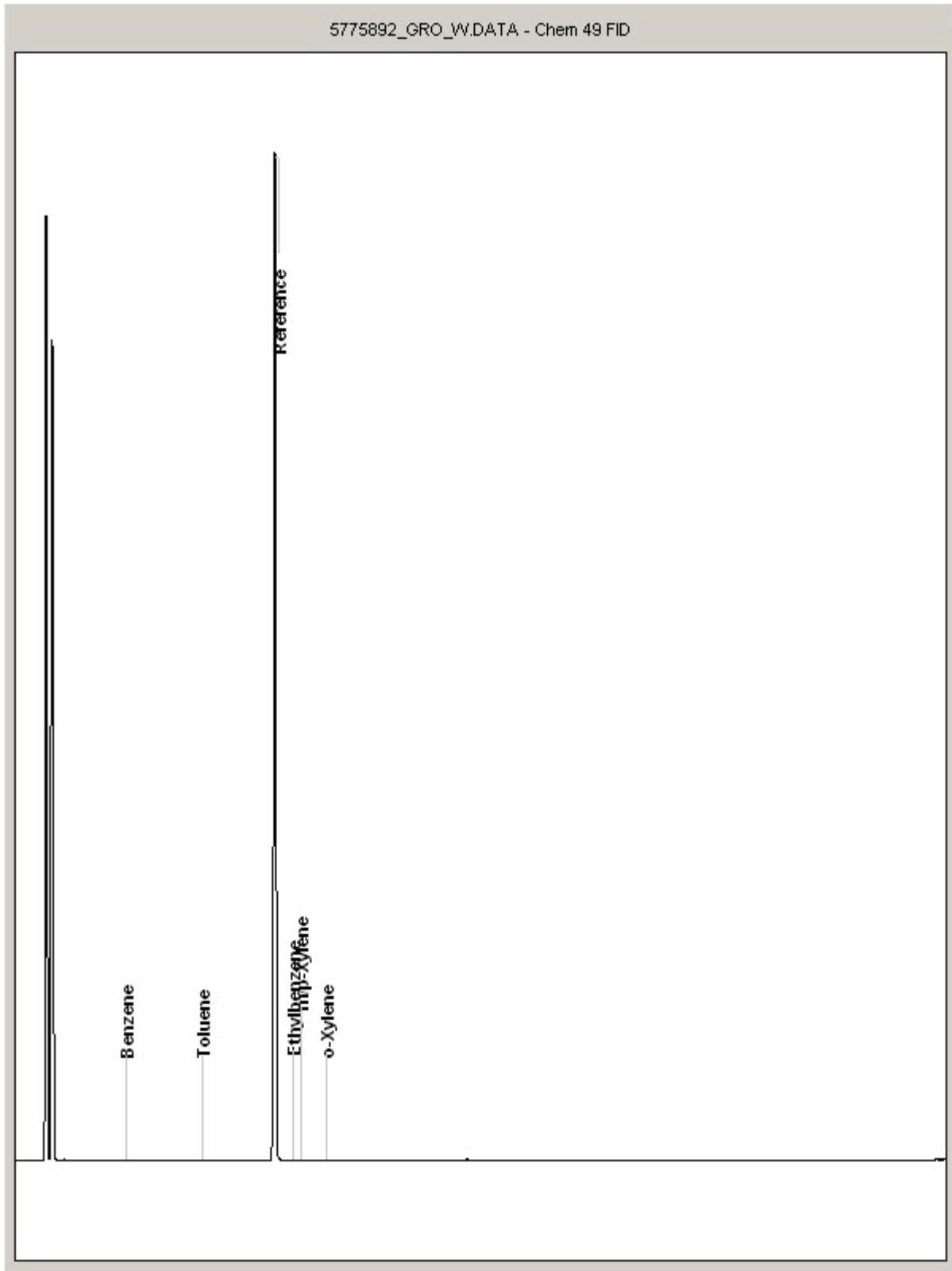
Order Number: 4559
Report Number: 187109
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5775892
Sample ID : 364540

Depth :



Hawarden Subcontractors
ALcontrol Laboratories Chester
Units 7 & 8 Hawarden Business Park
Off Manor Lane
Hawarden
Deeside
CH5 3US

Dear Hawarden

Please find attached the results for the batch of 8 samples described below.

Samples Registered on:	25-Jun-2012
Analysis Started on:	06-Jul-2012
Analysis Completed on:	09-Jul-2012
Results for Batch Number	20040939
Your Purchase Order Number:	149665

You will be invoiced shortly by our accounts department.

If we can be of further assistance then please do not hesitate to contact us.

Yours sincerely



William Fardon
Customer Services Team Leader
Tel: (0113) 231 2177
nls@environment-agency.gov.uk

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation. Details of analytical procedures and performance data are available on request. The date of sample analysis is available on request.

The Environment Agency carries out analytical work to high standards and within the scope of its UKAS accreditation, but has no knowledge of whether the circumstances or the validity of the procedures used to obtain the samples provided to the laboratory were representative of the need for which the information was required.

The Environment Agency and/or its staff does not therefore accept any liability for the consequences of any acts or omissions made on the basis of the analysis or advice or interpretation provided.

Client: ALcontrol Laboratories Chester
Folder No: 001985246
Comments: 5774674 - 282822
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 20-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	25.9	mg/l	1	None	NM	1102

Final Report

Report ID - 20040939 - 1

Batch description: SDG 120622-50 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985247
Comments: 5774684 - 215078
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 20-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	2.16	mg/l	1	None	NM	1102

Final Report

Report ID - 20040939 - 1

Batch description: SDG 120622-50 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985248
Comments: 5774741 - 364540
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 20-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	23.1	mg/l	1	None	NM	1102

Final Report

Report ID - 20040939 - 1

Batch description: SDG 120622-50 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985249
Comments: 5774763 - 74622
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 20-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	3.11	mg/l	1	None	NM	1102

Final Report

Report ID - 20040939 - 1

Batch description: SDG 120622-50 - Saline TOC Analysis

Reported on:
09-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001985250
Comments: 5774780 - 345730
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 20-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	3.32	mg/l	1	None	NM	1102

Client: ALcontrol Laboratories Chester
Folder No: 001985251
Comments: 5774794 - 419835
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 20-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	1.41	mg/l	1	None	NM	1102

Client: ALcontrol Laboratories Chester
Folder No: 001985252
Comments: 5774/801 - 733743
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 20-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	<1	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001985282
Comments: 5774803 - 880167
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 20-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	3.85	mg/l	1	None	NM 1102

Method Description Summary for all samples in batch Number 20040939

1102 NM I TOC - furnace with IR detection



Mark Gale

Laboratory Site Manager

All reporting limits quoted are those achievable for clean samples of the relevant matrix. No allowance is made for instances when dilutions are necessary owing to the nature of the sample or insufficient volume of the sample being available. In these cases higher reporting limits may be quoted and will be above the MRV.

Solid sample results are determined on a "dried" sample fraction except for parameters where the method description identifies that "as received" sample was used.

Please note all samples will be retained for 10 working days for aqueous samples and 30 working days for solid samples after reporting unless otherwise agreed with Customer Services

Key to Accreditation: UKAS = Methodology accredited to ISO/IEC 17025:2005, MCertS = Methodology accredited to MCertS Performance Standard for testing of soils, none = Methodology not accredited

Key to Lab ID: LE = Leeds, LL = Llanelli, NM = Nottingham, SX = Starcross, SC = Sub-Contracted outside NLS, FI = Field Data, NLS = Calculated

Any subsequent version of this report denoted with a higher version number will supersede this and any previous versions

END OF TEST REPORT

SDG: 120622-50
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187109
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-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
TPH by INFRARED (R)	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).

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: 10 July 2012
Customer: D_PRIORGEOT_CRK
Sample Delivery Group (SDG): 120623-38
Your Reference: P12030
Location: Haulbowline
Report No: 187081

We received 2 samples on Friday June 22, 2012 and 2 of these samples were scheduled for analysis which was completed on Tuesday July 10, 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





CERTIFICATE OF ANALYSIS

Validated

SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5777824	256404			21/06/2012
5777825	515251			21/06/2012

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



SDG: 120623-38
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 187081
 Superseded Report:



LEACH Results Legend	Lab Sample No(s)		5777824	5777825
			256404	515251
Customer Sample Reference				
AGS Reference				
Depth (m)				
Container			1l green glass bottle	Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 1l plastic (ALE221) 1 green glass bottle Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 1l plastic (ALE221)
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 2	X	X
Anions by Kone (w)	All	NDPs: 0 Tests: 2	X	X
BOD True Total	All	NDPs: 0 Tests: 2	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: 2		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2	X	X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 2	X	X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 2	X	X
Fluoride	All	NDPs: 0 Tests: 1		X
Free Sulphur	All	NDPs: 0 Tests: 2	X	X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 2		X
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2	X	X
Low Level Cyanide (W)	All	NDPs: 0 Tests: 2		X
Metals analysis (Saline Sample)	All	NDPs: 0 Tests: 2	X	X



SDG: 120623-38
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 187081
 Superseded Report:

LEACH Results Legend  Test  No Determination Possible	Lab Sample No(s)	5777824	5777825											
	Customer Sample Reference	256404	515251											
	AGS Reference													
	Depth (m)													
	Container	1 green glass bottle	1 green glass bottle	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	1 plastic (ALE221)	1 green glass bottle	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	1 plastic (ALE221)		
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 2	X		X									
Nitrite by Kone (w)	All	NDPs: 0 Tests: 2				X							X	
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2	X				X							
pH Value	All	NDPs: 0 Tests: 2	X					X						
Phenols by ms (w)	All	NDPs: 0 Tests: 1						X						
Saline TON	All	NDPs: 0 Tests: 2	X						X					
Sulphide	All	NDPs: 0 Tests: 2	X							X				
TOC (Saline)*	All	NDPs: 0 Tests: 2	X							X				
TPH CWG (W)	All	NDPs: 0 Tests: 2	X						X					
VOC MS (W)	All	NDPs: 0 Tests: 2								X				X



SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

Results Legend		Customer Sample R	256404	515251				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		Saline D	Saline D				
S	Deviating sample.		21/06/2012	21/06/2012				
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		22/06/2012	22/06/2012				
	Trigger breach confirmed		120623-38	120623-38				
(F)			5777824	5777825				
Component	LOD/Units	Method						
TOC (Saline)*	<1 mg/l	SUB	<1	1.27				
BOD, unfiltered	<1 mg/l	TM045	<2	<2				
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	<0.2				
Sulphide	<0.01 mg/l	TM101	<0.01	<0.01	#	#		
Fluoride	<0.5 mg/l	TM104		0.578				
COD, unfiltered	<7 mg/l	TM107	336	338				
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	39.2	38.5	#	#		
Barium (diss.filt)	<0.03 µg/l	TM152	25.3	29				
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	<0.07				
Cobalt (diss.filt)	<0.06 µg/l	TM152		0.469				
Molybdenum (diss.filt)	<0.24 µg/l	TM152		8.75				
Phosphorus (diss.filt)	<6.3 µg/l	TM152	6.59	<6.3				
Thallium (diss.filt)	<0.96 µg/l	TM152		<0.96				
Tin (diss.filt)	<0.36 µg/l	TM152		<0.36				
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05				
Sulphate	<2 mg/l	TM184	2190	2110				
Chloride	<2 mg/l	TM184	17000	16400				
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015				
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015				
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105				
Phenol	<0.5 µg/l	TM205		<1.5				
2-methylphenol	<0.5 µg/l	TM205		<0.5				
3-methylphenol	<0.5 µg/l	TM205		<0.5				
4-methylphenol	<0.5 µg/l	TM205		<0.5				
2-chlorophenol	<0.5 µg/l	TM205		<0.5				
2,4-dimethylphenol	<0.5 µg/l	TM205		<0.5				
4-chloro-3-methylphenol	<0.5 µg/l	TM205		<0.5				
2,6-dichlorophenol	<0.5 µg/l	TM205		<0.5				
4-Chlorophenol	<0.5 µg/l	TM205		<0.5				
2,4-dichlorophenol	<0.5 µg/l	TM205		<0.5				



SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

Results Legend		Customer Sample R	256404	515251			
#	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.		Saline D	Saline D			
diss.filt	Dissolved / filtered sample.		21/06/2012	21/06/2012			
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		22/06/2012	22/06/2012			
(F)	Trigger breach confirmed		120623-38	120623-38			
			5777824	5777825			
Component	LOD/Units	Method					
2-nitrophenol	<0.5 µg/l	TM205		<0.5			
2,4,6-trichlorophenol	<0.5 µg/l	TM205		<0.5			
2,4,5-trichlorophenol	<0.5 µg/l	TM205		<0.5			
4-nitrophenol	<0.5 µg/l	TM205		<0.5			
2,3,5,6-tetrachlorophenol	<0.5 µg/l	TM205		<0.5			
2,3,4,6-tetrachlorophenol	<0.5 µg/l	TM205		<0.5			
2,4-dinitrophenol	<2.5 µg/l	TM205		<5			
DNOC	<3 µg/l	TM205		<6			
Pentachlorophenol	<2 µg/l	TM205		<2			
Dinoseb	<4 µg/l	TM205		<4			
Cyanide, Free	<0.05 mg/l	TM227	<0.05	<0.05			
Cyanide, Complex	<0.05 mg/l	TM227	<0.05	<0.05			
Thiocyanate	<0.05 mg/l	TM227	<0.05	<0.05			
Calcium (diss.filt)	<0.012 mg/l	TM228	307	336			
Sodium (diss.filt)	<0.076 mg/l	TM228	8840	9470			
Magnesium (diss.filt)	<0.036 mg/l	TM228	964	942			
Potassium (diss.filt)	<2.335 mg/l	TM228	314	310			
Chromium, Hexavalent	<0.03 mg/l	TM241	<0.03	<0.03	#	#	
pH	<1 pH Units	TM256	8.24	8.48			
Arsenic (Saline)	<0.5 µg/l	TM270	3.95	3.34	#	#	
Aluminium (Saline)	<3.7 µg/l	TM270	62.3	77.2	#	#	
Antimony (Saline)	<1 µg/l	TM270	<1	<1	#	#	
Boron (Saline)	<201 µg/l	TM270	4190	4810	#	#	
Cadmium (Saline)	<0.15 µg/l	TM270	<0.15	<0.15	#	#	
Chromium (Saline)	<1.5 µg/l	TM270	<1.5	<1.5	#	#	
Copper (Saline)	<1 µg/l	TM270	<1	<1	#	#	
Iron (Saline)	<4 µg/l	TM270	8.25	29.4	#	#	
Lead (Saline)	<0.2 µg/l	TM270	<0.2	<0.2	#	#	
Manganese (Saline)	<0.3 µg/l	TM270	<0.3	<0.3	#	#	
Mercury (Saline)	<0.15 µg/l	TM270	0.219	0.298	#	#	
Nickel (saline)	<1.1 µg/l	TM270	1.78	<1.1	#	#	
Selenium (Saline)	<0.5 µg/l	TM270	0.881	1.22	#	#	
Vanadium (Saline)	<4 µg/l	TM270	22.2	21.9	#	#	
Zinc (Saline)	<2.1 µg/l	TM270	<2.1	<2.1	#	#	
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5			



CERTIFICATE OF ANALYSIS

Validated

SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

Table with columns: Results Legend, Customer Sample R, 256404, 515251, Component, LOD/Units, Method, 2.2, 1.87, 2.2, 1.87, <0.05, <0.05. Includes rows for Saline TON as NO3, Saline Nitrate as NO3, and Sulphur, Free.



SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

TPH CWG (W)

Results Legend		Customer Sample R		256404	515251				
#	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.								
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**	%		TM245	105	101				
GRO >C5-C12	<50 µg/l		TM245	<50	<50				
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3					
Benzene	<7 µg/l	TM245	<7	<7					
Toluene	<4 µg/l	TM245	<4	<4					
Ethylbenzene	<5 µg/l	TM245	<5	<5					
m,p-Xylene	<8 µg/l	TM245	<8	<8					
o-Xylene	<3 µg/l	TM245	<3	<3					
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11					
Sum of detected BTEX	<28 µg/l	TM245	<28	<28					
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10					
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10					
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10					
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10					
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10					
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10					
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10					
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10					
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10					
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10					
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10					
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10					
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10					
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10					
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10					
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10					
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10					



CERTIFICATE OF ANALYSIS

SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample R	256404	515251			
#	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.						
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						
				Saline D 21/06/2012	Saline D 21/06/2012		
			22/06/2012 120623-38 5777824	22/06/2012 120623-38 5777825			
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM208	119	118			
Toluene-d8**	%	TM208	101	101			
4-Bromofluorobenzene**	%	TM208	97.5	98.7			
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1			
Chloromethane	<1 µg/l	TM208	<1	<1			
Vinyl chloride	<1 µg/l	TM208	<1	<1			
Bromomethane	<1 µg/l	TM208	<1	<1			
Chloroethane	<1 µg/l	TM208	<1	<1			
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1			
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1			
Carbon disulphide	<1 µg/l	TM208	<1	<1			
Dichloromethane	<3 µg/l	TM208	<3	<3			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1			
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1			
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1			
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1			
Bromochloromethane	<1 µg/l	TM208	<1	<1			
Chloroform	<1 µg/l	TM208	<1	<1			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1			
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1			
Carbontetrachloride	<1 µg/l	TM208	<1	<1			
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1			
Benzene	<1 µg/l	TM208	<1	<1			
Trichloroethene	<1 µg/l	TM208	<1	<1			
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1			
Dibromomethane	<1 µg/l	TM208	<1	<1			
Bromodichloromethane	<1 µg/l	TM208	<1	<1			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1			
Toluene	<1 µg/l	TM208	<1	<1			
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1			
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1			
Tetrachloroethene	<1 µg/l	TM208	<1	<1			
Dibromochloromethane	<1 µg/l	TM208	<1	<1			



SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample R	256404	515251			
#	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.						
diss.fit	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						
				Saline D 21/06/2012	Saline D 21/06/2012		
			22/06/2012 120623-38 5777824	22/06/2012 120623-38 5777825			
Component	LOD/Units	Method					
1,2-Dibromoethane	<1 µg/l	TM208	<1	<1			
Chlorobenzene	<1 µg/l	TM208	<1	<1			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1			
Ethylbenzene	<1 µg/l	TM208	<1	<1			
m,p-Xylene	<1 µg/l	TM208	<1	<1			
o-Xylene	<1 µg/l	TM208	<1	<1			
Styrene	<1 µg/l	TM208	<1	<1			
Bromoform	<1 µg/l	TM208	<1	<1			
Isopropylbenzene	<1 µg/l	TM208	<1	<1			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1			
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	<1			
Bromobenzene	<1 µg/l	TM208	<1	<1			
Propylbenzene	<1 µg/l	TM208	<1	<1			
2-Chlorotoluene	<1 µg/l	TM208	<1	<1			
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	<1			
4-Chlorotoluene	<1 µg/l	TM208	<1	<1			
tert-Butylbenzene	<1 µg/l	TM208	<1	<1			
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	<1			
sec-Butylbenzene	<1 µg/l	TM208	<1	<1			
4-iso-Propyltoluene	<1 µg/l	TM208	<1	<1			
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	<1			
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	<1			
n-Butylbenzene	<1 µg/l	TM208	<1	<1			
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	<1			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1			
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	<1			
Hexachlorobutadiene	<1 µg/l	TM208	<1	<1			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	<1			
Naphthalene	<1 µg/l	TM208	<1	<1			
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	<1			
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1			



CERTIFICATE OF ANALYSIS

SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
SUB		Subcontracted Test		
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
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		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
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		
TM205		Determination of Phenols in Waste Waters using Solid Phase Extraction, Acetylation, Gas Chromatography and Mass Selective Detection		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
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		
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		
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		
TM270	Thermo Electron Application Note AN_E0640: X Series ICP-MS: Using automated collision cell ICP-MS with rapid in-sample switching to achieve ultimate performance in environmental analysis.	Dissolved Metals in Saline Matrices by CCT ICP-MS		
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser		
TM281		The Determination of Total Oxidized Nitrogen in Saline Matrices using the Kone Spectrophotometric Analysers		
TM294		Determination of Free Sulphur in liquids by HPLC		

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



SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

Test Completion Dates

Lab Sample No(s)	5777824	5777825
	256404	515251
Customer Sample Ref.		
AGS Ref.		
Depth		
Type	SALINE_D	SALINE_D
Ammoniacal Nitrogen	04-Jul-2012	04-Jul-2012
Anions by Kone (w)	03-Jul-2012	03-Jul-2012
BOD True Total	28-Jun-2012	28-Jun-2012
COD Unfiltered	28-Jun-2012	28-Jun-2012
Conductivity (at 20 deg.C)	28-Jun-2012	28-Jun-2012
Cyanide Comp/Free/Total/Thiocyanate	28-Jun-2012	28-Jun-2012
Dissolved Metals by ICP-MS	28-Jun-2012	28-Jun-2012
EPH CWG (Aliphatic) Aqueous GC (W)	29-Jun-2012	29-Jun-2012
EPH CWG (Aromatic) Aqueous GC (W)	29-Jun-2012	29-Jun-2012
Fluoride		28-Jun-2012
Free Sulphur	29-Jun-2012	29-Jun-2012
GRO by GC-FID (W)	26-Jun-2012	26-Jun-2012
Hexavalent Chromium (w)	28-Jun-2012	28-Jun-2012
Low Level Cyanide (W)	29-Jun-2012	29-Jun-2012
Metals analysis (Saline Sample)	29-Jun-2012	29-Jun-2012
Metals by iCap-OES Dissolved (W)	28-Jun-2012	28-Jun-2012
Nitrite by Kone (w)	28-Jun-2012	28-Jun-2012
PCB Congeners - Aqueous (W)	02-Jul-2012	02-Jul-2012
pH Value	02-Jul-2012	02-Jul-2012
Phenols by ms (w)		03-Jul-2012
Saline TON	02-Jul-2012	04-Jul-2012
Sulphide	29-Jun-2012	29-Jun-2012
TOC (Saline)*	10-Jul-2012	10-Jul-2012
TPH CWG (W)	29-Jun-2012	29-Jun-2012
VOC MS (W)	27-Jun-2012	27-Jun-2012



CERTIFICATE OF ANALYSIS

SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

Chromatogram

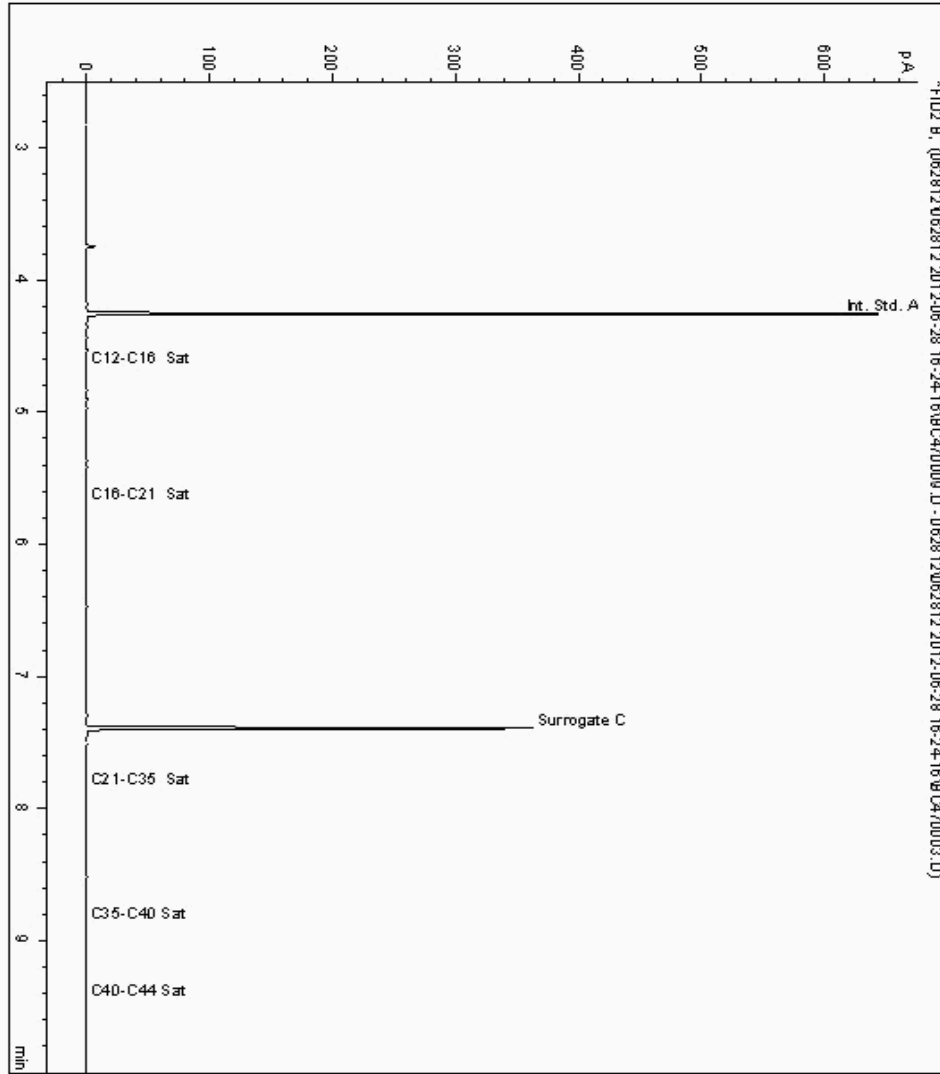
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5789916
Sample ID : 515251

Depth :

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

Sample Identity: 5639852-5789916
Date Acquired : 28/06/12 18:57:48
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

Chromatogram

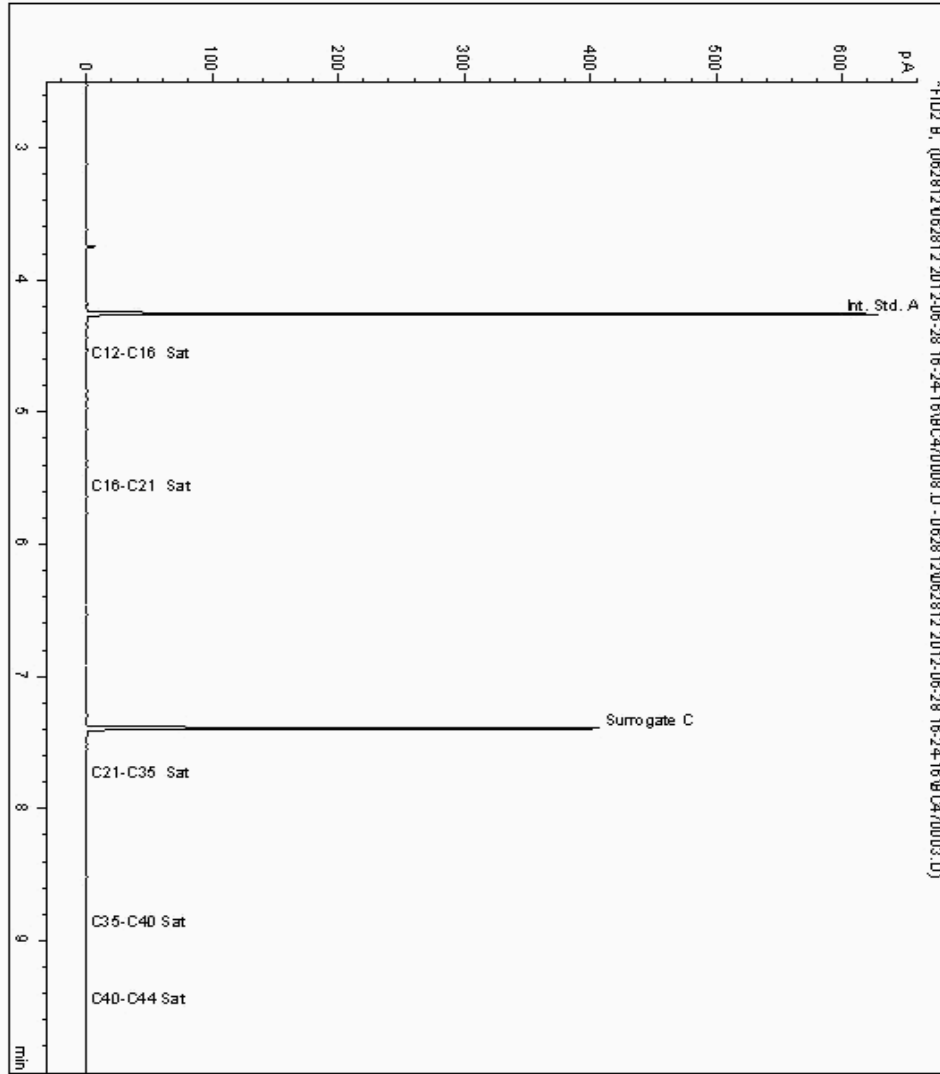
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5790102
Sample ID : 256404

Depth :

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

Sample Identity: 5639821-5790102
Date Acquired : 28/06/12 18:38:17
Units : ppb
Dilution :
CF : 1
Multiplier : 0.018





CERTIFICATE OF ANALYSIS

SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

Chromatogram

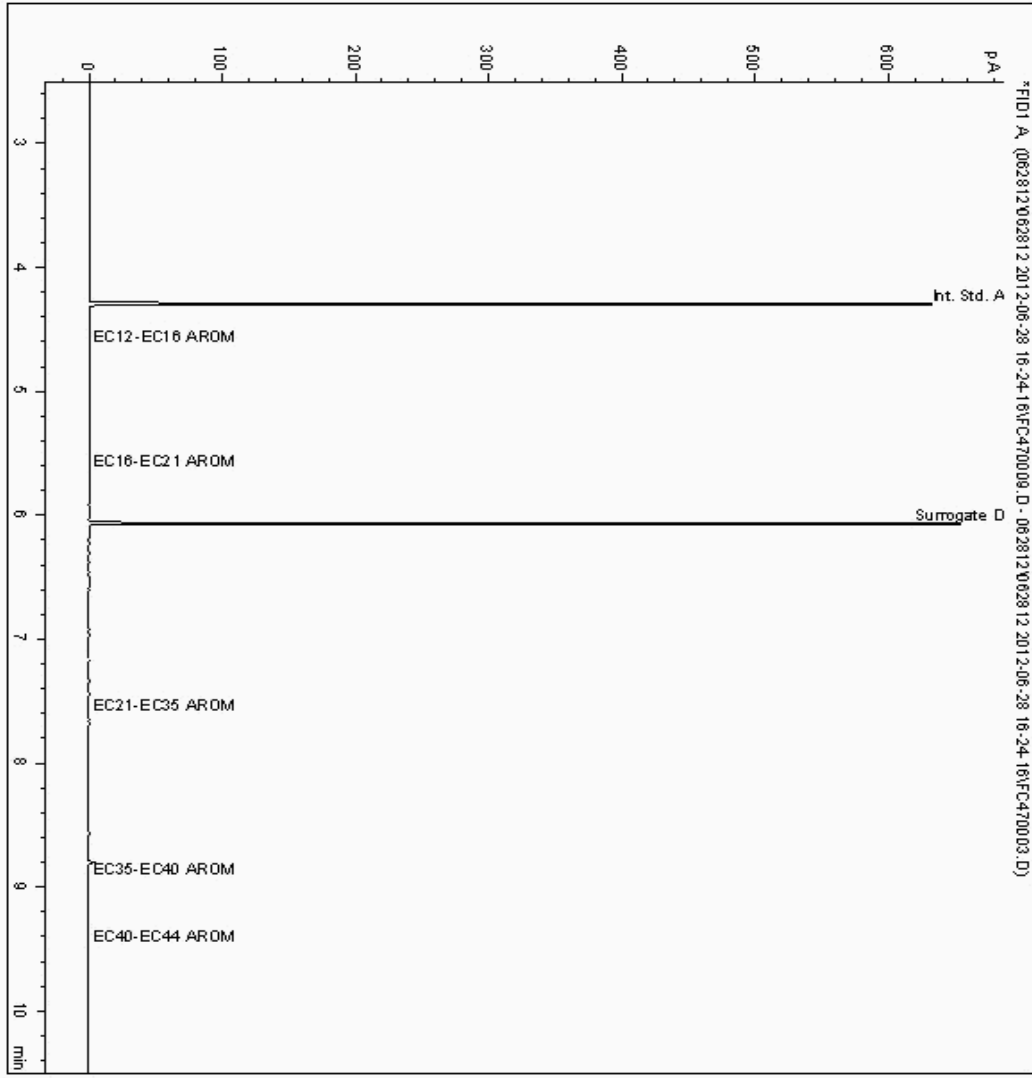
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5789916
Sample ID : 515251

Depth :

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

Sample Identity: 5639853-5789916
Date Acquired : 28/06/12 18:57:47
Units :
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
Superseded Report:

Chromatogram

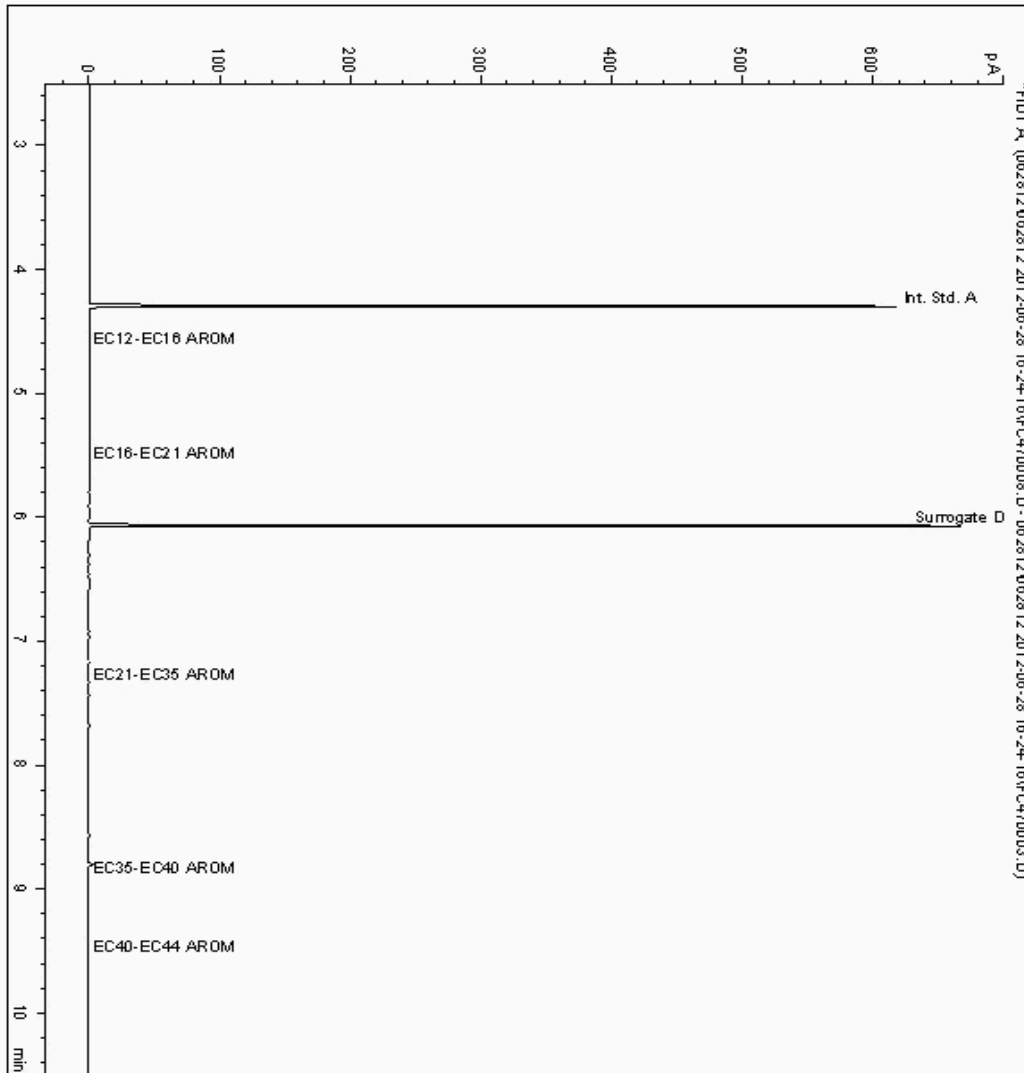
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5790102
Sample ID : 256404

Depth :

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

Sample Identity: 5639822-5790102
Date Acquired : 28/06/12 18:38:17
Units :
Dilution :
CF : 1
Multiplier : 0.018





SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

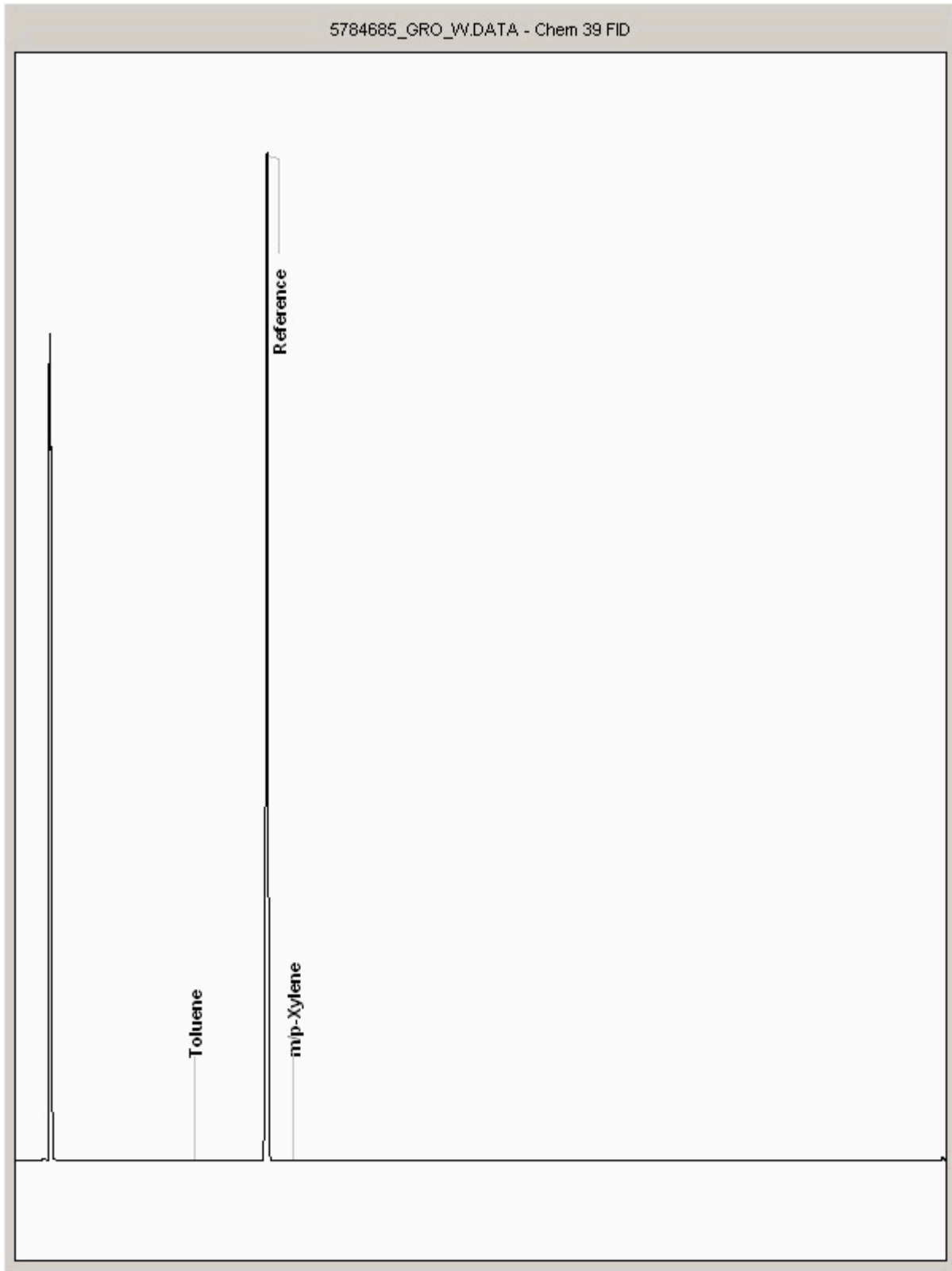
Order Number: 4559
Report Number: 187081
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5784685
Sample ID : 515251

Depth :





CERTIFICATE OF ANALYSIS

SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

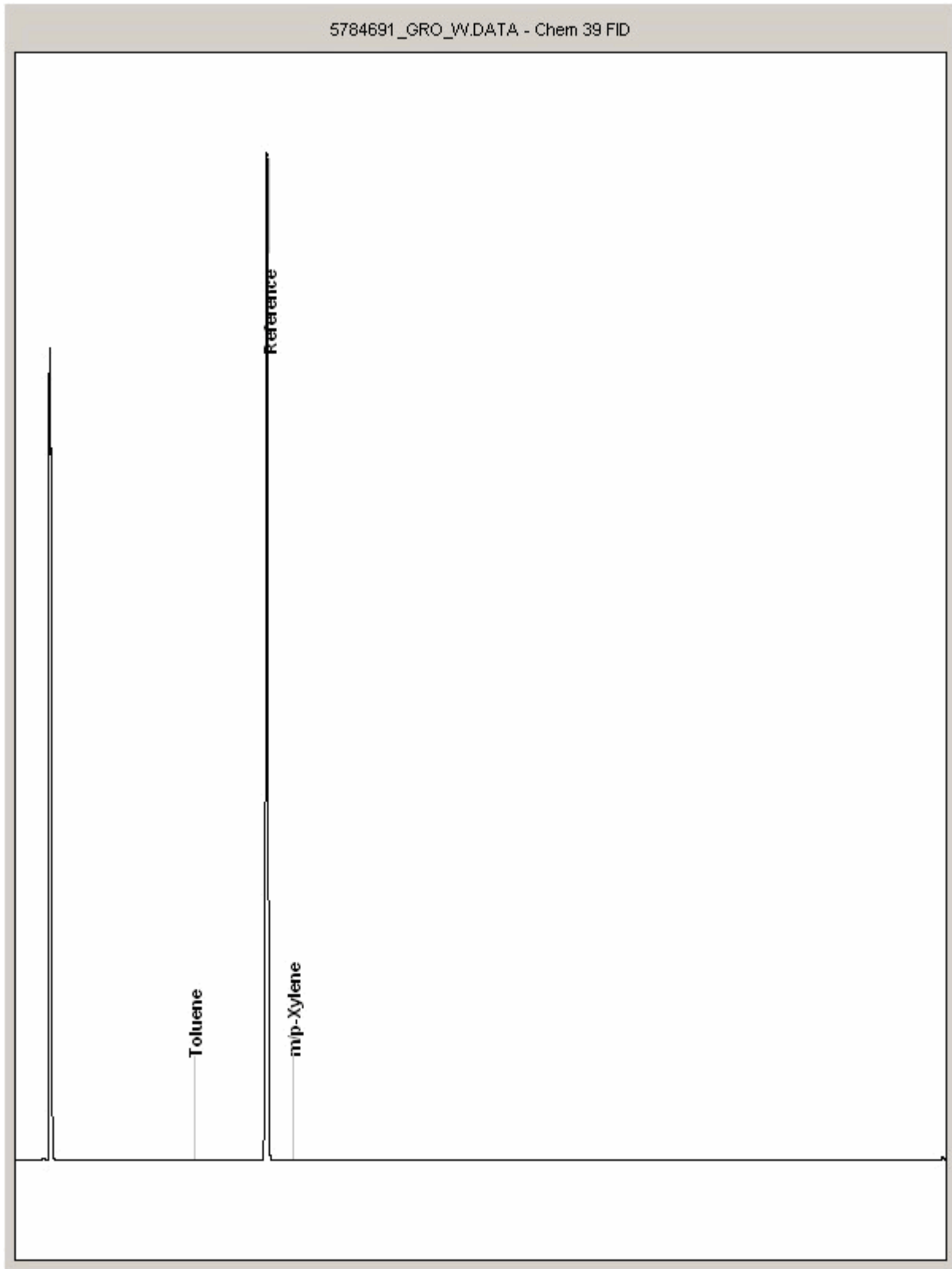
Order Number: 4559
Report Number: 187081
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5784691
Sample ID : 256404

Depth :



Hawarden Subcontractors
ALcontrol Laboratories Chester
Units 7 & 8 Hawarden Business Park
Off Manor Lane
Hawarden
Deeside
CH5 3US

Dear Hawarden

Please find attached the results for the batch of 2 samples described below.

