

- (H) Decontaminate sampling equipment as described below unless otherwise specified in the site workplan. When using stainless steel sampling equipment: -
- wash with non-phosphate detergent in potable water,
  - rinse sequentially in potable water, methanol, acetone, methanol and D1 water and;
  - allow to air dry in a containment free area.
- (I) Wrap the decontaminated sampling equipment in aluminium foil which has been decontaminated in accordance with Section H.

## **2.0 FIELD DOCUMENTATION**

Record sample information in the field notebook. Provide a complete description of the sample location, and a photograph, if necessary. Describe the soil appearance, especially if the presence of oil or an odour is noted. Document the sample bottle lot numbers in the field notebook. Record weather conditions at the time of sampling. The Field Team Leader will initial the logbook entries for correctness.

## **3.0 FIELD QA/QC SAMPLES**

See the separate SOP on Field QA/QC samples for appropriateness and preparation of D1 Water Field Blanks, Cross-contamination Field Blanks, Trip Blanks and Field Duplicate Samples.

## **4.0 PACKAGING AND TRANSPORT**

Check to be sure that all necessary information is on the sample container label. Complete the chain-of custody form. Package, label and transport the samples to the testing laboratory in accordance with requirements for packing, shipping and labelling environmental samples.

END.

DCC PLAN NO. 2861/21  
REVISED: 01/06/2021

## **APPENDIX 4**

### Groundwater Sampling Protocol



## STANDARD OPERATING PROCEDURE

### GROUNDWATER SAMPLING

---

The primary objective of groundwater sampling is to evaluate whether the potential contaminant sources at a site have impacted the quality of the groundwater in the underlying aquifer. The additional objective is to measure hydraulic gradient, or slope, of the water table in the shallow aquifer in an effort to evaluate the direction of groundwater flow.

The purpose of this procedure is to ensure that representative samples of groundwater are collected and documented using consistent methods to ensure sample integrity.

#### 1.0 SAMPLING PROCEDURES

##### 1.1 Well Operating and Purging Procedures

All groundwater sampling will be conducted after the installed and developed wells have been allowed to equilibrate for at least 2 to 3 days. A Field Data Sheet for Well Sampling will be completed for each well.

Groundwater sampling teams will use to following procedure for approaching, opening, purging and sampling all wells unless directed otherwise by the workplan.

- 1) Prior to placing any equipment into the well, decontaminate the sampling equipment according to standard decontamination protocol.
- 2) Approach the well with a working FID/PID , a well key, and a depth-to-water meter.
- 3) Unlock and open the well cap just enough to insert the probe of the PID/FID. Take and record a reading. A decision to upgrade PPE may be necessary based on the FID/PID readings in the breathing zone.
- 4) Where practical, the surface water column will be visually examined for the presence of hydrocarbons, if present or suspected, the thickness of the hydrocarbon layer will be measured using an oil/water interface probe prior to taking the depth-to-water measurement.
- 5) Insert the water level probe into the well and measure and record the static water level to the nearest 0.01 m with respect to the established survey point on top of the well casing.



- 6) Decontaminate the water level probe with DDI water (Do not rinse with any solvents unless product was encountered).
- 7) Calculate and record the minimum volume of water to be purged according to the following conversion factors: -

1 well volume	=	water column in metres x litres/linear metre
2 inch casing	=	2.0 LPM
4 inch casing	=	8.1 LPM
6 inch casing	=	18.2 LPM
8 inch casing	=	32.4 LPM

- 8) Purge the well of at least 3 casing volumes by pumping using a peristaltic pump with flow controller or bailing with a decontaminated submersible pump or PVC bailer equipped with a bottom filling check valve (if the purge volume is low, generally less than 100 litres, the sampling team might find it more efficient to purge with a bailer than a pump). Use a graduated bucket to track the amount of water removed from the well. The determination of purging and sampling will depend on parameters being analysed. Where VOCs or SVOCs are required it is recommended that slow purging using peristaltic pumping be undertaken. Periodically determine the pH, temperature and specific conductance of the purged water. Continue purging until the well has been completely evacuated or until the pH and specific conductance measurements have stabilised for at least one well volume. Wells that become dewatered prior to producing three casing volumes will be sampled as soon as practical once they recover sufficiently.
- 9) Dispose of purge water collected in the graduated bucket by dumping onto the ground at a distance of 50 to 60 metres from the vicinity of the well. If the water is known or suspected to be significantly contaminated, it may be necessary to store the purge water in a secure container, such as a drum, pending proper disposal.
- 10) Be aware and record any unusual occurrence during purging such as cascading (a shallow water entry zone that trickles into the borehole).

## 1.2 Field Parameter Measurement

Measurements of field parameters of pH, temperature and electrical conductivity are collected and organic vapour screening is conducted while the well is purged. To facilitate the collection of basic field parameters, the field team needs to: -

- Purge three well volumes of water from the well and measure field parameters for each well volume removed.
- Collection of water samples should take place after stabilisation of the following parameters: -
  - Temperature +/- 1°C
  - pH (meter or paper) +/- 0.2 units
  - Specific conductivity +/- 5%



- If the aforementioned parameters do not stabilise within three purge volumes, the well will be purged up to a maximum of six borehole volumes unless two consecutive sets of stabilised parameters are obtained.
- Note any observations in the field logbook.

### 1.3 Collection of Water Samples

All samples for chemical analysis will be placed in laboratory prepared bottles. The types of sample containers and preservative required for each type of analysis are described in the workplan. Where product layers are present a procedure and rationale for the collection of such layers should be outlined in the site specific work plan. If required, preservatives will be placed in the sample containers prior to collecting the samples.

The following procedure will be used to sample a well: -

- 1) After the well has been purged and allowed to recover, sample the well using a properly decontaminated or dedicated disposable bailer. Gently lower the bailer into the water column. Allow the bailer to sink and fill with a minimum of surface disturbance.
- 2) Slowly raise the bailer out of the well. Do not allow the bailer line to contact the ground, either by coiling it on a clean plastic sheet or by looping it from arm to arm as the line is extracted from the well.
- 3) Samples will be collected for VOCs analysis immediately after purging is complete and before other samples are collected. Pour the samples slowly into the laboratory prepared 40 ml glass vial. Overfill each vial slightly to eliminate air bubbles, a convex meniscus should be present at the top of the vial. Ensure that the Teflon liner of the septum cap is facing inward and that no bubbles are entrapped. After capping securely, turn bottle upside-down, tap it against your other hand, and observe sample water for bubbles. If bubbles are observed, remove the cap, overfill the vial and reseal. Repeat this step for each vial until the samples with no bubbles are obtained.
- 4) Place a label on the container and enter the following information: -
  - Client/Site Name
  - Date Collected
  - Time Collected
  - Analysis
  - Preservative
  - Sample Identification Number
- 5) Record pertinent information in the field logbook and on the Field Data Sheet for Well Sampling. Complete chain-of-custody form.
- 6) Place custody seals on the container caps. As soon as possible, place sample containers in a cooler with bagged ice and maintain at 4°C until extraction. Surround the bottles with vermiculite.