Samples Registered on:	27-Jun-2012
Analysis Started on:	09-Jul-2012
Analysis Completed on:	10-Jul-2012
Results for Batch Number	20041057
Your Purchase Order Number:	149739

You will be invoiced shortly by our accounts department.

If we can be of further assistance then please do not hesitate to contact us.

Yours sincerely



William Fardon
Customer Services Team Leader
Tel: (0113) 231 2177
nls@environment-agency.gov.uk

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation. Details of analytical procedures and performance data are available on request. The date of sample analysis is available on request.

The Environment Agency carries out analytical work to high standards and within the scope of its UKAS accreditation, but has no knowledge of whether the circumstances or the validity of the procedures used to obtain the samples provided to the laboratory were representative of the need for which the information was required.

The Environment Agency and/or its staff does not therefore accept any liability for the consequences of any acts or omissions made on the basis of the analysis or advice or interpretation provided.

Client: ALcontrol Laboratories Chester
Folder No: 001987992
Comments: 5785628 - 256404
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 21-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	<1	mg/l	1	None	NM 1102

Final Report

Report ID - 20041057 - 1

Batch description: Saline TOC analysis

Reported on:
10-Jul-2012

Client: ALcontrol Laboratories Chester
Folder No: 001987993
Comments: 5785634 - 515251
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 21-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	1.27	mg/l	1	None	NM	1102

Method Description Summary for all samples in batch Number 20041057

1102 NM I TOC - furnace with IR detection



Mark Gale

Laboratory Site Manager

All reporting limits quoted are those achievable for clean samples of the relevant matrix. No allowance is made for instances when dilutions are necessary owing to the nature of the sample or insufficient volume of the sample being available. In these cases higher reporting limits may be quoted and will be above the MRV.

Solid sample results are determined on a "dried" sample fraction except for parameters where the method description identifies that "as received" sample was used.

Please note all samples will be retained for 10 working days for aqueous samples and 30 working days for solid samples after reporting unless otherwise agreed with Customer Services

Key to Accreditation: UKAS = Methodology accredited to ISO/IEC 17025:2005, MCertS = Methodology accredited to MCertS Performance Standard for testing of soils, none = Methodology not accredited

Key to Lab ID: LE = Leeds, LL = Llanelli, NM = Nottingham, SX = Starcross, SC = Sub-Contracted outside NLS, FI = Field Data, NLS = Calculated

Any subsequent version of this report denoted with a higher version number will supersede this and any previous versions

END OF TEST REPORT

SDG: 120623-38
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187081
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
PESTOCPOPP	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 (R)	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.



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

Attention: Colette Kelly

CERTIFICATE OF ANALYSIS

Date: 24 August 2012
Customer: D_PRIORGEOT_CRK
Sample Delivery Group (SDG): 120627-67
Your Reference: P12030
Location: Haulbowline
Report No: 192004

We received 36 samples on Tuesday June 26, 2012 and 30 of these samples were scheduled for analysis which was completed on Friday August 24, 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: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5793095	237415			25/06/2012
5793100	345662			25/06/2012
5793104	475461			25/06/2012
5793105	533020			25/06/2012
5793106	543939			25/06/2012
5793108	637220			25/06/2012
5793114	654684			25/06/2012
5793115	870938			25/06/2012
5793116	882654			25/06/2012
5793117	952615			25/06/2012
5793120	974589			25/06/2012
5793121	983837			25/06/2012
5792607	BH307		0.60	25/06/2012
5792604	BH307		1.80	25/06/2012
5797547	BH307 COMP			25/06/2012
5805932	BH307 COMP			25/06/2012
6024610	BH307 LEACHATE FRACTION 1			
6024611	BH307 LEACHATE FRACTION 2			
6024613	BH307 LEACHATE FRACTION 3			
6024615	BH307 LEACHATE FRACTION 4			
6024616	BH307 LEACHATE FRACTION 5			
6024617	BH307 LEACHATE FRACTION 6			
6024618	BH307 LEACHATE FRACTION 7			
6024606	BH307 STATIC LEACHATE			
5792605	BH310C		2.10	25/06/2012
5792603	BH310C		4.00	25/06/2012
5797548	BH310C COMP			25/06/2012
5805933	BH310C COMP			25/06/2012
6024620	BH310C LEACHATE FRACTION 1			
6024621	BH310C LEACHATE FRACTION 2			
6024622	BH310C LEACHATE FRACTION 3			
6024623	BH310C LEACHATE FRACTION 4			
6024625	BH310C LEACHATE FRACTION 5			
6024626	BH310C LEACHATE FRACTION 6			
6024627	BH310C LEACHATE FRACTION 7			
6024608	BH310C STATIC LEACHATE			

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

CERTIFICATE OF ANALYSIS

SDG: 120627-67
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 192004
 Superseded Report:

LEACH			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
Results Legend <input checked="" type="checkbox"/> Test <input checked="" type="checkbox"/> No Determination Possible			5793095	237415			H2SO4 (ALE244) 500ml Plastic (ALE2 1)plastic (ALE221) 1l green glass bottle
			5793100	345662			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2 1)plastic (ALE221) 1l green glass bottle
			5793104	475461			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2 1)plastic (ALE221) 1l green glass bottle
			5793105	533020			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2 1)plastic (ALE221) 1l green glass bottle
			5793106	543939			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2 1)plastic (ALE221) 1l green glass bottle
			5793108	637220			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2 1)plastic (ALE221) 1l green glass bottle
			5793114	654684			H2SO4 (ALE244) 500ml Plastic (ALE2 1)plastic (ALE221) 1l green glass bottle
Alkalinity as CaCO3	All	NDPs: 0 Tests: 1					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 12					
Anions by Kone (w)	All	NDPs: 0 Tests: 12					
BOD True Total	All	NDPs: 0 Tests: 12					
COD Unfiltered	All	NDPs: 0 Tests: 12					
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 12					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 12					
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 12					
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 12					
Fluoride	All	NDPs: 0 Tests: 1					
Free Sulphur	All	NDPs: 0 Tests: 12					
GRO by GC-FID (W)	All	NDPs: 0 Tests: 12					
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 10					
Metals analysis (Saline Sample)	All	NDPs: 0 Tests: 12					
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 12					



SDG: 120627-67
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 192004
 Superseded Report:

LEACH Results Legend Test No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		5793095	237415			H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle
		5793100	345662			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle
		5793104	475461			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle
		5793105	533020			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle
	5793106	543939			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle	
	5793108	637220			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle	
	5793114	654684			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle	
Nitrite by Kone (w)	All	NDPs: 0 Tests: 12				
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 12				
pH Value	All	NDPs: 0 Tests: 12				
Phenols by ms (w)	All	NDPs: 0 Tests: 6				
Saline Cyanides (W)*	All	NDPs: 0 Tests: 12				
Saline Metals*	All	NDPs: 0 Tests: 12				
Saline TON	All	NDPs: 0 Tests: 12				
Sulphide	All	NDPs: 0 Tests: 12				
TOC (Saline)*	All	NDPs: 0 Tests: 12				
TPH CWG (W)	All	NDPs: 0 Tests: 12				



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

LEACH Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container			
	5793114	5793115	5793116	5793117	5793120	5793121	5793114	5793115	5793116	5793117	5793120	5793121
X Test N No Determination Possible												
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 12										
Anions by Kone (w)	All	NDPs: 0 Tests: 12										
BOD True Total	All	NDPs: 0 Tests: 12										
COD Unfiltered	All	NDPs: 0 Tests: 12										
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 12										
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 12										
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 12										
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 12										
Free Sulphur	All	NDPs: 0 Tests: 12										
GRO by GC-FID (W)	All	NDPs: 0 Tests: 12										
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 10										
Metals analysis (Saline Sample)	All	NDPs: 0 Tests: 12										
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 12										
Nitrite by Kone (w)	All	NDPs: 0 Tests: 12										
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 12										



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

LEACH Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
	5793114	654684			Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle Vial (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle
X Test	5793115	870938			NaOH (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle
N No Determination Possible	5793116	882654			NaOH (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle
	5793117	952615			NaOH (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle
	5793120	974589			NaOH (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle
	5793121	983837			NaOH (ALE297) NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE2) 11plastic (ALE221) 11 green glass bottle
pH Value	All	NDPs: 0 Tests: 12			
Phenols by ms (w)	All	NDPs: 0 Tests: 6			
Saline Cyanides (W)*	All	NDPs: 0 Tests: 12			
Saline Metals*	All	NDPs: 0 Tests: 12			
Saline TON	All	NDPs: 0 Tests: 12			
Sulphide	All	NDPs: 0 Tests: 12			
TOC (Saline)*	All	NDPs: 0 Tests: 12			
TPH CWG (W)	All	NDPs: 0 Tests: 12			
VOC MS (W)	All	NDPs: 0 Tests: 4			



CERTIFICATE OF ANALYSIS

Validated

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

LIQUID 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		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 16	X X X X
Mercury Dissolved	All	NDPs: 0 Tests: 16	X X X X
pH Value	All	NDPs: 0 Tests: 16	X X X X



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Table with columns: Lab Sample No(s), Customer Sample Reference, AGS Reference, Depth (m), Container, and test results for Dissolved Metals by ICP-MS, Mercury Dissolved, and pH Value. Includes a legend for 'LIQUID' results (Test, No Determination Possible).



SDG: 120627-67
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 192004
 Superseded Report:

SOLID Results Legend X Test N No Determination Possible	Lab Sample No(s)	5797547	5797548	
	Customer Sample Reference	BH307 COMP	BH310C COMP	
	AGS Reference			
	Depth (m)			
	Container	1 kg Glass	1 kg Glass	1 kg TUB
Boron Water Soluble	All	NDPs: 0 Tests: 2	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2	X	X
Mercury Dissolved	All	NDPs: 0 Tests: 2	X	X
Metals by iCap-OES (Soil)	Arsenic	NDPs: 0 Tests: 2	X	X
	Cadmium	NDPs: 0 Tests: 2	X	X
	Chromium	NDPs: 0 Tests: 2	X	X
	Copper	NDPs: 0 Tests: 2	X	X
	Lead	NDPs: 0 Tests: 2	X	X
	Mercury	NDPs: 0 Tests: 2	X	X
	Nickel	NDPs: 0 Tests: 2	X	X
	Selenium	NDPs: 0 Tests: 2	X	X
	Vanadium	NDPs: 0 Tests: 2	X	X
	Zinc	NDPs: 0 Tests: 2	X	X
NRA Leachate	All	NDPs: 0 Tests: 2	X	X
pH	All	NDPs: 0 Tests: 2	X	X



SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

SOLID			
Results Legend <input checked="" type="checkbox"/> Test <input type="checkbox"/> No Determination Possible	Lab Sample No(s)	5797547	5797548
	Customer Sample Reference	BH307 COMP	BH310C COMP
	AGS Reference		
	Depth (m)		
	Container	1 kg Glass	1 kg TUB 1 kg Glass 1 kg TUB 1 kg Glass
pH Value	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"/>

SDG: 120627-67
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

Location: Haulbowline
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 Attention: Colette Kelly

Order Number: 4559
 Report Number: 192004
 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
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
5797547	BH307 COMP		Dark Brown	N/A	2 - 10 mm	Stones	None
5797548	BH310C COMP		Dark Brown	N/A	> 10 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.



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Client Reference: P12030

Location: Haulbowline
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Order Number: 4559
Report Number: 192004
Superseded Report:

Results Legend			Customer Sample R						
#	ISO17025 accredited.		237415	345662	475461	533020	543939	637220	
M	mCERTS accredited.								
S	Deviating sample.								
aq	Aqueous / settled sample.	Depth (m)							
diss.filt	Dissolved / filtered sample.	Sample Type	Saline D	Saline D	Saline D	Saline D	Saline D	Saline D	
tot.unfilt	Total / unfiltered sample.	Date Sampled	25/06/2012	25/06/2012	25/06/2012	25/06/2012	25/06/2012	25/06/2012	
*	Subcontracted test.	Sampled Time							
**	% 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	Date Received	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	
(F)	Trigger breach confirmed	SDG Ref	120627-67	120627-67	120627-67	120627-67	120627-67	120627-67	
		Lab Sample No.(s)	5793095	5793100	5793104	5793105	5793106	5793108	
		AGS Reference							
Component	LOD/Units	Method							
Cyanide Complex as CN*	mg/l	SUB	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
TOC (Saline)*	<1 mg/l	SUB	1.06	5.74	15.2	1.82	5.08	1.27	
Cyanide Free as CN*	<0.005 mg/l	SUB	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Cyanide as CN*	<0.005 mg/l	SUB	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Chromium (tot.unfilt)*	<0.5 µg/l	SUB	9.6	500	71.5	103	22.4	4.2	
Molybdenum (tot.unfilt)*	<30 µg/l	SUB	<30	<30	<30	31.8	<30	<30	
BOD, unfiltered	<1 mg/l	TM045	<60	<2	<60	<2	<60	<2	
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Sulphide	<0.01 mg/l	TM101	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
COD, unfiltered	<7 mg/l	TM107	<280	282	342	260	270	308	
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	39.6	40	39.4	39.7	38.7	40.8	
Barium (diss.filt)	<0.03 µg/l	TM152	73.8	50.4	41.1	46.1	42.7	60.7	
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Sulphate	<2 mg/l	TM184	2120	2240	2150	2190	2090	2170	
Chloride	<2 mg/l	TM184	17100	18100	17200	17200	16800	18300	
PCB congener 28	<0.015 µg/l	TM197	<0.015	0.11	<0.015	<0.015	<0.015	<0.015	
PCB congener 52	<0.015 µg/l	TM197	<0.015	0.07	<0.015	<0.015	<0.015	<0.015	
PCB congener 101	<0.015 µg/l	TM197	<0.015	0.04	<0.015	<0.015	<0.015	<0.015	
PCB congener 118	<0.015 µg/l	TM197	<0.015	0.03	<0.015	<0.015	<0.015	<0.015	
PCB congener 138	<0.015 µg/l	TM197	<0.015	0.03	<0.015	<0.015	<0.015	<0.015	
PCB congener 153	<0.015 µg/l	TM197	<0.015	0.02	<0.015	<0.015	<0.015	<0.015	
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	0.3	<0.105	<0.105	<0.105	<0.105	
Phenol	<0.5 µg/l	TM205	<2.5					<2.5	
2-methylphenol	<0.5 µg/l	TM205	<0.5					<0.5	
3-methylphenol	<0.5 µg/l	TM205	<0.5					<0.5	
4-methylphenol	<0.5 µg/l	TM205	<0.5					<0.5	
2-chlorophenol	<0.5 µg/l	TM205	<0.5					<0.5	
2,4-dimethylphenol	<0.5 µg/l	TM205	<0.5					<0.5	
4-chloro-3-methylphenol	<0.5 µg/l	TM205	<0.5					<0.5	
2,6-dichlorophenol	<0.5 µg/l	TM205	<0.5					<0.5	
4-Chlorophenol	<0.5 µg/l	TM205	<0.5					<0.5	
2,4-dichlorophenol	<0.5 µg/l	TM205	<0.5					<0.5	
2-nitrophenol	<0.5 µg/l	TM205	<0.5					<0.5	
2,4,6-trichlorophenol	<0.5 µg/l	TM205	<0.5					<0.5	



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Results Legend			Customer Sample R	237415	345662	475461	533020	543939	637220	
#	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.									
diss.filt	Dissolved / filtered sample.			Saline D	Saline D	Saline D	Saline D	Saline D	Saline D	Saline D
tot.unfilt	Total / unfiltered sample.			25/06/2012	25/06/2012	25/06/2012	25/06/2012	25/06/2012	25/06/2012	25/06/2012
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			26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012
	Trigger breach confirmed			120627-67	120627-67	120627-67	120627-67	120627-67	120627-67	120627-67
(F)				5793095	5793100	5793104	5793105	5793106	5793108	5793108
Component	LOD/Units	Method								
2,4,5-trichlorophenol	<0.5 µg/l	TM205		<0.5					<0.5	
4-nitrophenol	<0.5 µg/l	TM205		<0.5					<0.5	
2,3,5,6-tetrachlorophenol	<0.5 µg/l	TM205		<0.5					<0.5	
2,3,4,6-tetrachlorophenol	<0.5 µg/l	TM205		<0.5					<0.5	
2,4-dinitrophenol	<2.5 µg/l	TM205		<2.5					<2.5	
DNOC	<3 µg/l	TM205		<3					<3	
Pentachlorophenol	<2 µg/l	TM205		<2					<2	
Dinoseb	<4 µg/l	TM205		<4					<4	
Calcium (diss.filt)	<0.012 mg/l	TM228		491	291	371	355	353	423	
Sodium (diss.filt)	<0.076 mg/l	TM228		9390	9340	9040	9640	9220	9490	
Magnesium (diss.filt)	<0.036 mg/l	TM228		859	1010	972	1060	924	885	
Potassium (diss.filt)	<2.335 mg/l	TM228		363	330	320	345	319	322	
Chromium, Hexavalent	<0.03 mg/l	TM241			<0.03 #	<0.03 #	<0.03 #	<0.03 #		
pH	<1 pH Units	TM256		9	9.04	8.41	9.04	8.65	9.08	
Arsenic (Saline)	<0.5 µg/l	TM270		<0.5 #	<0.5 #	2.02 #	<0.5 #	<0.5 #	<0.5 #	
Aluminium (Saline)	<3.7 µg/l	TM270		23.1 #	23.8 #	91.4 #	19.7 #	29.5 #	24.9 #	
Antimony (Saline)	<1 µg/l	TM270		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Boron (Saline)	<201 µg/l	TM270		2560 #	3150 #	3940 #	3350 #	2690 #	2110 #	
Cadmium (Saline)	<0.15 µg/l	TM270		<0.15 #	<0.15 #	<0.15 #	<0.15 #	<0.15 #	<0.15 #	
Chromium (Saline)	<1.5 µg/l	TM270		12.1 #	13.9 #	8.67 #	15.6 #	11.1 #	7.74 #	
Copper (Saline)	<1 µg/l	TM270		6.75 #	<1 #	1.28 #	<1 #	<1 #	2.38 #	
Iron (Saline)	<4 µg/l	TM270		<4 #	<4 #	<4 #	<4 #	<4 #	<4 #	
Lead (Saline)	<0.2 µg/l	TM270		<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	
Manganese (Saline)	<0.3 µg/l	TM270		<0.3 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #	
Mercury (Saline)	<0.15 µg/l	TM270		0.399 #	0.251 #	0.196 #	0.22 #	0.153 #	0.293 #	
Nickel (saline)	<1.1 µg/l	TM270		4.9 #	3.72 #	2.06 #	3.49 #	3.99 #	4.4 #	
Selenium (Saline)	<0.5 µg/l	TM270		1.5 #	1.67 #	0.775 #	1.15 #	2.02 #	2.19 #	
Vanadium (Saline)	<4 µg/l	TM270		<4 #	<4 #	18 #	<4 #	<4 #	<4 #	
Zinc (Saline)	<2.1 µg/l	TM270		<2.1 #	<2.1 #	2.78 #	<2.1 #	<2.1 #	<2.1 #	
Saline TON as NO3	<0.3 mg/l	TM281		<0.3 #	1.2 #	2.32 #	1.24 #	2.01 #	<0.3 #	
Saline Nitrate as NO3	<0.3 mg/l	TM281		<0.3 #	1.2 #	2.32 #	1.24 #	2.01 #	<0.3 #	
Sulphur, Free	<0.05 mg/l	TM294		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	



SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Results Legend			Customer Sample R						
#	ISO17025 accredited.		654684	870938	882654	952615	974589	983837	
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	Saline D	Saline D	Saline D	Saline D	Saline D	Saline D	
		Date Sampled	25/06/2012	25/06/2012	25/06/2012	25/06/2012	25/06/2012	25/06/2012	
		Sampled Time							
		Date Received	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	
		SDG Ref	120627-67	120627-67	120627-67	120627-67	120627-67	120627-67	
		Lab Sample No.(s)	5793114	5793115	5793116	5793117	5793120	5793121	
		AGS Reference							
Component	LOD/Units	Method							
Cyanide Complex as CN*	mg/l	SUB	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
TOC (Saline)*	<1 mg/l	SUB	4.05	<1	<1	7.5	3.5	4.63	
Cyanide Free as CN*	<0.005 mg/l	SUB	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Cyanide as CN*	<0.005 mg/l	SUB	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Chromium (tot.unfilt)*	<0.5 µg/l	SUB	121	52.4	145	53.3	131	24.3	
Molybdenum (tot.unfilt)*	<30 µg/l	SUB	<30	<30	<30	<30	<30	<30	
Saline Total Alkalinity as CaCO3	<5 mg/l	TM043	50	#					
BOD, unfiltered	<1 mg/l	TM045	<2	\$	<2	\$	<2	\$	
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	0.223	#	<0.2	#	1.73	#	
Sulphide	<0.01 mg/l	TM101	0.023	#	<0.01	#	<0.01	#	
Fluoride	<0.5 mg/l	TM104	<0.5						
COD, unfiltered	<7 mg/l	TM107	260		185	280	237	254	
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	35.1	#	39.1	#	40.2	#	
Barium (diss.filt)	<0.03 µg/l	TM152	124	#	54.4	#	302	#	
Molybdenum (diss.filt)	<0.24 µg/l	TM152	25.6						
Phosphorus (diss.filt)	<6.3 µg/l	TM152	<6.3						
Nitrite as NO2	<0.05 mg/l	TM184	0.128		<0.05	<0.05	0.495	0.167	
Sulphate	<2 mg/l	TM184	1650		2100	2120	1620	1840	
Chloride	<2 mg/l	TM184	15000		16900	17800	14900	16700	
PCB congener 28	<0.015 µg/l	TM197	0.07		<0.015	<0.015	<0.015	0.11	
PCB congener 52	<0.015 µg/l	TM197	0.04		<0.015	<0.015	<0.015	0.06	
PCB congener 101	<0.015 µg/l	TM197	0.02		<0.015	<0.015	<0.015	0.04	
PCB congener 118	<0.015 µg/l	TM197	<0.015		<0.015	<0.015	<0.015	0.03	
PCB congener 138	<0.015 µg/l	TM197	<0.015		<0.015	<0.015	<0.015	0.03	
PCB congener 153	<0.015 µg/l	TM197	<0.015		<0.015	<0.015	<0.015	0.02	
PCB congener 180	<0.015 µg/l	TM197	<0.015		<0.015	<0.015	<0.015	<0.015	
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	0.13		<0.105	<0.105	<0.105	0.29	
Phenol	<0.5 µg/l	TM205	<2.5				<2.5	<2.5	
2-methylphenol	<0.5 µg/l	TM205	<0.5				<0.5	<0.5	
3-methylphenol	<0.5 µg/l	TM205	<0.5				<0.5	<0.5	
4-methylphenol	<0.5 µg/l	TM205	<0.5				<0.5	<0.5	
2-chlorophenol	<0.5 µg/l	TM205	<0.5				<0.5	<0.5	
2,4-dimethylphenol	<0.5 µg/l	TM205	<0.5				<0.5	<0.5	
4-chloro-3-methylphenol	<0.5 µg/l	TM205	<0.5				<0.5	<0.5	
2,6-dichlorophenol	<0.5 µg/l	TM205	<0.5				<0.5	<0.5	



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Results Legend			Customer Sample R					
#	ISO17025 accredited.		654684	870938	882654	952615	974589	983837
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 Trigger breach confirmed							
(F)								
Component	LOD/Units	Method	654684	870938	882654	952615	974589	983837
4-Chlorophenol	<0.5 µg/l	TM205	<0.5			<0.5	<0.5	<0.5
2,4-dichlorophenol	<0.5 µg/l	TM205	<0.5			<0.5	<0.5	<0.5
2-nitrophenol	<0.5 µg/l	TM205	<0.5			<0.5	<0.5	<0.5
2,4,6-trichlorophenol	<0.5 µg/l	TM205	<0.5			<0.5	<0.5	<0.5
2,4,5-trichlorophenol	<0.5 µg/l	TM205	<0.5			<0.5	<0.5	<0.5
4-nitrophenol	<0.5 µg/l	TM205	<0.5			<0.5	<0.5	<0.5
2,3,5,6-tetrachlorophenol	<0.5 µg/l	TM205	<0.5			<0.5	<0.5	<0.5
2,3,4,6-tetrachlorophenol	<0.5 µg/l	TM205	<0.5			<0.5	<0.5	<0.5
2,4-dinitrophenol	<2.5 µg/l	TM205	<2.5			<2.5	<2.5	<2.5
DNOC	<3 µg/l	TM205	<3			<3	<3	<3
Pentachlorophenol	<2 µg/l	TM205	<2.5			<2	<2	<2
Dinoseb	<4 µg/l	TM205	<4			<4	<4	<4
Calcium (diss.filt)	<0.012 mg/l	TM228	1210	402	358	1140	1010	1080
Sodium (diss.filt)	<0.076 mg/l	TM228	8120	10100	9100	8560	8800	8060
Magnesium (diss.filt)	<0.036 mg/l	TM228	232	1070	961	246	425	309
Potassium (diss.filt)	<2.335 mg/l	TM228	304	360	326	296	328	295
Chromium, Hexavalent	<0.03 mg/l	TM241	<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #
pH	<1 pH Units	TM256	9.17	9.25	9.24	9.14	9.14	9.01
Arsenic (Saline)	<0.5 µg/l	TM270	<0.5 #	0.566 #	<0.5 #	<0.5 #	<0.5 #	0.709 #
Aluminium (Saline)	<3.7 µg/l	TM270	27.3 #	30.6 #	18.4 #	30.2 #	16.3 #	25.3 #
Antimony (Saline)	<1 µg/l	TM270	1.21 #	<1 #	<1 #	1.04 #	<1 #	1.38 #
Boron (Saline)	<201 µg/l	TM270	622 #	3530 #	3090 #	584 #	820 #	969 #
Cadmium (Saline)	<0.15 µg/l	TM270	<0.15 #	<0.15 #	<0.15 #	<0.15 #	<0.15 #	<0.15 #
Chromium (Saline)	<1.5 µg/l	TM270	20.3 #	7.94 #	7.72 #	2.95 #	9.61 #	2.9 #
Copper (Saline)	<1 µg/l	TM270	1.89 #	<1 #	<1 #	8.46 #	<1 #	4.92 #
Iron (Saline)	<4 µg/l	TM270	<4 #	<4 #	<4 #	<4 #	<4 #	<4 #
Lead (Saline)	<0.2 µg/l	TM270	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #
Manganese (Saline)	<0.3 µg/l	TM270	<0.3 #	<0.3 #	<0.3 #	9.2 #	<0.3 #	<0.3 #
Mercury (Saline)	<0.15 µg/l	TM270	0.706 #	0.213 #	0.165 #	0.875 #	0.297 #	0.798 #
Nickel (saline)	<1.1 µg/l	TM270	5.08 #	2.64 #	3.27 #	10.9 #	4.46 #	7.12 #
Selenium (Saline)	<0.5 µg/l	TM270	1.97 #	0.838 #	1.05 #	2.74 #	1.81 #	1.45 #
Vanadium (Saline)	<4 µg/l	TM270	<4 #	12.5 #	<4 #	<4 #	<4 #	4.8 #
Zinc (Saline)	<2.1 µg/l	TM270	<2.1 #	<2.1 #	<2.1 #	<2.1 #	<2.1 #	<2.1 #
Saline TON as NO3	<0.3 mg/l	TM281	<0.3 #	1.39 #	1.14 #	0.401 #	<0.3 #	0.608 #
Saline Nitrate as NO3	<0.3 mg/l	TM281	<0.3 #	1.39 #	1.14 #	<0.3 #	<0.3 #	0.482 #



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Table with columns for Results Legend, Customer Sample R (654684, 870938, 882654, 952615, 974589, 983837), Component, LOD/Units, Method, and numerical results for Sulphur, Free.



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Results Legend			Customer Sample R		BH310C COMP	BH310C LEACHATE FRACTION 1	BH310C LEACHATE FRACTION 2	BH310C LEACHATE FRACTION 3	BH310C LEACHATE FRACTION 4	BH310C LEACHATE FRACTION 5
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		Soil/Solid	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.			25/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012
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								
Arsenic (diss.filt)	<0.12 µg/l	TM152		0.72	0.614	0.437	0.291	0.167		
Boron (diss.filt)	<9.4 µg/l	TM152		93.4	101	91.6	62.6	73		
Cadmium (diss.filt)	<0.1 µg/l	TM152		<0.1	0.112	<0.1	<0.1	<0.1		
Chromium (diss.filt)	<0.22 µg/l	TM152		48.4	39.1	32.4	25	11		
Copper (diss.filt)	<0.85 µg/l	TM152		17.8	12.5	8.62	7.31	4.35		
Lead (diss.filt)	<0.02 µg/l	TM152		376	356	268	175	76.3		
Nickel (diss.filt)	<0.15 µg/l	TM152		7.21	7.22	6.79	7.01	7.11		
Selenium (diss.filt)	<0.39 µg/l	TM152		3.39	3.08	2.3	2.47	3.13		
Vanadium (diss.filt)	<0.24 µg/l	TM152		<0.24	<0.24	<0.24	<0.24	<0.24		
Zinc (diss.filt)	<0.41 µg/l	TM152		26.2	18.4	13.5	16.5	10.1		
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01	<0.01	<0.01	0.0102	<0.01		
pH	<1 pH Units	TM256		12.9	12.9	12.4	12.6	12.5		
pH	1 pH Units	TM133	12.2							
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152	<0.12							
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152	136							
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152	<0.1							
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152	192							
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152	1.71							
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152	17.9							
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152	1.41							
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152	0.826							
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152	5.87							
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152	2.66							
Arsenic	<0.6 mg/kg	TM181	18							
Cadmium	<0.02 mg/kg	TM181	1.07							
Chromium	<0.9 mg/kg	TM181	2870							
Copper	<1.4 mg/kg	TM181	465							
Lead	<0.7 mg/kg	TM181	271							
Mercury	<0.14 mg/kg	TM181	<0.7							
Nickel	<0.2 mg/kg	TM181	110							
Selenium	<1 mg/kg	TM181	28.3							
Vanadium	<0.2 mg/kg	TM181	319							
Zinc	<1.9 mg/kg	TM181	549							
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183	<0.01							
Boron, water soluble	<1 mg/kg	TM222	2.77							



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Table with columns: Results Legend, Customer Sample R, BH310C COMP, BH310C LEACHATE FRACTION 1-5, Component, LOD/Units, Method. Includes data for pH NRA leach and various leachate fractions.



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Results Legend			Customer Sample R	BH307 COMP	BH307 LEACHATE FRACTION 1	BH307 LEACHATE FRACTION 2	BH310C LEACHATE FRACTION 6	BH310C LEACHATE FRACTION 7	BH310C STATIC L EACHATE	
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Soil/Solid	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	
M	mCERTS accredited.			25/06/2012	-	-	-	-	-	-
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			26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012
(F)	Trigger breach confirmed			120627-67	120627-67	120627-67	120627-67	120627-67	120627-67	120627-67
				5797547	6024610	6024611	6024626	6024627	6024608	
Component	LOD/Units	Method								
Arsenic (diss.filt)	<0.12 µg/l	TM152		3.73 #	2.71 #	<0.12 #	<0.12 #	0.194 #		
Boron (diss.filt)	<9.4 µg/l	TM152		273 #	294 #	65.8 #	109 #	57.6 #		
Cadmium (diss.filt)	<0.1 µg/l	TM152		1.56 #	1.01 #	<0.1 #	<0.1 #	<0.1 #		
Chromium (diss.filt)	<0.22 µg/l	TM152		118 #	74.9 #	2.53 #	4.63 #	152 #		
Copper (diss.filt)	<0.85 µg/l	TM152		13.8 #	7.93 #	4.03 #	2.14 #	1.92 #		
Lead (diss.filt)	<0.02 µg/l	TM152		1.61 #	1.68 #	24.8 #	57.9 #	50.1 #		
Nickel (diss.filt)	<0.15 µg/l	TM152		6.85 #	6.11 #	6.15 #	4.19 #	1.77 #		
Selenium (diss.filt)	<0.39 µg/l	TM152		13.8 #	9.88 #	2.72 #	2.44 #	2.01 #		
Vanadium (diss.filt)	<0.24 µg/l	TM152		2.62 #	1.6 #	<0.24 #	<0.24 #	3.41 #		
Zinc (diss.filt)	<0.41 µg/l	TM152		3.39 #	3.73 #	8.88 #	4.01 #	1.73 #		
Mercury (diss.filt)	<0.01 µg/l	TM183		0.0207 § #	0.0145 § #	0.0146 § #	<0.01 § #	<0.01 § #		
pH	<1 pH Units	TM256		11.9 § #	12 § #	12.5 § #	12.6 § #	12.2 § #		
pH	1 pH Units	TM133	11.3 #							
Arsenic (diss.filt) NRA leach	<0.12 µg/l	TM152	<0.12							
Boron (diss.filt) NRA leach	<9.4 µg/l	TM152	673							
Cadmium (diss.filt) NRA leach	<0.1 µg/l	TM152	<0.1							
Chromium (diss.filt) NRA leach	<0.22 µg/l	TM152	57.1							
Copper (diss.filt) NRA leach	<0.85 µg/l	TM152	2.3							
Lead (diss.filt) NRA leach	<0.02 µg/l	TM152	10.2							
Nickel (diss.filt) NRA leach	<0.15 µg/l	TM152	0.692							
Selenium (diss.filt) NRA leach	<0.39 µg/l	TM152	1.48							
Vanadium (diss.filt) NRA leach	<0.24 µg/l	TM152	8.37							
Zinc (diss.filt) NRA leach	<0.41 µg/l	TM152	6.25							
Arsenic	<0.6 mg/kg	TM181	7.82 #							
Cadmium	<0.02 mg/kg	TM181	1.93 #							
Chromium	<0.9 mg/kg	TM181	4320 #							
Copper	<1.4 mg/kg	TM181	249 #							
Lead	<0.7 mg/kg	TM181	173 #							
Mercury	<0.14 mg/kg	TM181	<0.7 #							
Nickel	<0.2 mg/kg	TM181	60.3 #							
Selenium	<1 mg/kg	TM181	20.7 #							
Vanadium	<0.2 mg/kg	TM181	453 #							
Zinc	<1.9 mg/kg	TM181	268 #							
Mercury (diss.filt) NRA leach	<0.01 µg/l	TM183	0.0281							
Boron, water soluble	<1 mg/kg	TM222	3.85 #							



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Table with columns: Results Legend, Customer Sample R, BH307 COMP, BH307 LEACHATE FRACTION 1, BH307 LEACHATE FRACTION 2, BH310C LEACHATE FRACTION 6, BH310C LEACHATE FRACTION 7, BH310C STATIC L EACHATE. Includes a data row for pH NRA leach with a value of 11.4.



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Results Legend		Customer Sample R	BH307 LEACHATE FRACTION 3	BH307 LEACHATE FRACTION 4	BH307 LEACHATE FRACTION 5	BH307 LEACHATE FRACTION 6	BH307 LEACHATE FRACTION 7	BH307 STATIC LEACHATE
#	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.							
diss.filt	Dissolved / filtered sample.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
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		26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012
	Trigger breach confirmed		120627-67	120627-67	120627-67	120627-67	120627-67	120627-67
(F)			6024613	6024615	6024616	6024617	6024618	6024606
Component	LOD/Units	Method						
Arsenic (diss.filt)	<0.12 µg/l	TM152	1.77 #	1.24 #	0.399 #	0.196 #	0.164 #	0.287 #
Boron (diss.filt)	<9.4 µg/l	TM152	232 #	249 #	227 #	239 #	200 #	327 #
Cadmium (diss.filt)	<0.1 µg/l	TM152	0.589 #	0.186 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Chromium (diss.filt)	<0.22 µg/l	TM152	45.2 #	27 #	14.6 #	10.5 #	11.3 #	37.2 #
Copper (diss.filt)	<0.85 µg/l	TM152	5.17 #	3.54 #	1.79 #	1.61 #	1.74 #	2.14 #
Lead (diss.filt)	<0.02 µg/l	TM152	0.746 #	0.747 #	1.08 #	1.35 #	1.14 #	1.09 #
Nickel (diss.filt)	<0.15 µg/l	TM152	4.32 #	2.65 #	1.79 #	1.28 #	1.04 #	0.832 #
Selenium (diss.filt)	<0.39 µg/l	TM152	6.49 #	4.2 #	2.03 #	2.68 #	3.84 #	1.44 #
Vanadium (diss.filt)	<0.24 µg/l	TM152	1.13 #	1.36 #	1.83 #	4 #	8.62 #	13.7 #
Zinc (diss.filt)	<0.41 µg/l	TM152	0.78 #	1.27 #	<0.41 #	<0.41 #	0.786 #	4 #
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 § #	<0.01 § #	<0.01 § #	<0.01 § #	<0.01 § #	<0.01 § #
pH	<1 pH Units	TM256	12 § #	12 § #	12 § #	11.8 § #	11.7 § #	11.7 § #

CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

TPH CWG (W)

Results Legend		Customer Sample R	237415	345662	475461	533020	543939	637220
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Saline D	Saline D	Saline D	Saline D	Saline D	Saline D
M	mCERTS accredited.		25/06/2012	25/06/2012	25/06/2012	25/06/2012	25/06/2012	25/06/2012
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		26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012
	Trigger breach confirmed		120627-67	120627-67	120627-67	120627-67	120627-67	120627-67
(F)			5793095	5793100	5793104	5793105	5793106	5793108
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM245	120	116	116	114	116	120
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	<50	<50	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3
Benzene	<7 µg/l	TM245	<7	<7	<7	<7	<7	<7
Toluene	<4 µg/l	TM245	<4	<4	<4	<4	<4	<4
Ethylbenzene	<5 µg/l	TM245	<5	<5	<5	<5	<5	<5
m,p-Xylene	<8 µg/l	TM245	<8	<8	<8	<8	<8	<8
o-Xylene	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11	<11	<11	<11	<11
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28	<28	<28
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	72	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	72	<10	<10	<10	<10
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	72	<10	<10	<10	<10



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

TPH CWG (W)

Table with columns for Results Legend, Customer Sample R (654684, 870938, 882654, 952615, 974589, 983837), Depth (m), Sample Type, Date Sampled, Sampled Time, Date Received, SDG Ref, Lab Sample No.(s), AGS Reference, Component, LOD/Units, Method, and numerical results for various chemical components like GRO Surrogate %, Methyl tertiary butyl ether (MTBE), Benzene, Toluene, Ethylbenzene, etc.



SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample R	654684	952615	974589	983837		
#	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.							
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**	%	TM208	110	108	111	111		
Toluene-d8**	%	TM208	99.4	99.2	99.5	99.9		
4-Bromofluorobenzene**	%	TM208	93.8	95.4	95.6	95.1		
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1	<1		
Chloromethane	<1 µg/l	TM208	<1	<1	<1	<1		
Vinyl chloride	<1 µg/l	TM208	<1	<1	<1	<1		
Bromomethane	<1 µg/l	TM208	<1	<1	<1	<1		
Chloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1	<1	<1		
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1		
Carbon disulphide	<1 µg/l	TM208	<1	<1	<1	<1		
Dichloromethane	<3 µg/l	TM208	<3	<3	<3	<3		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1		
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1		
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1		
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1		
Bromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1		
Chloroform	<1 µg/l	TM208	<1	1.39	<1	<1		
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1		
Carbontetrachloride	<1 µg/l	TM208	<1	<1	<1	<1		
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
Benzene	<1 µg/l	TM208	<1	<1	<1	<1		
Trichloroethene	<1 µg/l	TM208	<1	<1	<1	<1		
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1		
Dibromomethane	<1 µg/l	TM208	<1	<1	<1	<1		
Bromodichloromethane	<1 µg/l	TM208	<1	<1	<1	<1		
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1		
Toluene	<1 µg/l	TM208	<1	<1	<1	<1		
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1		
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1		
Tetrachloroethene	<1 µg/l	TM208	<1	<1	<1	<1		
Dibromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1		



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample R	654684	952615	974589	983837		
#	M	S							
ISO17025 accredited.			Depth (m)	Saline D	Saline D	Saline D	Saline D		
mCERTS accredited.									
Deviating sample.			Sample Type	25/06/2012	25/06/2012	25/06/2012	25/06/2012		
Aqueous / settled sample.									
Dissolved / filtered sample.			Date Sampled	26/06/2012	26/06/2012	26/06/2012	26/06/2012		
Total / unfiltered sample.									
Subcontracted test.			Date Received	120627-67	120627-67	120627-67	120627-67		
% 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 trigger breach confirmed									
			Lab Sample No.(s)	5793114	5793117	5793120	5793121		
			AGS Reference						
Component	LOD/Units	Method							
1,2-Dibromoethane	<1 µg/l	TM208	<1	<1	<1	<1	<1		
Chlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1		
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
Styrene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
Bromoform	<1 µg/l	TM208	<1	<1	<1	<1	<1		
Isopropylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1		
Bromobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
Propylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
2-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
4-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
tert-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
sec-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
4-iso-Propyltoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
n-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
Hexachlorobutadiene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	<1	<1	<1	<1		
Naphthalene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1		



SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5802031	237415		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802045	345662		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802059	654684		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802080	974589		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802152	882654		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802194	983837		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802238	475461		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802267	870938		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802289	952615		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802311	543939		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802329	533020		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
5802352	637220		SALINE_D	BOD True Total	BOD, unfiltered	Sample holding time exceeded
6032565	BH307 LEACHATE FRACTION 2		LIQUID	pH Value	pH	Sample holding time exceeded
6032580	BH310C LEACHATE FRACTION 2		LIQUID	pH Value	pH	Sample holding time exceeded
6032585	BH307 LEACHATE FRACTION 1		LIQUID	pH Value	pH	Sample holding time exceeded
6032598	BH310C LEACHATE FRACTION 1		LIQUID	pH Value	pH	Sample holding time exceeded
6032607	BH307 LEACHATE FRACTION 3		LIQUID	pH Value	pH	Sample holding time exceeded
6032620	BH310C STATIC LEACHATE		LIQUID	pH Value	pH	Sample holding time exceeded
6032627	BH307 STATIC LEACHATE		LIQUID	pH Value	pH	Sample holding time exceeded
6035116	BH310C LEACHATE FRACTION 7		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample holding time exceeded
6035117	BH310C LEACHATE FRACTION 7		LIQUID	pH Value	pH	Sample holding time exceeded
6035243	BH307 LEACHATE FRACTION 5		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample holding time exceeded
6035244	BH307 LEACHATE FRACTION 5		LIQUID	pH Value	pH	Sample holding time exceeded
6035276	BH310C LEACHATE FRACTION 5		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample holding time exceeded
6035277	BH310C LEACHATE FRACTION 5		LIQUID	pH Value	pH	Sample holding time exceeded
6035288	BH307 LEACHATE FRACTION 6		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample holding time exceeded
6035290	BH307 LEACHATE FRACTION 6		LIQUID	pH Value	pH	Sample holding time exceeded
6035312	BH307 LEACHATE FRACTION 7		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample holding time exceeded
6035315	BH307 LEACHATE FRACTION 7		LIQUID	pH Value	pH	Sample holding time exceeded
6035347	BH310C LEACHATE FRACTION 6		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample holding time exceeded
6035350	BH310C LEACHATE FRACTION 6		LIQUID	pH Value	pH	Sample holding time exceeded
6035381	BH307 LEACHATE FRACTION 4		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample holding time exceeded
6035388	BH307 LEACHATE FRACTION 4		LIQUID	pH Value	pH	Sample holding time exceeded
6035406	BH310C LEACHATE FRACTION 3		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample holding time exceeded
6035408	BH310C LEACHATE FRACTION 3		LIQUID	pH Value	pH	Sample holding time exceeded
6035453	BH310C LEACHATE FRACTION 4		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample holding time exceeded
6035457	BH310C LEACHATE FRACTION 4		LIQUID	pH Value	pH	Sample holding time exceeded
6032564	BH307 LEACHATE FRACTION 2		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample Holding Time exceeded - no instructions received with sample
6032579	BH310C LEACHATE FRACTION 2		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample Holding Time exceeded - no instructions received with sample
6032584	BH307 LEACHATE FRACTION 1		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample Holding Time exceeded - no instructions received with sample
6032597	BH310C LEACHATE FRACTION 1		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample Holding Time exceeded - no instructions received with sample



CERTIFICATE OF ANALYSIS

Validated

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
6032606	BH307 LEACHATE FRACTION 3		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample Holding Time exceeded - no instructions received with sample
6032619	BH310C STATIC LEACHATE		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample Holding Time exceeded - no instructions received with sample
6032626	BH307 STATIC LEACHATE		LIQUID	Mercury Dissolved	Mercury (diss.filt)	Sample Holding Time exceeded - no instructions received with sample

Note : Test results may be compromised



SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
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Location: Haulbowline
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Order Number: 4559
Report Number: 192004
Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	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		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
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		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
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		
TM205		Determination of Phenols in Waste Waters using Solid Phase Extraction, Acetylation, Gas Chromatography and Mass Selective Detection		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
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		
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		
TM270	Thermo Electron Application Note AN_E0640: X Series ICP-MS: Using automated collision cell ICP-MS with rapid in-sample switching to achieve ultimate performance in environmental analysis.	Dissolved Metals in Saline Matrices by CCT ICP-MS		
TM281		The Determination of Total Oxidized Nitrogen in Saline Matrices using the Kone Spectrophotometric Analysers		
TM294		Determination of Free Sulphur in liquids by HPLC		

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



SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	5793095	5793100	5793104	5793105	5793106	5793108	5793114	5793115	5793116	5793117
	237415	345662	475461	533020	543939	637220	654684	870938	882654	952615
AGS Ref.										
Depth										
Type	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D	SALINE_D
Alkalinity as CaCO3							03-Jul-2012			
Ammoniacal Nitrogen	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
Anions by Kone (w)	30-Jun-2012	30-Jun-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	30-Jun-2012	30-Jun-2012	04-Jul-2012	04-Jul-2012	30-Jun-2012
BOD True Total	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
COD Unfiltered	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012
Conductivity (at 20 deg.C)	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012
Dissolved Metals by ICP-MS	03-Jul-2012	03-Jul-2012	03-Jul-2012	02-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	04-Jul-2012	03-Jul-2012
EPH CWG (Aliphatic) Aqueous GC (W)	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
EPH CWG (Aromatic) Aqueous GC (W)	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
Fluoride							02-Jul-2012			
Free Sulphur	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
GRO by GC-FID (W)	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012
Hexavalent Chromium (w)		18-Jul-2012	18-Jul-2012	18-Jul-2012	18-Jul-2012		18-Jul-2012	18-Jul-2012	18-Jul-2012	18-Jul-2012
Metals analysis (Saline Sample)	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
Metals by iCap-OES Dissolved (W)	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012
Nitrite by Kone (w)	02-Jul-2012	30-Jun-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	02-Jul-2012	30-Jun-2012
PCB Congeners - Aqueous (W)	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
pH Value	29-Jun-2012	29-Jun-2012	02-Jul-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	02-Jul-2012	02-Jul-2012	29-Jun-2012
Phenols by ms (w)	24-Aug-2012					24-Aug-2012	04-Jul-2012			24-Aug-2012
Saline Cyanides (W)*	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012
Saline Metals*	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012
Saline TON	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
Sulphide	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012
TOC (Saline)*	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012
TPH CWG (W)	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
VOC MS (W)							02-Jul-2012			02-Jul-2012

Lab Sample No(s) Customer Sample Ref.	5793120	5793121	5797548	6024620	6024621	6024622	6024623	6024625	6024626	6024627
	974589	983837	BH310C COMP	BH310C LEACHATE FRACTION 1	BH310C LEACHATE FRACTION 2	BH310C LEACHATE FRACTION 3	BH310C LEACHATE FRACTION 4	BH310C LEACHATE FRACTION 5	BH310C LEACHATE FRACTION 6	BH310C LEACHATE FRACTION 7
AGS Ref.										
Depth										
Type	SALINE_D	SALINE_D	SOLID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	04-Jul-2012	04-Jul-2012								
Anions by Kone (w)	30-Jun-2012	04-Jul-2012								
BOD True Total	04-Jul-2012	04-Jul-2012								
Boron Water Soluble			02-Jul-2012							
COD Unfiltered	29-Jun-2012	29-Jun-2012								
Conductivity (at 20 deg.C)	02-Jul-2012	02-Jul-2012								
Dissolved Metals by ICP-MS	03-Jul-2012	04-Jul-2012	05-Jul-2012	21-Aug-2012	21-Aug-2012	20-Aug-2012	20-Aug-2012	20-Aug-2012	20-Aug-2012	20-Aug-2012
EPH CWG (Aliphatic) Aqueous GC (W)	04-Jul-2012	04-Jul-2012								
EPH CWG (Aromatic) Aqueous GC (W)	04-Jul-2012	04-Jul-2012								
Free Sulphur	04-Jul-2012	04-Jul-2012								
GRO by GC-FID (W)	30-Jun-2012	30-Jun-2012								
Hexavalent Chromium (w)	18-Jul-2012	18-Jul-2012								
Mercury Dissolved			06-Jul-2012	16-Aug-2012	16-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012
Metals analysis (Saline Sample)	04-Jul-2012	04-Jul-2012								
Metals by iCap-OES (Soil)			02-Jul-2012							
Metals by iCap-OES Dissolved (W)	02-Jul-2012	02-Jul-2012								
Nitrite by Kone (w)	02-Jul-2012	30-Jun-2012								
NRA Leachate			03-Jul-2012							
PCB Congeners - Aqueous (W)	04-Jul-2012	04-Jul-2012								
pH			02-Jul-2012							
pH Value	29-Jun-2012	02-Jul-2012	04-Jul-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012
Phenols by ms (w)	24-Aug-2012	24-Aug-2012								
Saline Cyanides (W)*	13-Jul-2012	13-Jul-2012								
Saline Metals*	13-Jul-2012	13-Jul-2012								
Saline TON	04-Jul-2012	04-Jul-2012								
Sample description			29-Jun-2012							
Sulphide	03-Jul-2012	03-Jul-2012								
TOC (Saline)*	13-Jul-2012	13-Jul-2012								
TPH CWG (W)	04-Jul-2012	04-Jul-2012								
VOC MS (W)	02-Jul-2012	02-Jul-2012								



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Lab Sample No(s) Customer Sample Ref.	5797547	6024610	6024611	6024613	6024615	6024616	6024617	6024618	6024606	6024608
	BH307 COMP	BH307 LEACHATE FRACTION 1	BH307 LEACHATE FRACTION 2	BH307 LEACHATE FRACTION 3	BH307 LEACHATE FRACTION 4	BH307 LEACHATE FRACTION 5	BH307 LEACHATE FRACTION 6	BH307 LEACHATE FRACTION 7	BH307 STATIC LEACHATE	BH310C STATIC LEACHATE
AGS Ref.										
Depth										
Type	SOLID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Boron Water Soluble	02-Jul-2012									
Dissolved Metals by ICP-MS	05-Jul-2012	21-Aug-2012	21-Aug-2012	21-Aug-2012	20-Aug-2012	20-Aug-2012	20-Aug-2012	20-Aug-2012	21-Aug-2012	21-Aug-2012
Mercury Dissolved	06-Jul-2012	16-Aug-2012	16-Aug-2012	16-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	16-Aug-2012	16-Aug-2012
Metals by iCap-OES (Soil)	02-Jul-2012									
NRA Leachate	03-Jul-2012									
pH	02-Jul-2012									
pH Value	04-Jul-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012	17-Aug-2012
Sample description	29-Jun-2012									



CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

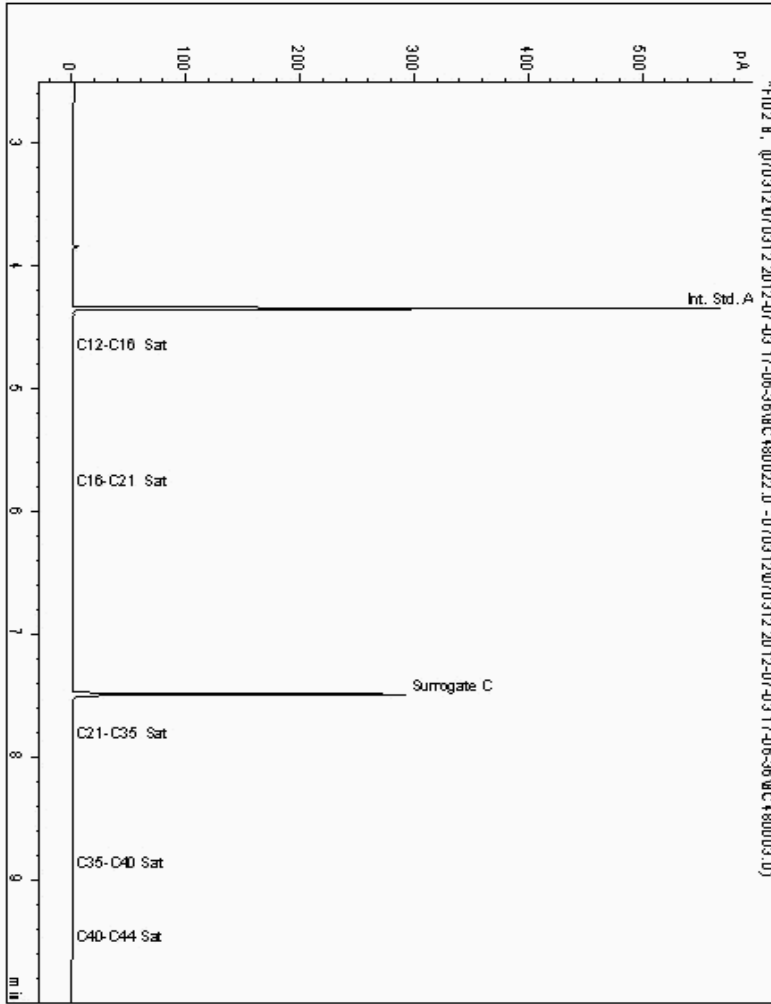
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5807282
Sample ID : 974589

Depth :

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

Sample Identity: 5658368-5807282
Date Acquired : 03/07/12 23:49:36
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

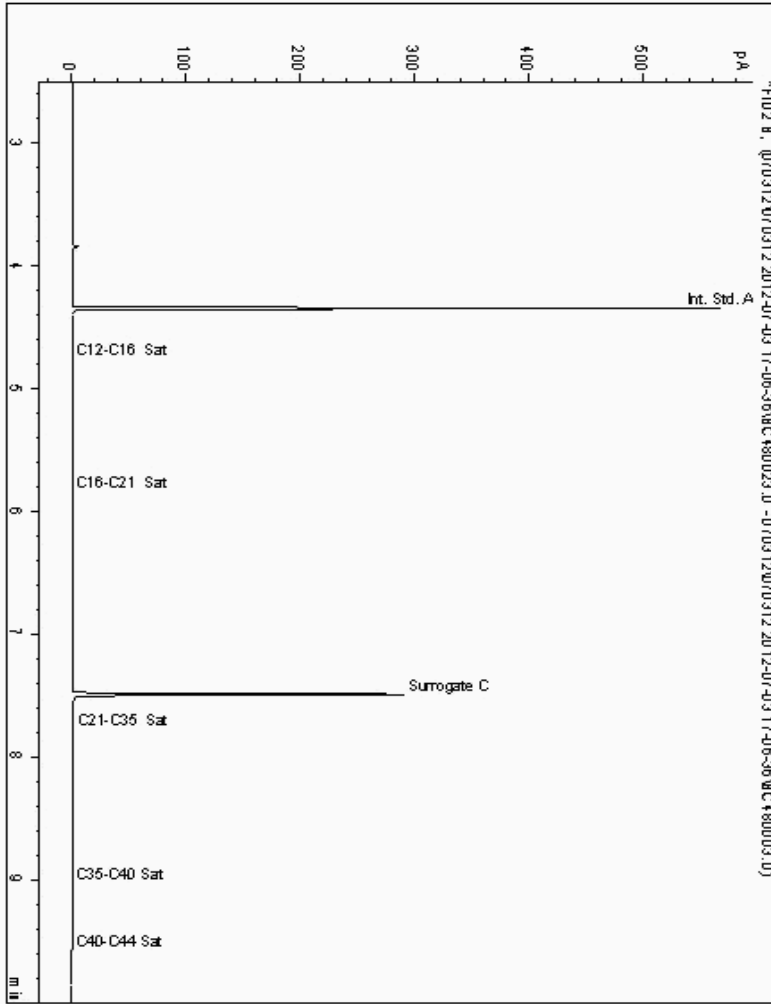
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5807399
Sample ID : 345662

Depth :

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

Sample Identity: 5658111-5807399
Date Acquired : 04/07/12 00:09:02
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

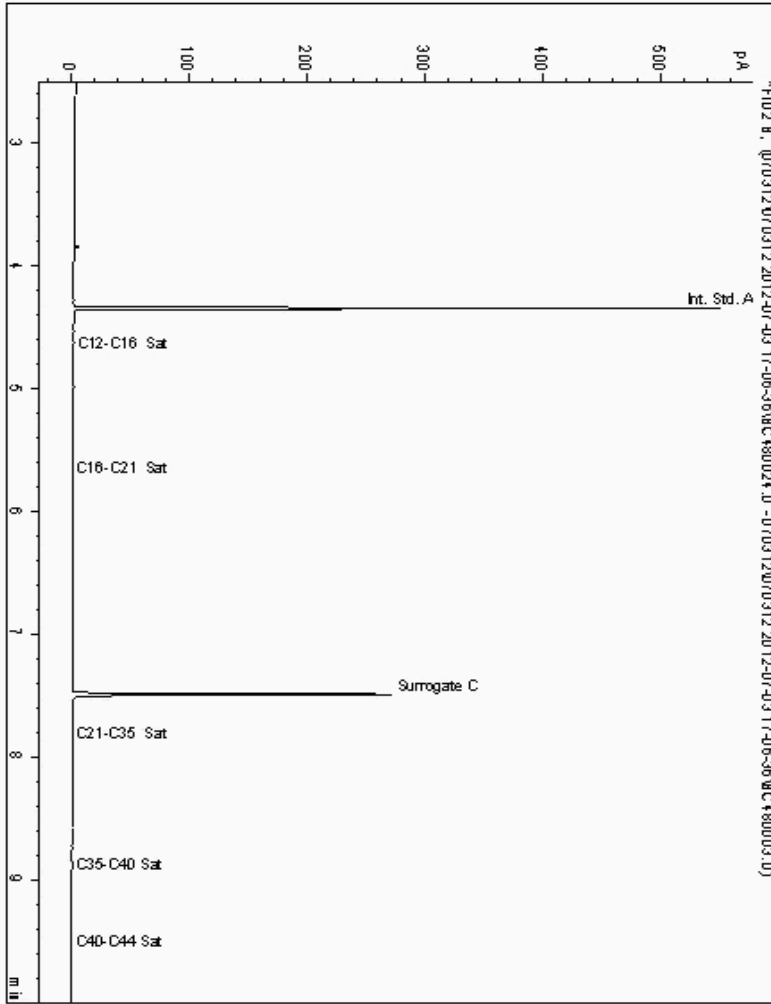
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5807521
Sample ID : 237415

Depth :

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

Sample Identity: 5658085-5807521
Date Acquired : 04/07/12 00:28:27
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

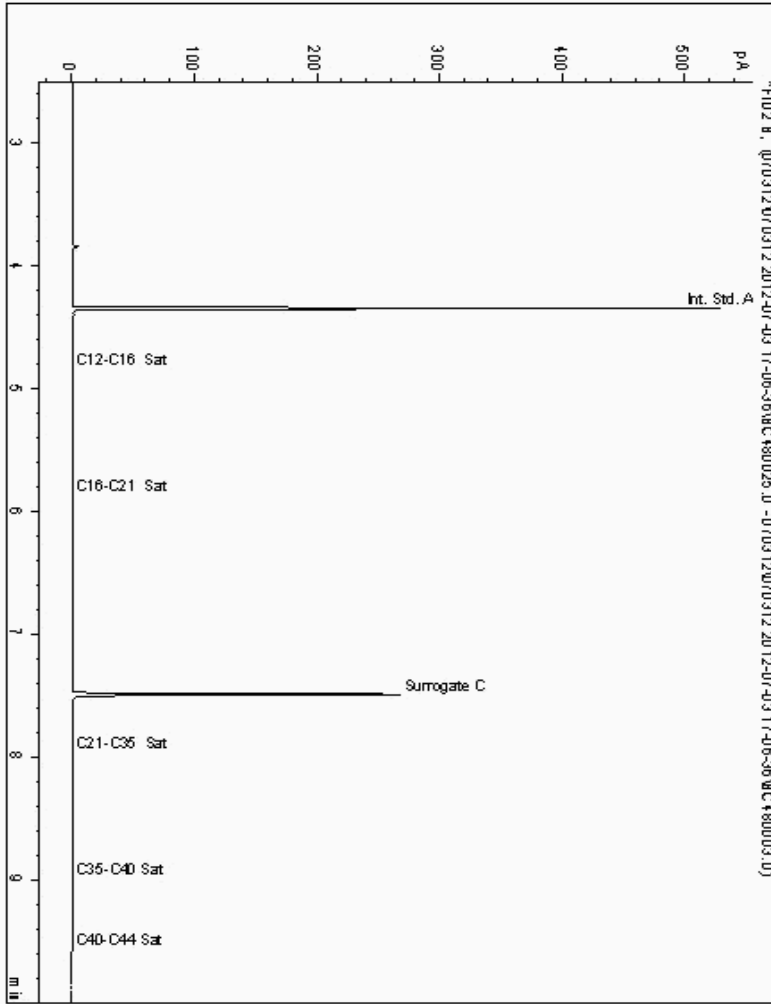
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5807528
Sample ID : 654684

Depth :

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

Sample Identity: 5658253-5807528
Date Acquired : 04/07/12 00:47:52
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

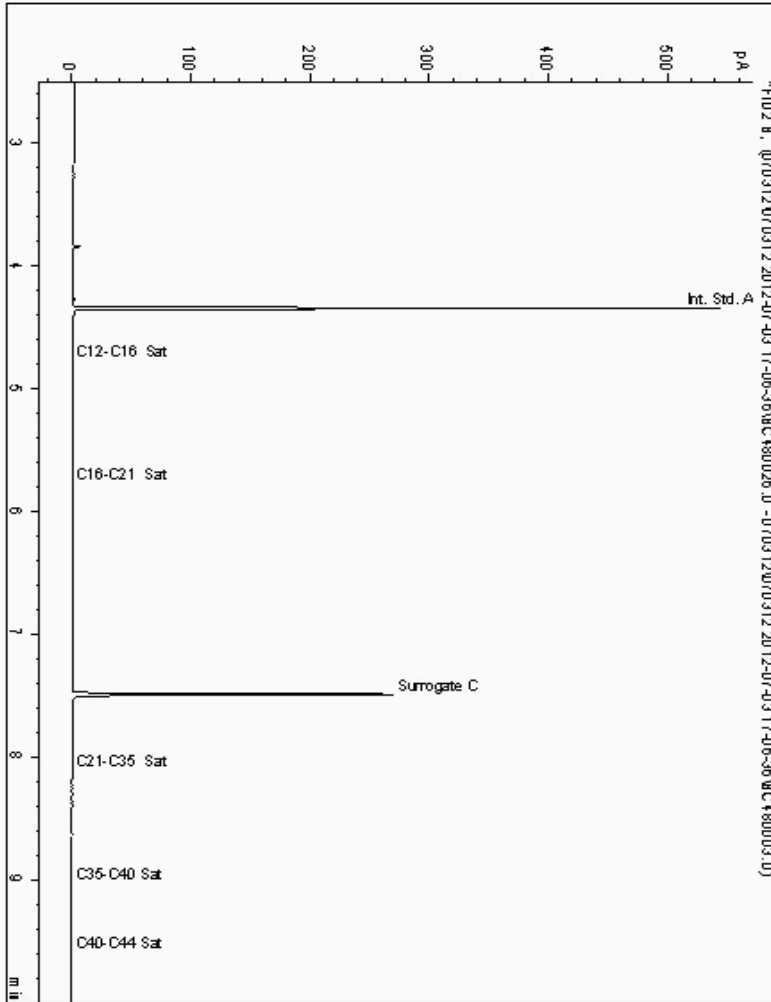
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5807928
Sample ID : 533020

Depth :

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

Sample Identity: 5658167-5807928
Date Acquired : 04/07/12 01:07:31
Units : ppb
Dilution :
CF : 1
Multiplier : 0.018





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

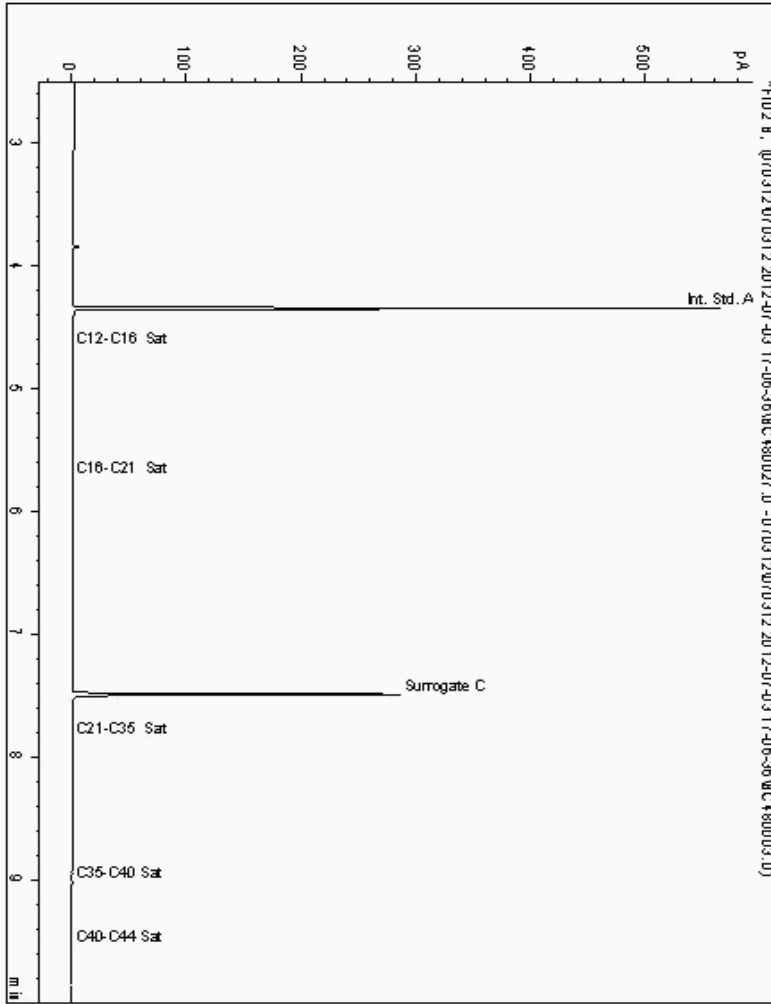
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5808341
Sample ID : 952615

Depth :

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

Sample Identity: 5658340-5808341
Date Acquired : 04/07/12 01:26:57
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

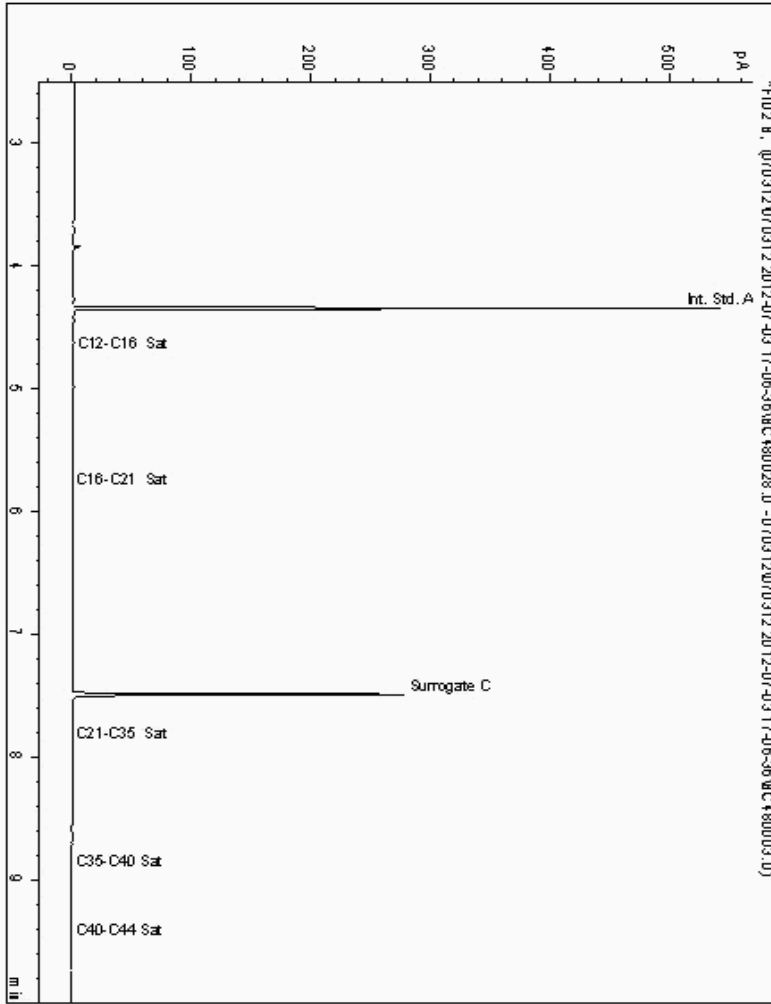
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5808383
Sample ID : 637220

Depth :

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

Sample Identity: 5658225-5808383
Date Acquired : 04/07/12 01:46:25
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

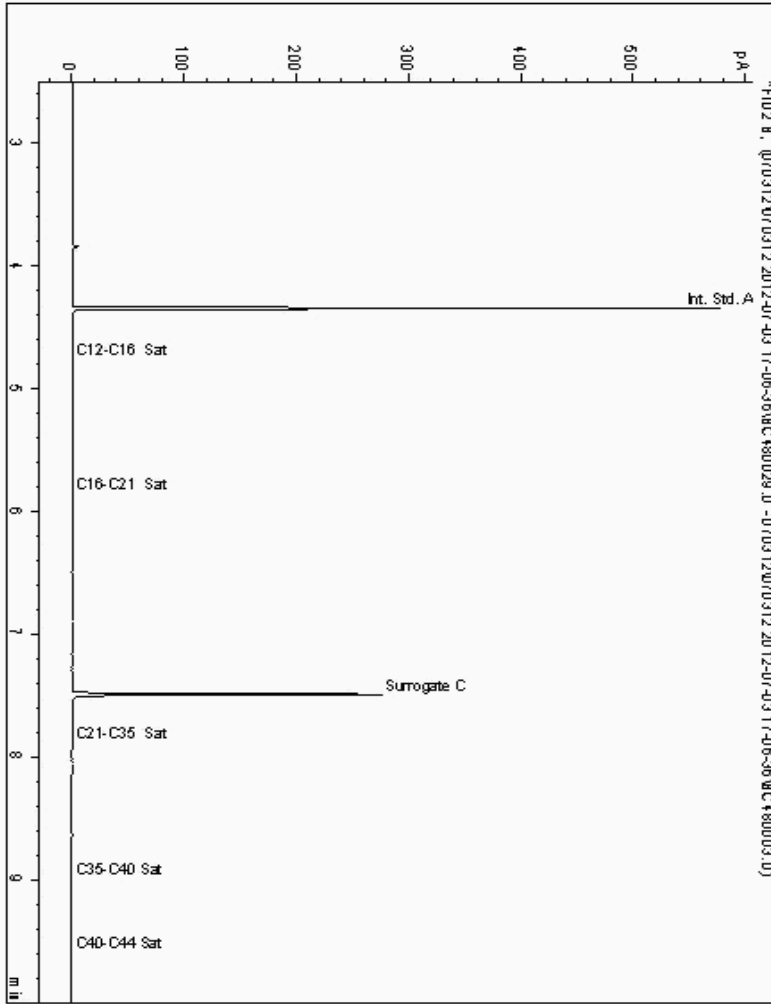
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5808429
Sample ID : 870938

Depth :

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

Sample Identity: 5658284-5808429
Date Acquired : 04/07/12 02:05:53
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

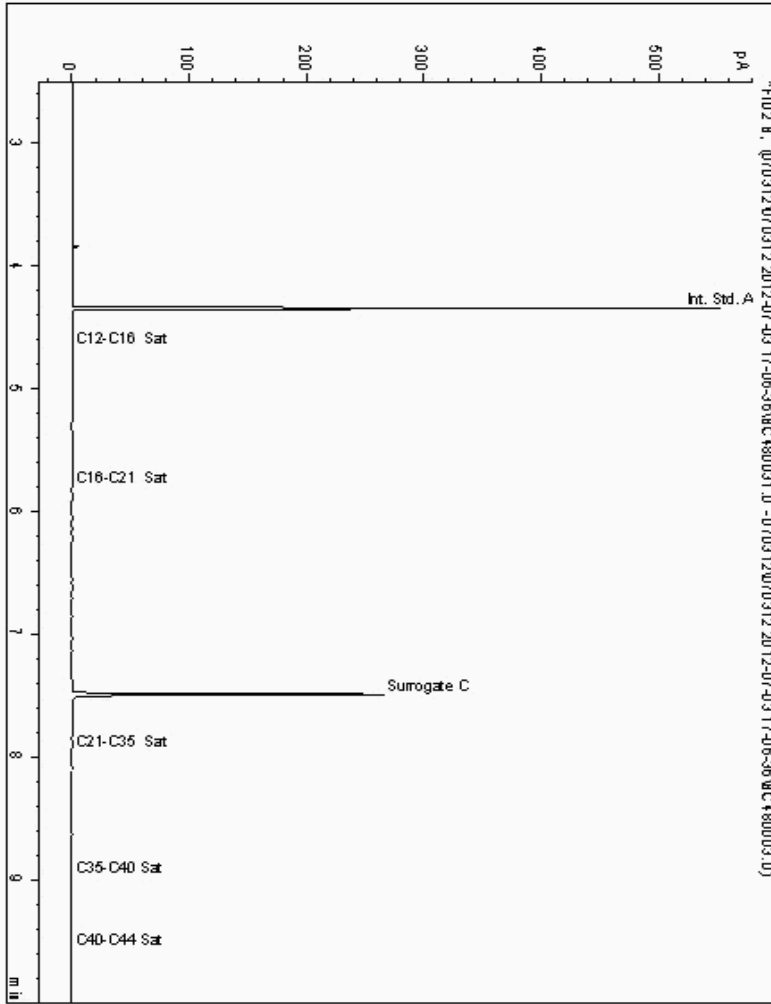
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5810640
Sample ID : 882654

Depth :

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

Sample Identity: 5658312-5810640
Date Acquired : 04/07/12 02:44:49
Units : ppb
Dilution :
CF : 1
Multiplier : 0.018





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

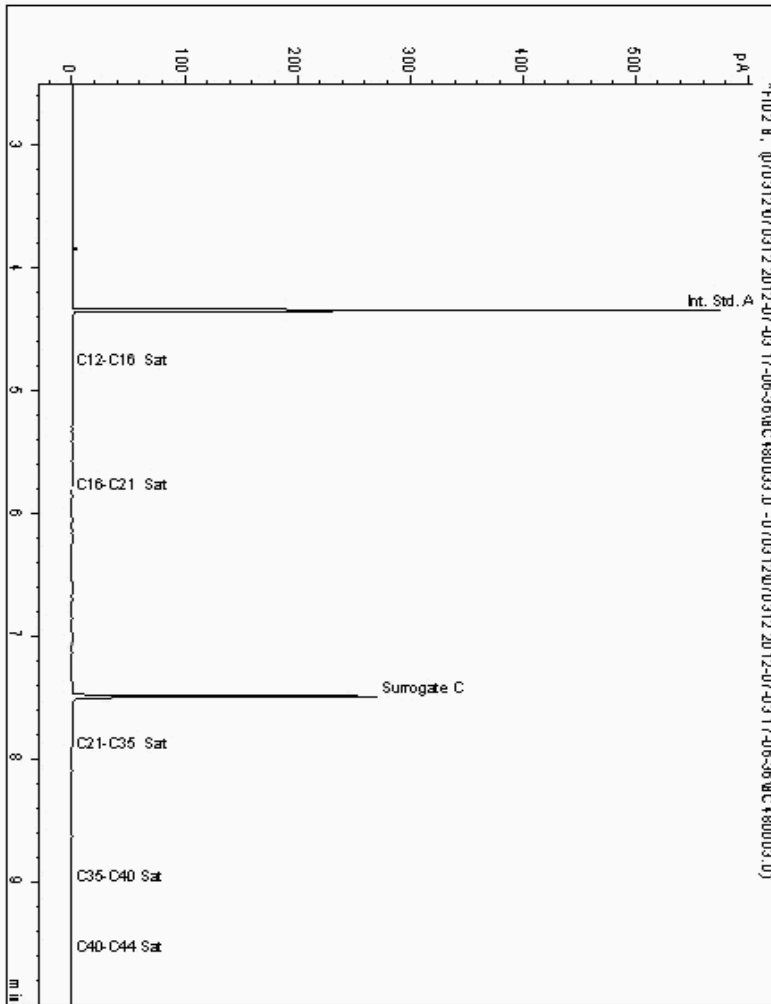
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5810680
Sample ID : 983837

Depth :

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

Sample Identity: 5658395-5810680
Date Acquired : 04/07/12 03:24:00
Units : ppb
Dilution :
CF : 1
Multiplier : 0.019





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

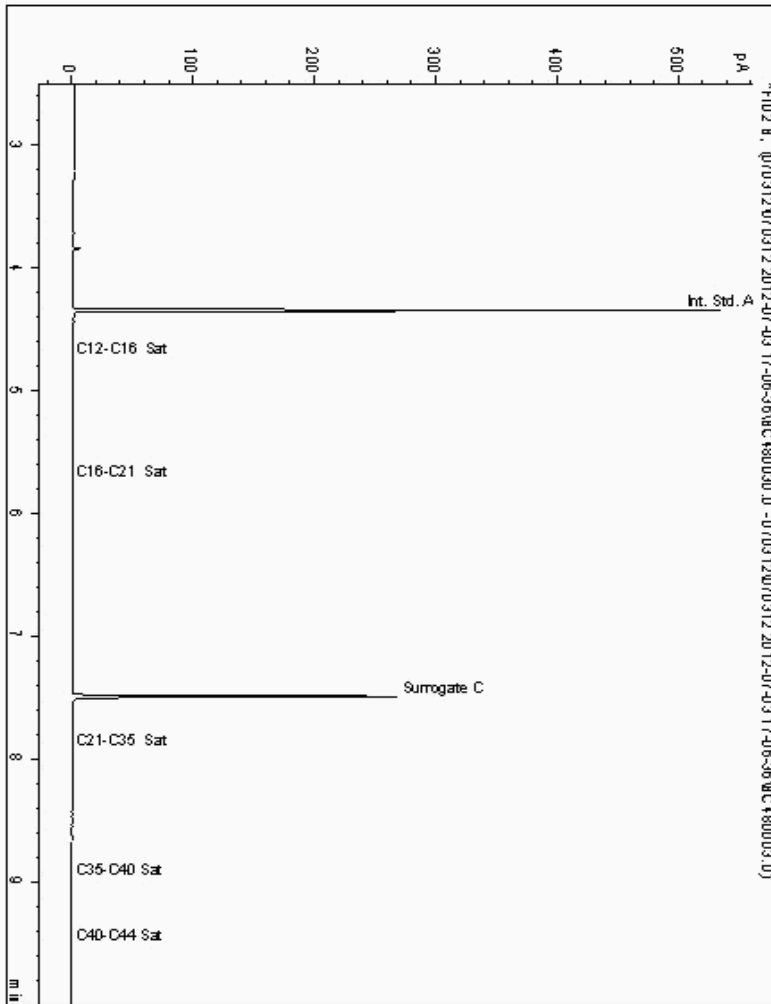
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5810709
Sample ID : 475461

Depth :

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

Sample Identity: 5658136-5810709
Date Acquired : 04/07/12 02:25:22
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

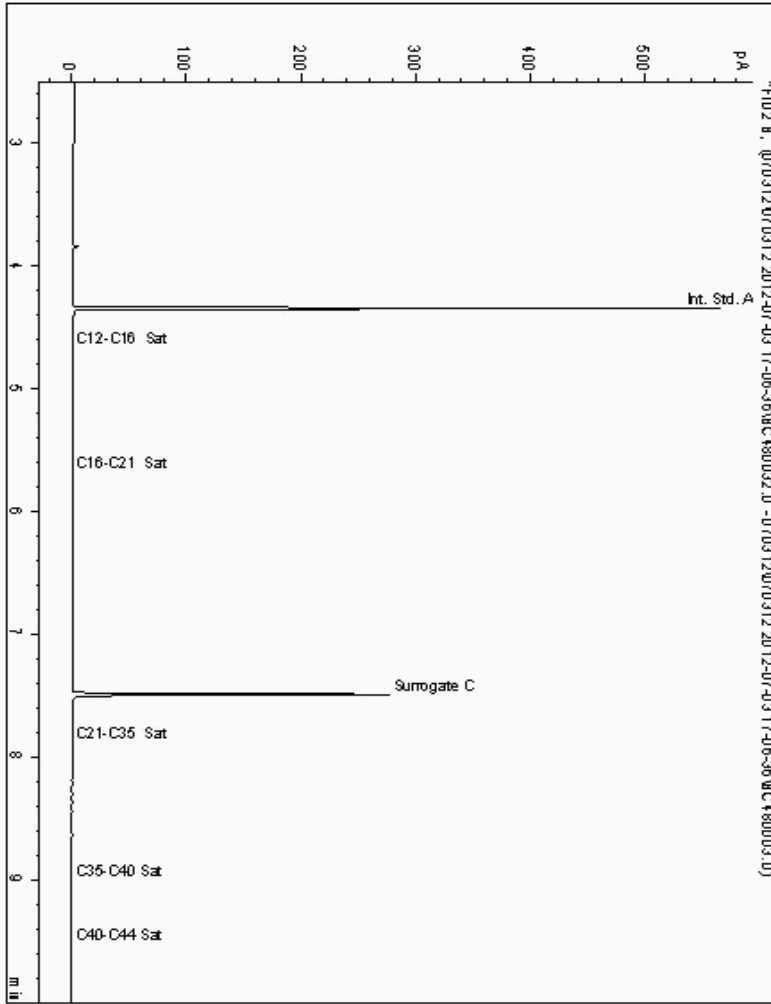
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5810724
Sample ID : 543939

Depth :

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

Sample Identity: 5658200-5810724
Date Acquired : 04/07/12 03:04:18
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

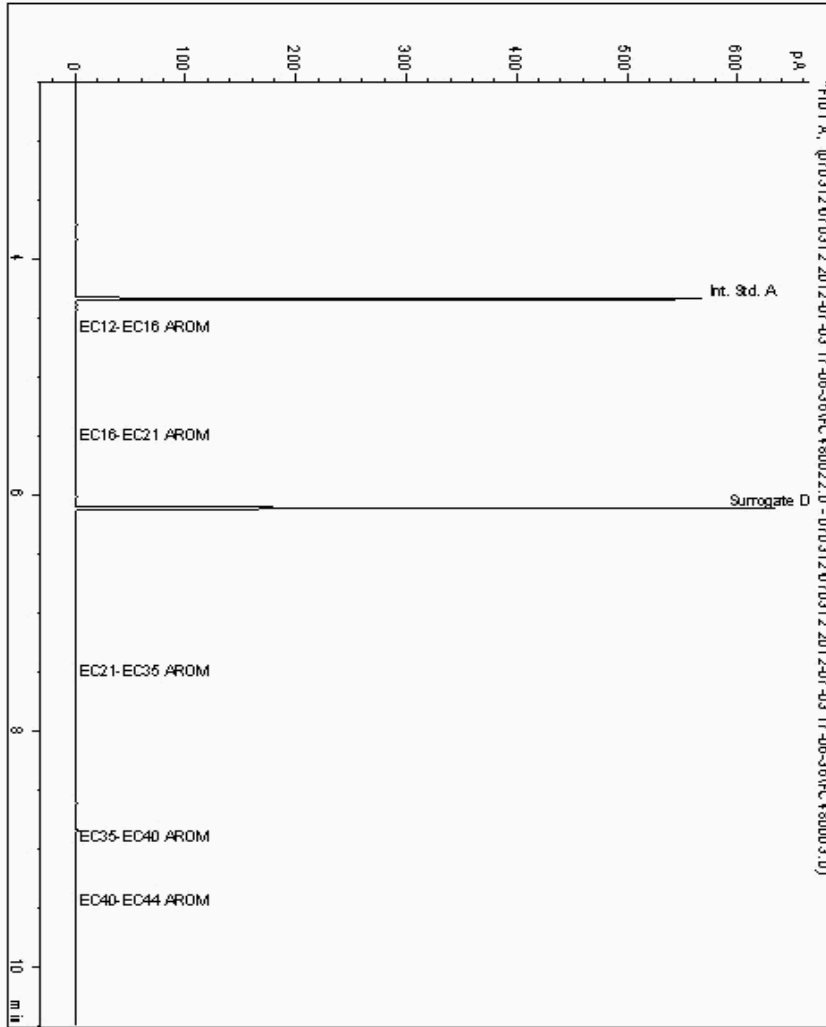
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5807282
Sample ID : 974589

Depth :

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

Sample Identity: 5658369-5807282
Date Acquired : 03/07/12 23:49:36
Units :
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

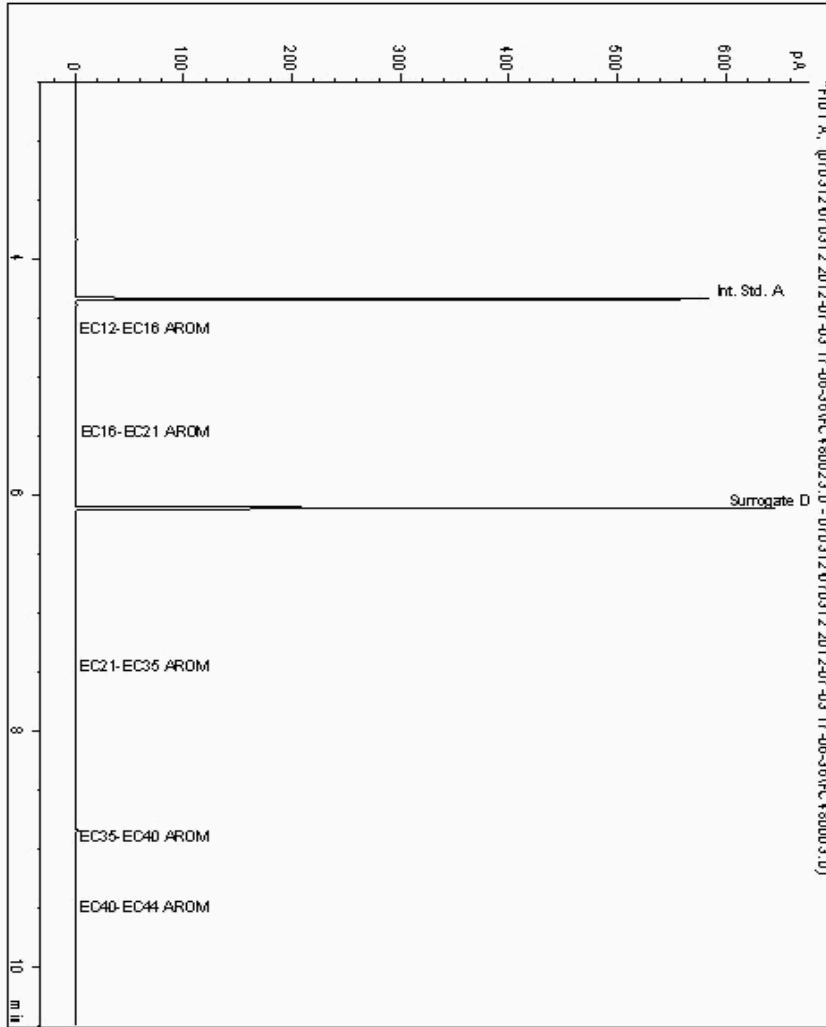
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5807399
Sample ID : 345662

Depth :

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

Sample Identity: 5658112-5807399
Date Acquired : 04/07/12 00:09:01
Units :
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

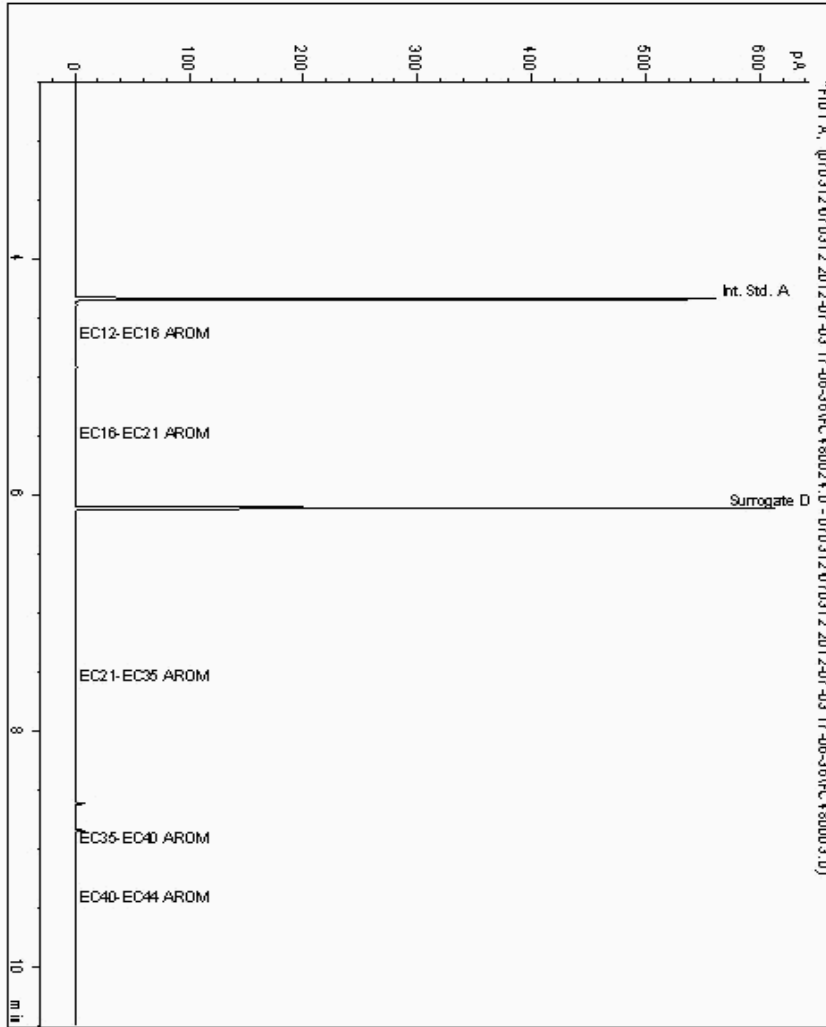
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5807521
Sample ID : 237415

Depth :

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

Sample Identity: 5658086-5807521
Date Acquired : 04/07/12 00:28:26
Units :
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

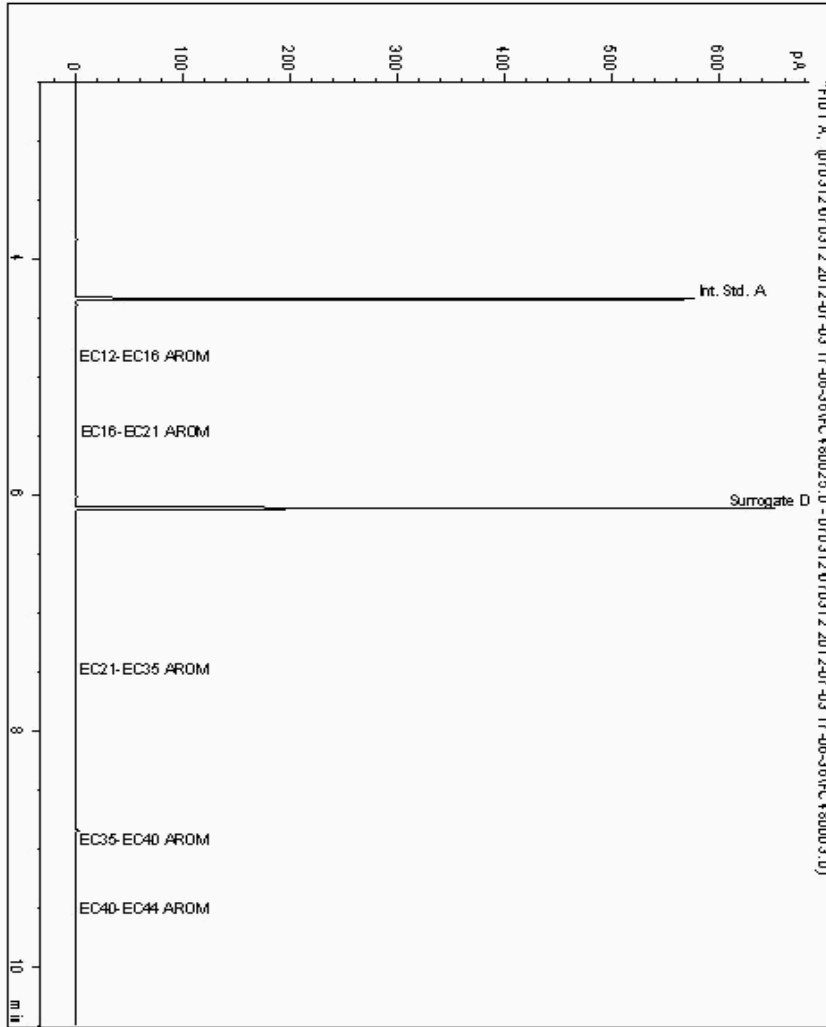
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5807528
Sample ID : 654684

Depth :

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

Sample Identity: 5658254-5807528
Date Acquired : 04/07/12 00:47:51
Units :
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

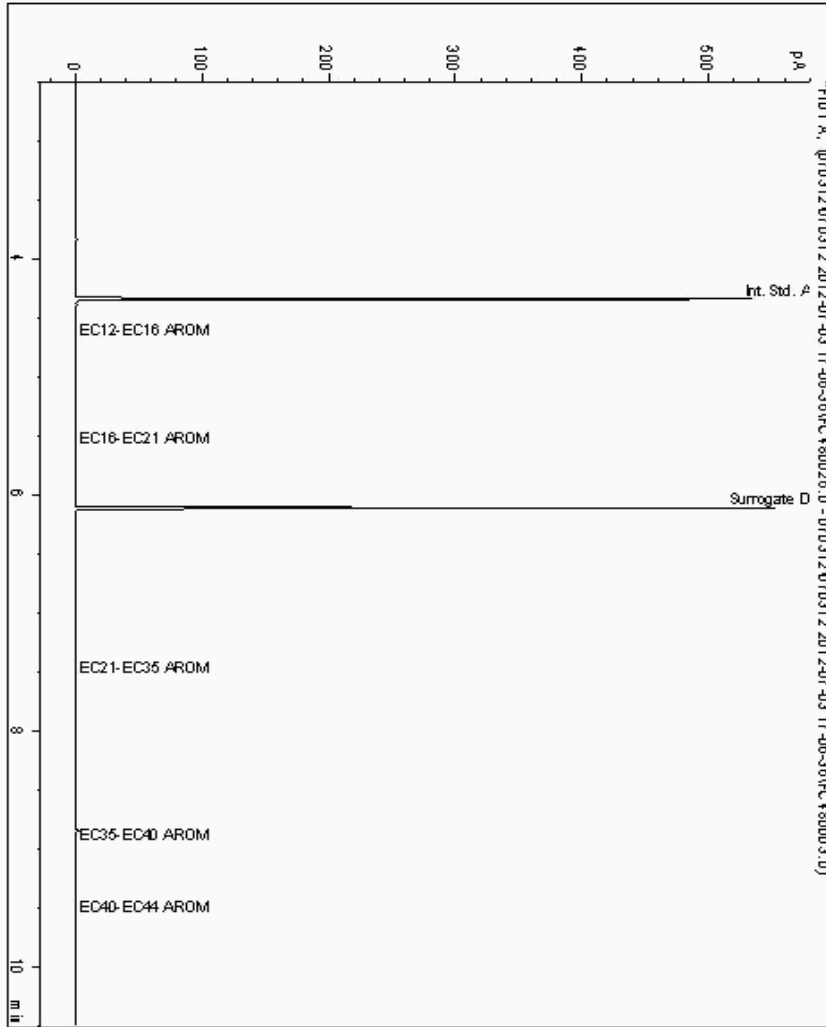
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5807928
Sample ID : 533020

Depth :

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

Sample Identity: 5658168-5807928
Date Acquired : 04/07/12 01:07:31
Units :
Dilution :
CF : 1
Multiplier : 0.018





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

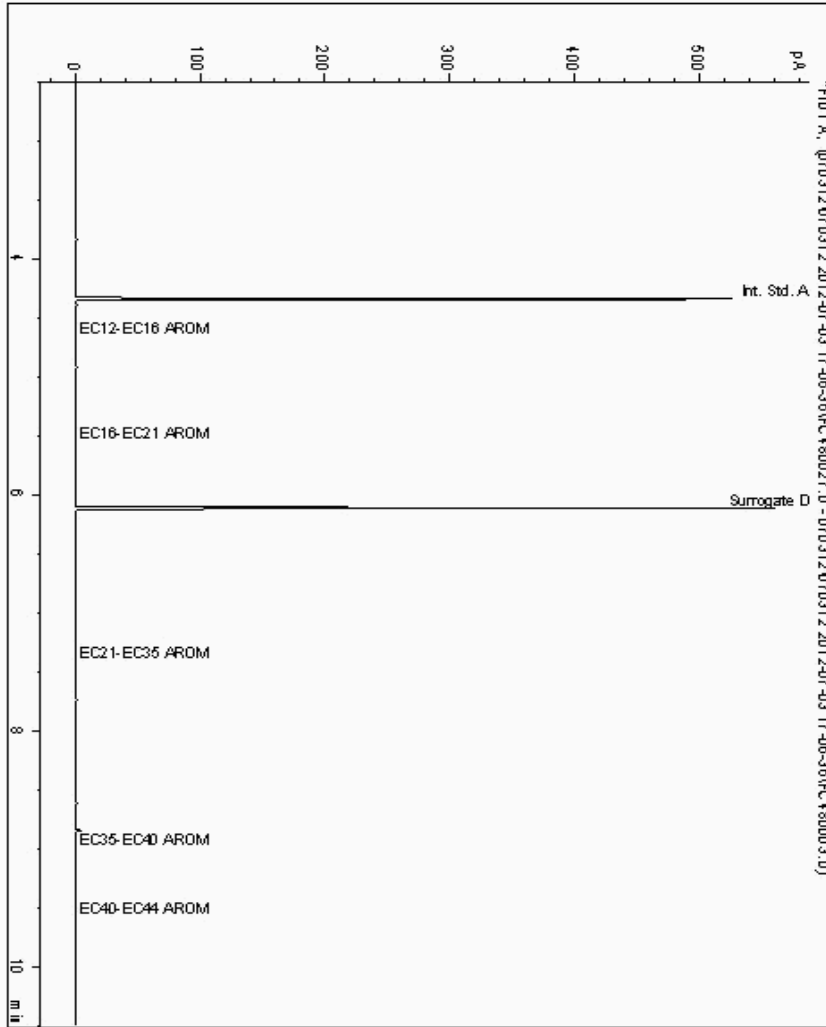
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5808341
Sample ID : 952615

Depth :

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

Sample Identity: 5658341-5808341
Date Acquired : 04/07/12 01:26:57
Units :
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

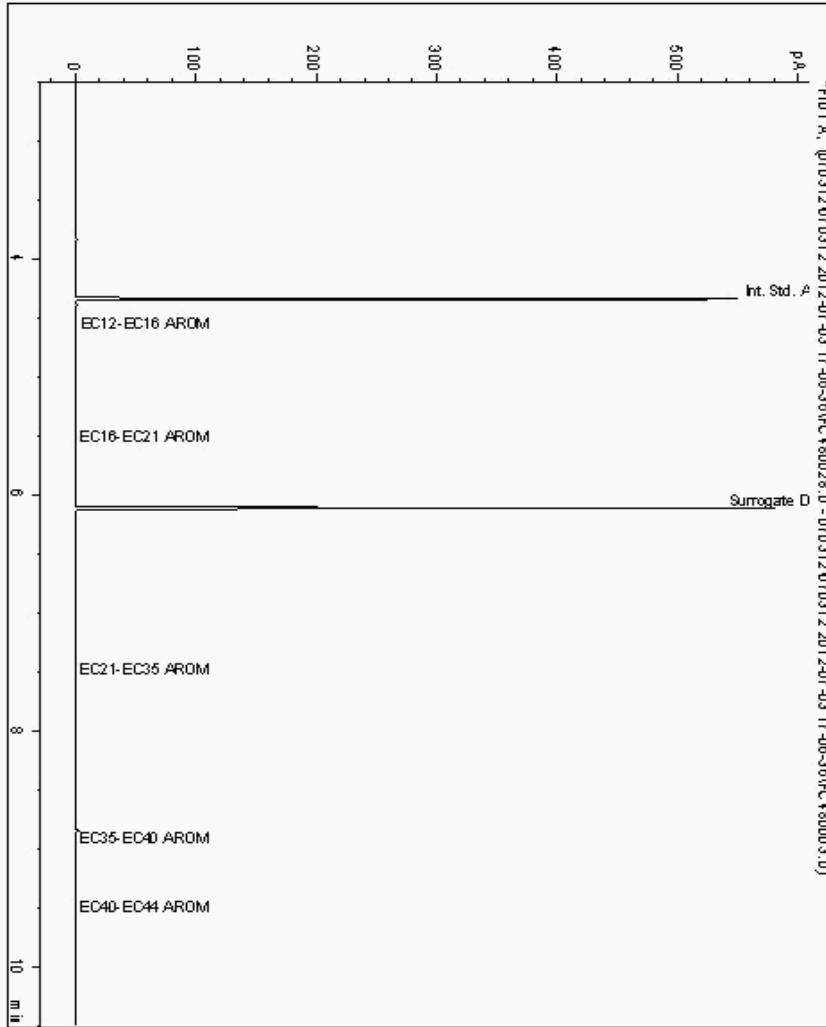
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5808383
Sample ID : 637220

Depth :

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

Sample Identity: 5658226-5808383
Date Acquired : 04/07/12 01:46:25
Units :
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

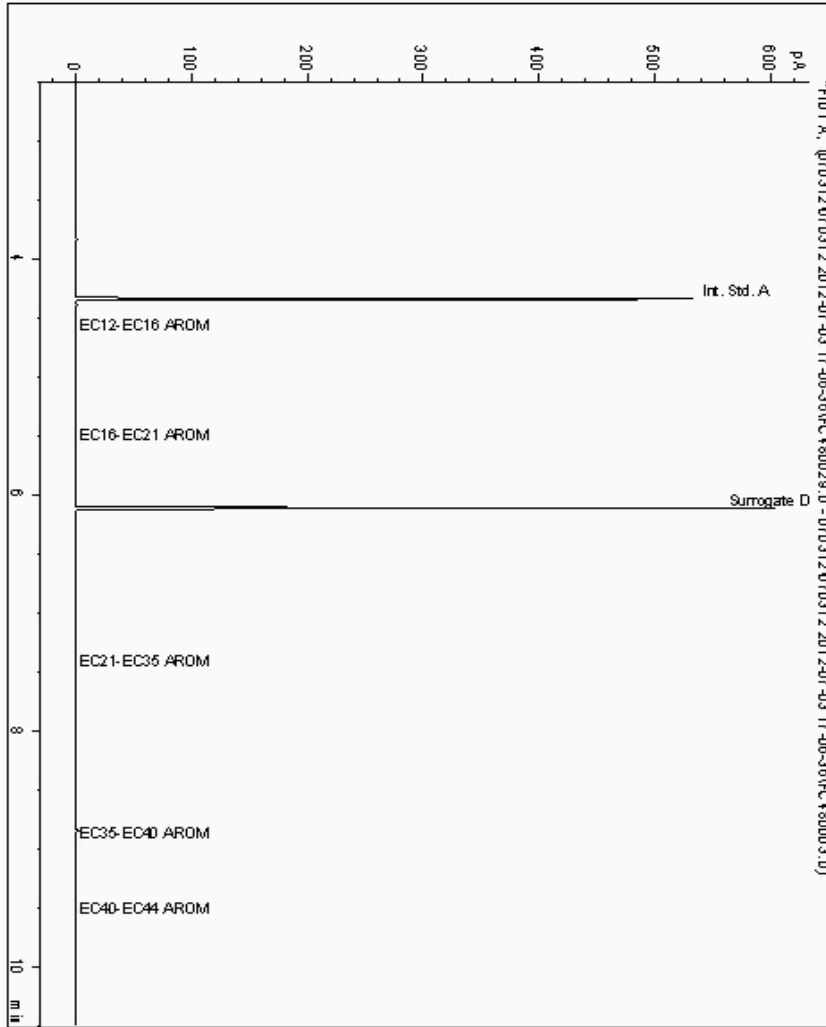
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5808429
Sample ID : 870938

Depth :

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

Sample Identity: 5658285-5808429
Date Acquired : 04/07/12 02:05:53
Units :
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

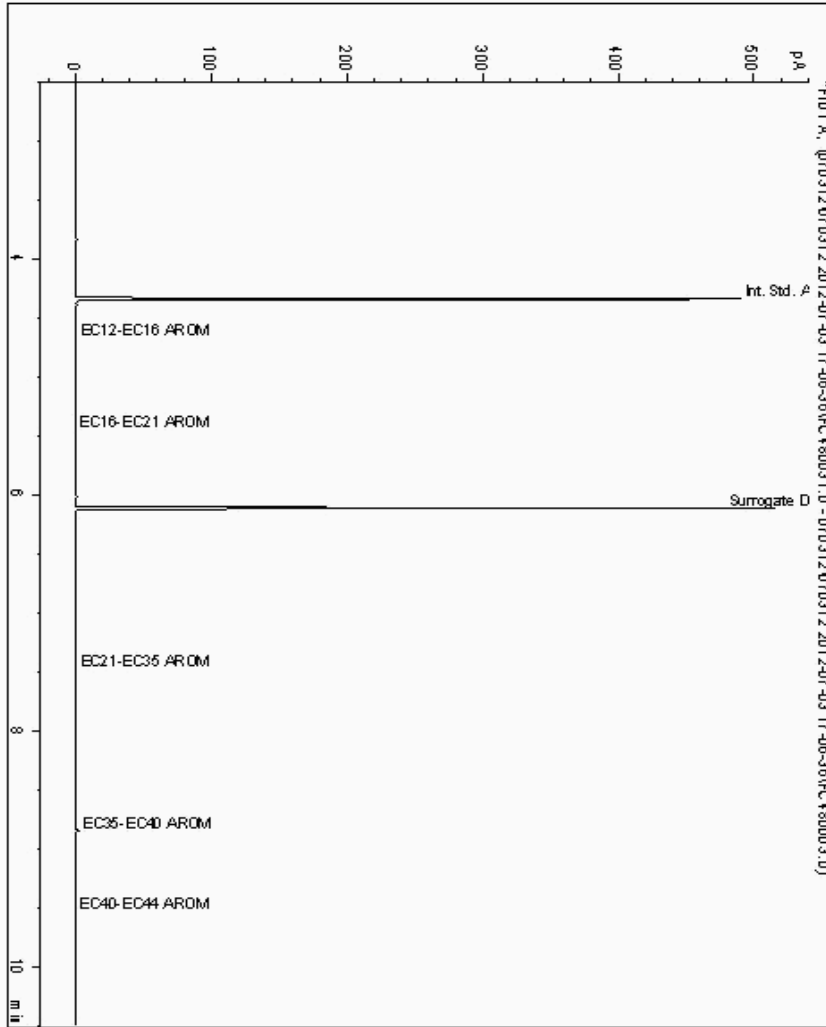
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5810640
Sample ID : 882654

Depth :

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

Sample Identity: 5658313-5810640
Date Acquired : 04/07/12 02:44:48
Units :
Dilution :
CF : 1
Multiplier : 0.018





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

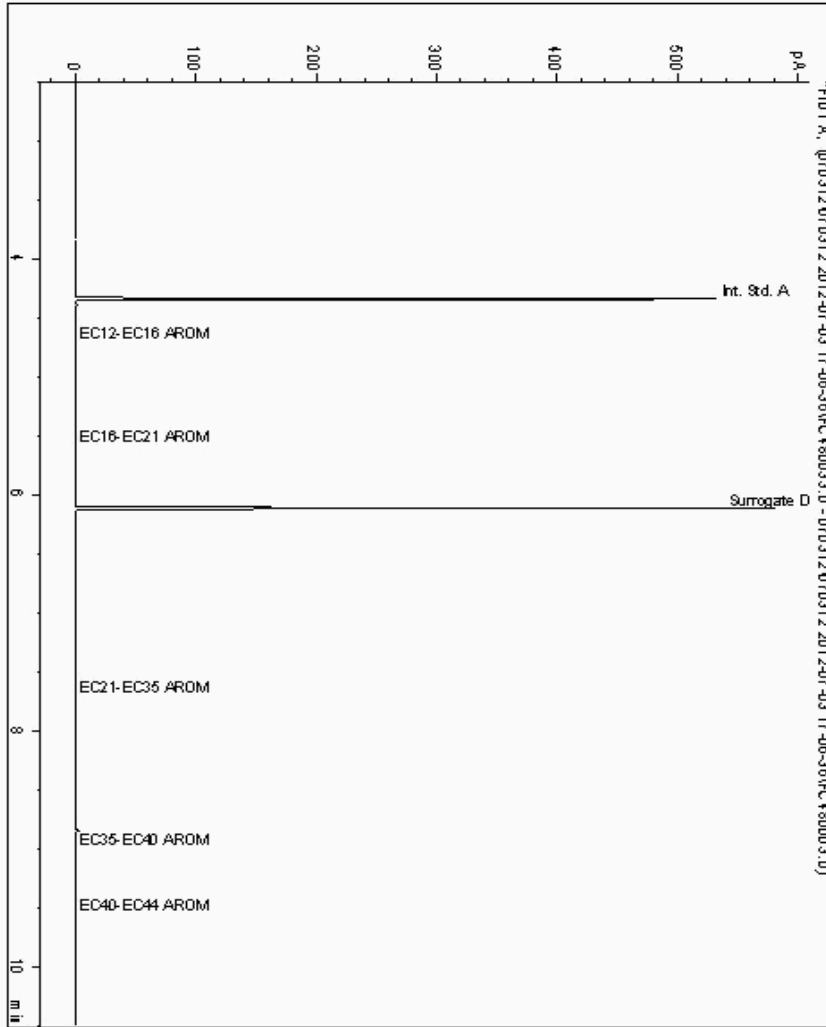
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5810680
Sample ID : 983837

Depth :

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

Sample Identity: 5658396-5810680
Date Acquired : 04/07/12 03:23:59
Units :
Dilution :
CF : 1
Multiplier : 0.019





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

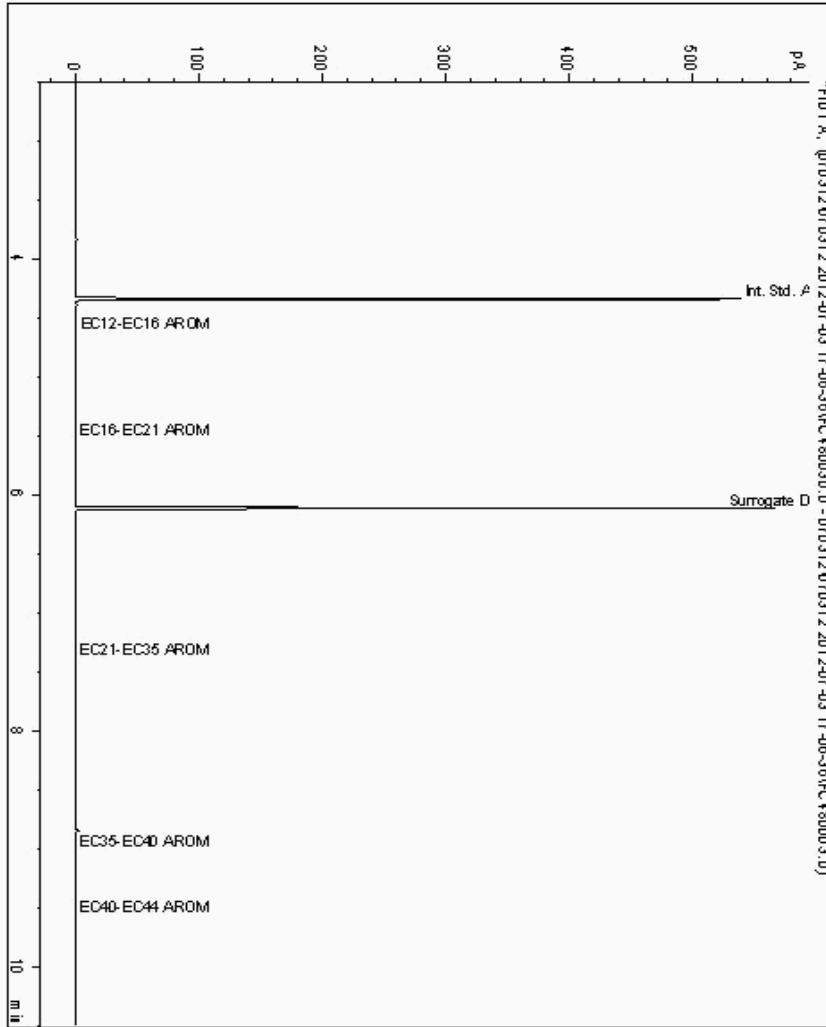
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5810709
Sample ID : 475461

Depth :

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

Sample Identity: 5658137-5810709
Date Acquired : 04/07/12 02:25:22
Units :
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

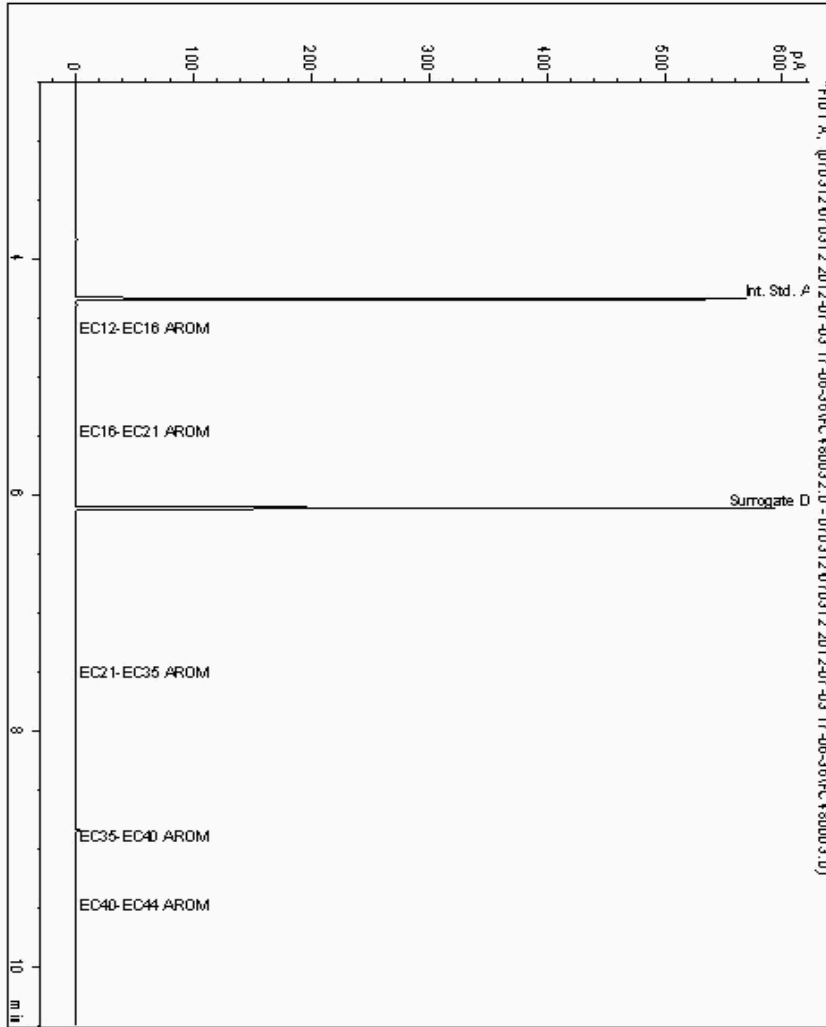
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5810724
Sample ID : 543939

Depth :

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

Sample Identity: 5658201-5810724
Date Acquired : 04/07/12 03:04:18
Units :
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

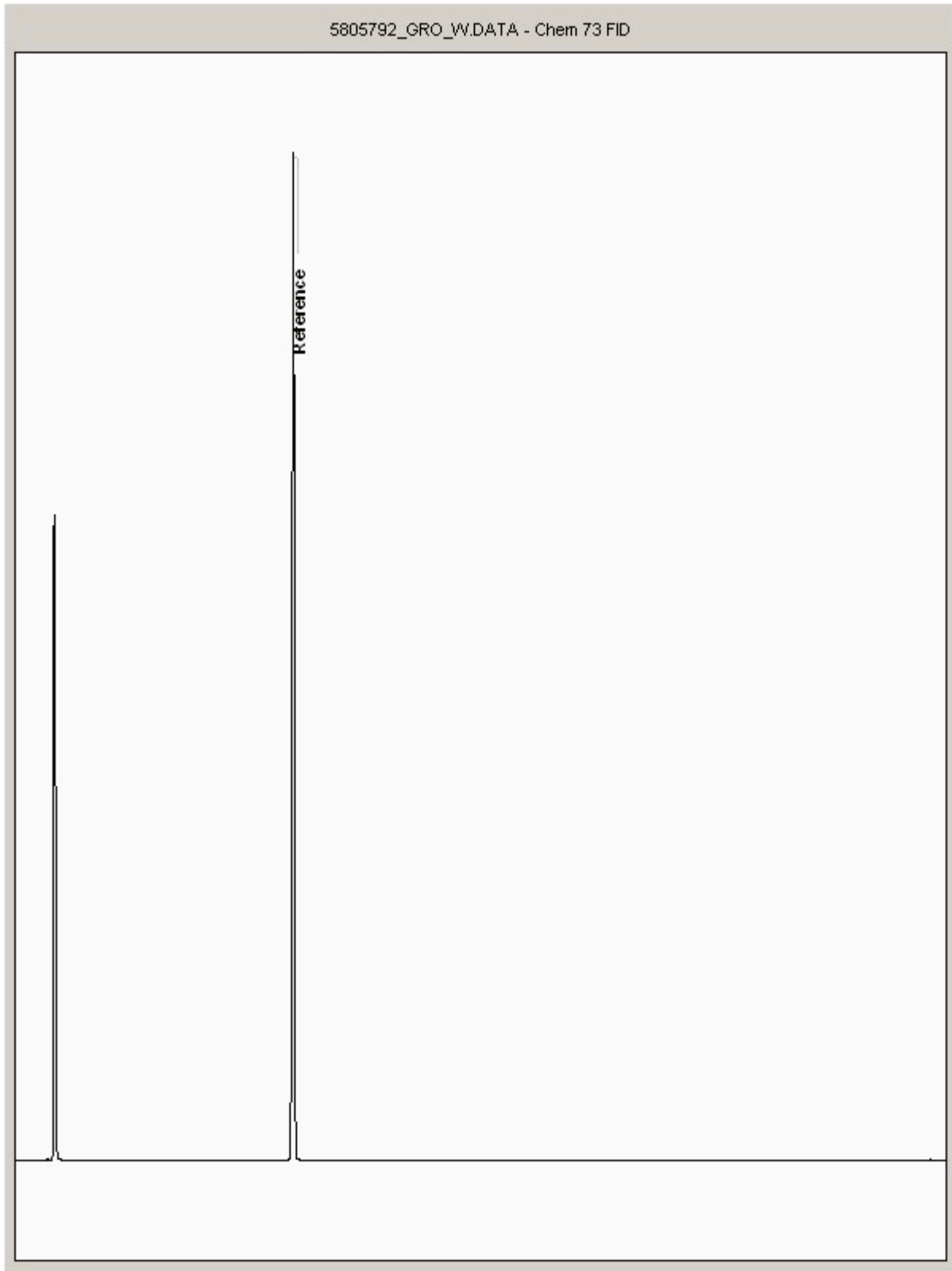
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805792
Sample ID : 237415