- 7) Obtain the semi-volatile compound/pesticides/PCBs sample(s) by transferring the water to a laboratory prepared 1000 ml amber glass bottle with Teflon-lined cap. Fill the bottle to the bottom of the neck and follow steps 4, 5 and 6 above.
- 8) Dissolved metals (if necessary) requires the team to filter the sample water through a .45 micron filter. The water is collected in a 1 litre, unpreserved, plastic or glass bottle with HNO<sub>3</sub> preservative. Filtering must be done within 15 minutes of sample collection.
- 9) Obtain the total metals sample by directly transferring the water from the bailer into a laboratory prepared 1000 ml plastic or glass bottle with HNO<sub>3</sub> preservative.
- 10) Be sure the pH of the metals sampled is less than 2 by pouring off an aliquot in a clean jar and testing for pH using litmus paper. Dispose of this water and rinse the jar.
- 11) Collect and prepare Field QA/QC samples in accordance with separate SOP.
- 12) Be sure to record all data required on the Field Data Sheet or Well Sampling and appropriate entries into the field logbook.
- 13) Secure the well cap and replace the locking cover.
- 14) Decontaminate all sampling equipment according to procedure.
- 15) Decontaminate submersible pumps as follows: -

Scrub pump and cord in a tub of Liquinox/or similar and potable water  
Pump at least 80 litres of soapy water through pump  
Rinse with potable water  
Pump at least 80 litres of rinse water through the pump  
Rinse with D1 water before lowering pump into the next well.

END.

# **APPENDIX 5**

## Laboratory Results



DCC PLAN NO.2861/21  
RECEIVED: 01/06/2021

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**Mr Crean**  
**O Callaghan Moran & Assoc.**  
**Granary House**  
**Rutland Street**  
**Cork**

14 August 2008

**Test Report: MID/538002/2008**

Dear Mr Crean

Analysis of your sample(s) submitted on 11 August 2008 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7658 4800 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using STL and we look forward to receiving your next samples.

Yours Sincerely,

Signed: *L. Ellis*

Name: L. Ellis

Title: Team Leader

STL Midlands

Rayner House, 80 Lockhurst Lane,  
Coventry, CV6 5PZ

Severn Trent Laboratories Limited

Registered in England & Wales Registration No. 2148934 Registered Office: 2297 Coventry Road, Birmingham B26

Tel: +44 (0)24 7658 4800

Fax: +44 (0)24 7658 4848

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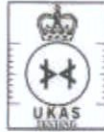
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Cert. No. 10099  
Environmental Management Systems



# Report Summary



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# STL

**Mr Donal Crean  
O Callaghan Moran & Assoc.  
Granary House  
Rutland Street  
Cork**

Date of Issue: **14 August 2008**

Report Number: **MID/538002/2008**

Issue **1**

**Job Description:** Donal Crean

Number of Samples  
included in this report **3**

Job Received: **11 August 2008**

Number of Test Results  
included in this report **117**

Analysis Commenced: **11 August 2008**

Signed: *L. Ellis*

Name: **L. Ellis**

Date: **14 August 2008**

Title: **Team Leader**

STL was not responsible for sampling unless otherwise stated. Sampling is not covered by our UKAS accreditation.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

**Severn Trent Laboratories Ltd.**

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# Certificate of Analysis



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Report Number: **MID/538002/2008**

Issue **1**

Laboratory Number: **10715372**

Sample **1** of **3**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH7 0.50m-1.00m**

Sample Date:

Sample Received

**11 August 2008**

Analysis Complete:

**14 August 2008**

Test Description	Result	Units	Accreditation	Method
Antimony as Sb, dry weight	1.6	mg/kg	Y Mid	30C
Arsenic as As, dry weight	16	mg/kg	Y Mid	30/30C
Barium as Ba, dry weight	150	mg/kg	Y Mid	30
Cadmium as Cd, dry weight	0.65	mg/kg	Y Mid	30
Chromium as Cr, dry weight	11	mg/kg	Y Mid	30
Copper as Cu, dry weight	19	mg/kg	Y Mid	30
Iron as Fe, dry weight	8900	mg/kg	Y Mid	30
Lead as Pb, dry weight	42	mg/kg	Y Mid	30
Manganese as Mn, dry weight	830	mg/kg	Y Mid	30
Mercury as Hg, dry weight	<0.25	mg/kg	Y Mid	30C
Nickel as Ni, dry weight	24	mg/kg	Y Mid	30
Tin as Sn, dry weight	<2.0	mg/kg	Y Mid	30
Zinc as Zn, dry weight	68	mg/kg	Y Mid	30
TPH >C6 - C10	<50	mg/kg	Y Mid	317
TPH >C10 - C20	<50	mg/kg	Y Mid	317
TPH >C20 - C40	180	mg/kg	Y Mid	317
TPH >C6 - C40, Total	180	mg/kg	Y Mid	317
naphthalene	0.80	mg/kg	Y Mid	307
acenaphthylene	<0.10	mg/kg	Y Mid	307
acenaphthene	0.48	mg/kg	Y Mid	307
fluorene	0.32	mg/kg	Y Mid	307
phenanthrene	4.0	mg/kg	Y Mid	307
anthracene	0.92	mg/kg	Y Mid	307
fluoranthene	4.0	mg/kg	Y Mid	307
pyrene	3.7	mg/kg	Y Mid	307
benzo(a)anthracene	1.7	mg/kg	Y Mid	307
chrysene	1.6	mg/kg	Y Mid	307
benzo(b)fluoranthene	1.4	mg/kg	Y Mid	307
benzo(k)fluoranthene	0.70	mg/kg	Y Mid	307
benzo(a)pyrene	1.6	mg/kg	Y Mid	307
Dibenz(a,h)anthracene	0.17	mg/kg	Y Mid	307
Benzo(g,h,i)perylene	1.1	mg/kg	Y Mid	307
Indeno(1,2,3-c,d)pyrene	0.83	mg/kg	Y Mid	307
PAH, Total of 16 EPA	23	mg/kg	Y Mid	307
benzene	<0.10	mg/kg	Y Mid	327

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# Certificate of Analysis



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Report Number: MID/538002/2008

Issue 1

Laboratory Number: 10715372

Sample 1 of 3

Sample Source: O Callaghan Moran & Assoc.

Sample Point Description: O Callaghan Moran & Assoc.

Sample Description: BH7 0.50m-1.00m

Sample Date: Sample Received 11 August 2008 Analysis Complete: 14 August 2008

Test Description	Result	Units	Accreditation	Method
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327

Analyst Comments for 10715372: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected In volume of sample filtered. /S=Insufficient sample

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Report Number: **MID/538002/2008**  
 Laboratory Number: **10715373**

Issue **1**  
 Sample **2** of **3**

Sample Source: **O Callaghan Moran & Assoc.**  
 Sample Point Description: **O Callaghan Moran & Assoc.**  
 Sample Description: **BH9 0.50m-1.00m**

Sample Date: Sample Received **11 August 2008** Analysis Complete: **14 August 2008**