Depth :





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

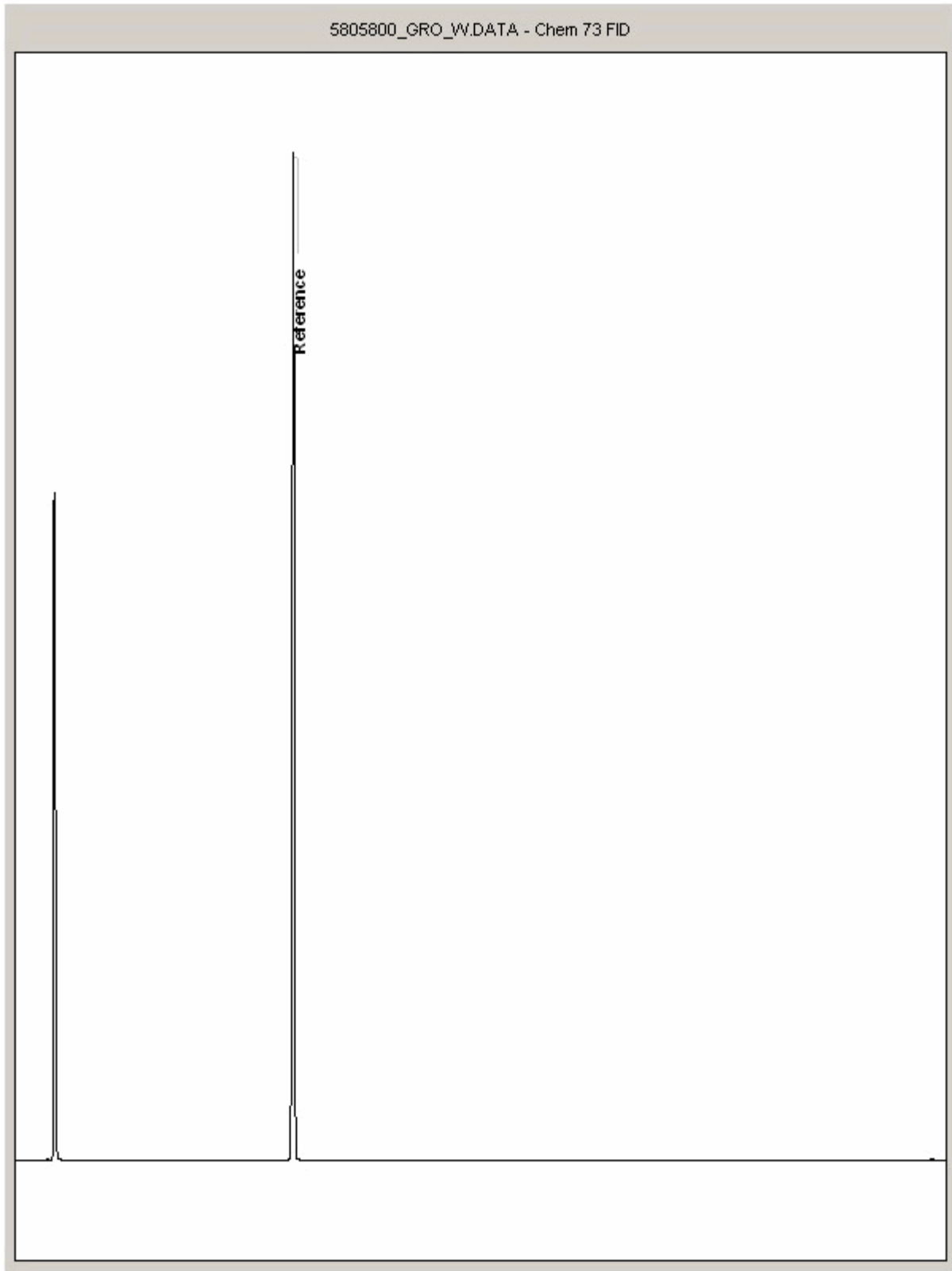
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805800
Sample ID : 533020

Depth :





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

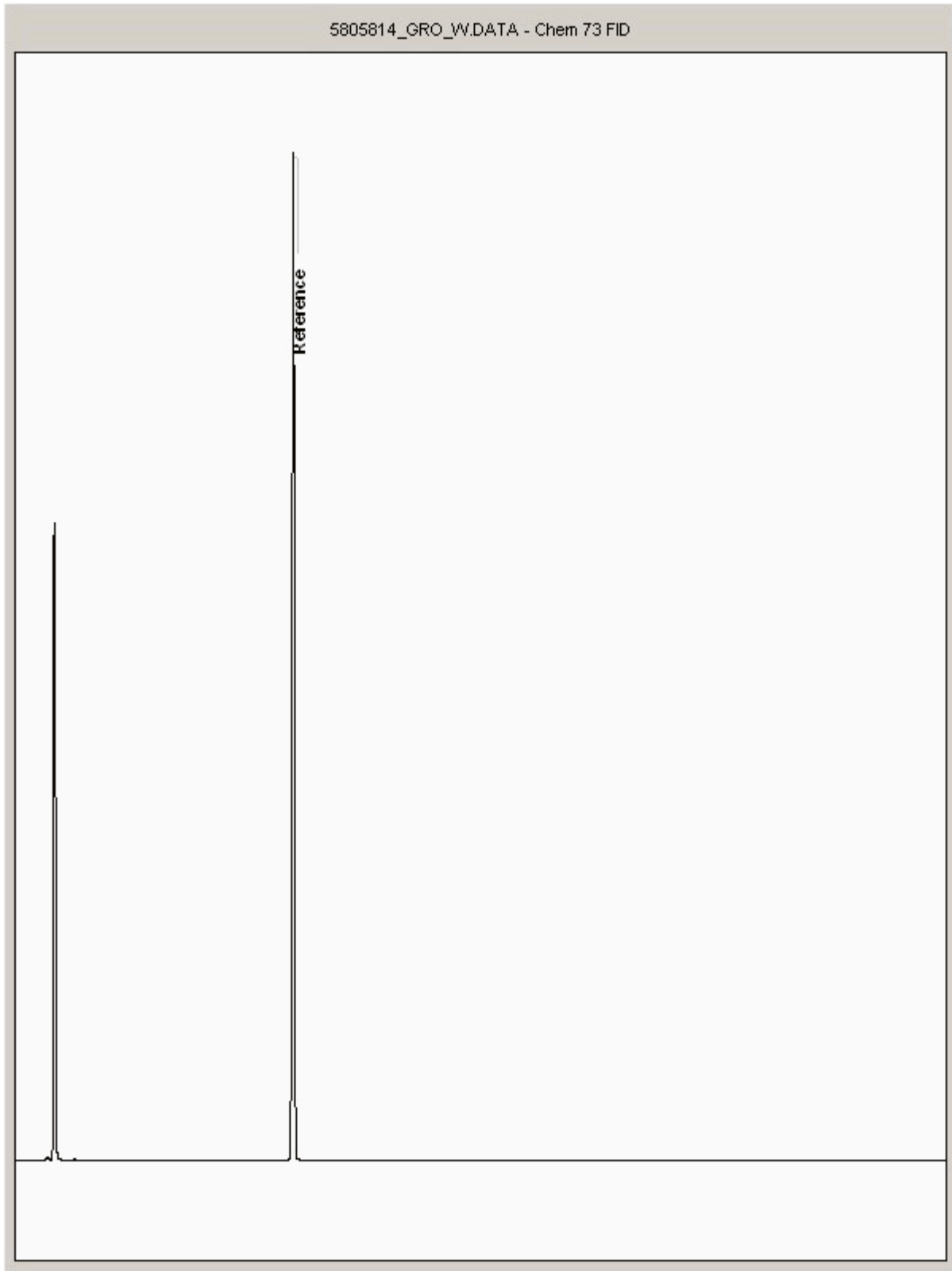
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805814
Sample ID : 637220

Depth :





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

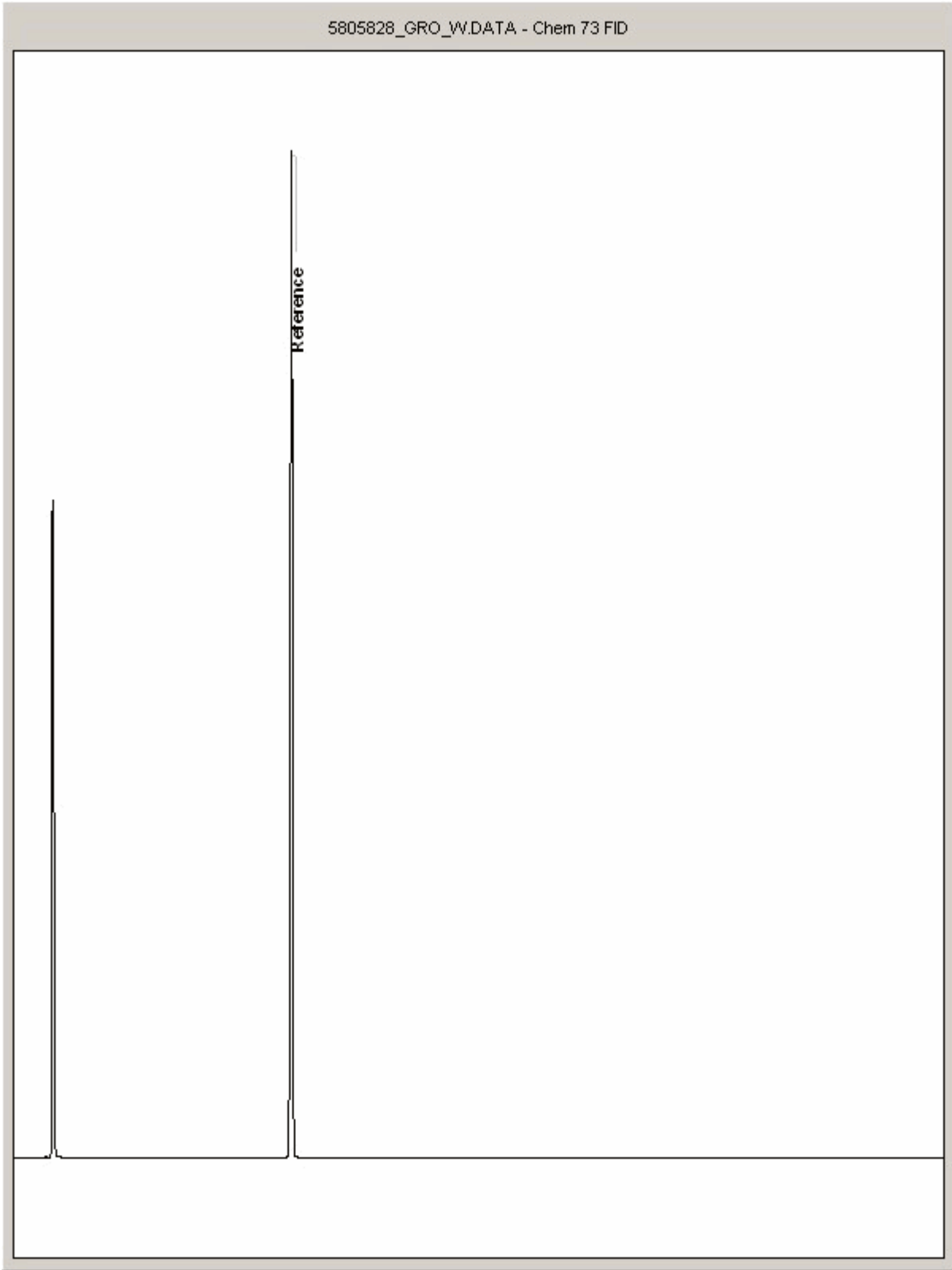
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805828
Sample ID : 475461

Depth :





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

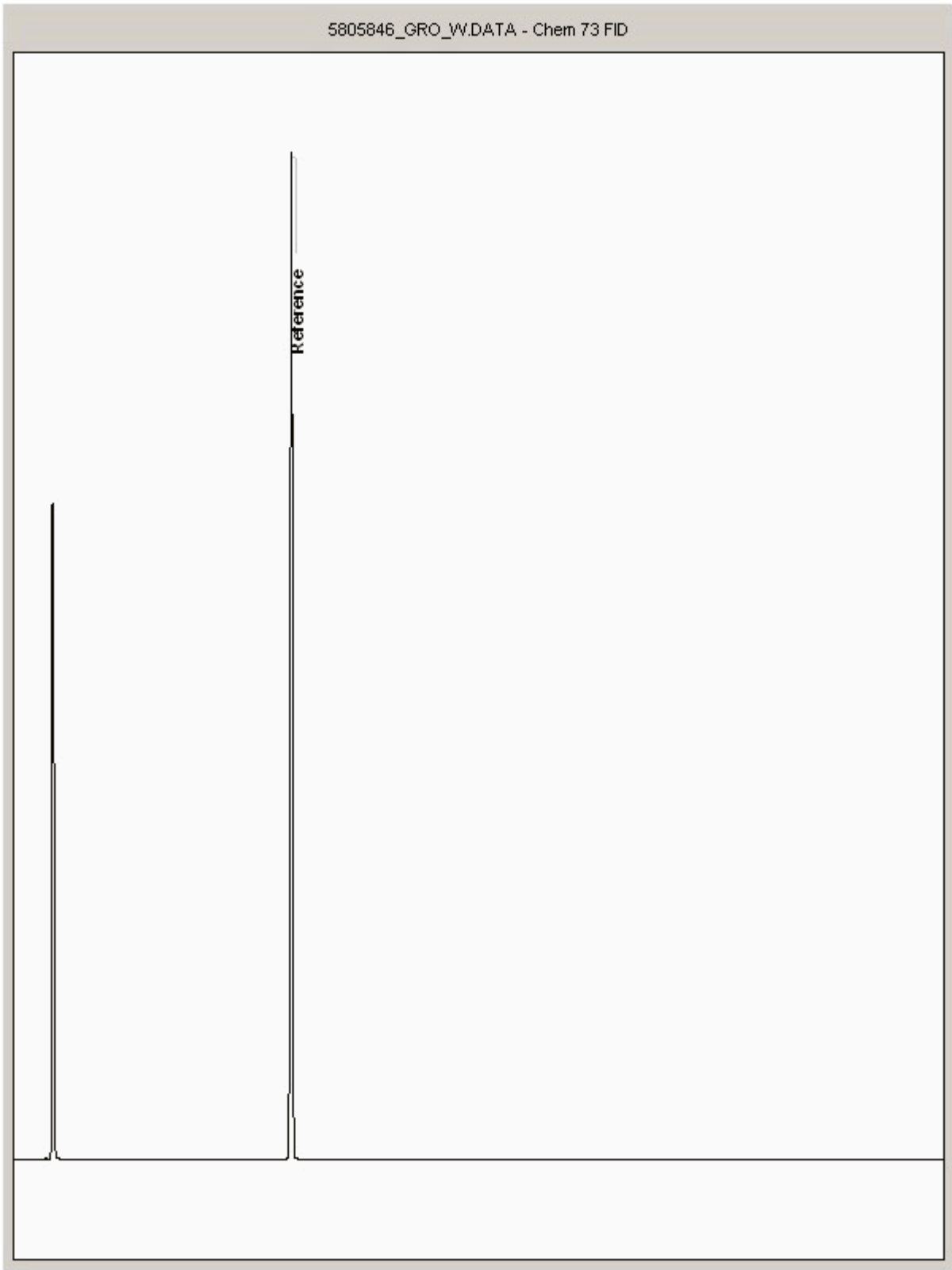
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805846
Sample ID : 543939

Depth :





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

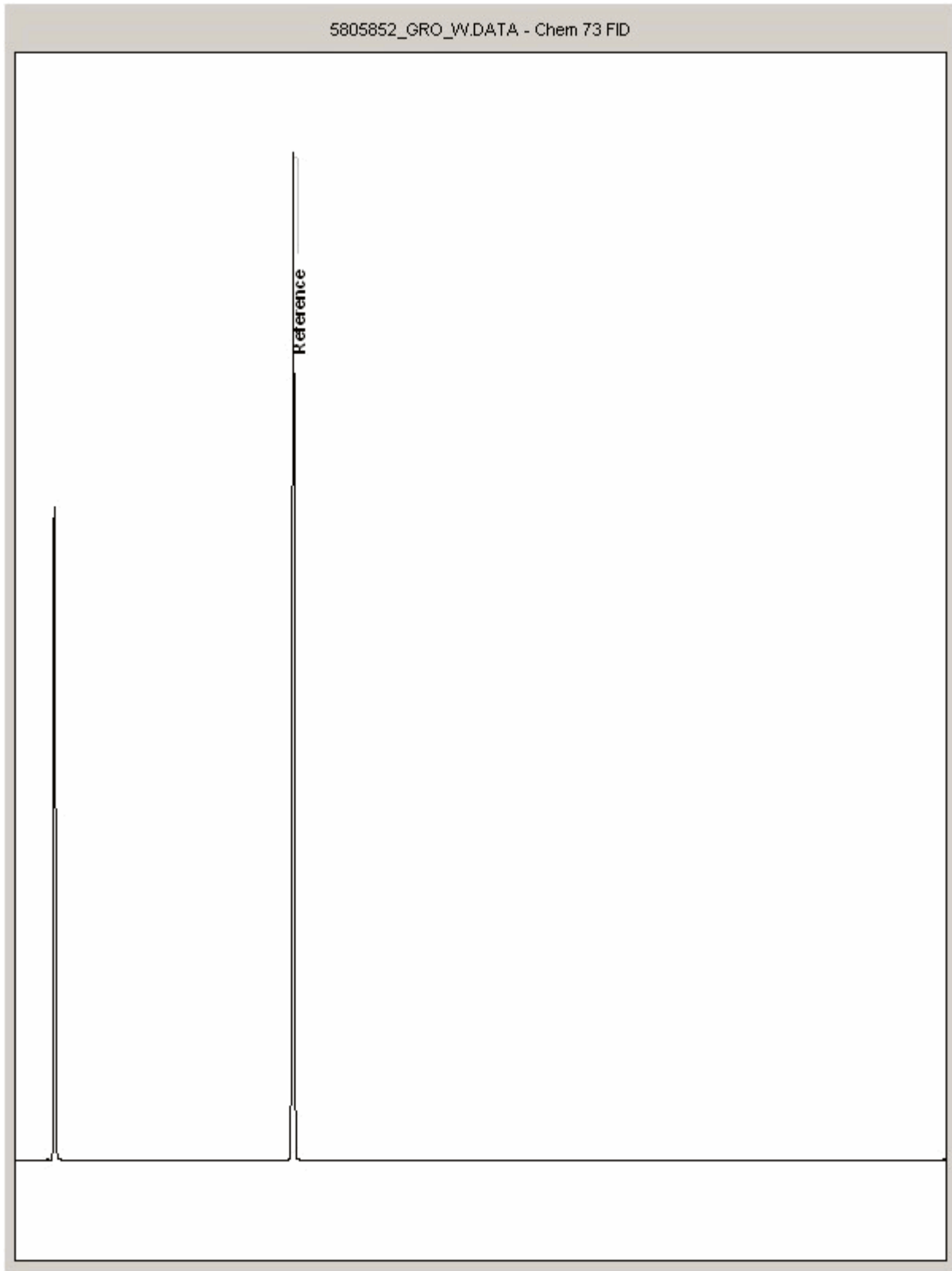
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805852
Sample ID : 870938

Depth :





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

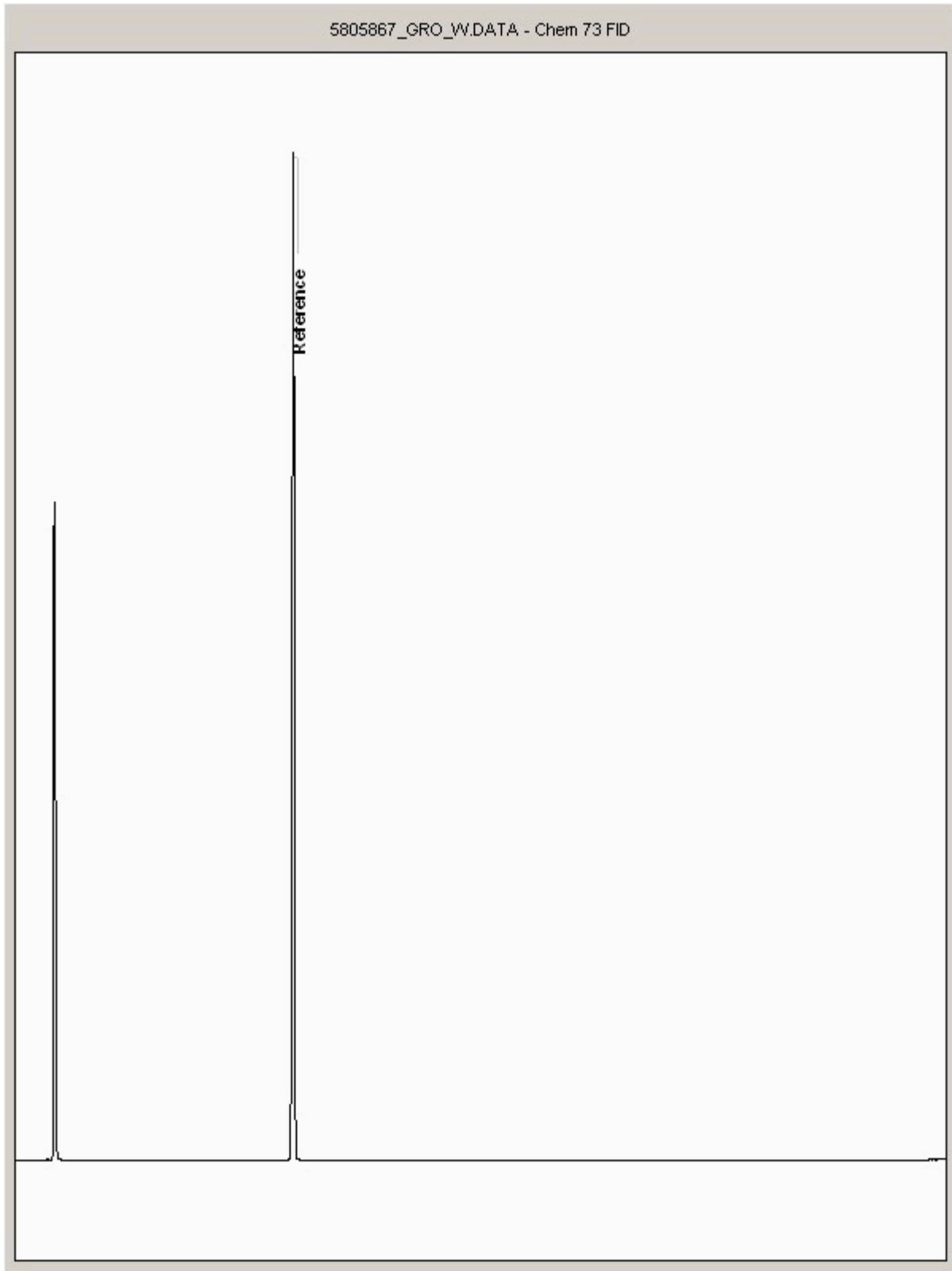
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805867
Sample ID : 345662

Depth :





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

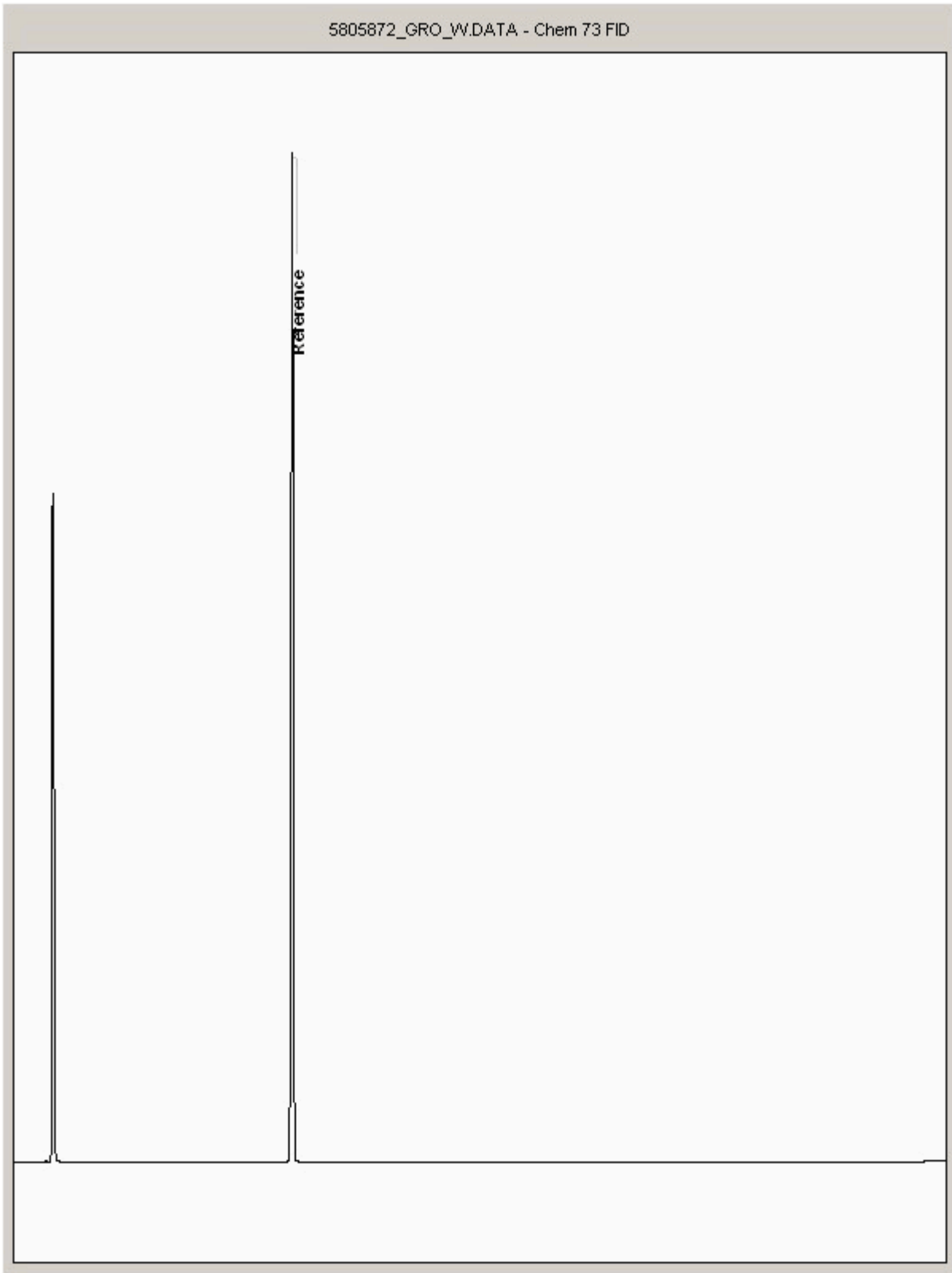
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805872
Sample ID : 882654

Depth :





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

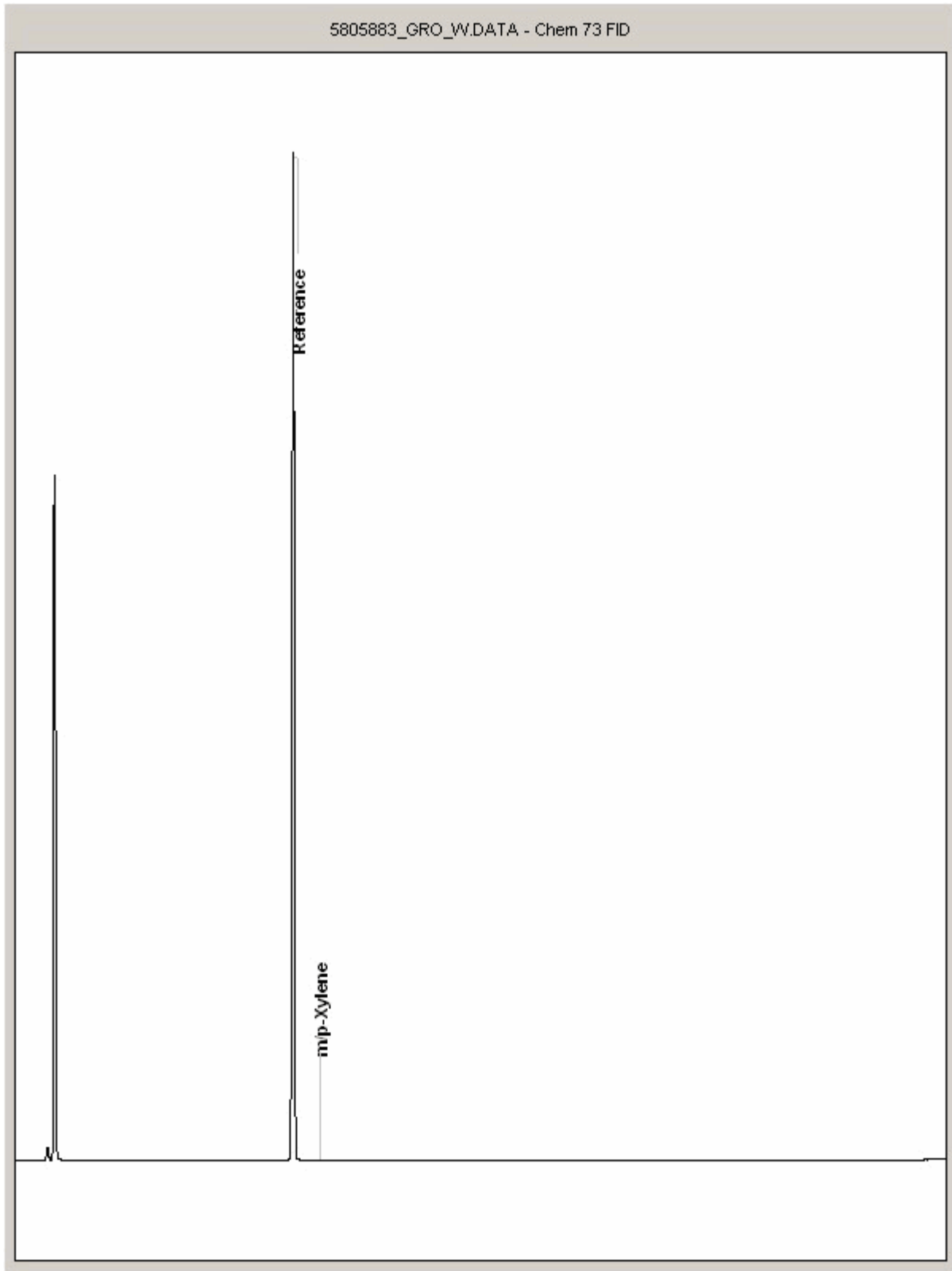
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805883
Sample ID : 974589

Depth :





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

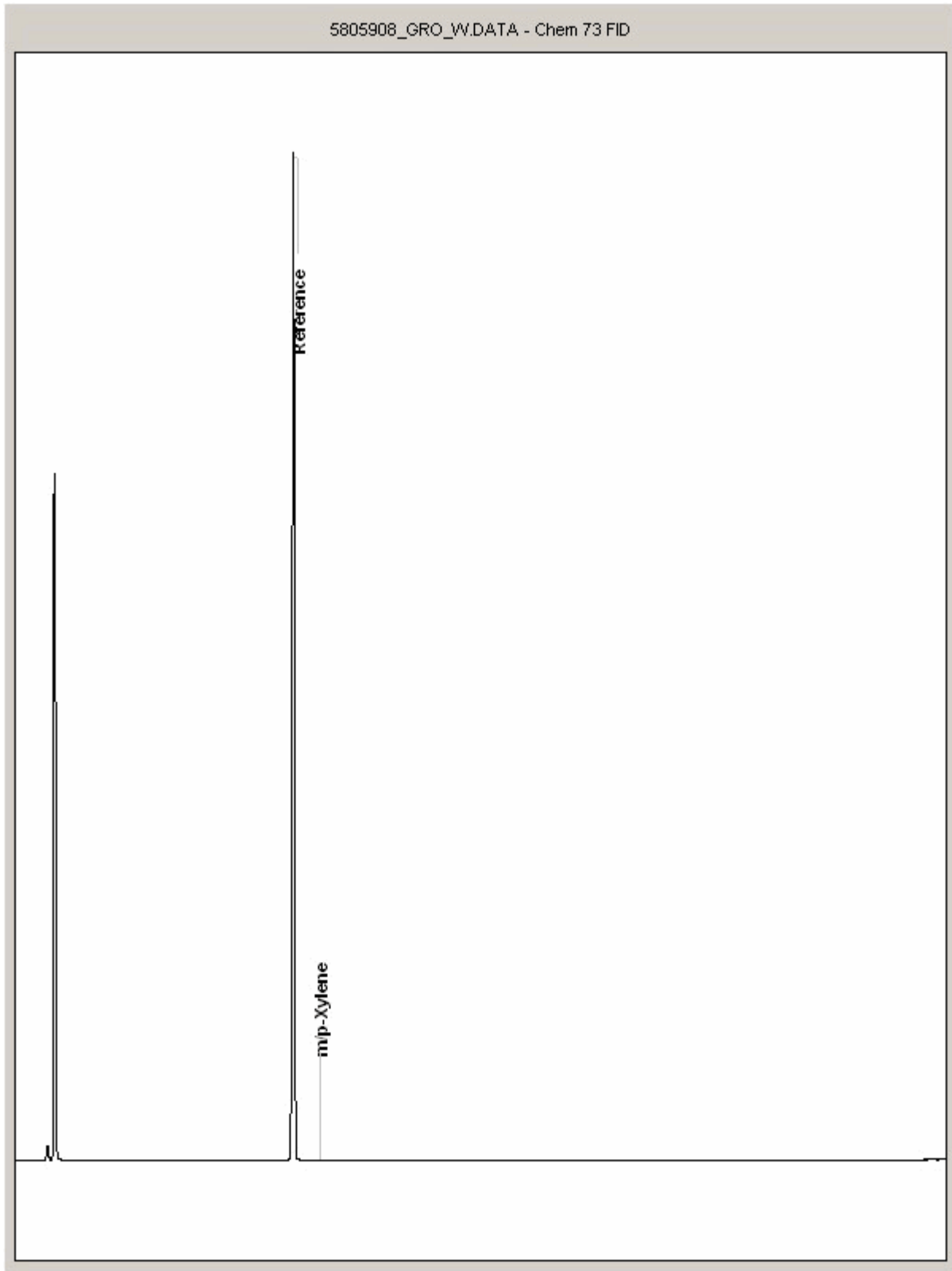
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805908
Sample ID : 654684

Depth :





CERTIFICATE OF ANALYSIS

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

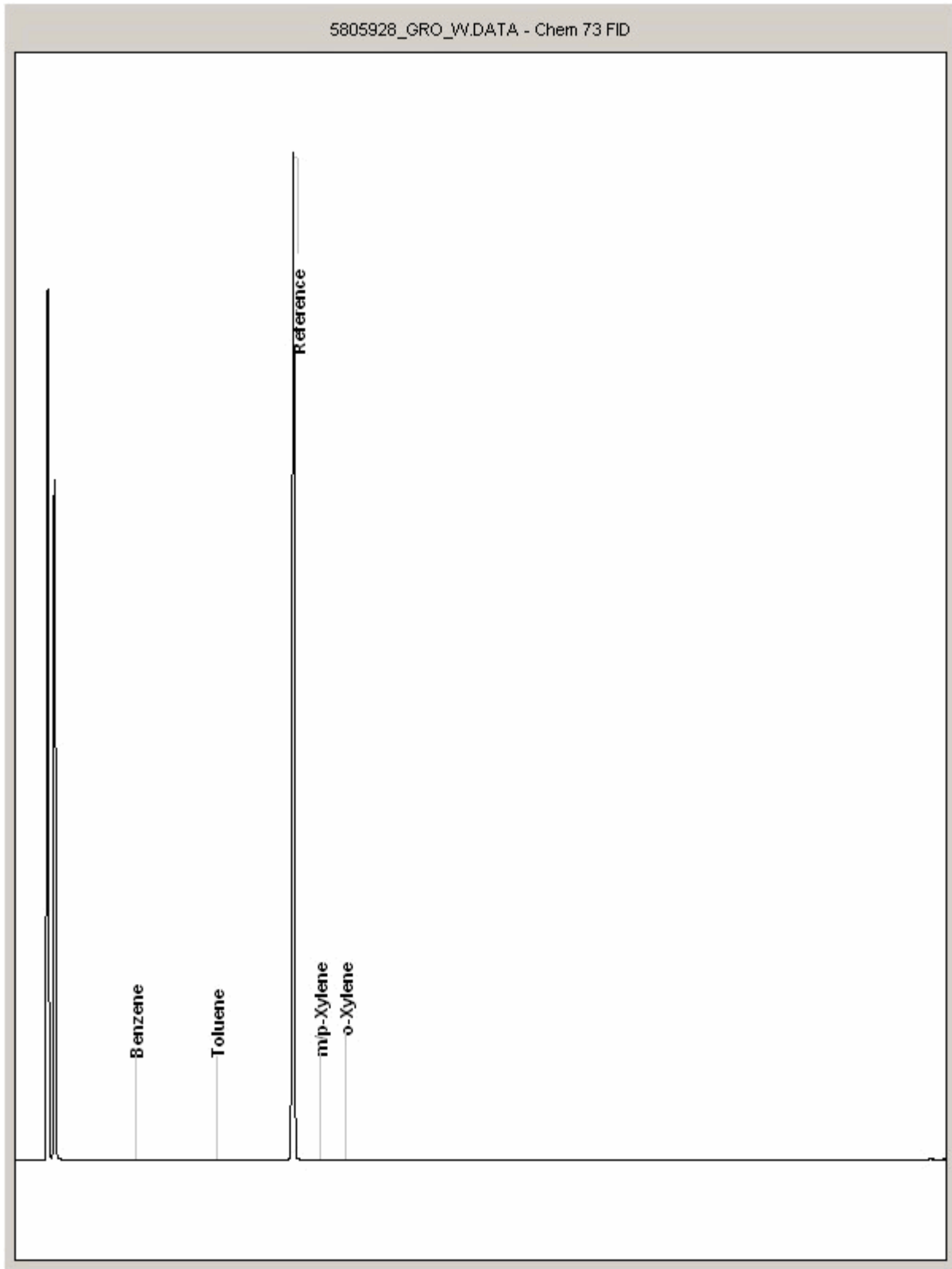
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805928
Sample ID : 983837

Depth :





SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

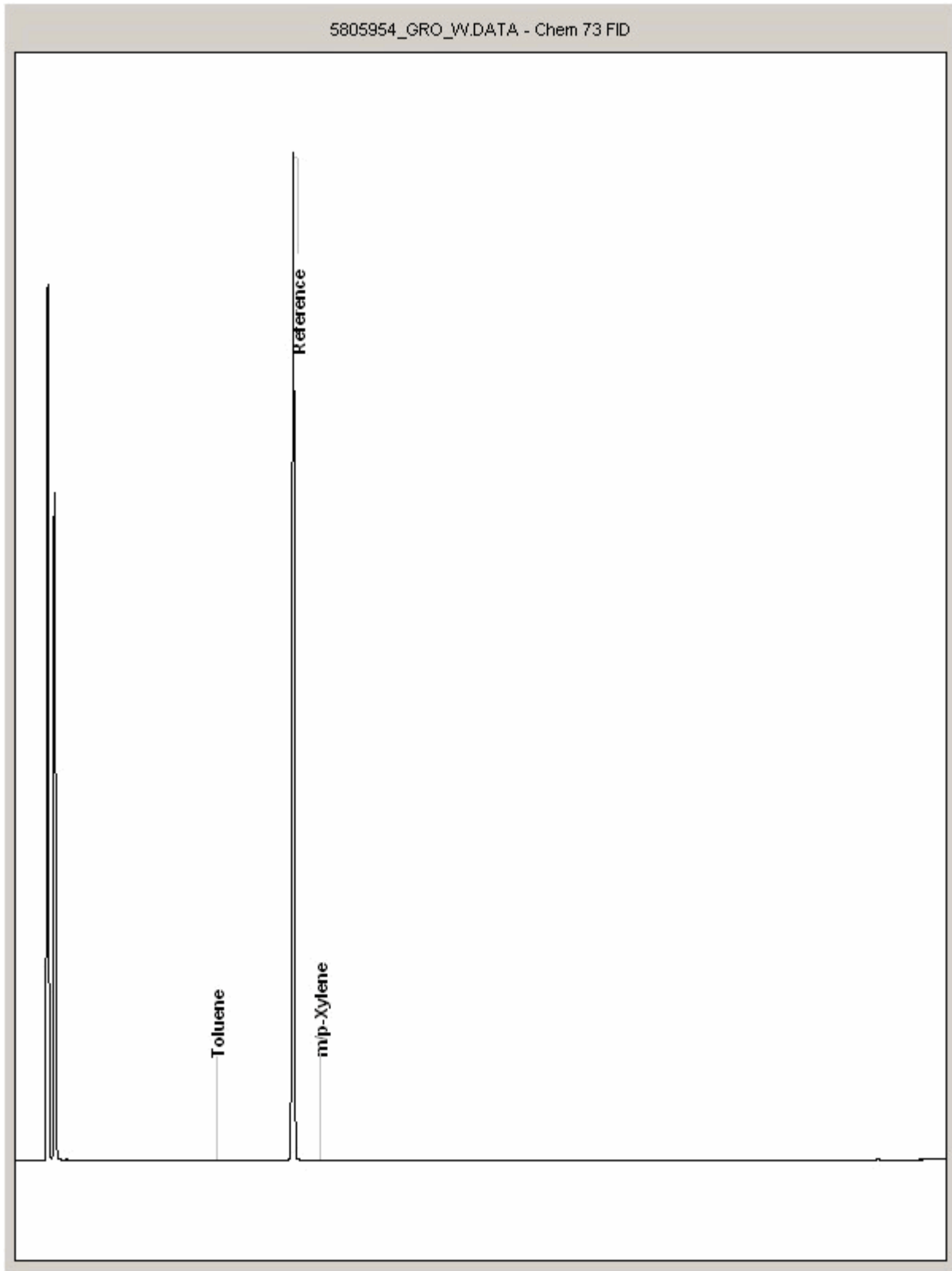
Order Number: 4559
Report Number: 192004
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5805954
Sample ID : 952615

Depth :



Hawarden Subcontractors
ALcontrol Laboratories Chester
Units 7 & 8 Hawarden Business Park
Off Manor Lane
Hawarden
Deeside
CH5 3US

Dear Hawarden

Please find attached the results for the batch of 36 samples described below.