Test Description	Result	Units	Accreditation	Method
Antimony as Sb, dry weight	1.6	mg/kg	Y Mid	30C
Arsenic as As, dry weight	12	mg/kg	Y Mid	30/30C
Barium as Ba, dry weight	72	mg/kg	Y Mid	30
Cadmium as Cd, dry weight	1.2	mg/kg	Y Mid	30
Chromium as Cr, dry weight	14	mg/kg	Y Mid	30
Copper as Cu, dry weight	28	mg/kg	Y Mid	30
Iron as Fe, dry weight	20000	mg/kg	Y Mid	30
Lead as Pb, dry weight	79	mg/kg	Y Mid	30
Manganese as Mn, dry weight	1100	mg/kg	Y Mid	30
Mercury as Hg, dry weight	0.34	mg/kg	Y Mid	30C
Nickel as Ni, dry weight	31	mg/kg	Y Mid	30
Tin as Sn, dry weight	3.5	mg/kg	Y Mid	30
Zinc as Zn, dry weight	86	mg/kg	Y Mid	30
TPH >C6 - C10	<50	mg/kg	Y Mid	317
TPH >C10 - C20	<50	mg/kg	Y Mid	317
TPH >C20 - C40	150	mg/kg	Y Mid	317
TPH >C6 - C40, Total	150	mg/kg	Y Mid	317
naphthalene	0.24	mg/kg	Y Mid	307
acenaphthylene	<0.10	mg/kg	Y Mid	307
acenaphthene	<0.10	mg/kg	Y Mid	307
fluorene	<0.10	mg/kg	Y Mid	307
phenanthrene	0.62	mg/kg	Y Mid	307
anthracene	0.13	mg/kg	Y Mid	307
fluoranthene	0.63	mg/kg	Y Mid	307
pyrene	0.51	mg/kg	Y Mid	307
benzo(a)anthracene	0.27	mg/kg	Y Mid	307
chrysene	0.26	mg/kg	Y Mid	307
benzo(b)fluoranthene	0.25	mg/kg	Y Mid	307
benzo(k)fluoranthene	0.13	mg/kg	Y Mid	307
benzo(a)pyrene	0.25	mg/kg	Y Mid	307
Dibenz(a,h)anthracene	<0.10	mg/kg	Y Mid	307
Benzo(g,h,i)perylene	0.25	mg/kg	Y Mid	307
Indeno(1,2,3-c,d)pyrene	0.22	mg/kg	Y Mid	307
PAH, Total of 16 EPA	3.7	mg/kg	Y Mid	307
benzene	<0.10	mg/kg	Y Mid	327

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Report Number: **MID/538002/2008**

Issue **1**

Laboratory Number: **10715373**

Sample **2** of **3**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH9 0.50m-1.00m**

Sample Date: Sample Received **11 August 2008** Analysis Complete: **14 August 2008**

Test Description	Result	Units	Accreditation	Method
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327

Analyst Comments for 10715373: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

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Report Number: **MID/538002/2008**

Issue **1**

Laboratory Number: **10715374**

Sample **3** of **3**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH10 1.70m-2.50m**

Sample Date:

Sample Received

**11 August 2008**

Analysis Complete:

**14 August 2008**

Test Description	Result	Units	Accreditation	Method
Antimony as Sb, dry weight	1.7	mg/kg	Y Mid	30C
Arsenic as As, dry weight	13	mg/kg	Y Mid	30/30C
Barium as Ba, dry weight	79	mg/kg	Y Mid	30
Cadmium as Cd, dry weight	1.6	mg/kg	Y Mid	30
Chromium as Cr, dry weight	14	mg/kg	Y Mid	30
Copper as Cu, dry weight	30	mg/kg	Y Mid	30
Iron as Fe, dry weight	25000	mg/kg	Y Mid	30
Lead as Pb, dry weight	59	mg/kg	Y Mid	30
Manganese as Mn, dry weight	1500	mg/kg	Y Mid	30
Mercury as Hg, dry weight	<0.25	mg/kg	Y Mid	30C
Nickel as Ni, dry weight	37	mg/kg	Y Mid	30
Tin as Sn, dry weight	3.7	mg/kg	Y Mid	30
Zinc as Zn, dry weight	94	mg/kg	Y Mid	30
TPH >C6 - C10	<50	mg/kg	Y Mid	317
TPH >C10 - C20	<50	mg/kg	Y Mid	317
TPH >C20 - C40	<50	mg/kg	Y Mid	317
TPH >C6 - C40, Total	<50	mg/kg	Y Mid	317
naphthalene	<0.10	mg/kg	Y Mid	307
acenaphthylene	<0.10	mg/kg	Y Mid	307
acenaphthene	<0.10	mg/kg	Y Mid	307
fluorene	<0.10	mg/kg	Y Mid	307
phenanthrene	0.20	mg/kg	Y Mid	307
anthracene	<0.10	mg/kg	Y Mid	307
fluoranthene	0.13	mg/kg	Y Mid	307
pyrene	<0.10	mg/kg	Y Mid	307
benzo(a)anthracene	<0.10	mg/kg	Y Mid	307
chrysene	<0.10	mg/kg	Y Mid	307
benzo(b)fluoranthene	<0.10	mg/kg	Y Mid	307
benzo(k)fluoranthene	<0.10	mg/kg	Y Mid	307
benzo(a)pyrene	<0.10	mg/kg	Y Mid	307
Dibenz(a,h)anthracene	<0.10	mg/kg	Y Mid	307
Benzo(g,h,i)perylene	<0.10	mg/kg	Y Mid	307
Indeno(1,2,3-c,d)pyrene	<0.10	mg/kg	Y Mid	307
PAH, Total of 16 EPA	<1.0	mg/kg	Y Mid	307
benzene	<0.10	mg/kg	Y Mid	327

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Report Number: **MID/538002/2008**

Issue **1**

Laboratory Number: **10715374**

Sample **3** of **3**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH10 1.70m-2.50m**

Sample Date: Sample Received **11 August 2008** Analysis Complete: **14 August 2008**

Test Description	Result	Units	Accreditation	Method
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327

Analyst Comments for 10715374: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

Signed: *L. Ellis*

Name: **L. Ellis**

Date: **14 August 2008**

Title: **Team Leader**

**Mr Crean**  
**O Callaghan Moran & Assoc.**  
**Granary House**  
**Rutland Street**  
**Cork**

19 November 2008

**Test Report: COV/558587/2008**

Dear Mr Crean

Analysis of your sample(s) submitted on 31 October 2008 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out is included with this report.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using STL and we look forward to receiving your next samples.

Yours Sincerely,

Signed: *L. Ellis*

Name: L. Ellis

Title: Team Leader

**STL Coventry**

STL Business Centre, Torrington Avenue,  
Coventry, CV4 9GU

Severn Trent Laboratories Limited

Registered in England & Wales Registration No. 2148934 Registered Office: 2297 Coventry Road, Birmingham B26

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Cert. No. 10269  
Environmental Management Systems



Certificate No. FS67435





# Report Summary



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# STL

**Mr Donal Crean  
O Callaghan Moran & Assoc.  
Granary House  
Rutland Street  
Cork**

Date of Issue: **19 November 2008**

Report Number: **COV/558587/2008**

Issue **1**

**Job Description:** Donal Crean

**Job Location:** 08-014-05

Number of Samples  
included in this report **16**

**Job Received:** 31 October 2008

Number of Test Results  
included in this report **400**

**Analysis Commenced:** 31 October 2008

Signed:

Name: **L. Ellis**

Date: **19 November 2008**

Title: **Team Leader**

STL was not responsible for sampling unless otherwise stated. Sampling is not covered by our UKAS accreditation.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

**Severn Trent Laboratories Ltd.**

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# Certificate of Analysis



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# STL

Report Number: **COV/558587/2008**  
Laboratory Number: **10888346**

Issue **1**  
Sample **1** of **16**

Sample Source: **O Callaghan Moran & Assoc.**  
Sample Point Description: **O Callaghan Moran & Assoc.**  
Sample Description: **BH7 13.0-14.00m**

Sample Date: \_\_\_\_\_ Sample Received **31 October 2008** Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
EN 12457-3 Leachate	Y		N Mid	EN12457-3
Moisture Content Ratio at 105C	1.19	% ratio	N Mid	33
Moisture at 105c	1.2	%	N Mid	33
TOC by Ignition in O2	0.52	%	N Mid	27
PCB, Total of 7 Congeners	<0.010	mg/kg	N Mid	312
Mineral Oils, >C10 - C40	<50	mg/kg	Y Mid	317
Naphthalene	<0.10	mg/kg	N Mid	307
Acenaphthylene	<0.10	mg/kg	N Mid	307
Acenaphthene	<0.10	mg/kg	N Mid	307
Fluorene	<0.10	mg/kg	N Mid	307
Phenanthrene	<0.10	mg/kg	N Mid	307
Anthracene	<0.10	mg/kg	N Mid	307
Fluoranthene	<0.10	mg/kg	N Mid	307
Pyrene	<0.10	mg/kg	N Mid	307
Benzo(a)anthracene	<0.10	mg/kg	N Mid	307
Chrysene	<0.10	mg/kg	N Mid	307
Benzo(b)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(k)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(a)pyrene	<0.10	mg/kg	N Mid	307
Dibenz(a,h)anthracene	<0.10	mg/kg	N Mid	307
Benzo(g,h,i)perylene	<0.10	mg/kg	N Mid	307
Indeno(1,2,3-c,d)pyrene	<0.10	mg/kg	N Mid	307
Coronene	<0.10	mg/kg	N Mid	307
PAH, Total of 17 WAC	<1.0	mg/kg	N Mid	307
benzene	<0.10	mg/kg	Y Mid	327
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327
Dry Ratio (BSEN 12457)	98.83	%	N Mid	Calculated

Analyst Comments for 10888346: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Raa = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=insufficient sample

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Report Number: **COV/558587/2008**  
 Laboratory Number: **10888347**

Issue **1**  
 Sample **2** of **16**

Sample Source: **O Callaghan Moran & Assoc.**  
 Sample Point Description: **O Callaghan Moran & Assoc.**  
 Sample Description: **BH15 0.5-1.00m**

Sample Date: Sample Received **31 October 2008** Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
EN 12457-3 Leachate	Y		N Mid	EN12457-3
Moisture Content Ratio at 105C	2.13	% ratio	N Mid	33
Moisture at 105c	2.1	%	N Mid	33
TOC by Ignition in O2	3.6	%	N Mid	27
PCB, Total of 7 Congeners	<0.010	mg/kg	N Mid	312
Mineral Oils, >C10 - C40	120	mg/kg	Y Mid	317
Naphthalene	0.20	mg/kg	N Mid	307
Acenaphthylene	<0.10	mg/kg	N Mid	307
Acenaphthene	<0.10	mg/kg	N Mid	307
Fluorene	<0.10	mg/kg	N Mid	307
Phenanthrene	0.44	mg/kg	N Mid	307
Anthracene	0.10	mg/kg	N Mid	307
Fluoranthene	0.50	mg/kg	N Mid	307
Pyrene	0.43	mg/kg	N Mid	307
Benzo(a)anthracene	0.34	mg/kg	N Mid	307
Chrysene	0.63	mg/kg	N Mid	307
Benzo(b)fluoranthene	0.41	mg/kg	N Mid	307
Benzo(k)fluoranthene	0.21	mg/kg	N Mid	307
Benzo(a)pyrene	0.39	mg/kg	N Mid	307
Dibenz(a,h)anthracene	<0.10	mg/kg	N Mid	307
Benzo(g,h,i)perylene	0.35	mg/kg	N Mid	307
Indeno(1,2,3-c,d)pyrene	0.18	mg/kg	N Mid	307
Coronene	<0.10	mg/kg	N Mid	307
PAH, Total of 17 WAC	4.2	mg/kg	N Mid	307
benzene	<0.10	mg/kg	Y Mid	327
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327
Dry Ratio (BSEN 12457)	97.91	%	N Mid	Calculated

Analyst Comments for 10888347: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
 Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

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Report Number: **COV/558587/2008**

Issue **1**

Laboratory Number: **10888348**

Sample **3** of **16**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH15 1.0-2.00m**

Sample Date:

Sample Received

**31 October 2008**

Analysis Complete:

**13 November 2008**

Test Description	Result	Units	Accreditation	Method
EN 12457-3 Leachate	Y		N Mid	EN12457-3
Moisture Content Ratio at 105C	1.51	% ratio	N Mid	33
Moisture at 105c	1.5	%	N Mid	33
TOC by Ignition in O2	5.2	%	N Mid	27
PCB, Total of 7 Congeners	<0.010	mg/kg	N Mid	312
Mineral Oils, >C10 - C40	86	mg/kg	Y Mid	317
Naphthalene	0.16	mg/kg	N Mid	307
Acenaphthylene	<0.10	mg/kg	N Mid	307
Acenaphthene	<0.10	mg/kg	N Mid	307
Fluorene	<0.10	mg/kg	N Mid	307
Phenanthrene	0.42	mg/kg	N Mid	307
Anthracene	<0.10	mg/kg	N Mid	307
Fluoranthene	0.14	mg/kg	N Mid	307
Pyrene	0.12	mg/kg	N Mid	307
Benzo(a)anthracene	0.12	mg/kg	N Mid	307
Chrysene	0.32	mg/kg	N Mid	307
Benzo(b)fluoranthene	0.13	mg/kg	N Mid	307
Benzo(k)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(a)pyrene	<0.10	mg/kg	N Mid	307
Dibenz(a,h)anthracene	<0.10	mg/kg	N Mid	307
Benzo(g,h,i)perylene	<0.10	mg/kg	N Mid	307
Indeno(1,2,3-c,d)pyrene	<0.10	mg/kg	N Mid	307
Coronene	<0.10	mg/kg	N Mid	307
PAH, Total of 17 WAC	1.4	mg/kg	N Mid	307
benzene	<0.10	mg/kg	Y Mid	327
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327
Dry Ratio (BSEN 12457)	98.51	%	N Mid	Calculated

Analyst Comments for 10888348:

No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. /S=Insufficient sample

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# STL

Report Number: **COV/558587/2008**

Issue **1**

Laboratory Number: **10888350**

Sample **5** of **16**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **W2 0.50-1.00m**

Sample Date:

Sample Received

**31 October 2008**

Analysis Complete:

**13 November 2008**

Test Description	Result	Units	Accreditation	Method
EN 12457-3 Leachate	Y		N Mid	EN12457-3
Moisture Content Ratio at 105C	0.99	% ratio	N Mid	33
Moisture at 105c	0.98	%	N Mid	33
TOC by Ignition in O2	5.6	%	N Mid	27
PCB, Total of 7 Congeners	<0.010	mg/kg	N Mid	312
Mineral Oils, >C10 - C40	150	mg/kg	Y Mid	317
Naphthalene	5.5	mg/kg	N Mid	307
Acenaphthylene	0.11	mg/kg	N Mid	307
Acenaphthene	7.1	mg/kg	N Mid	307
Fluorene	4.4	mg/kg	N Mid	307
Phenanthrene	40	mg/kg	N Mid	307
Anthracene	13	mg/kg	N Mid	307
Fluoranthene	38	mg/kg	N Mid	307
Pyrene	34	mg/kg	N Mid	307
Benzo(a)anthracene	18	mg/kg	N Mid	307
Chrysene	17	mg/kg	N Mid	307
Benzo(b)fluoranthene	14	mg/kg	N Mid	307
Benzo(k)fluoranthene	7.7	mg/kg	N Mid	307
Benzo(a)pyrene	19	mg/kg	N Mid	307
Dibenz(a,h)anthracene	1.1	mg/kg	N Mid	307
Benzo(g,h,i)perylene	6.9	mg/kg	N Mid	307
Indeno(1,2,3-c,d)pyrene	6.9	mg/kg	N Mid	307
Coronene	1.5	mg/kg	N Mid	307
PAH, Total of 17 WAC	230	mg/kg	N Mid	307
benzene	<0.10	mg/kg	Y Mid	327
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327
Dry Ratio (BSEN 12457)	99.02	%	N Mid	Calculated