Samples Registered on:	02-Jul-2012
Analysis Started on:	04-Jul-2012
Analysis Completed on:	12-Jul-2012
Results for Batch Number	20041196
Your Purchase Order Number:	150061

You will be invoiced shortly by our accounts department.

If we can be of further assistance then please do not hesitate to contact us.

Yours sincerely



William Fardon
Customer Services Team Leader
Tel: (0113) 231 2177
nls@environment-agency.gov.uk

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation. Details of analytical procedures and performance data are available on request. The date of sample analysis is available on request.

The Environment Agency carries out analytical work to high standards and within the scope of its UKAS accreditation, but has no knowledge of whether the circumstances or the validity of the procedures used to obtain the samples provided to the laboratory were representative of the need for which the information was required.

The Environment Agency and/or its staff does not therefore accept any liability for the consequences of any acts or omissions made on the basis of the analysis or advice or interpretation provided.

Client: ALcontrol Laboratories Chester
Folder No: 001991125
Comments: 5805427 - 345662
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	500	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991133
Comments: 5805513 - 345662
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	5.74	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991134
Comments: 5805551- 654684
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	121	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991135
Comments: 5805571 - 974589
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	3.50	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991136
Comments: 5805574 - 974589
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	131	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991137
Comments: 5805894 - 870938
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	<1	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991138
Comments: 5805905 - 870938
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	52.4	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991139
Comments: 5805925 - 983837
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	4.63	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991140
Comments: 5805929 - 983837
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	24.3	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991141
Comments: 5805958 - 475461
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	15.2	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991142
Comments: 5805976 - 475461
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	71.5	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991143
Comments: 5806021 - 882654
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	<1	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991144
Comments: 5806031 - 882654
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	145	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991145
Comments: 5806065 - 952615
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	53.3	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991146
Comments: 5806068 - 952615
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	7.50	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991147
Comments: 5806080 - 543939
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	5.08	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991148
Comments: 5806085 - 543939
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	22.4	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991149
Comments: 5806102 - 637220
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	1.27	mg/l	1	None	NM	1102

Client: ALcontrol Laboratories Chester
Folder No: 001991150
Comments: 5806105 - 637220
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	4.20	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991151
Comments: 5806187 - 533020
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991152
Comments: 5806194 - 870938
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991153
Comments: 5806197 - 882654
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991154
Comments: 5806200 - 543939
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991155
Comments: 5806203 - 475461
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991156
Comments: 5806214 - 952615
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991157
Comments: 5806219 - 983837
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991158
Comments: 5806262 - 533020
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	31.8	ug/l	30	UKAS	SX	321
Chromium	103	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991159
Comments: 5806287 - 533020
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	1.82	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991160
Comments: 5806466 - 237415
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	9.60	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001991161
Comments: 5806488 - 237415
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	1.06	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991162
Comments: 5806714 - 637220
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991163
Comments: 5806749 - 237415
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991164
Comments: 5806810 - 654684
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991165
Comments: 5806830 - 654684
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	4.05	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001991166
Comments: 5806855 - 345662
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001991167
Comments: 5806906 - 974589
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 25-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Method Description Summary for all samples in batch Number 20041196

92	SX M Misc Cr - Chromium - acid digested, determined by GF-AAS
182	SX I Cyanide or NM I Cyanide- (total) - UV digested, determined colorimetrically by CF analyser
183	SX I Cyanide or NM I Cyanide- (free) - determined colorimetrically by CF analyser
321	SX M ICPMS NR Saline - Metals - acid digested, determined by ICPMS
864	Parameter by calculation
1102	NM I TOC - furnace with IR detection



Simon Padley
Laboratory Site Manager

All reporting limits quoted are those achievable for clean samples of the relevant matrix. No allowance is made for instances when dilutions are necessary owing to the nature of the sample or insufficient volume of the sample being available. In these cases higher reporting limits may be quoted and will be above the MRV.

Solid sample results are determined on a "dried" sample fraction except for parameters where the method description identifies that "as received" sample was used.

Please note all samples will be retained for 10 working days for aqueous samples and 30 working days for solid samples after reporting unless otherwise agreed with Customer Services

Key to Accreditation: UKAS = Methodology accredited to ISO/IEC 17025:2005, MCertS = Methodology accredited to MCertS Performance Standard for testing of soils, none = Methodology not accredited

Key to Lab ID: LE = Leeds, LL = Llanelli, NM = Nottingham, SX = Starcross, SC = Sub-Contracted outside NLS, FI = Field Data, NLS = Calculated

Any subsequent version of this report denoted with a higher version number will supersede this and any previous versions

END OF TEST REPORT

SDG: 120627-67
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 192004
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).

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: 18 July 2012
Customer: D_PRIORGEOT_CRK
Sample Delivery Group (SDG): 120628-125
Your Reference: P12030
Location: Haulbowline
Report No: 187939

This report has been revised and directly supersedes 187501 in its entirety.

We received 7 samples on Wednesday June 27, 2012 and 7 of these samples were scheduled for analysis which was completed on Wednesday July 18, 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: 120628-125	Location: Haulbowline	Order Number: 4559
Job: D_PRIORGEOT_CRK-44	Customer: Priority Geotechnical Ltd	Report Number: 187939
Client Reference: P12030	Attention: Colette Kelly	Superseded Report: 187501

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5800717	221455			26/06/2012
5800720	225370			26/06/2012
5800715	292411			26/06/2012
5800711	685990			26/06/2012
5800709	907491			26/06/2012
5800721	932833			26/06/2012
5800714	982927			26/06/2012

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



CERTIFICATE OF ANALYSIS

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Results Legend		Customer Sample R	221455	225370	292411	685990	907491	932833
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		Saline D	Saline D	Saline B	Saline D	Saline D	Saline D
S	Deviating sample.		26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012
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		27/06/2012	27/06/2012	27/06/2012	27/06/2012	27/06/2012	27/06/2012
(F)	Trigger breach confirmed		120628-125	120628-125	120628-125	120628-125	120628-125	120628-125
			5800717	5800720	5800715	5800711	5800709	5800721
Component	LOD/Units	Method						
Cyanide Complex as CN*	mg/l	SUB	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TOC (Saline)*	<1 mg/l	SUB	3.04	12.3	21.2	17.6	10.6	13.5
Cyanide Free as CN*	<0.005 mg/l	SUB	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide as CN*	<0.005 mg/l	SUB	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium (tot.unfilt)*	<0.5 µg/l	SUB	12.1	17.7	31.4	31	20.7	36.6
Molybdenum (tot.unfilt)*	<30 µg/l	SUB	<30	<30	<30	<30	<30	<30
Saline Total Alkalinity as CaCO3	<5 mg/l	TM043		195	#			
BOD, unfiltered	<1 mg/l	TM045	<2	<2	<10	<10	<10	<10
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	3.13	12.5	2.78	3.3	3.39
Sulphide	<0.01 mg/l	TM101	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluoride	<0.5 mg/l	TM104	0.836			<0.5		
COD, unfiltered	<7 mg/l	TM107	184	208	169	195	188	274
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	39.8	30	13.9	38.2	31	36.7
Barium (diss.filt)	<0.03 µg/l	TM152	22.7	70.6	145	195	82.6	180
Molybdenum (diss.filt)	<0.24 µg/l	TM152	10.2			17.4		
Phosphorus (diss.filt)	<6.3 µg/l	TM152	18.7			19.6		
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	0.073	<0.05	<0.05	<0.05
Sulphate	<2 mg/l	TM184	2260	1590	621	1750	1600	1760
Chloride	<2 mg/l	TM184	18000	12800	5340	16300	12900	16400
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105
Phenol	<0.5 µg/l	TM205	<2.5			<2.5		
2-methylphenol	<0.5 µg/l	TM205	<0.5			<0.5		
3-methylphenol	<0.5 µg/l	TM205	<0.5			<0.5		
4-methylphenol	<0.5 µg/l	TM205	<0.5			<0.5		
2-chlorophenol	<0.5 µg/l	TM205	<0.5			<0.5		
2,4-dimethylphenol	<0.5 µg/l	TM205	<0.5			<0.5		
4-chloro-3-methylphenol	<0.5 µg/l	TM205	<0.5			<0.5		
2,6-dichlorophenol	<0.5 µg/l	TM205	<0.5			<0.5		



CERTIFICATE OF ANALYSIS

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Results Legend			Customer Sample R	221455	225370	292411	685990	907491	932833
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Saline D	Saline D	Saline B	Saline D	Saline D	Saline D
M	mCERTS accredited.			26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012	26/06/2012
S	Deviating sample.			27/06/2012	27/06/2012	27/06/2012	27/06/2012	27/06/2012	27/06/2012
aq	Aqueous / settled sample.			120628-125	120628-125	120628-125	120628-125	120628-125	120628-125
diss.filt	Dissolved / filtered sample.			5800717	5800720	5800715	5800711	5800709	5800721
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							
4-Chlorophenol	<0.5 µg/l	TM205		<0.5			<0.5		
2,4-dichlorophenol	<0.5 µg/l	TM205		<0.5			<0.5		
2-nitrophenol	<0.5 µg/l	TM205		<0.5			<0.5		
2,4,6-trichlorophenol	<0.5 µg/l	TM205		<0.5			<0.5		
2,4,5-trichlorophenol	<0.5 µg/l	TM205		<0.5			<0.5		
4-nitrophenol	<0.5 µg/l	TM205		<0.5			<0.5		
2,3,5,6-tetrachlorophenol	<0.5 µg/l	TM205		<0.5			<0.5		
2,3,4,6-tetrachlorophenol	<0.5 µg/l	TM205		<0.5			<0.5		
2,4-dinitrophenol	<2.5 µg/l	TM205		<2.5			<2.5		
DNOC	<3 µg/l	TM205		<3			<3		
Pentachlorophenol	<2 µg/l	TM205		<2			<2		
Dinoseb	<4 µg/l	TM205		<4			<4		
Calcium (diss.filt)	<0.012 mg/l	TM228		350	371	204	892	373	906
Sodium (diss.filt)	<0.076 mg/l	TM228		10900	7550	3070	9970	7570	8770
Magnesium (diss.filt)	<0.036 mg/l	TM228		1060	685	296	506	679	505
Potassium (diss.filt)	<2.335 mg/l	TM228		337	262	123	318	262	313
Chromium, Hexavalent	<0.03 mg/l	TM241		<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #
pH	<1 pH Units	TM256		7.89	7.92	8.15	7.95	7.9	8.75
Arsenic (Saline)	<0.5 µg/l	TM270		<0.5 #	0.801 #	5.07 #	<0.5 #	0.694 #	<0.5 #
Aluminium (Saline)	<3.7 µg/l	TM270		57.1 #	28.9 #	25.4 #	29.2 #	31.9 #	33 #
Antimony (Saline)	<1 µg/l	TM270		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Boron (Saline)	<201 µg/l	TM270		2920 #	2160 #	1190 #	1010 #	2050 #	964 #
Cadmium (Saline)	<0.15 µg/l	TM270		<0.15 #	<0.15 #	<0.15 #	<0.15 #	<0.15 #	<0.15 #
Chromium (Saline)	<1.5 µg/l	TM270		9.2 #	2.65 #	3.09 #	3.08 #	3.06 #	2.88 #
Copper (Saline)	<1 µg/l	TM270		1.09 #	<1 #	13.2 #	<1 #	<1 #	<1 #
Iron (Saline)	<4 µg/l	TM270		<4 #	<4 #	<4 #	<4 #	<4 #	<4 #
Lead (Saline)	<0.2 µg/l	TM270		<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #
Manganese (Saline)	<0.3 µg/l	TM270		<0.3 #	888 #	1750 #	391 #	664 #	316 #
Mercury (Saline)	<0.15 µg/l	TM270		<0.15 #	0.226 #	0.347 #	0.364 #	0.176 #	0.305 #
Nickel (saline)	<1.1 µg/l	TM270		4.83 #	6.39 #	15.7 #	5.42 #	6.11 #	6.05 #
Selenium (Saline)	<0.5 µg/l	TM270		2.19 #	2.7 #	1.82 #	2.44 #	2.22 #	2.69 #
Vanadium (Saline)	<4 µg/l	TM270		<4 #	<4 #	<4 #	<4 #	<4 #	<4 #
Zinc (Saline)	<2.1 µg/l	TM270		<2.1 #	<2.1 #	<2.1 #	<2.1 #	<2.1 #	<2.1 #
Saline TON as NO3	<0.3 mg/l	TM281		2.26 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #	0.313 #
Saline Nitrate as NO3	<0.3 mg/l	TM281		2.26 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #	0.313 #



CERTIFICATE OF ANALYSIS

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Table with columns for Results Legend, Customer Sample R, and various sample identifiers (221455, 225370, 292411, 685990, 907491, 932833). Includes rows for Component (Sulphur, Free), LOD/Units, Method, and analytical results.



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Results Legend		Customer Sample R	982927			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Saline B 26/06/2012 27/06/2012 120628-125 5800714			
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		
Cyanide Complex as CN*	mg/l	SUB	<0.005			
TOC (Saline)*	<1 mg/l	SUB	28.2			
Cyanide Free as CN*	<0.005 mg/l	SUB	<0.005			
Cyanide as CN*	<0.005 mg/l	SUB	<0.005			
Chromium (tot.unfilt)*	<0.5 µg/l	SUB	54.6			
Molybdenum (tot.unfilt)*	<30 µg/l	SUB	<30			
BOD, unfiltered	<1 mg/l	TM045	3.27			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	8.81	#		
Sulphide	<0.01 mg/l	TM101	<0.01			
COD, unfiltered	<7 mg/l	TM107	200			
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	7.12	#		
Barium (diss.filt)	<0.03 µg/l	TM152	79.4			
Nitrite as NO2	<0.05 mg/l	TM184	0.497			
Sulphate	<2 mg/l	TM184	369			
Chloride	<2 mg/l	TM184	2390			
PCB congener 28	<0.015 µg/l	TM197	<0.015			
PCB congener 52	<0.015 µg/l	TM197	<0.015			
PCB congener 101	<0.015 µg/l	TM197	<0.015			
PCB congener 118	<0.015 µg/l	TM197	<0.015			
PCB congener 138	<0.015 µg/l	TM197	<0.015			
PCB congener 153	<0.015 µg/l	TM197	<0.015			
PCB congener 180	<0.015 µg/l	TM197	<0.015			
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105			
Calcium (diss.filt)	<0.012 mg/l	TM228	163			
Sodium (diss.filt)	<0.076 mg/l	TM228	1400			
Magnesium (diss.filt)	<0.036 mg/l	TM228	106			
Potassium (diss.filt)	<2.335 mg/l	TM228	80.1			
Chromium, Hexavalent	<0.03 mg/l	TM241	<0.03	#		
pH	<1 pH Units	TM256	8.2			
Arsenic (Saline)	<0.5 µg/l	TM270	13.3	#		
Aluminium (Saline)	<3.7 µg/l	TM270	27.7	#		
Antimony (Saline)	<1 µg/l	TM270	<1	#		
Boron (Saline)	<201 µg/l	TM270	250	#		
Cadmium (Saline)	<0.15 µg/l	TM270	<0.15	#		
Chromium (Saline)	<1.5 µg/l	TM270	3.43	#		



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Table with columns: Results Legend, Customer Sample R, Component, LOD/Units, Method, and numerical data. Includes rows for Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Vanadium, Zinc, Saline TON as NO3, Saline Nitrate as NO3, and Sulphur, Free.



CERTIFICATE OF ANALYSIS

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

VOC MS (W)

Results Legend		Customer Sample R	221455	292411	982927			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		Saline D	Saline B	Saline B			
S	Deviating sample.		26/06/2012	26/06/2012	26/06/2012			
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		27/06/2012	27/06/2012	27/06/2012			
(F)	Trigger breach confirmed		120628-125	120628-125	120628-125			
			5800717	5800715	5800714			
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM208	110	114	112			
Toluene-d8**	%	TM208	99.3	99.4	98.7			
4-Bromofluorobenzene**	%	TM208	98.8	95	95.4			
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1			
Chloromethane	<1 µg/l	TM208	<1	<1	<1			
Vinyl chloride	<1 µg/l	TM208	<1	<1	<1			
Bromomethane	<1 µg/l	TM208	<1	<1	<1			
Chloroethane	<1 µg/l	TM208	<1	<1	<1			
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1	<1			
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1	<1			
Carbon disulphide	<1 µg/l	TM208	<1	<1	<1			
Dichloromethane	<3 µg/l	TM208	<3	<3	<3			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1			
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1			
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1	<1			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1			
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1			
Bromochloromethane	<1 µg/l	TM208	<1	<1	<1			
Chloroform	<1 µg/l	TM208	<1	<1	<1			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1	<1			
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1	<1			
Carbontetrachloride	<1 µg/l	TM208	<1	<1	<1			
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1	<1			
Benzene	<1 µg/l	TM208	<1	<1	<1			
Trichloroethene	<1 µg/l	TM208	<1	<1	<1			
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1			
Dibromomethane	<1 µg/l	TM208	<1	<1	<1			
Bromodichloromethane	<1 µg/l	TM208	<1	<1	<1			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1			
Toluene	<1 µg/l	TM208	<1	<1	<1			
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1	<1			
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1	<1			
Tetrachloroethene	<1 µg/l	TM208	<1	<1	<1			
Dibromochloromethane	<1 µg/l	TM208	<1	<1	<1			



CERTIFICATE OF ANALYSIS

SDG:	120628-125	Location:	Haulbowline	Order Number:	4559
Job:	D_PRIORGEOT_CRK-44	Customer:	Priority Geotechnical Ltd	Report Number:	187939
Client Reference:	P12030	Attention:	Colette Kelly	Superseded Report:	187501

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
SUB		Subcontracted Test		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
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		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
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		
TM205		Determination of Phenols in Waste Waters using Solid Phase Extraction, Acetylation, Gas Chromatography and Mass Selective Detection		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
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		
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		
TM270	Thermo Electron Application Note AN_E0640: X Series ICP-MS: Using automated collision cell ICP-MS with rapid in-sample switching to achieve ultimate performance in environmental analysis.	Dissolved Metals in Saline Matrices by CCT ICP-MS		
TM281		The Determination of Total Oxidized Nitrogen in Saline Matrices using the Kone Spectrophotometric Analysers		
TM294		Determination of Free Sulphur in liquids by HPLC		

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



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Test Completion Dates

Lab Sample No(s)	5800717	5800720	5800715	5800711	5800709	5800721	5800714
Customer Sample Ref.	221455	225370	292411	685990	907491	932833	982927
AGS Ref.							
Depth							
Type	SALINE_D	SALINE_D	SALINE_B	SALINE_D	SALINE_D	SALINE_D	SALINE_B
Alkalinity as CaCO3		03-Jul-2012					
Ammoniacal Nitrogen	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
Anions by Kone (w)	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012
BOD True Total	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
COD Unfiltered	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012	29-Jun-2012
Conductivity (at 20 deg.C)	04-Jul-2012	04-Jul-2012	04-Jul-2012	03-Jul-2012	03-Jul-2012	04-Jul-2012	04-Jul-2012
Dissolved Metals by ICP-MS	03-Jul-2012	03-Jul-2012	04-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012
EPH CWG (Aliphatic) Aqueous GC (W)	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012
EPH CWG (Aromatic) Aqueous GC (W)	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012
Fluoride	02-Jul-2012			02-Jul-2012			
Free Sulphur	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012
GRO by GC-FID (W)	01-Jul-2012	01-Jul-2012	01-Jul-2012	01-Jul-2012	01-Jul-2012	01-Jul-2012	01-Jul-2012
Hexavalent Chromium (w)	18-Jul-2012	18-Jul-2012	18-Jul-2012	18-Jul-2012	18-Jul-2012	18-Jul-2012	18-Jul-2012
Metals analysis (Saline Sample)	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
Metals by iCap-OES Dissolved (W)	03-Jul-2012	03-Jul-2012	02-Jul-2012	03-Jul-2012	03-Jul-2012	02-Jul-2012	02-Jul-2012
Nitrite by Kone (w)	02-Jul-2012	02-Jul-2012	02-Jul-2012	30-Jun-2012	30-Jun-2012	02-Jul-2012	02-Jul-2012
PCB Congeners - Aqueous (W)	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012
pH Value	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012
Phenols by ms (w)	05-Jul-2012			05-Jul-2012			
Saline Cyanides (W)*	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012
Saline Metals*	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012
Saline TON	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012
Sulphide	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012
TOC (Saline)*	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012	13-Jul-2012
TPH CWG (W)	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012
VOC MS (W)	02-Jul-2012		02-Jul-2012				02-Jul-2012



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5811147
Sample ID : 685990

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5811219
Sample ID : 907491

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5812211
Sample ID : 225370

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5812224
Sample ID : 221455

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5812988
Sample ID : 982927

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5813000
Sample ID : 292411

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5815009
Sample ID : 932833

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5811147
Sample ID : 685990

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5811219
Sample ID : 907491

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5812211
Sample ID : 225370

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5812224
Sample ID : 221455

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5812988
Sample ID : 982927

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5813000
Sample ID : 292411

Depth :



SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

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

Sample No : 5815009
Sample ID : 932833

Depth :



CERTIFICATE OF ANALYSIS

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

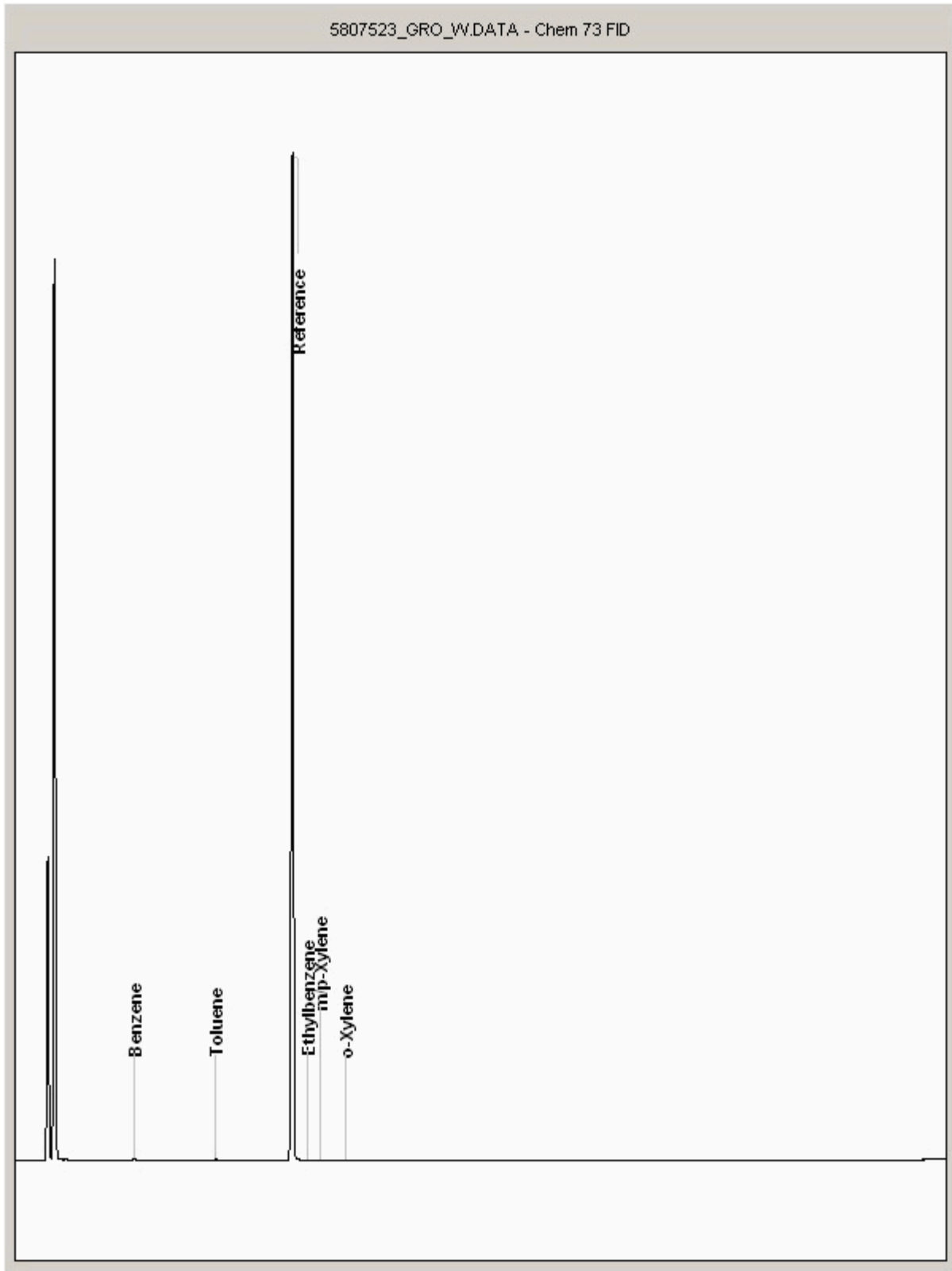
Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5807523
Sample ID : 685990

Depth :





CERTIFICATE OF ANALYSIS

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

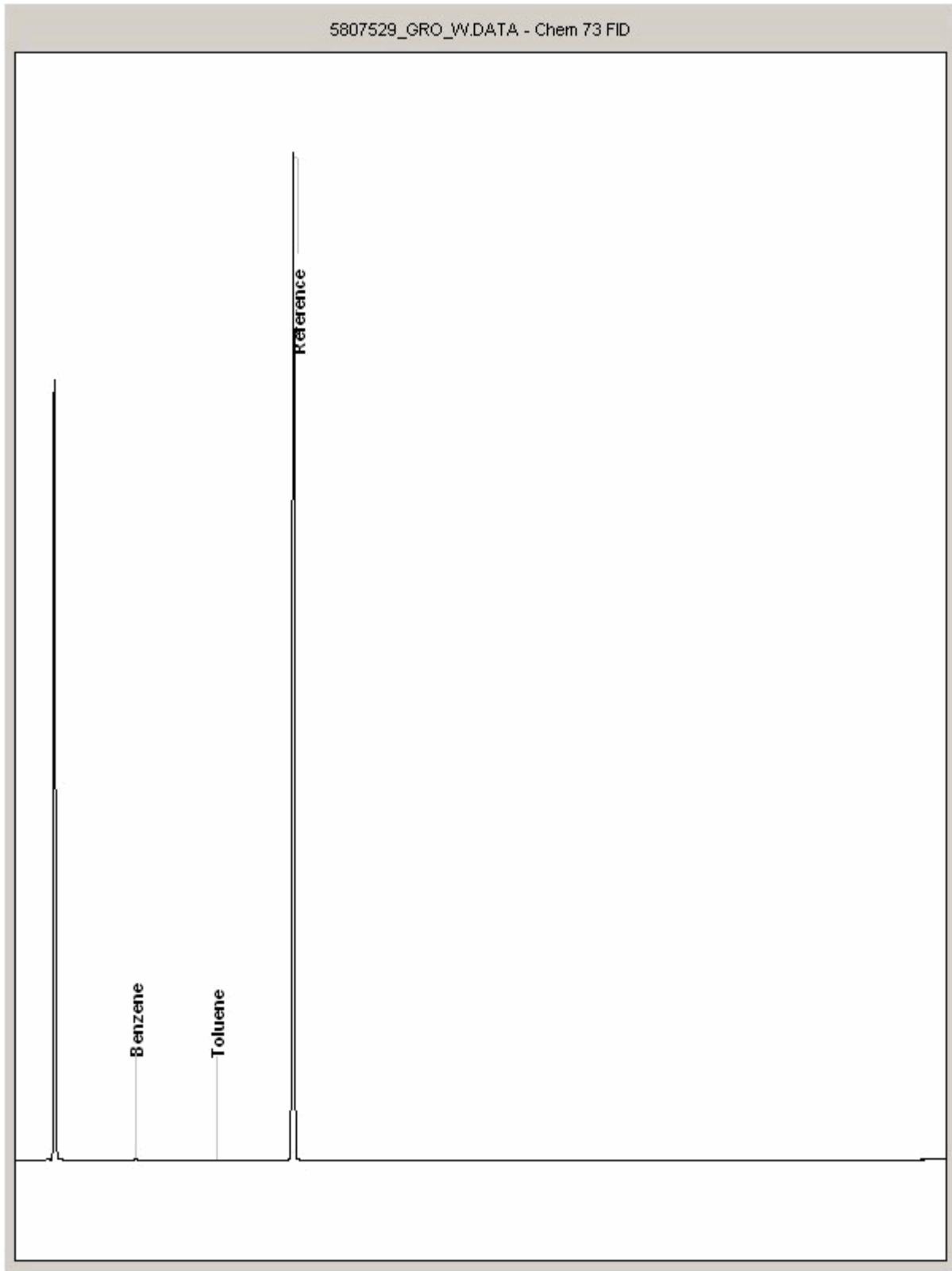
Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5807529
Sample ID : 907491

Depth :





SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

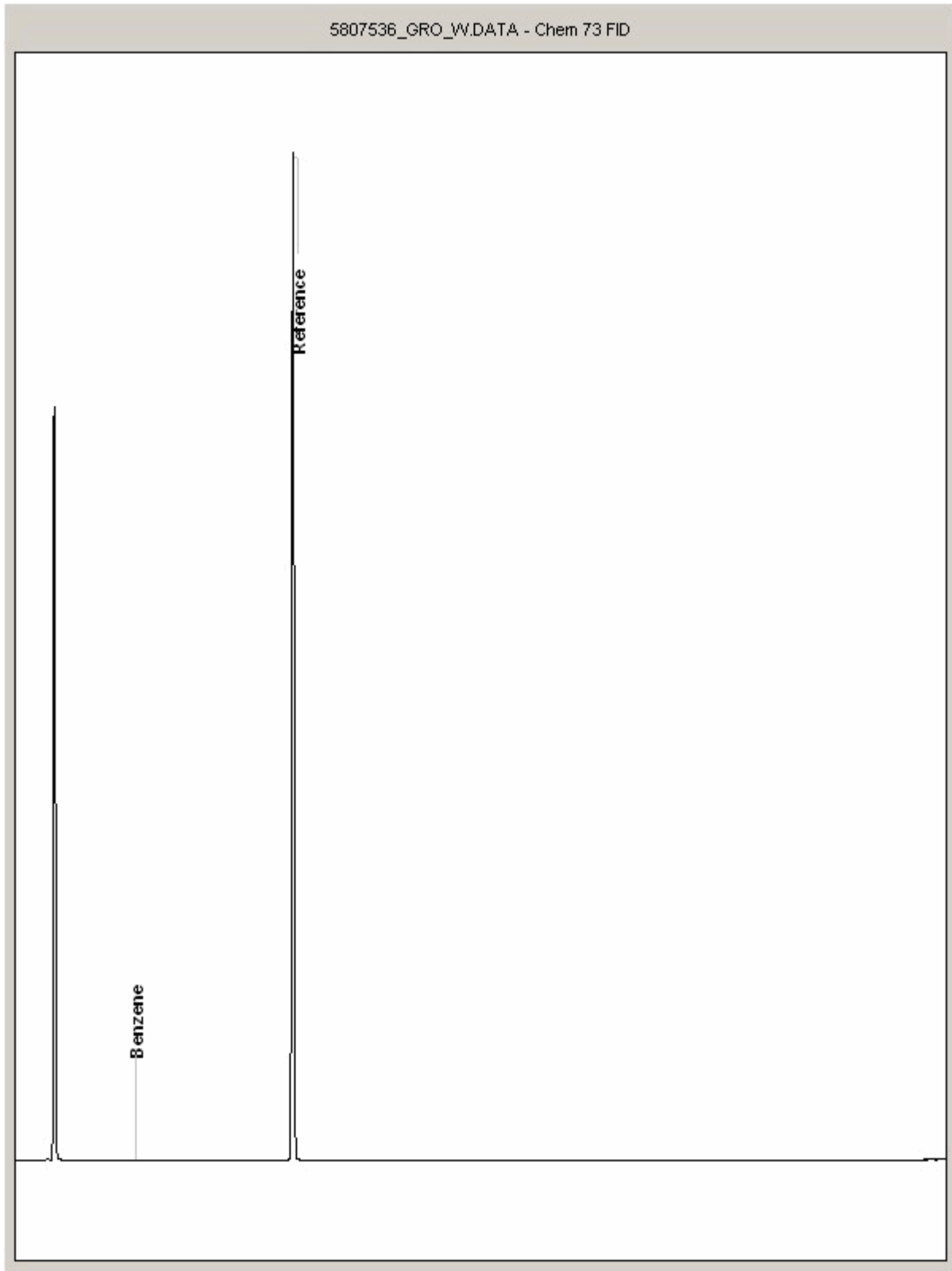
Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5807536
Sample ID : 225370

Depth :





CERTIFICATE OF ANALYSIS

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

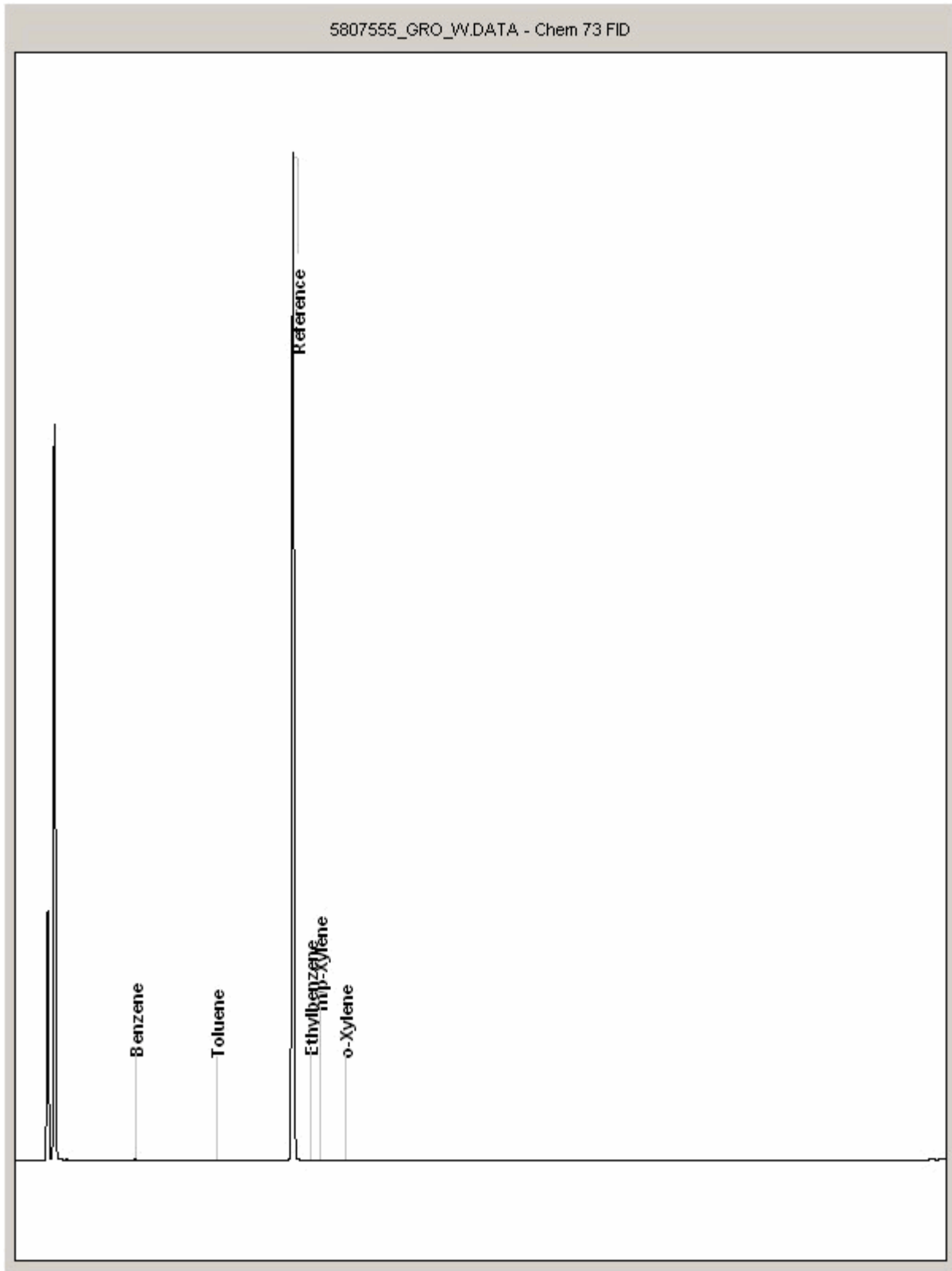
Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5807555
Sample ID : 932833

Depth :





CERTIFICATE OF ANALYSIS

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

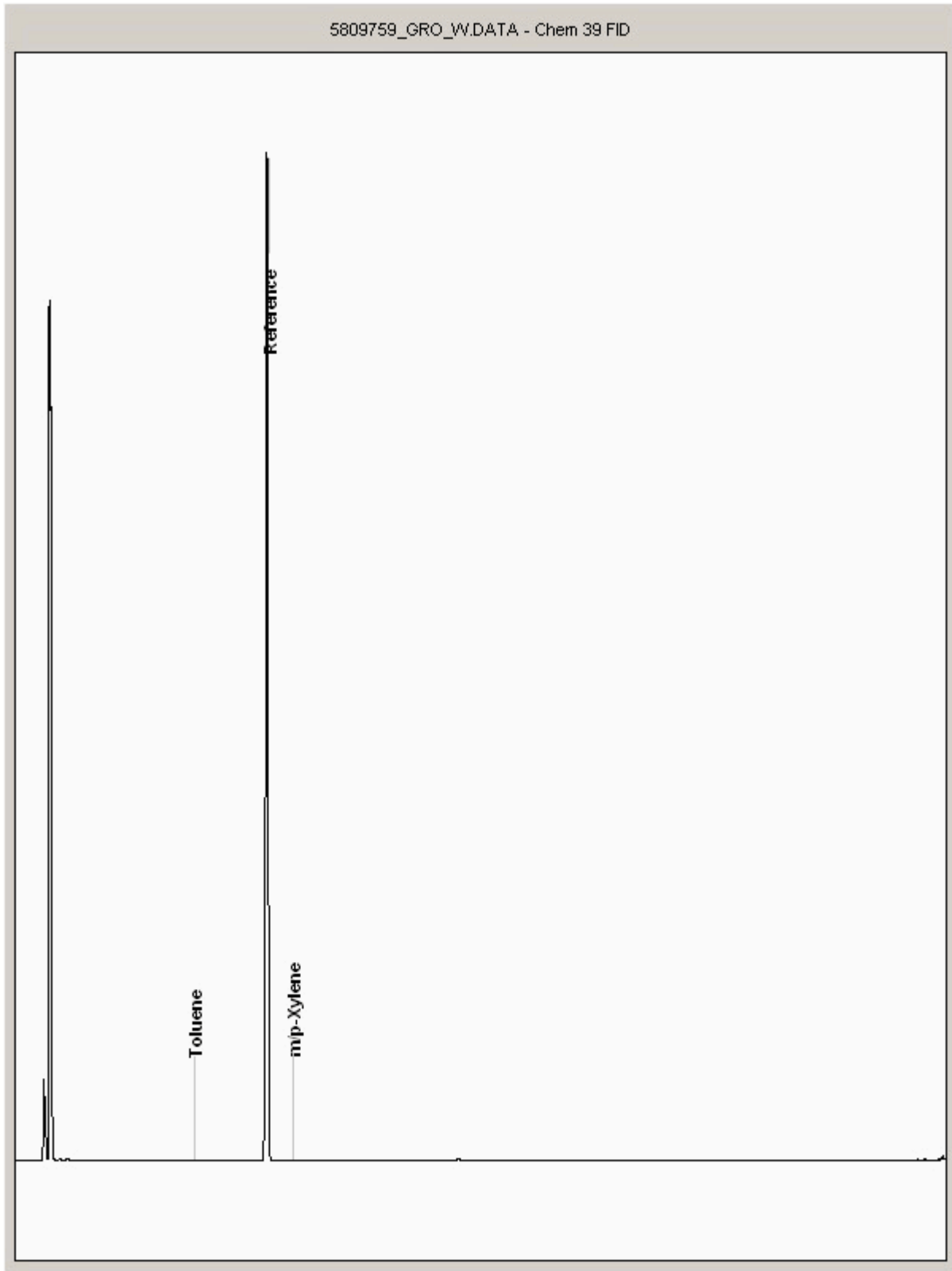
Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5809759
Sample ID : 982927