Analyst Comments for 10888350:

No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
 Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected In volume of sample filtered. I/S=Insufficient sample

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Report Number: **COV/558587/2008**  
Laboratory Number: **10888352**

Issue **1**  
Sample **7** of **16**

Sample Source: **O Callaghan Moran & Assoc.**  
Sample Point Description: **O Callaghan Moran & Assoc.**  
Sample Description: **BH8 0.50-1.00m**

Sample Date: Sample Received **31 October 2008** Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
EN 12457-3 Leachate	Y		N Mid	EN12457-3
Moisture Content Ratio at 105C	2.38	% ratio	N Mid	33
Moisture at 105c	2.3	%	N Mid	33
TOC by Ignition in O2	3.1	%	N Mid	27
PCB, Total of 7 Congeners	0.028	mg/kg	N Mid	312
Mineral Oils, >C10 - C40	510	mg/kg	Y Mid	317
Naphthalene	1.3	mg/kg	N Mid	307
Acenaphthylene	<0.10	mg/kg	N Mid	307
Acenaphthene	0.56	mg/kg	N Mid	307
Fluorene	1.3	mg/kg	N Mid	307
Phenanthrene	5.3	mg/kg	N Mid	307
Anthracene	1.7	mg/kg	N Mid	307
Fluoranthene	8.4	mg/kg	N Mid	307
Pyrene	6.4	mg/kg	N Mid	307
Benzo(a)anthracene	3.8	mg/kg	N Mid	307
Chrysene	3.4	mg/kg	N Mid	307
Benzo(b)fluoranthene	2.9	mg/kg	N Mid	307
Benzo(k)fluoranthene	1.6	mg/kg	N Mid	307
Benzo(a)pyrene	3.8	mg/kg	N Mid	307
Dibenz(a,h)anthracene	0.23	mg/kg	N Mid	307
Benzo(g,h,i)perylene	1.4	mg/kg	N Mid	307
Indeno(1,2,3-c,d)pyrene	1.3	mg/kg	N Mid	307
Coronene	0.52	mg/kg	N Mid	307
PAH, Total of 17 WAC	44	mg/kg	N Mid	307
benzene	<0.10	mg/kg	Y Mid	327
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327
Dry Ratio (BSEN 12457)	97.67	%	N Mid	Calculated

Analyst Comments for 10888352: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered, I/S=Insufficient sample

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Report Number: **COV/558587/2008**

Issue **1**

Laboratory Number: **10888353**

Sample **8** of **16**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH8 1.00-2.00m**

Sample Date: Sample Received **31 October 2008** Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
EN 12457-3 Leachate	Y		N Mid	EN12457-3
Moisture Content Ratio at 105C	1.50	% ratio	N Mid	33
Moisture at 105c	1.5	%	N Mid	33
TOC by Ignition in O2	3.0	%	N Mid	27
PCB, Total of 7 Congeners	<0.010	mg/kg	N Mid	312
Mineral Oils, >C10 - C40	1800	mg/kg	Y Mid	317
Naphthalene	11	mg/kg	N Mid	307
Acenaphthylene	<0.10	mg/kg	N Mid	307
Acenaphthene	3.3	mg/kg	N Mid	307
Fluorene	4.6	mg/kg	N Mid	307
Phenanthrene	33	mg/kg	N Mid	307
Anthracene	13	mg/kg	N Mid	307
Fluoranthene	52	mg/kg	N Mid	307
Pyrene	43	mg/kg	N Mid	307
Benzo(a)anthracene	23	mg/kg	N Mid	307
Chrysene	21	mg/kg	N Mid	307
Benzo(b)fluoranthene	16	mg/kg	N Mid	307
Benzo(k)fluoranthene	9.5	mg/kg	N Mid	307
Benzo(a)pyrene	24	mg/kg	N Mid	307
Dibenz(a,h)anthracene	1.1	mg/kg	N Mid	307
Benzo(g,h,i)perylene	8.7	mg/kg	N Mid	307
Indeno(1,2,3-c,d)pyrene	9.2	mg/kg	N Mid	307
Coronene	1.8	mg/kg	N Mid	307
PAH, Total of 17 WAC	280	mg/kg	N Mid	307
benzene	<0.10	mg/kg	Y Mid	327
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327
Dry Ratio (BSEN 12457)	98.53	%	N Mid	Calculated

Analyst Comments for 10888353: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

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Report Number: **COV/558587/2008**

Issue **1**

Laboratory Number: **10888354**

Sample **9** of **16**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH7 13.0-14.00m 10:1**

Sample Date: Sample Received **31 October 2008** Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
Leachate BSEN 10:1 extract	Y		N Mid	EN12457-3 10:1
Antimony, Soluble	<0.030	mg/l	N Mid	25C
Arsenic, Soluble	<50	ug/l	N Mid	25C
Barium, Soluble	0.014	mg/l	Y Mid	54F
Cadmium, Soluble	<0.10	ug/l	Y Mid	56
Calcium, Soluble	12	mg/l	Y Mid	53F
Chromium, Soluble	<10	ug/l	Y Mid	53F
Copper, Soluble	<10	ug/l	Y Mid	53F
Lead, Soluble	<10	ug/l	Y Mid	53F
Mercury, Soluble	0.38	ug/l	Y Mid	56
Molybdenum, Soluble	0.0085	mg/l	N Mid	68
Nickel, Soluble	<10	ug/l	Y Mid	53F
Selenium, Soluble	<6.0	ug/l	N Mid	25C
Zinc, Soluble	<10	ug/l	Y Mid	53F
Phenol Index	<0.050	mg/l	N Mid	32A
Sulphate as SO4	<11	mg/l	Y Mid	60
Chloride as Cl	7.1	mg/l	Y Mid	60
Dissolved Solids	<200	mg/l	N Mid	18
Fluoride as F-	0.42	mg/l	Y Mid	20
TOC (Filtered)	3.9	mg/l	Y Mid	41

Analyst Comments for 10888354: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. /S=Insufficient sample

Severn Trent Laboratories Ltd.