Depth :





CERTIFICATE OF ANALYSIS

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

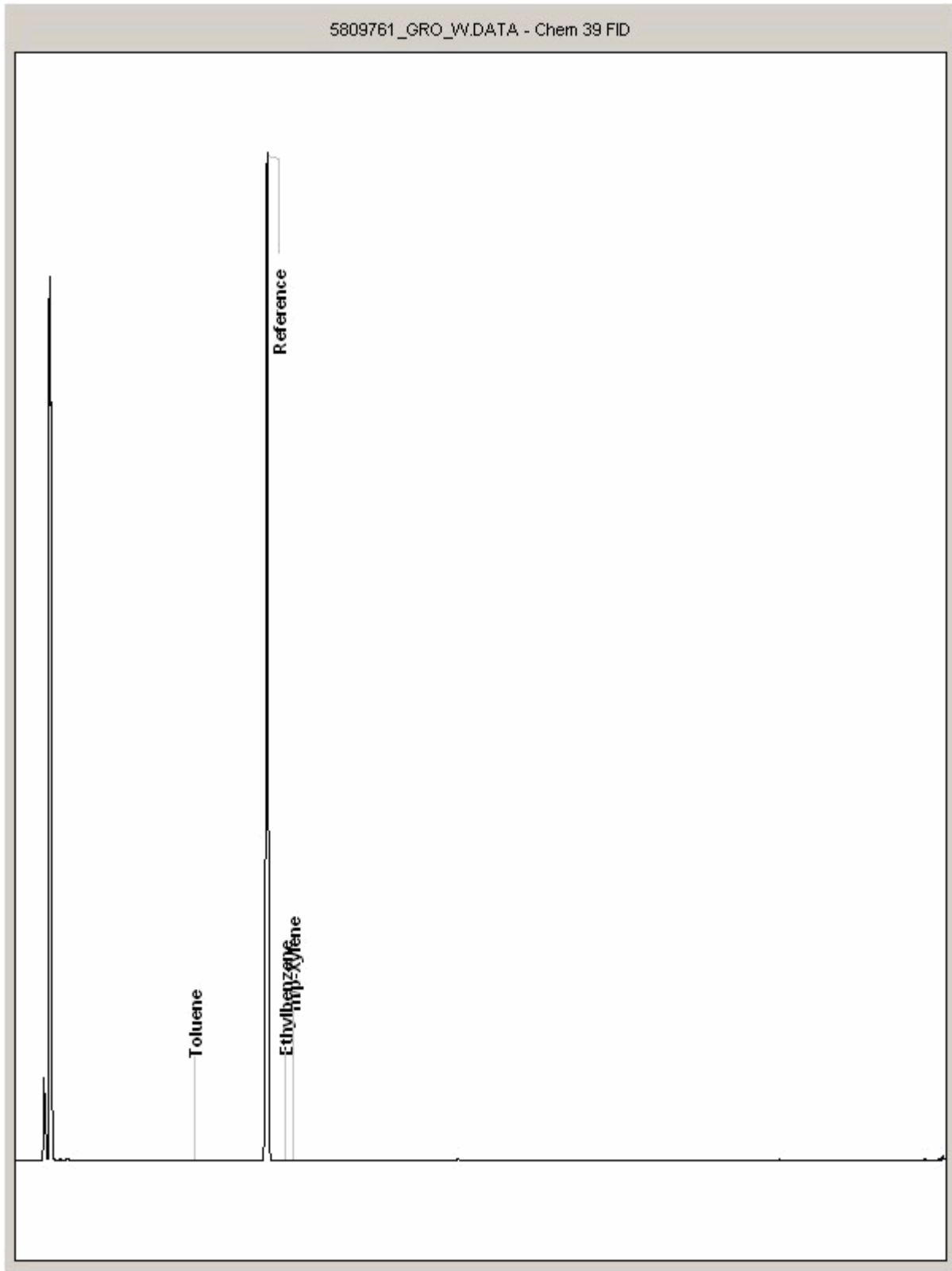
Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5809761
Sample ID : 292411

Depth :





CERTIFICATE OF ANALYSIS

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

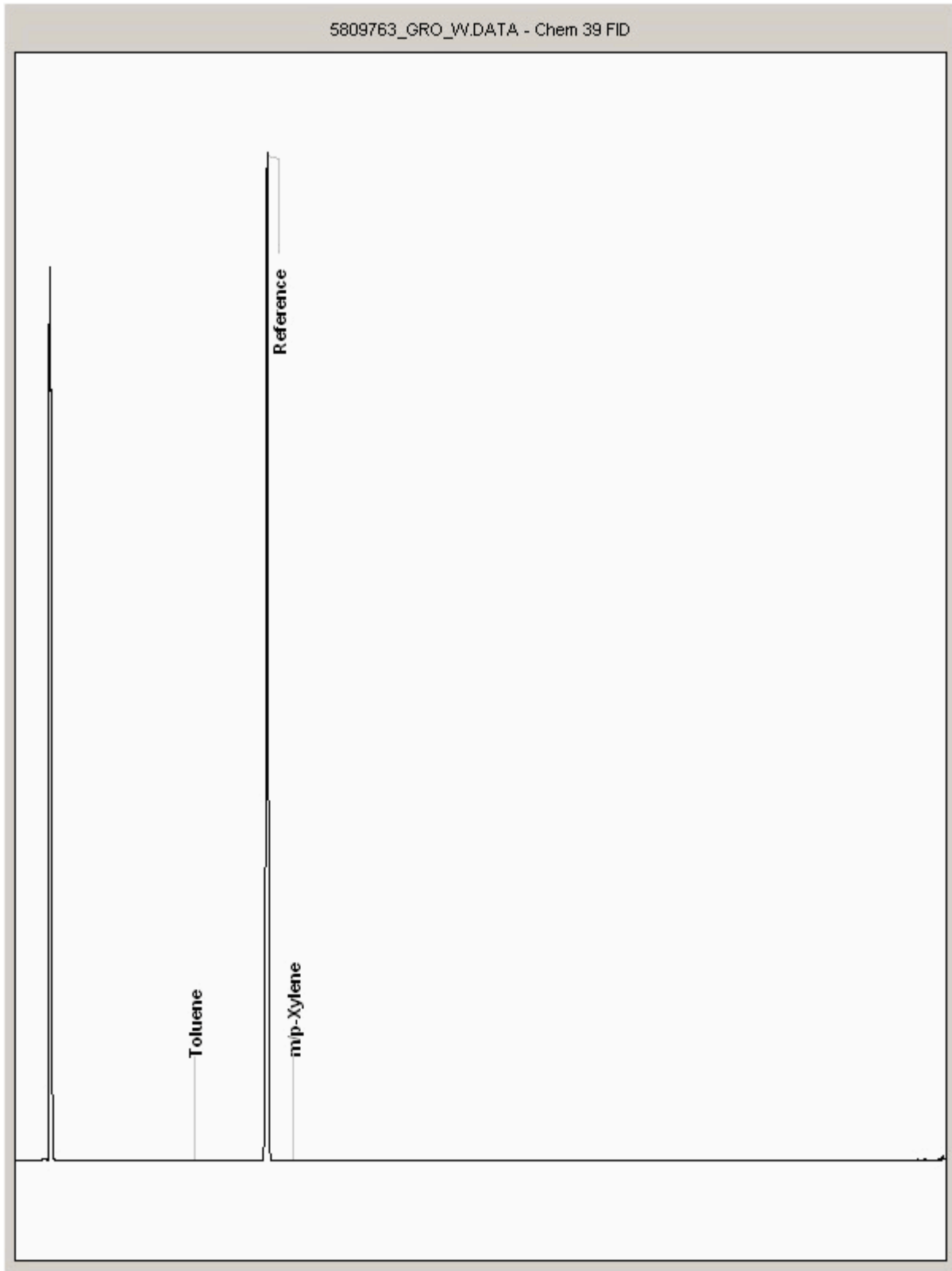
Order Number: 4559
Report Number: 187939
Superseded Report: 187501

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5809763
Sample ID : 221455

Depth :



Hawarden Subcontractors
ALcontrol Laboratories Chester
Units 7 & 8 Hawarden Business Park
Off Manor Lane
Hawarden
Deeside
CH5 3US

Dear Hawarden

Please find attached the results for the batch of 21 samples described below.

Samples Registered on:	03-Jul-2012
Analysis Started on:	04-Jul-2012
Analysis Completed on:	13-Jul-2012
Results for Batch Number	20041226
Your Purchase Order Number:	150139

You will be invoiced shortly by our accounts department.

If we can be of further assistance then please do not hesitate to contact us.

Yours sincerely



William Fardon
Customer Services Team Leader
Tel: (0113) 231 2177
nls@environment-agency.gov.uk

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation. Details of analytical procedures and performance data are available on request. The date of sample analysis is available on request.

The Environment Agency carries out analytical work to high standards and within the scope of its UKAS accreditation, but has no knowledge of whether the circumstances or the validity of the procedures used to obtain the samples provided to the laboratory were representative of the need for which the information was required.

The Environment Agency and/or its staff does not therefore accept any liability for the consequences of any acts or omissions made on the basis of the analysis or advice or interpretation provided.

Client: ALcontrol Laboratories Chester
Folder No: 001993675
Comments: 5811040 - 685990
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	31.0	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001993679
Comments: 5811072 - 685990
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)
Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	17.6	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001993680
Comments: 5811166 - 907491
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	20.7	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001993681
Comments: 5811184 - 907491
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	10.6	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001993682
Comments: 5811229 - 907491
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001993683
Comments: 5811242 - 685990
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001993684
Comments: 5811920 - 225370
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	17.7	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001993685
Comments: 5811957 - 225370
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	12.3	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001993686
Comments: 5811960 - 221455
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	12.1	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001993687
Comments: 5811984 - 221455
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	3.04	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001993688
Comments: 5812282 - 221455
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001993689
Comments: 5812300 - 225370
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001993690
Comments: 5812617 - 982927
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	54.6	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001993691
Comments: 5812629 - 982927
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	28.2	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001993692
Comments: 5812630 - 292411
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	31.4	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001993693
Comments: 5812639 - 292411
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Carbon, Organic : Total as C :- {TOC}	21.2	mg/l	1	None	NM	1102

Client: ALcontrol Laboratories Chester
Folder No: 001993694
Comments: 5813045 - 982927
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001993695
Comments: 5813073 - 292411
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Client: ALcontrol Laboratories Chester
Folder No: 001993696
Comments: 5814942 - 932833
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Molybdenum	<30	ug/l	30	UKAS	SX	321
Chromium	36.6	ug/l	0.5	UKAS	SX	92

Client: ALcontrol Laboratories Chester
Folder No: 001993698
Comments: 5814956 - 932833
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID, Testcode</u>
Carbon, Organic : Total as C :- {TOC}	13.5	mg/l	1	None	NM 1102

Client: ALcontrol Laboratories Chester
Folder No: 001993699
Comments: 5815020 - 932833
Quote No: 7078

Project: Saline analysis 2011
Sampled on: 26-Jun-12 @ (Time not supplied)

Matrix: Saline Water

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>MRV</u>	<u>Accred</u>	<u>Lab ID</u>	<u>Testcode</u>
Cyanide : Free as CN	<0.00500	mg/l	0.005	None	SX	183
Cyanide as CN	<0.00500	mg/l	0.005	None	SX	182
Cyanide : Complex as CN	<0.00500	mg/l		None	NLS	864

Method Description Summary for all samples in batch Number 20041226

92	SX M Misc Cr - Chromium - acid digested, determined by GF-AAS
182	SX I Cyanide or NM I Cyanide- (total) - UV digested, determined colorimetrically by CF analyser
183	SX I Cyanide or NM I Cyanide- (free) - determined colorimetrically by CF analyser
321	SX M ICPMS NR Saline - Metals - acid digested, determined by ICPMS
864	Parameter by calculation
1102	NM I TOC - furnace with IR detection



Simon Padley
Laboratory Site Manager

All reporting limits quoted are those achievable for clean samples of the relevant matrix. No allowance is made for instances when dilutions are necessary owing to the nature of the sample or insufficient volume of the sample being available. In these cases higher reporting limits may be quoted and will be above the MRV.

Solid sample results are determined on a "dried" sample fraction except for parameters where the method description identifies that "as received" sample was used.

Please note all samples will be retained for 10 working days for aqueous samples and 30 working days for solid samples after reporting unless otherwise agreed with Customer Services

Key to Accreditation: UKAS = Methodology accredited to ISO/IEC 17025:2005, MCertS = Methodology accredited to MCertS Performance Standard for testing of soils, none = Methodology not accredited

Key to Lab ID: LE = Leeds, LL = Llanelli, NM = Nottingham, SX = Starcross, SC = Sub-Contracted outside NLS, FI = Field Data, NLS = Calculated

Any subsequent version of this report denoted with a higher version number will supersede this and any previous versions

END OF TEST REPORT

SDG: 120628-125
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187939
Superseded Report: 187501

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: 11 July 2012
Customer: D_PRIORGEOT_CRK
Sample Delivery Group (SDG): 120629-72
Your Reference: P12030
Location: Haulbowline
Report No: 187179

We received 4 samples on Thursday June 28, 2012 and 4 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: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5805078	286405			27/06/2012
5805079	841212			27/06/2012
5805076	865749			27/06/2012
5805075	987541			27/06/2012

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



CERTIFICATE OF ANALYSIS

SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Results Legend		Customer Sample R	286405	841212	865749	987541		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		Saline D	Saline D	Saline D	Saline D		
S	Deviating sample.		27/06/2012	27/06/2012	27/06/2012	27/06/2012		
aq	Aqueous / settled sample.		28/06/2012	28/06/2012	28/06/2012	28/06/2012		
diss.filt	Dissolved / filtered sample.		120629-72	120629-72	120629-72	120629-72		
tot.unfilt	Total / unfiltered sample.		5805078	5805079	5805076	5805075		
*	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					
BOD, unfiltered	<1 mg/l	TM045	<2	<2	<2	<2	#	#
Organic Carbon, Total	<3 mg/l	TM090	<3	<3	<3	<3	#	#
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	0.871	0.265	<0.2	#	#
Sulphide	<0.01 mg/l	TM101	<0.01	<0.01	<0.01	<0.01	#	#
COD, unfiltered	<7 mg/l	TM107	316	284	248	241	#	#
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	41.2	40.1	41.5	39.7	#	#
Barium (diss.filt)	<0.03 µg/l	TM152	56.5	50.9	52.9	59.6		
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	<0.05	<0.05		
Chloride	<2 mg/l	TM184	17800	17000	17300	16500		
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015		
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105	<0.105	<0.105		
Phenol	<0.5 µg/l	TM205	<3.6	<3.6	<3.6	<3.6		
2-methylphenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
3-methylphenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
4-methylphenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
2-chlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
2,4-dimethylphenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
4-chloro-3-methylphenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
2,6-dichlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
4-Chlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
2,4-dichlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
2-nitrophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
2,4,6-trichlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
2,4,5-trichlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
4-nitrophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
2,3,5,6-tetrachlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
2,3,4,6-tetrachlorophenol	<0.5 µg/l	TM205	<0.5	<0.5	<0.5	<0.5		
2,4-dinitrophenol	<2.5 µg/l	TM205	<2.5	<2.5	<2.5	<2.5		
DNOC	<3 µg/l	TM205	<3	<3	<3	<3		



CERTIFICATE OF ANALYSIS

SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Results Legend			Customer Sample R			
#	ISO17025 accredited.		286405	841212	865749	987541
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	Saline D	Saline D	Saline D	Saline D
		Date Sampled	27/06/2012	27/06/2012	27/06/2012	27/06/2012
		Sampled Time				
		Date Received	28/06/2012	28/06/2012	28/06/2012	28/06/2012
		SDG Ref	120629-72	120629-72	120629-72	120629-72
		Lab Sample No.(s)	5805078	5805079	5805076	5805075
		AGS Reference				
Component	LOD/Units	Method				
Pentachlorophenol	<2 µg/l	TM205	<2	<2	<2	<2
Dinoseb	<4 µg/l	TM205	<4	<4	<4	<4
Cyanide, Total	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05
Cyanide, Free	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05
Cyanide, Complex	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05
Thiocyanate	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05
Calcium (diss.filt)	<0.012 mg/l	TM228	368	411	361	449
Sodium (diss.filt)	<0.076 mg/l	TM228	9720	9320	9610	9510
Magnesium (diss.filt)	<0.036 mg/l	TM228	1040	975	1080	968
Potassium (diss.filt)	<2.335 mg/l	TM228	357	336	363	346
Chromium, Hexavalent	<0.03 mg/l	TM241	<0.03	<0.03	<0.03	<0.03
pH	<1 pH Units	TM256	9.45	8.78	9.11	9.04
Arsenic (Saline)	<0.5 µg/l	TM270	<0.5	<0.5	<0.5	<0.5
Aluminium (Saline)	<3.7 µg/l	TM270	26.7	30.3	29.7	36.2
Antimony (Saline)	<1 µg/l	TM270	<1	<1	<1	<1
Boron (Saline)	<201 µg/l	TM270	3030	2740	3080	2630
Cadmium (Saline)	<0.15 µg/l	TM270	<0.15	<0.15	<0.15	<0.15
Chromium (Saline)	<1.5 µg/l	TM270	9.32	15.4	10.8	14.2
Copper (Saline)	<1 µg/l	TM270	<1	<1	<1	<1
Iron (Saline)	<4 µg/l	TM270	<4	<4	<4	<4
Lead (Saline)	<0.2 µg/l	TM270	<0.2	<0.2	<0.2	<0.2
Manganese (Saline)	<0.3 µg/l	TM270	<0.3	<0.3	<0.3	<0.3
Mercury (Saline)	<0.15 µg/l	TM270	0.282	0.305	0.298	0.395
Nickel (saline)	<1.1 µg/l	TM270	4.58	4.03	3.9	4.82
Selenium (Saline)	<0.5 µg/l	TM270	2.62	2.63	2.81	2.81
Vanadium (Saline)	<4 µg/l	TM270	<4	<4	<4	<4
Zinc (Saline)	<2.1 µg/l	TM270	<2.1	<2.1	<2.1	<2.1
Saline TON as NO3	<0.3 mg/l	TM281	1.56	2.15	1.51	2.03
Saline Nitrate as NO3	<0.3 mg/l	TM281	1.56	2.15	1.51	2.03
Sulphur, Free	<0.05 mg/l	TM294	<0.05	<0.05	<0.05	<0.05



SDG: 120629-72
 Job: D_PRIORGEOT_CRK-44
 Client Reference: P12030

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

Order Number: 4559
 Report Number: 187179
 Superseded Report:

VOC MS (W)

Results Legend		Customer Sample R	286405	841212	865749	987541		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		Saline D	Saline D	Saline D	Saline D		
S	Deviating sample.		27/06/2012	27/06/2012	27/06/2012	27/06/2012		
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		28/06/2012	28/06/2012	28/06/2012	28/06/2012		
(F)	Trigger breach confirmed		120629-72	120629-72	120629-72	120629-72		
			5805078	5805079	5805076	5805075		
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM208	110	111	107	105		
Toluene-d8**	%	TM208	99	98.6	98.8	99.7		
4-Bromofluorobenzene**	%	TM208	95.3	95.3	94.6	94.1		
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1	<1		
Chloromethane	<1 µg/l	TM208	<1	<1	<1	<1		
Vinyl chloride	<1 µg/l	TM208	<1	<1	<1	<1		
Bromomethane	<1 µg/l	TM208	<1	<1	<1	<1		
Chloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1	<1	<1		
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1		
Carbon disulphide	<1 µg/l	TM208	<1	<1	<1	<1		
Dichloromethane	<3 µg/l	TM208	<3	<3	<3	<3		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1		
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1		
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1	<1		
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1		
Bromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1		
Chloroform	<1 µg/l	TM208	<1	<1	<1	<1		
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1		
Carbontetrachloride	<1 µg/l	TM208	<1	<1	<1	<1		
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
Benzene	<1 µg/l	TM208	<1	<1	<1	<1		
Trichloroethene	<1 µg/l	TM208	<1	<1	<1	<1		
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1		
Dibromomethane	<1 µg/l	TM208	<1	<1	<1	<1		
Bromodichloromethane	<1 µg/l	TM208	<1	<1	<1	<1		
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1		
Toluene	<1 µg/l	TM208	<1	<1	<1	<1		
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1	<1		
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1	<1	<1		
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1		
Tetrachloroethene	<1 µg/l	TM208	<1	<1	<1	<1		
Dibromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1		



CERTIFICATE OF ANALYSIS

SDG:	120629-72	Location:	Haulbowline	Order Number:	4559
Job:	D_PRIORGEOT_CRK-44	Customer:	Priority Geotechnical Ltd	Report Number:	187179
Client Reference:	P12030	Attention:	Colette Kelly	Superseded Report:	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: 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		
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		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
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		
TM205		Determination of Phenols in Waste Waters using Solid Phase Extraction, Acetylation, Gas Chromatography and Mass Selective Detection		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
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		
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		
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		
TM270	Thermo Electron Application Note AN_E0640: X Series ICP-MS: Using automated collision cell ICP-MS with rapid in-sample switching to achieve ultimate performance in environmental analysis.	Dissolved Metals in Saline Matrices by CCT ICP-MS		
TM281		The Determination of Total Oxidized Nitrogen in Saline Matrices using the Kone Spectrophotometric Analysers		
TM294		Determination of Free Sulphur in liquids by HPLC		

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



SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	5805078	5805079	5805076	5805075
	286405	841212	865749	987541
AGS Ref.				
Depth				
Type	SALINE_D	SALINE_D	SALINE_D	SALINE_D
Ammoniacal Nitrogen	05-Jul-2012	05-Jul-2012	05-Jul-2012	04-Jul-2012
Anions by Kone (w)	06-Jul-2012	06-Jul-2012	06-Jul-2012	06-Jul-2012
BOD True Total	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012
COD Unfiltered	30-Jun-2012	30-Jun-2012	30-Jun-2012	30-Jun-2012
Conductivity (at 20 deg.C)	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012
Cyanide Comp/Free/Total/Thiocyanate	03-Jul-2012	03-Jul-2012	03-Jul-2012	04-Jul-2012
Dissolved Metals by ICP-MS	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012
EPH CWG (Aliphatic) Aqueous GC (W)	06-Jul-2012	06-Jul-2012	06-Jul-2012	06-Jul-2012
EPH CWG (Aromatic) Aqueous GC (W)	06-Jul-2012	06-Jul-2012	06-Jul-2012	06-Jul-2012
Free Sulphur	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
GRO by GC-FID (W)	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012
Hexavalent Chromium (w)	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
Metals analysis (Saline Sample)	05-Jul-2012	05-Jul-2012	05-Jul-2012	05-Jul-2012
Metals by iCap-OES Dissolved (W)	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
Nitrite by Kone (w)	04-Jul-2012	04-Jul-2012	04-Jul-2012	06-Jul-2012
PCB Congeners - Aqueous (W)	06-Jul-2012	06-Jul-2012	06-Jul-2012	06-Jul-2012
pH Value	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
Phenols by ms (w)	10-Jul-2012	10-Jul-2012	10-Jul-2012	10-Jul-2012
Saline TON	06-Jul-2012	06-Jul-2012	06-Jul-2012	06-Jul-2012
Sulphide	04-Jul-2012	04-Jul-2012	04-Jul-2012	04-Jul-2012
Total Organic and Inorganic Carbon	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012
TPH CWG (W)	06-Jul-2012	06-Jul-2012	06-Jul-2012	06-Jul-2012
VOC MS (W)	03-Jul-2012	03-Jul-2012	03-Jul-2012	03-Jul-2012



CERTIFICATE OF ANALYSIS

SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

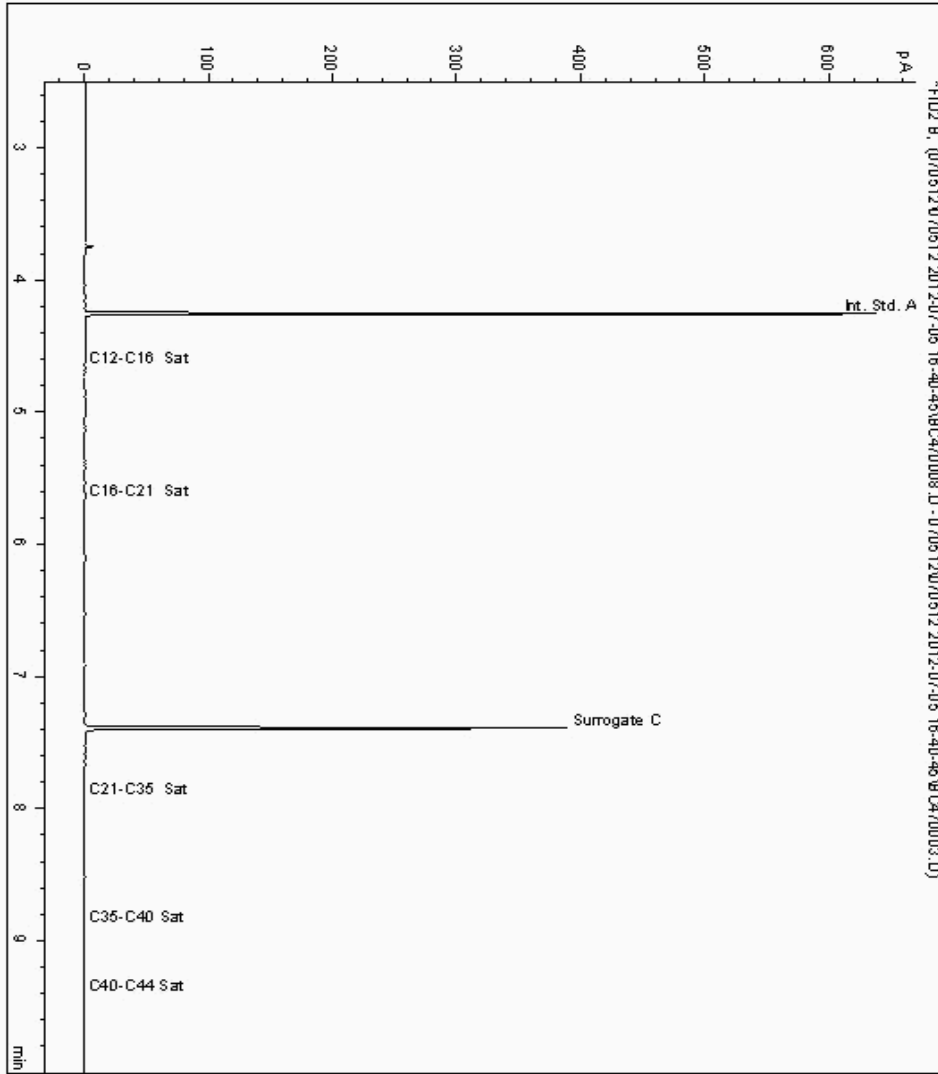
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5817275
Sample ID : 987541

Depth :

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

Sample Identity: 5667523-5817275
Date Acquired : 05/07/12 18:52:50
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

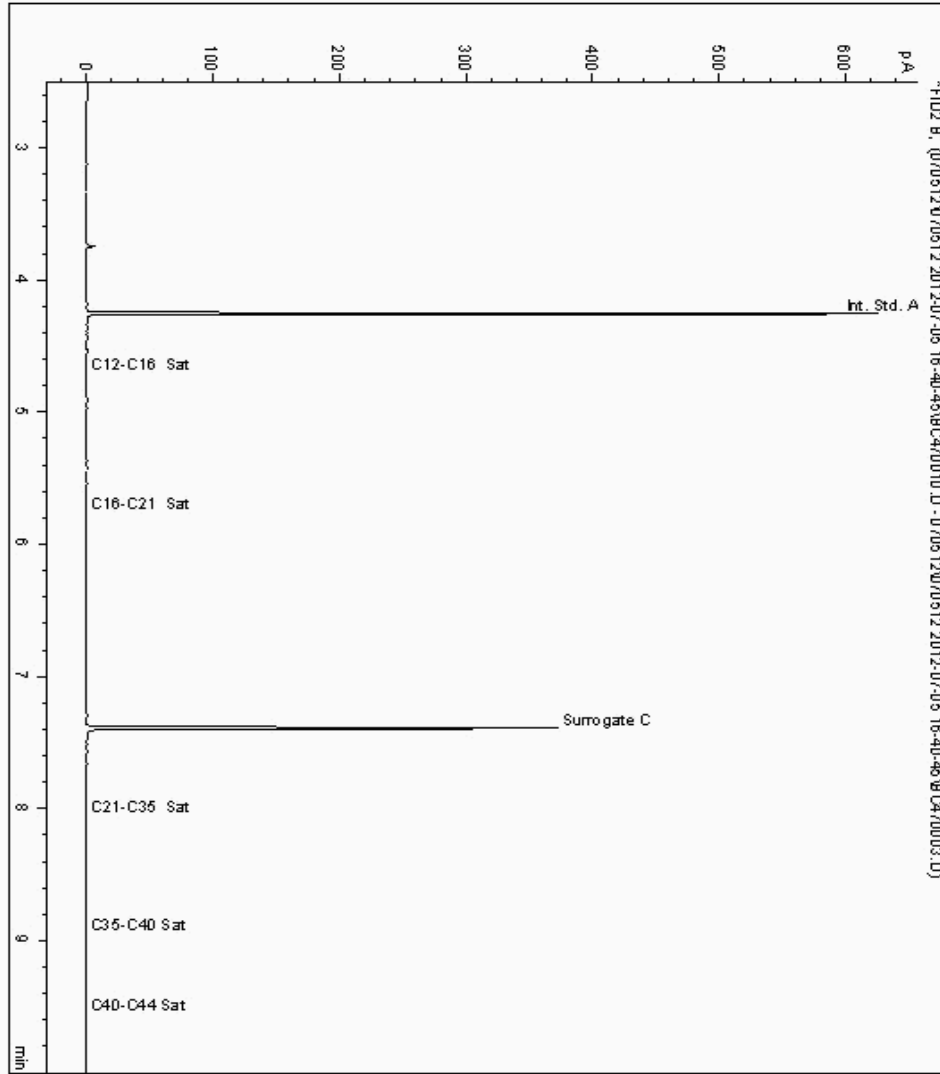
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5817353
Sample ID : 865749

Depth :

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

Sample Identity: 5667549-5817353
Date Acquired : 05/07/12 19:31:15
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

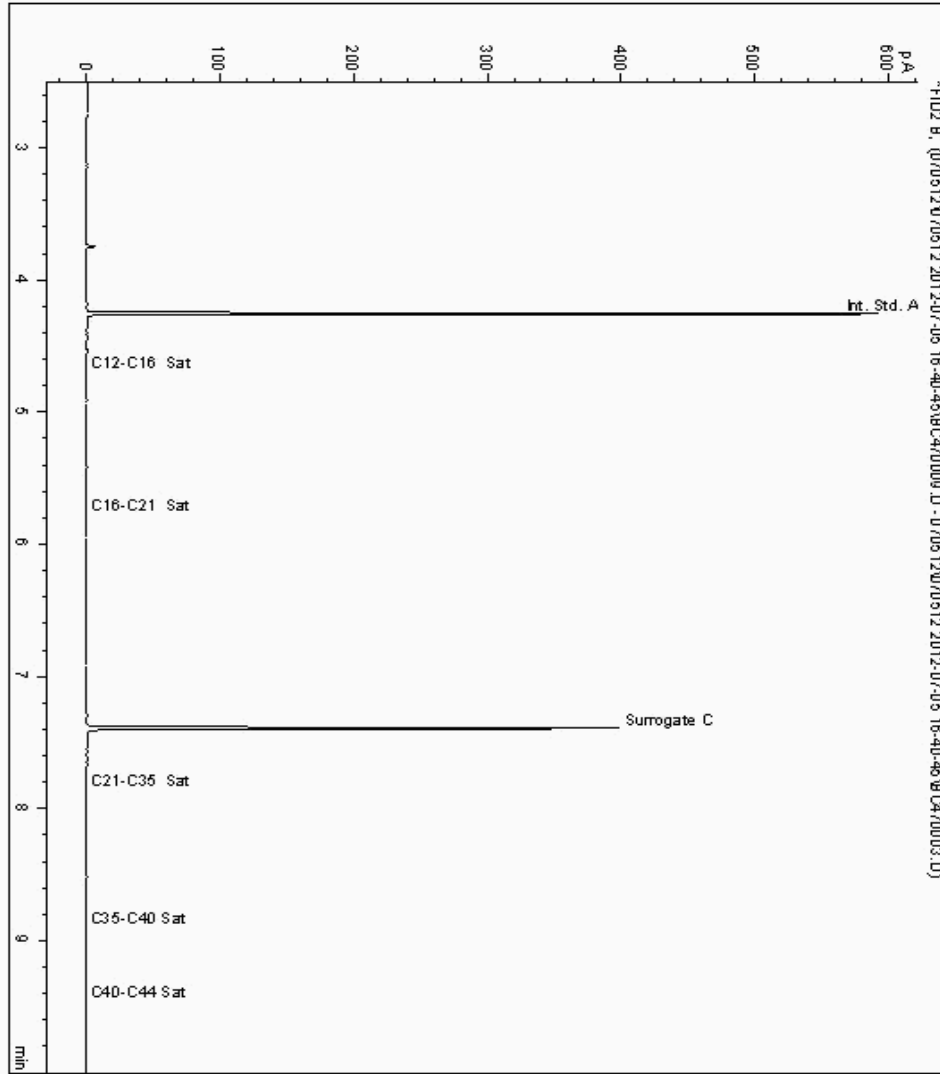
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5817402
Sample ID : 286405

Depth :

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

Sample Identity: 5667577-5817402
Date Acquired : 05/07/12 19:12:01
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

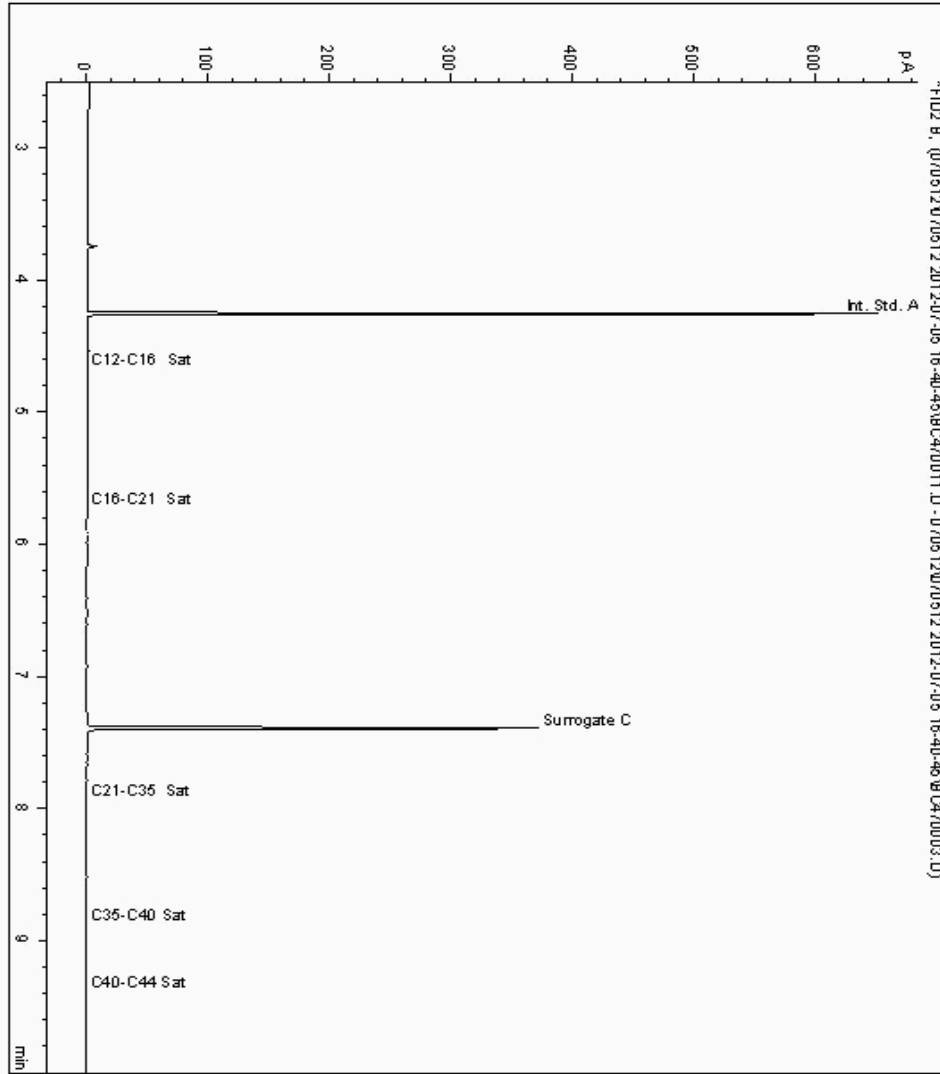
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 5817471
Sample ID : 841212

Depth :

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

Sample Identity: 5667603-5817471
Date Acquired : 05/07/12 19:50:31
Units : ppb
Dilution :
CF : 1
Multiplier : 0.017





CERTIFICATE OF ANALYSIS

SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

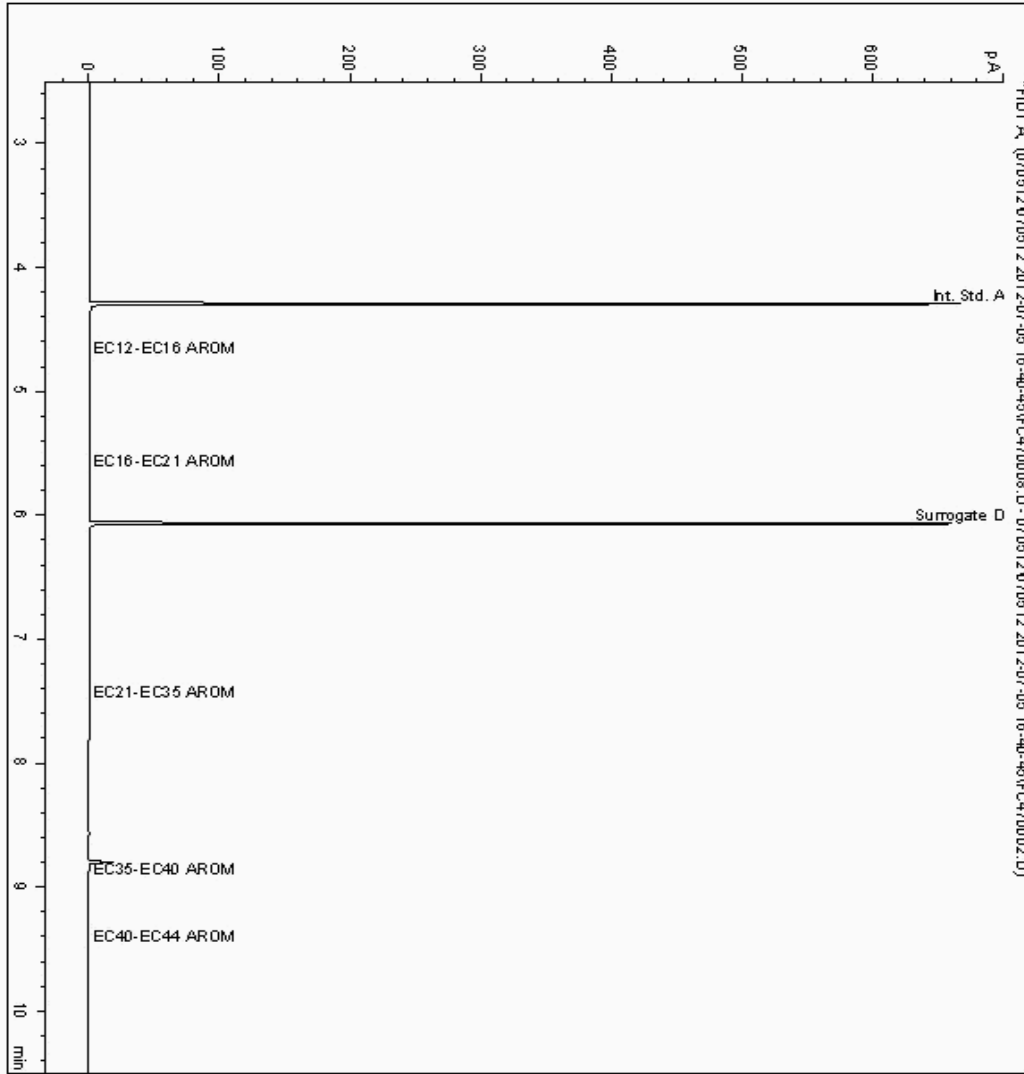
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5817275
Sample ID : 987541

Depth :

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

Sample Identity: 5667524-5817275
Date Acquired : 05/07/12 18:52:50
Units :
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

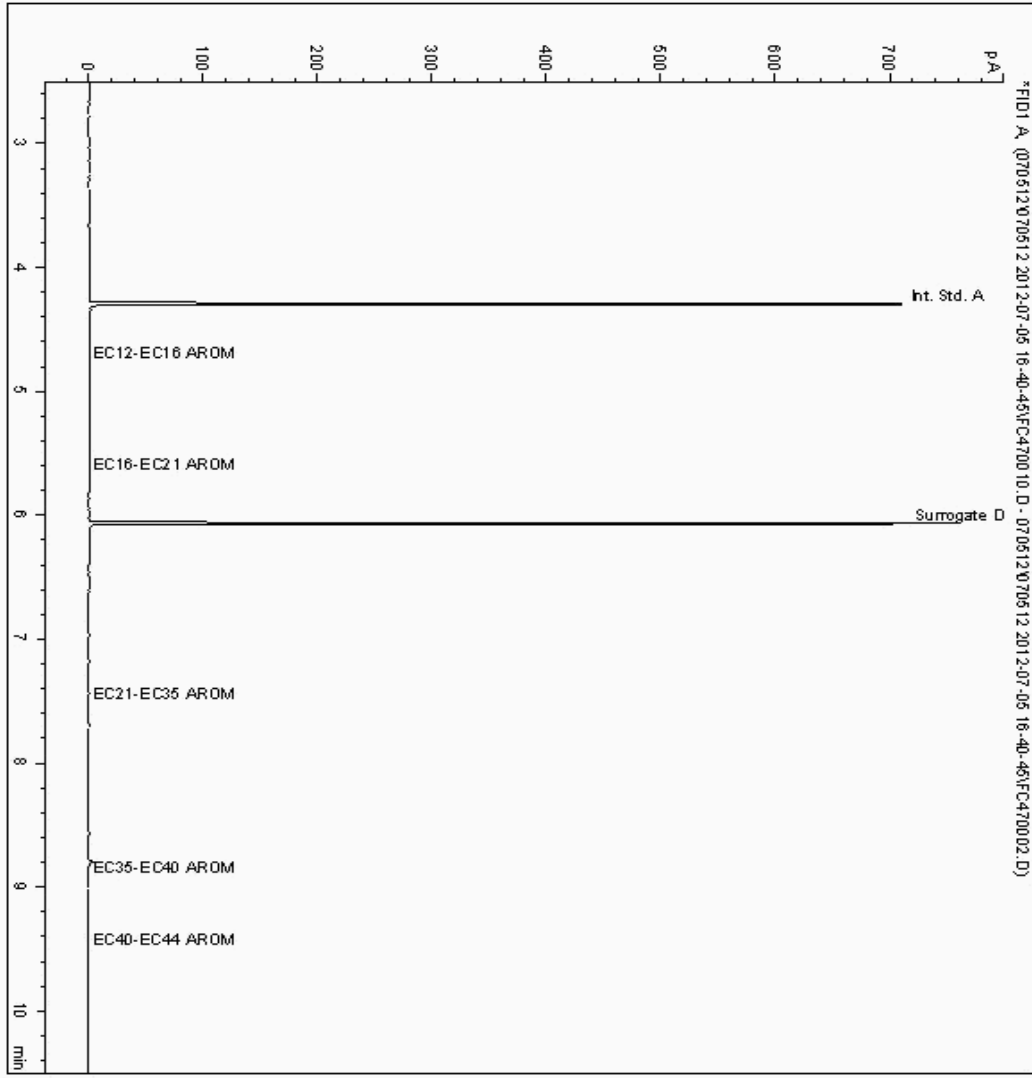
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5817353
Sample ID : 865749

Depth :

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

Sample Identity: 5667550-5817353
Date Acquired : 05/07/12 19:31:16
Units :
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

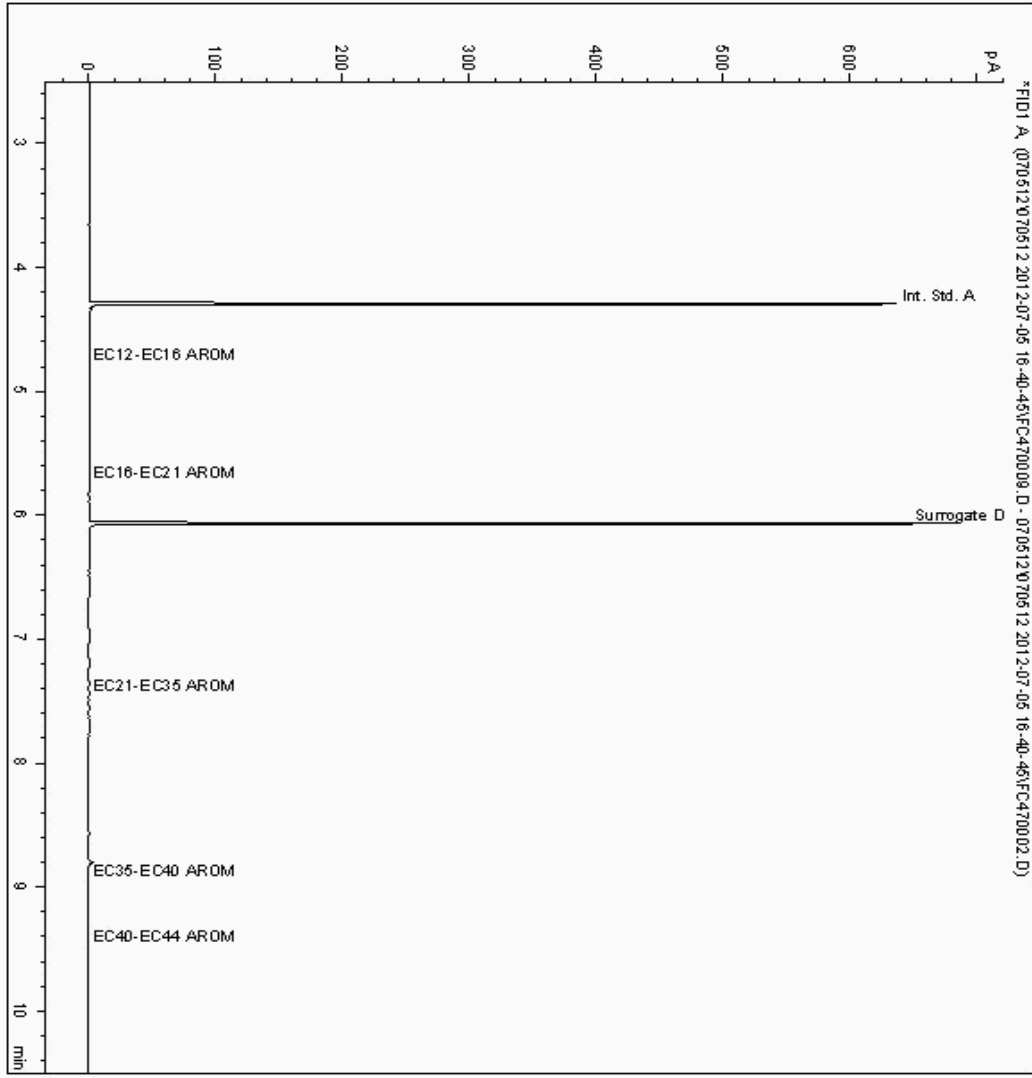
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5817402
Sample ID : 286405

Depth :

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

Sample Identity: 5667578-5817402
Date Acquired : 05/07/12 19:12:01
Units :
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

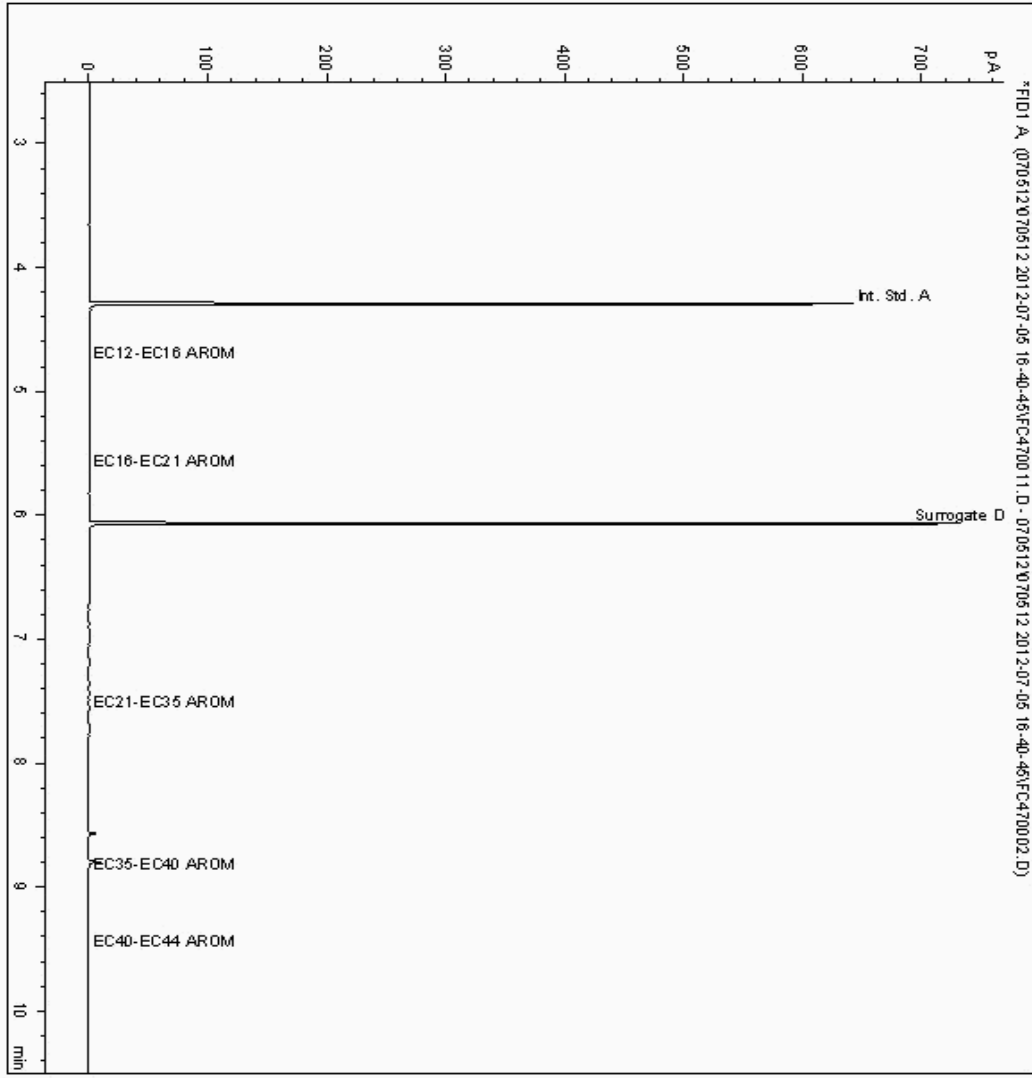
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 5817471
Sample ID : 841212

Depth :

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

Sample Identity: 5667604-5817471
Date Acquired : 05/07/12 19:50:31
Units :
Dilution :
CF : 1
Multiplier : 0.017





SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

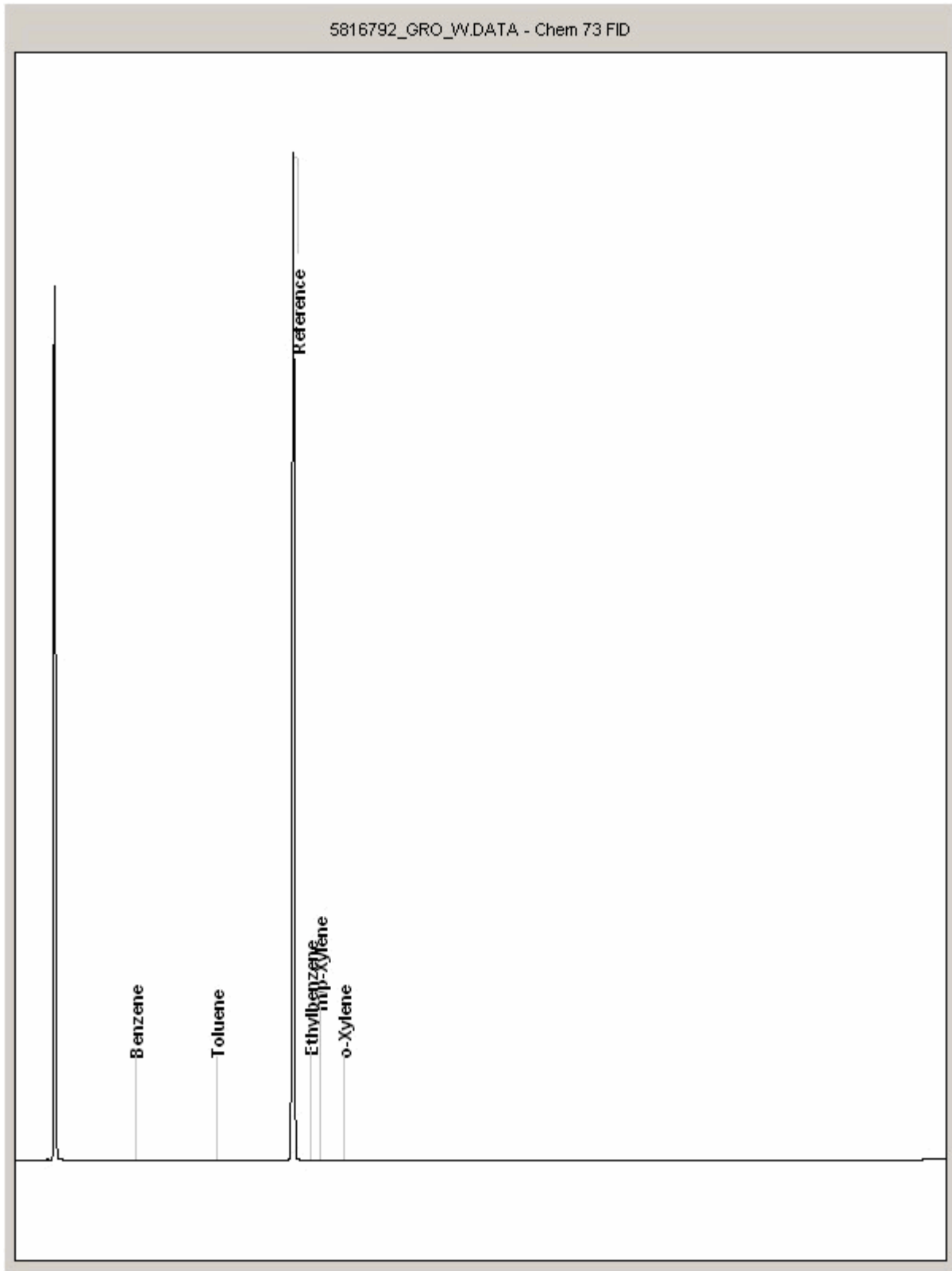
Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5816792
Sample ID : 987541

Depth :





SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

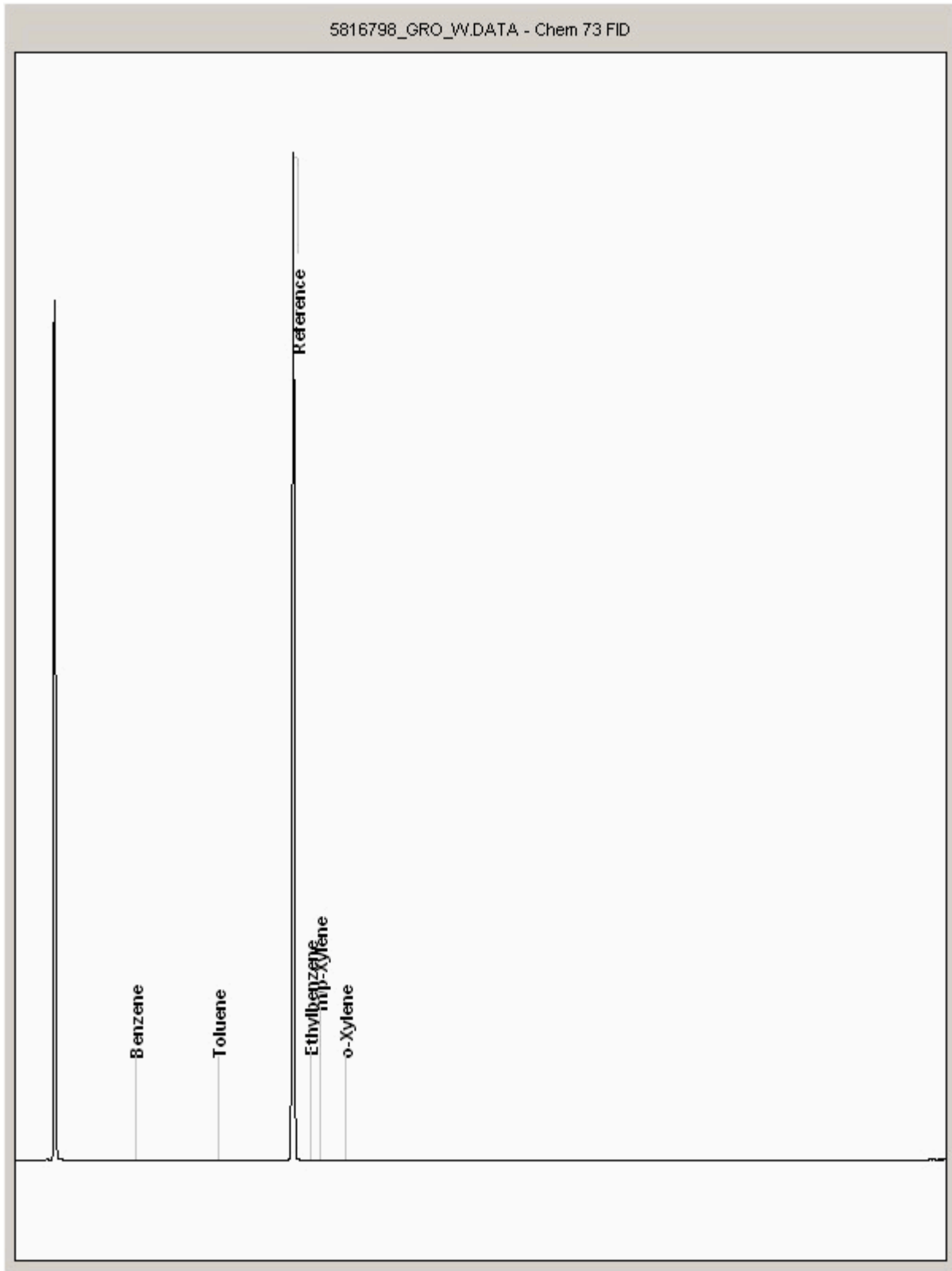
Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5816798
Sample ID : 865749

Depth :





SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

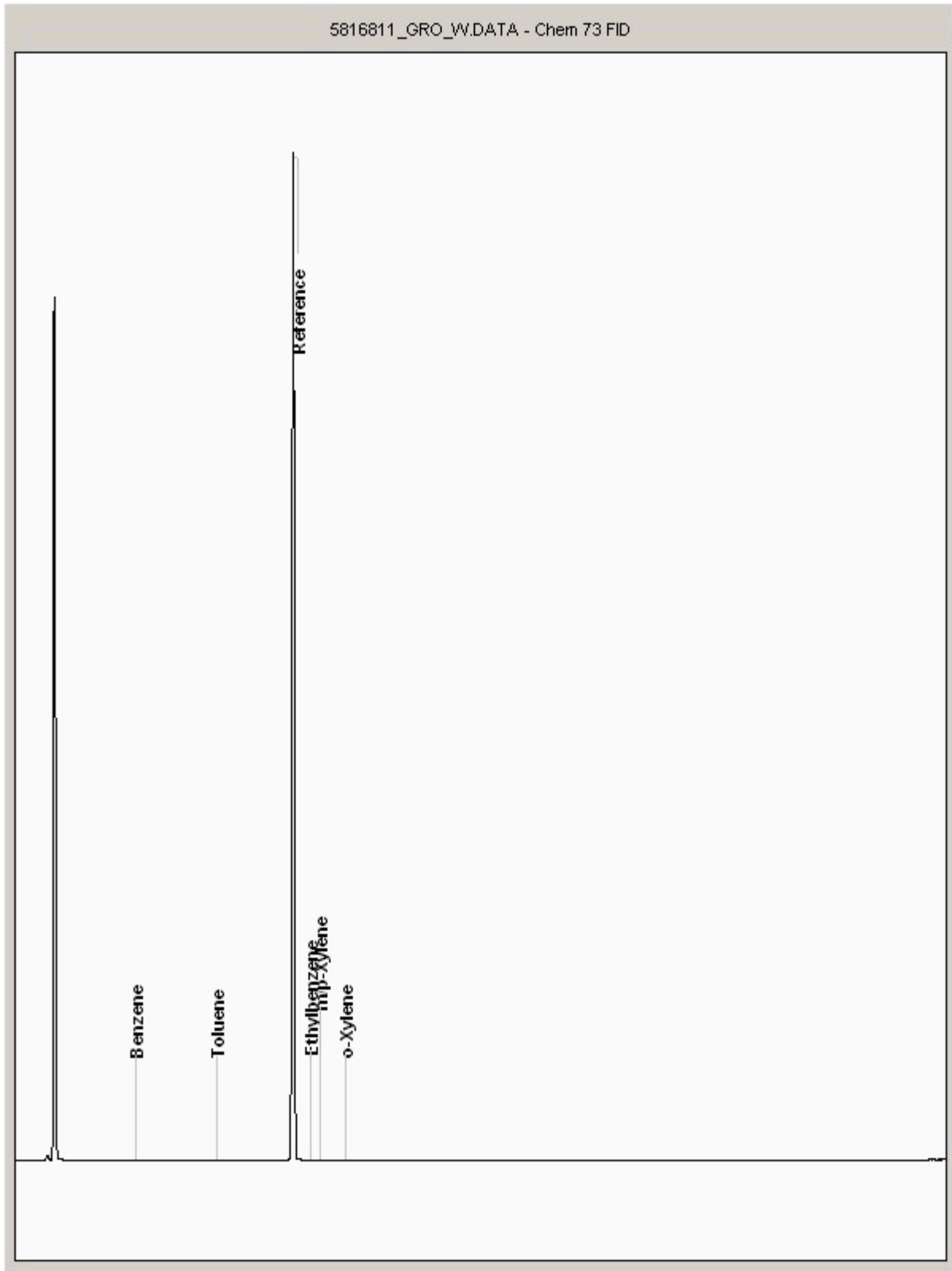
Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5816811
Sample ID : 286405

Depth :





CERTIFICATE OF ANALYSIS

SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

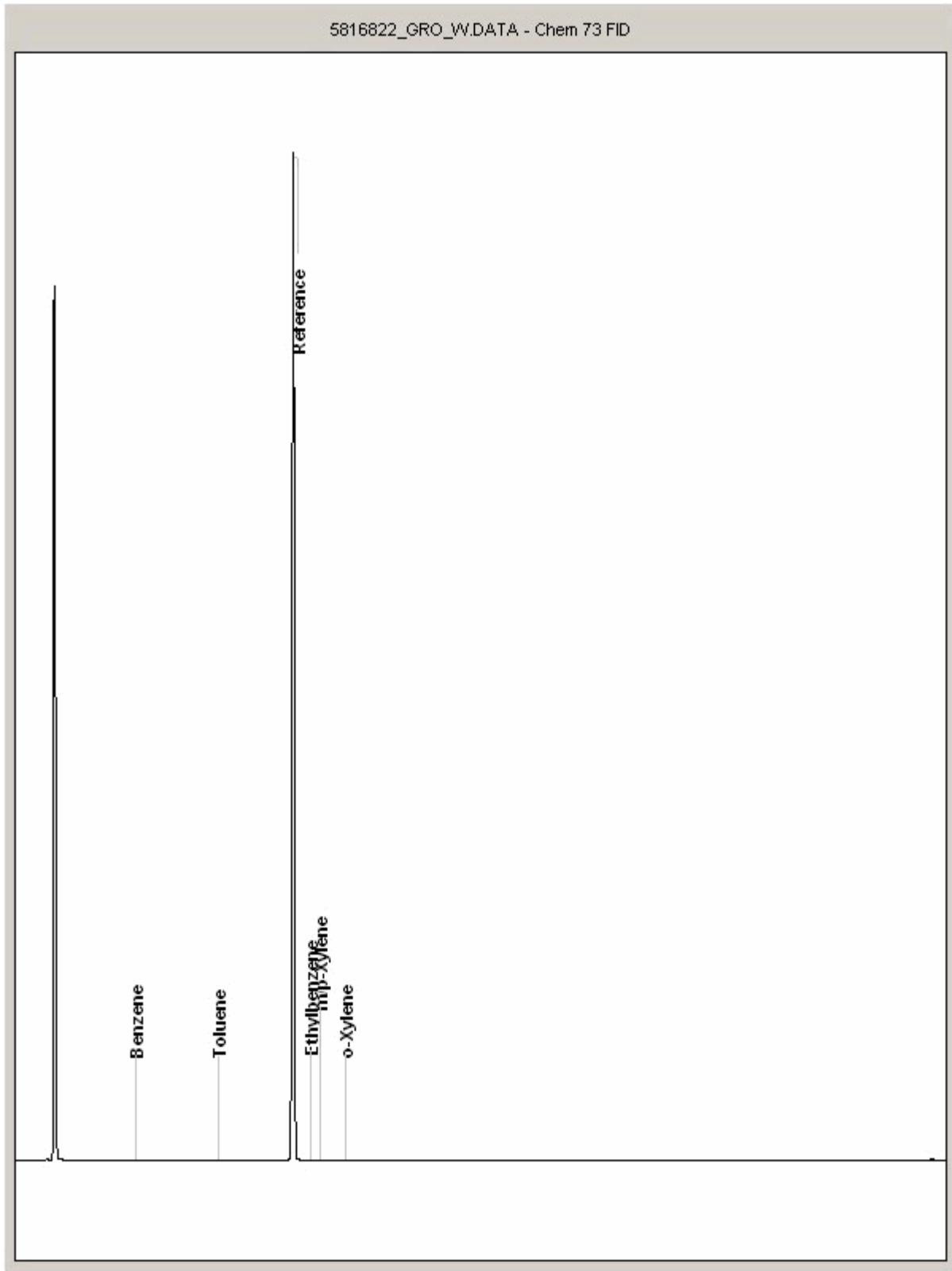
Order Number: 4559
Report Number: 187179
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 5816822
Sample ID : 841212

Depth :



SDG: 120629-72
Job: D_PRIORGEOT_CRK-44
Client Reference: P12030

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

Order Number: 4559
Report Number: 187179
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-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
PESTOCPOPP	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 (R)	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.

Chemtest Technical Services
Depot Road
Newmarket
Suffolk
CB8 0ALFAO S Fisher/J Cutting/P Hellier
14 December 2012

Dear S Fisher/J Cutting/P Hellier

Test Report Number 217297
Your Project Reference A26036 - pH Dependence

Please find enclosed the results of analysis for the samples received 30 November 2012.

All soil samples will be retained for a period of one month and all water samples will be retained for 7 days following the date of the test report. Should you require an extended retention period then please detail your requirements in an email to customerservices@chemtest.co.uk. Please be aware that charges may be applicable for extended sample storage.

If you require any further assistance, please do not hesitate to contact the Customer Services team.

Yours sincerely

<input type="checkbox"/>	Darrell Hall	Director
<input type="checkbox"/>	Phil Hellier	Director
<input type="checkbox"/>	Keith Jones	Technical Manager
<input type="checkbox"/>	John Crawford	Quality Manager
<input type="checkbox"/>	Malcolm Avis	Director

Authorised Signatory



2183

*Notes to accompany report:*

- The sign < means 'less than'
- Tests marked 'U' hold UKAS accreditation
- Tests marked 'M' hold MCertS (and UKAS) accreditation
- Tests marked 'N' do not currently hold UKAS accreditation
- Tests marked 'S' were subcontracted to an approved laboratory
- n/e means 'not evaluated'
- i/s means 'insufficient sample'
- u/s means 'unsuitable sample'
- Comments or interpretations are beyond the scope of UKAS accreditation
- The results relate only to the items tested
- All results are expressed on a dry weight basis
- The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, phenols
- For all other tests the samples were dried at < 37°C prior to analysis
- Uncertainties of measurement for the determinands tested are available upon request
- None of the test results included in this report have been recovery corrected

Test Report 217297 Cover Sheet

LABORATORY TEST REPORT

Results of analysis of 20 samples
 received 30 November 2012

Report Date
04 December 2012

FAO S Fisher/J Cutting/P Hellier

A26036 - pH Dependence

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

					217297					
					AI01902	AI01903	AI01904	AI01905	AI01906	AI01907
					BH307 - 4	BH307 - 5	BH307 - 6	BH307 - 7	BH307 - 8	BH307 - 9
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					WATER	WATER	WATER	WATER	WATER	WATER
1010	pH	PH		U	4.66	5.99	6.72	7.36	8.43	9.09
1450	Arsenic	7440382	µg l ⁻¹	U	420	250	240	140	73	39
	Boron	7440428	µg l ⁻¹	U	1100	780	800	680	580	630
	Cadmium (total)	7440439	µg l ⁻¹	U	13	3.0	2.0	0.75	0.28	0.19
	Copper	7440508	µg l ⁻¹	U	50	8.7	5.6	3.2	3.7	2.5
	Nickel	7440020	µg l ⁻¹	U	44	15	11	6.8	4.1	1.8
	Lead	7439921	µg l ⁻¹	U	69	7.2	4.5	1.8	1.1	1.6
	Selenium	7782492	µg l ⁻¹	U	<1.0	<1.0	<1.0	<1.0	<1.0	4.0
	Vanadium	7440622	µg l ⁻¹	U	78	130	140	140	170	160
	Zinc	7440666	µg l ⁻¹	U	280	31	20	14	12	13

LABORATORY TEST REPORT

Results of analysis of 20 samples
 received 30 November 2012

Report Date
04 December 2012

FAO S Fisher/J Cutting/P Hellier

A26036 - pH Dependence

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

217297

AI01908	AI01909	AI01910	AI01911	AI01912	AI01913
BH307 - 10	BH307 - 11	BH307 - 12	BH307 -	BH310 - 4	BH310 - 5
Not Provided	Not Provided	Not Provided	Natural	Not Provided	Not Provided
WATER	WATER	WATER	WATER	WATER	WATER
10.07	11.25	11.96	11.79	4.64	6.12
17	7.1	4.0	3.7	340	570
220	190	46	57	800	930
0.14	<0.080	<0.080	<0.080	4.5	7.6
2.5	4.2	4.4	4.1	280	8.4
1.9	<1.0	<1.0	<1.0	35	27
1.2	1.9	6.0	4.0	220	8.0
4.0	4.2	3.0	3.5	<1.0	<1.0
120	71	54	42	75	150
10	7.8	6.8	5.9	460	92

1010	pH	PH		U
1450	Arsenic	7440382	µg l ⁻¹	U
	Boron	7440428	µg l ⁻¹	U
	Cadmium (total)	7440439	µg l ⁻¹	U
	Copper	7440508	µg l ⁻¹	U
	Nickel	7440020	µg l ⁻¹	U
	Lead	7439921	µg l ⁻¹	U
	Selenium	7782492	µg l ⁻¹	U
	Vanadium	7440622	µg l ⁻¹	U
	Zinc	7440666	µg l ⁻¹	U

* Accreditation status

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LABORATORY TEST REPORT

Results of analysis of 20 samples
 received 30 November 2012

Report Date
04 December 2012

FAO S Fisher/J Cutting/P Hellier

A26036 - pH Dependence

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

217297

					AI01914	AI01915	AI01916	AI01917	AI01918	AI01919
					BH310 - 6	BH310 - 7	BH310 - 8	BH310 - 9	BH310 - 10	BH310 - 11
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					WATER	WATER	WATER	WATER	WATER	WATER
1010	pH	PH		U	6.40	7.05	7.88	8.95	9.64	11.30
1450	Arsenic	7440382	µg l ⁻¹	U	300	210	150	78	32	7.2
	Boron	7440428	µg l ⁻¹	U	550	560	510	450	410	410
	Cadmium (total)	7440439	µg l ⁻¹	U	1.1	0.91	0.41	0.31	0.29	0.35
	Copper	7440508	µg l ⁻¹	U	3.9	5.1	5.8	2.4	3.6	7.0
	Nickel	7440020	µg l ⁻¹	U	5.9	5.1	3.0	2.3	1.9	<1.0
	Lead	7439921	µg l ⁻¹	U	5.3	5.6	5.4	2.3	2.8	2.1
	Selenium	7782492	µg l ⁻¹	U	<1.0	2.7	4.4	4.8	4.0	7.0
	Vanadium	7440622	µg l ⁻¹	U	200	230	290	220	160	140
	Zinc	7440666	µg l ⁻¹	U	13	17	8.1	6.9	6.9	9.7

LABORATORY TEST REPORT

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A26036 - pH Dependence

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

217297	
AI01920	AI01921
BH310 - 12	BH310
Not Provided	Natural
Not Provided	Not Provided
WATER	WATER

SOP↓	Determinand↓	CAS No↓	Units↓	*	AI01920	AI01921
1010	pH	PH		U	12.03	11.79
1450	Arsenic	7440382	µg l ⁻¹	U	3.9	3.5
	Boron	7440428	µg l ⁻¹	U	42	67
	Cadmium (total)	7440439	µg l ⁻¹	U	0.39	0.30
	Copper	7440508	µg l ⁻¹	U	10	6.6
	Nickel	7440020	µg l ⁻¹	U	<1.0	<1.0
	Lead	7439921	µg l ⁻¹	U	15	5.8
	Selenium	7782492	µg l ⁻¹	U	12	5.5
	Vanadium	7440622	µg l ⁻¹	U	94	51
	Zinc	7440666	µg l ⁻¹	U	12	10

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LABORATORY TEST REPORT

Results of analysis of 20 samples
 received 30 November 2012

Report Date
 14 December 2012

FAO S Fisher/J Cutting/P Hellier

A26036 - pH Dependence

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

					217297					
					AI01902	AI01903	AI01904	AI01905	AI01906	AI01907
					BH307 - 4	BH307 - 5	BH307 - 6	BH307 - 7	BH307 - 8	BH307 - 9
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					WATER	WATER	WATER	WATER	WATER	WATER
SOP↓	Determinand↓	CAS No↓	Units↓	*						
1010	pH	PH		U	4.66	5.99	6.72	7.36	8.43	9.09
1450	Arsenic	7440382	µg l ⁻¹	U	420	250	240	140	73	39
	Boron	7440428	µg l ⁻¹	U	1100	780	800	680	580	630
	Cadmium (total)	7440439	µg l ⁻¹	U	13	3.0	2.0	0.75	0.28	0.19
	Chromium	7440473	µg l ⁻¹	U	300	380	380	360	330	340
	Copper	7440508	µg l ⁻¹	U	50	8.7	5.6	3.2	3.7	2.5
	Nickel	7440020	µg l ⁻¹	U	44	15	11	6.8	4.1	1.8
	Lead	7439921	µg l ⁻¹	U	69	7.2	4.5	1.8	1.1	1.6
	Selenium	7782492	µg l ⁻¹	U	<1.0	<1.0	<1.0	<1.0	<1.0	4.0
	Vanadium	7440622	µg l ⁻¹	U	78	130	140	140	170	160
	Zinc	7440666	µg l ⁻¹	U	280	31	20	14	12	13
1460	Mercury Low Level	7439976	µg l ⁻¹	U	0.035	<0.05	<0.01	<0.01	<0.01	<0.01

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A26036 - pH Dependence

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

				217297						
				AI01908	AI01909	AI01910	AI01911	AI01912	AI01913	
				BH307 - 10	BH307 - 11	BH307 - 12	BH307 -	BH310 - 4	BH310 - 5	
							Natural			
				Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	
				WATER	WATER	WATER	WATER	WATER	WATER	
1010	pH	PH	U	10.07	11.25	11.96	11.79	4.64	6.12	
1450	Arsenic	7440382	µg l ⁻¹	U	17	7.1	4.0	3.7	340	570
	Boron	7440428	µg l ⁻¹	U	220	190	46	57	800	930
	Cadmium (total)	7440439	µg l ⁻¹	U	0.14	<0.080	<0.080	<0.080	4.5	7.6
	Chromium	7440473	µg l ⁻¹	U	320	200	170	140	310	440
	Copper	7440508	µg l ⁻¹	U	2.5	4.2	4.4	4.1	280	8.4
	Nickel	7440020	µg l ⁻¹	U	1.9	<1.0	<1.0	<1.0	35	27
	Lead	7439921	µg l ⁻¹	U	1.2	1.9	6.0	4.0	220	8.0
	Selenium	7782492	µg l ⁻¹	U	4.0	4.2	3.0	3.5	<1.0	<1.0
	Vanadium	7440622	µg l ⁻¹	U	120	71	54	42	75	150
	Zinc	7440666	µg l ⁻¹	U	10	7.8	6.8	5.9	460	92
1460	Mercury Low Level	7439976	µg l ⁻¹	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

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A26036 - pH Dependence

Login Batch No

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Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

217297

				AI01914	AI01915	AI01916	AI01917	AI01918	AI01919
				BH310 - 6	BH310 - 7	BH310 - 8	BH310 - 9	BH310 - 10	BH310 - 11
				Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
				WATER	WATER	WATER	WATER	WATER	WATER
1010	pH	PH	U	6.40	7.05	7.88	8.95	9.64	11.30
1450	Arsenic	7440382	µg l ⁻¹	300	210	150	78	32	7.2
	Boron	7440428	µg l ⁻¹	550	560	510	450	410	410
	Cadmium (total)	7440439	µg l ⁻¹	1.1	0.91	0.41	0.31	0.29	0.35
	Chromium	7440473	µg l ⁻¹	470	480	470	460	440	820
	Copper	7440508	µg l ⁻¹	3.9	5.1	5.8	2.4	3.6	7.0
	Nickel	7440020	µg l ⁻¹	5.9	5.1	3.0	2.3	1.9	<1.0
	Lead	7439921	µg l ⁻¹	5.3	5.6	5.4	2.3	2.8	2.1
	Selenium	7782492	µg l ⁻¹	<1.0	2.7	4.4	4.8	4.0	7.0
	Vanadium	7440622	µg l ⁻¹	200	230	290	220	160	140
	Zinc	7440666	µg l ⁻¹	13	17	8.1	6.9	6.9	9.7
1460	Mercury Low Level	7439976	µg l ⁻¹	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

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A26036 - pH Dependence

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

217297

AI01920

AI01921

BH310 - 12

BH310

Natural

Not Provided

Not Provided

WATER

WATER

SOP↓	Determinand↓	CAS No↓	Units↓	*	AI01920	AI01921
1010	pH	PH		U	12.03	11.79
1450	Arsenic	7440382	µg l ⁻¹	U	3.9	3.5
	Boron	7440428	µg l ⁻¹	U	42	67
	Cadmium (total)	7440439	µg l ⁻¹	U	0.39	0.30
	Chromium	7440473	µg l ⁻¹	U	920	540
	Copper	7440508	µg l ⁻¹	U	10	6.6
	Nickel	7440020	µg l ⁻¹	U	<1.0	<1.0
	Lead	7439921	µg l ⁻¹	U	15	5.8
	Selenium	7782492	µg l ⁻¹	U	12	5.5
	Vanadium	7440622	µg l ⁻¹	U	94	51
	Zinc	7440666	µg l ⁻¹	U	12	10
1460	Mercury Low Level	7439976	µg l ⁻¹	U	<0.01	<0.01

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