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Report Number: **COV/558587/2008**  
Laboratory Number: **10888355**

Issue **1**  
Sample **10** of **16**

Sample Source: **O Callaghan Moran & Assoc.**  
Sample Point Description: **O Callaghan Moran & Assoc.**  
Sample Description: **BH15 0.5-1.00m 10:1**

Sample Date: Sample Received **31 October 2008** Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
Leachate BSEN 10:1 extract	Y		N Mid	EN12457-3 10:1
Antimony, Soluble	<0.030	mg/l	N Mid	25C
Arsenic, Soluble	<50	ug/l	N Mid	25C
Barium, Soluble	0.0060	mg/l	Y Mid	54F
Cadmium, Soluble	<0.10	ug/l	Y Mid	56
Calcium, Soluble	54	mg/l	Y Mid	53F
Chromium, Soluble	18	ug/l	Y Mid	53F
Copper, Soluble	36	ug/l	Y Mid	53F
Lead, Soluble	42	ug/l	Y Mid	53F
Mercury, Soluble	0.35	ug/l	Y Mid	56
Molybdenum, Soluble	0.016	mg/l	N Mid	68
Nickel, Soluble	15	ug/l	Y Mid	53F
Selenium, Soluble	<6.0	ug/l	N Mid	25C
Zinc, Soluble	<10	ug/l	Y Mid	53F
Phenol Index	<0.050	mg/l	N Mid	32A
Sulphate as SO4	50	mg/l	Y Mid	60
Chloride as Cl	<2.5	mg/l	Y Mid	60
Dissolved Solids	420	mg/l	N Mid	18
Fluoride as F-	0.23	mg/l	Y Mid	20
TOC (Filtered)	6.2	mg/l	Y Mid	41

Analyst Comments for 10888355: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered, I/S=Insufficient sample

Severn Trent Laboratories Ltd.

# Certificate of Analysis



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# STL

Report Number: **COV/558587/2008**

Issue **1**

Laboratory Number: **10888356**

Sample **11** of **16**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH15 1.0-2.00m 10:1**

Sample Date: Sample Received **31 October 2008** Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
Leachate BSEN 10:1 extract	Y		N Mid	EN12457-3 10:1
Antimony, Soluble	<0.030	mg/l	N Mid	25C
Arsenic, Soluble	<50	ug/l	N Mid	25C
Barium, Soluble	0.0055	mg/l	Y Mid	54F
Cadmium, Soluble	<0.10	ug/l	Y Mid	56
Calcium, Soluble	26	mg/l	Y Mid	53F
Chromium, Soluble	<10	ug/l	Y Mid	53F
Copper, Soluble	28	ug/l	Y Mid	53F
Lead, Soluble	43	ug/l	Y Mid	53F
Mercury, Soluble	0.49	ug/l	Y Mid	56
Molybdenum, Soluble	0.013	mg/l	N Mid	68
Nickel, Soluble	14	ug/l	Y Mid	53F
Selenium, Soluble	<6.0	ug/l	N Mid	25C
Zinc, Soluble	13	ug/l	Y Mid	53F
Phenol Index	<0.050	mg/l	N Mid	32A
Sulphate as SO4	19	mg/l	Y Mid	60
Chloride as Cl	<2.5	mg/l	Y Mid	60
Dissolved Solids	<200	mg/l	N Mid	18
Fluoride as F-	<0.20	mg/l	Y Mid	20
TOC (Filtered)	3.6	mg/l	Y Mid	41

Analyst Comments for 10888356: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Brj = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample



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Report Number: **COV/558587/2008**

Issue **1**

Laboratory Number: **10888357**

Sample **12** of **16**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH15 12.0-13.00m 10:1**

Sample Date:                      Sample Received **31 October 2008**      Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
Leachate BSEN 10:1 extract	Y		N Mid	EN12457-3 10:1
Antimony, Soluble	<0.030	mg/l	N Mid	25C
Arsenic, Soluble	<50	ug/l	N Mid	25C
Barium, Soluble	0.017	mg/l	Y Mid	54F
Cadmium, Soluble	<0.10	ug/l	Y Mid	56
Calcium, Soluble	17	mg/l	Y Mid	53F
Chromium, Soluble	<10	ug/l	Y Mid	53F
Copper, Soluble	15	ug/l	Y Mid	53F
Lead, Soluble	41	ug/l	Y Mid	53F
Mercury, Soluble	<0.30	ug/l	Y Mid	56
Molybdenum, Soluble	0.0046	mg/l	N Mid	68
Nickel, Soluble	14	ug/l	Y Mid	53F
Selenium, Soluble	<6.0	ug/l	N Mid	25C
Zinc, Soluble	<10	ug/l	Y Mid	53F
Phenol Index	<0.050	mg/l	N Mid	32A
Sulphate as SO4	13	mg/l	Y Mid	60
Chloride as Cl	10	mg/l	Y Mid	60
Dissolved Solids	<200	mg/l	N Mid	18
Fluoride as F-	0.47	mg/l	Y Mid	20
TOC (Filtered)	3.7	mg/l	Y Mid	41

Analyst Comments for 10888357:                      No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

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Report Number: **COV/558587/2008**  
Laboratory Number: **10888358**

Issue **1**  
Sample **13** of **16**

Sample Source: **O Callaghan Moran & Assoc.**  
Sample Point Description: **O Callaghan Moran & Assoc.**  
Sample Description: **W2 0.50-1.00m 10:1**

Sample Date: Sample Received **31 October 2008** Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
Leachate BSEN 10:1 extract	Y		N Mid	EN12457-3 10:1
Antimony, Soluble	0.036	mg/l	N Mid	25C
Arsenic, Soluble	<50	ug/l	N Mid	25C
Barium, Soluble	0.024	mg/l	Y Mid	54F
Cadmium, Soluble	<0.10	ug/l	Y Mid	56
Calcium, Soluble	43	mg/l	Y Mid	53F
Chromium, Soluble	21	ug/l	Y Mid	53F
Copper, Soluble	34	ug/l	Y Mid	53F
Lead, Soluble	43	ug/l	Y Mid	53F
Mercury, Soluble	<0.30	ug/l	Y Mid	56
Molybdenum, Soluble	0.0066	mg/l	N Mid	68
Nickel, Soluble	13	ug/l	Y Mid	53F
Selenium, Soluble	<6.0	ug/l	N Mid	25C
Zinc, Soluble	11	ug/l	Y Mid	53F
Phenol Index	<0.050	mg/l	N Mid	32A
Sulphate as SO4	44	mg/l	Y Mid	60
Chloride as Cl	2.7	mg/l	Y Mid	60
Dissolved Solids	210	mg/l	N Mid	18
Fluoride as F-	0.41	mg/l	Y Mid	20
TOC (Filtered)	4.5	mg/l	Y Mid	41

Analyst Comments for 10888358: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

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Report Number: **COV/558587/2008**

Issue **1**

Laboratory Number: **10888359**

Sample **14** of **16**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **W2 1.00-2.00m 10:1**

Sample Date:                      Sample Received **31 October 2008**      Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
Leachate BSEN 10:1 extract	Y		N Mid	EN12457-3 10:1
Antimony, Soluble	<0.030	mg/l	N Mid	25C
Arsenic, Soluble	<50	ug/l	N Mid	25C
Barium, Soluble	0.018	mg/l	Y Mid	54F
Cadmium, Soluble	<0.10	ug/l	Y Mid	56
Calcium, Soluble	110	mg/l	Y Mid	53F
Chromium, Soluble	<100	ug/l	Y Mid	53F
Copper, Soluble	<100	ug/l	Y Mid	53F
Lead, Soluble	<100	ug/l	Y Mid	53F
Mercury, Soluble	<0.30	ug/l	Y Mid	56
Molybdenum, Soluble	0.0081	mg/l	N Mid	68
Nickel, Soluble	<100	ug/l	Y Mid	53F
Selenium, Soluble	<6.0	ug/l	N Mid	25C
Zinc, Soluble	<100	ug/l	Y Mid	53F
Phenol Index	<0.050	mg/l	N Mid	32A
Sulphate as SO4	160	mg/l	Y Mid	60
Chloride as Cl	14	mg/l	Y Mid	60
Dissolved Solids	420	mg/l	N Mid	18
Fluoride as F-	<0.20	mg/l	Y Mid	20
TOC (Filtered)	6.0	mg/l	Y Mid	41

Analyst Comments for 10888359:                      No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Brl = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=insufficient sample

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Report Number: **COV/558587/2008**  
Laboratory Number: **10888360**

Issue **1**  
Sample **15** of **16**

Sample Source: **O Callaghan Moran & Assoc.**  
Sample Point Description: **O Callaghan Moran & Assoc.**  
Sample Description: **BH8 0.50-1.00m 10:1**

Sample Date:                      Sample Received **31 October 2008**      Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
Leachate BSEN 10:1 extract	Y		N Mid	EN12457-3 10:1
Antimony, Soluble	<0.030	mg/l	N Mid	25C
Arsenic, Soluble	<50	ug/l	N Mid	25C
Barium, Soluble	0.021	mg/l	Y Mid	54F
Cadmium, Soluble	<0.10	ug/l	Y Mid	56
Calcium, Soluble	690	mg/l	Y Mid	53F
Chromium, Soluble	<100	ug/l	Y Mid	53F
Copper, Soluble	<100	ug/l	Y Mid	53F
Lead, Soluble	<100	ug/l	Y Mid	53F
Mercury, Soluble	<0.30	ug/l	Y Mid	56
Molybdenum, Soluble	0.010	mg/l	N Mid	68
Nickel, Soluble	<100	ug/l	Y Mid	53F
Selenium, Soluble	<6.0	ug/l	N Mid	25C
Zinc, Soluble	<100	ug/l	Y Mid	53F
Phenol Index	<0.050	mg/l	N Mid	32A
Sulphate as SO4	1500	mg/l	Y Mid	60
Chloride as Cl	4.3	mg/l	Y Mid	60
Dissolved Solids	2400	mg/l	N Mid	18
Fluoride as F-	<0.20	mg/l	Y Mid	20
TOC (Filtered)	5.2	mg/l	Y Mid	41

Analyst Comments for 10888360:                      No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

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Report Number: COV/558587/2008

Issue 1

Laboratory Number: 10888361

Sample 16 of 16

Sample Source: O Callaghan Moran & Assoc.

Sample Point Description: O Callaghan Moran & Assoc.

Sample Description: BH8 1.00-2.00m 10:1

Sample Date: Sample Received 31 October 2008 Analysis Complete: 13 November 2008

Test Description	Result	Units	Accreditation	Method
Leachate BSEN 10:1 extract	Y		N Mid	EN12457-3 10:1
Antimony, Soluble	<0.030	mg/l	N Mid	25C
Arsenic, Soluble	<50	ug/l	N Mid	25C
Barium, Soluble	0.025	mg/l	Y Mid	54F
Cadmium, Soluble	<0.10	ug/l	Y Mid	56
Calcium, Soluble	650	mg/l	Y Mid	53F
Chromium, Soluble	<100	ug/l	Y Mid	53F
Copper, Soluble	<100	ug/l	Y Mid	53F
Lead, Soluble	<100	ug/l	Y Mid	53F
Mercury, Soluble	<0.30	ug/l	Y Mid	56
Molybdenum, Soluble	0.0095	mg/l	N Mid	68
Nickel, Soluble	<100	ug/l	Y Mid	53F
Selenium, Soluble	<6.0	ug/l	N Mid	25C
Zinc, Soluble	<100	ug/l	Y Mid	53F
Phenol Index	<0.050	mg/l	N Mid	32A
Sulphate as SO <sub>4</sub>	1400	mg/l	Y Mid	60
Chloride as Cl	5.8	mg/l	Y Mid	60
Dissolved Solids	2400	mg/l	N Mid	18
Fluoride as F-	<0.20	mg/l	Y Mid	20
TOC (Filtered)	7.3	mg/l	Y Mid	41

Analyst Comments for 10888361: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

Signed: *L. Ellis*

Name: L. Ellis

Date: 19 November 2008

Title: Team Leader

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DCC PLAN NO. 2861/21  
01/06/2021



**Mr Crean**  
**O Callaghan Moran & Assoc.**  
**Granary House**  
**Rutland Street**  
**Cork**

24 December 2008

**Test Report: COV/569308/2008**

Dear Mr Crean

Analysis of your sample(s) submitted on 12 December 2008 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using STL and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: G. Smith

Title: Inorg and License Chem Manager

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**Severn Trent Laboratories Limited**  
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# Report Summary



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**Mr Donal Crean  
O Callaghan Moran & Assoc.  
Granary House  
Rutland Street  
Cork**

Date of Issue: **24 December 2008**

**Report Number: COV/569308/2008**

**Issue 1**

**Job Description:** Donal Crean

**Job Location:** O Callaghan Moran & Associates

**Number of Samples  
included in this report** **22**

**Job Received:** **12 December 2008**

**Number of Test Results  
included in this report** **550**

**Analysis Commenced:** **12 December 2008**

Signed: 

**Name:** **G. Smith**

**Date:** **24 December 2008**

**Title:** **Inorg and License Chem Manager**

STL was not responsible for sampling unless otherwise stated. Sampling is not covered by our UKAS accreditation.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

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# Certificate of Analysis



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Report Number: **COV/569308/2008**

Issue **1**

Laboratory Number: **10956741**

Sample **1** of **22**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH7 4.00m-5.00m**

Sample Date: Sample Received **12 December 2008** Analysis Complete: **24 December 2008**

Test Description	Result	Units	Accreditation	Method
EN 12457-3 Leachate	Y		N Mid	EN12457-3
Moisture Content Ratio at 105C	0.10	% ratio	N Mid	33
Moisture at 105c	0.10	%	N Mid	33
TOC by Ignition in O2	3.1	%	N Mid	27
PCB, Total of 7 Congeners	<0.010	mg/kg	N Mid	312
Mineral Oils, >C10 - C40	<50	mg/kg	Y Mid	317
Naphthalene	<0.10	mg/kg	N Mid	307
Acenaphthylene	<0.10	mg/kg	N Mid	307
Acenaphthene	<0.10	mg/kg	N Mid	307
Fluorene	<0.10	mg/kg	N Mid	307
Phenanthrene	<0.10	mg/kg	N Mid	307
Anthracene	<0.10	mg/kg	N Mid	307
Fluoranthene	<0.10	mg/kg	N Mid	307
Pyrene	<0.10	mg/kg	N Mid	307
Benzo(a)anthracene	<0.10	mg/kg	N Mid	307
Chrysene	<0.10	mg/kg	N Mid	307
Benzo(b)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(k)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(a)pyrene	<0.10	mg/kg	N Mid	307
Dibenz(a,h)anthracene	<0.10	mg/kg	N Mid	307
Benzo(g,h,i)perylene	<0.10	mg/kg	N Mid	307
Indeno(1,2,3-c,d)pyrene	<0.10	mg/kg	N Mid	307
Coronene	<0.10	mg/kg	N Mid	307
PAH, Total of 17 WAC	<1.0	mg/kg	N Mid	307
benzene	<0.10	mg/kg	Y Mid	327
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327
Dry Ratio (BSEN 12457)	99.90	%	N Mid	Calculated

Analyst Comments for 10956741: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
 Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. Relating to Legionella volume analysed 1g is approximately equivalent to 1ml.  
 I/S=Insufficient sample

Severn Trent Laboratories Ltd.







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Report Number: **COV/569308/2008**

Issue **1**

Laboratory Number: **10956743**

Sample **3** of **22**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH12 3.00m-4.00m**

Sample Date: Sample Received **12 December 2008** Analysis Complete: **24 December 2008**

Test Description	Result	Units	Accreditation	Method
EN 12457-3 Leachate	Y		N Mid	EN12457-3
Moisture Content Ratio at 105C	0.29	% ratio	N Mid	33
Moisture at 105c	0.29	%	N Mid	33
TOC by Ignition in O2	3.0	%	N Mid	27
PCB, Total of 7 Congeners	<0.010	mg/kg	N Mid	312
Mineral Oils, >C10 - C40	170	mg/kg	Y Mid	317
Naphthalene	<0.10	mg/kg	N Mid	307
Acenaphthylene	<0.10	mg/kg	N Mid	307
Acenaphthene	<0.10	mg/kg	N Mid	307
Fluorene	<0.10	mg/kg	N Mid	307
Phenanthrene	0.11	mg/kg	N Mid	307
Anthracene	<0.10	mg/kg	N Mid	307
Fluoranthene	<0.10	mg/kg	N Mid	307
Pyrene	<0.10	mg/kg	N Mid	307
Benzo(a)anthracene	<0.10	mg/kg	N Mid	307
Chrysene	<0.10	mg/kg	N Mid	307
Benzo(b)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(k)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(a)pyrene	<0.10	mg/kg	N Mid	307
Dibenz(a,h)anthracene	<0.10	mg/kg	N Mid	307
Benzo(g,h,i)perylene	<0.10	mg/kg	N Mid	307
Indeno(1,2,3-c,d)pyrene	<0.10	mg/kg	N Mid	307
Coronene	<0.10	mg/kg	N Mid	307
PAH, Total of 17 WAC	<1.0	mg/kg	N Mid	307
benzene	<0.10	mg/kg	Y Mid	327
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327
Dry Ratio (BSEN 12457)	99.71	%	N Mid	Calculated

**Analyst Comments for 10956743:** No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
 Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. Relating to Legionella volume analysed 1g is approximately equivalent to 1ml.  
 I/S=Insufficient sample

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Report Number: **COV/569308/2008**

Issue **1**

Laboratory Number: **10956744**

Sample **4** of **22**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH12 4.00m-5.00m**

Sample Date: Sample Received **12 December 2008** Analysis Complete: **24 December 2008**

Test Description	Result	Units	Accreditation	Method
EN 12457-3 Leachate	Y		N Mid	EN12457-3
Moisture Content Ratio at 105C	0.28	% ratio	N Mid	33
Moisture at 105c	0.28	%	N Mid	33
TOC by Ignition in O2	2.4	%	N Mid	27
PCB, Total of 7 Congeners	<0.010	mg/kg	N Mid	312
Mineral Oils, >C10 - C40	57	mg/kg	Y Mid	317
Naphthalene	0.15	mg/kg	N Mid	307
Acenaphthylene	<0.10	mg/kg	N Mid	307
Acenaphthene	<0.10	mg/kg	N Mid	307
Fluorene	<0.10	mg/kg	N Mid	307
Phenanthrene	<0.10	mg/kg	N Mid	307
Anthracene	<0.10	mg/kg	N Mid	307
Fluoranthene	<0.10	mg/kg	N Mid	307
Pyrene	<0.10	mg/kg	N Mid	307
Benzo(a)anthracene	<0.10	mg/kg	N Mid	307
Chrysene	<0.10	mg/kg	N Mid	307
Benzo(b)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(k)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(a)pyrene	<0.10	mg/kg	N Mid	307
Dibenz(a,h)anthracene	<0.10	mg/kg	N Mid	307
Benzo(g,h,i)perylene	<0.10	mg/kg	N Mid	307
Indeno(1,2,3-c,d)pyrene	<0.10	mg/kg	N Mid	307
Coronene	<0.10	mg/kg	N Mid	307
PAH, Total of 17 WAC	<1.0	mg/kg	N Mid	307
benzene	<0.10	mg/kg	Y Mid	327
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327
Dry Ratio (BSEN 12457)	99.72	%	N Mid	Calculated

Analyst Comments for 10956744: No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.  
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.  
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. Relating to Legionella volume analysed 1g is approximately equivalent to 1ml.  
I/S=Insufficient sample

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# STL

Report Number: **COV/569308/2008**

Issue **1**

Laboratory Number: **10956745**

Sample **5** of **22**

Sample Source: **O Callaghan Moran & Assoc.**

Sample Point Description: **O Callaghan Moran & Assoc.**

Sample Description: **BH12 8.00m-10.00m**

Sample Date: Sample Received **12 December 2008** Analysis Complete: **24 December 2008**

Test Description	Result	Units	Accreditation	Method
EN 12457-3 Leachate	Y		N Mid	EN12457-3
Moisture Content Ratio at 105C	0.37	% ratio	N Mid	33
Moisture at 105c	0.37	%	N Mid	33
TOC by Ignition in O2	1.4	%	N Mid	27
PCB, Total of 7 Congeners	<0.010	mg/kg	N Mid	312
Mineral Oils, >C10 - C40	<50	mg/kg	Y Mid	317
Naphthalene	0.18	mg/kg	N Mid	307
Acenaphthylene	<0.10	mg/kg	N Mid	307
Acenaphthene	<0.10	mg/kg	N Mid	307
Fluorene	<0.10	mg/kg	N Mid	307
Phenanthrene	<0.10	mg/kg	N Mid	307
Anthracene	<0.10	mg/kg	N Mid	307
Fluoranthene	<0.10	mg/kg	N Mid	307
Pyrene	<0.10	mg/kg	N Mid	307
Benzo(a)anthracene	<0.10	mg/kg	N Mid	307
Chrysene	<0.10	mg/kg	N Mid	307
Benzo(b)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(k)fluoranthene	<0.10	mg/kg	N Mid	307
Benzo(a)pyrene	<0.10	mg/kg	N Mid	307
Dibenz(a,h)anthracene	<0.10	mg/kg	N Mid	307
Benzo(g,h,i)perylene	<0.10	mg/kg	N Mid	307
Indeno(1,2,3-c,d)pyrene	<0.10	mg/kg	N Mid	307
Coronene	<0.10	mg/kg	N Mid	307
PAH, Total of 17 WAC	<1.0	mg/kg	N Mid	307
benzene	<0.10	mg/kg	Y Mid	327
toluene	<0.10	mg/kg	Y Mid	327
ethylbenzene	<0.10	mg/kg	Y Mid	327
m&p-Xylene	<0.20	mg/kg	Y Mid	327
o-xylene	<0.10	mg/kg	Y Mid	327
Dry Ratio (BSEN 12457)	99.63	%	N Mid	Calculated

Analyst Comments for 10956745:

No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.

Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcom.

For Microbiological determinands 0 or ND=Not Detected. For Legionella ND=Not Detected in volume of sample filtered. Relating to Legionella volume analysed 1g is approximately equivalent to 1ml. I/S=Insufficient sample

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