DUNKINEELY HISTORIC LANDFILL

Environmental Risk Assessment Report (Tier 3)

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EXECUTIVE SUMMARY

RPS was appointed by Donegal County Council to undertake a Tier 1, 2, and 3 Environmental Site Investigation and Risk Assessment of an area of land to the north of Dunkineely, Co. Donegal in accordance with the EPA Code of Practice for Environmental Risk Assessments for Unregulated Waste Disposal Sites.

The risk assessment was based on a desk study of available information, a walkover survey and a site investigation carried out by Causeway Geotech Ltd under the supervision of RPS. The investigation made provision for contamination testing of; soil samples, groundwater and surface water samples and the monitoring of ground gases.

The key findings of the report are as follows:

1. SITE HISTORY

Historic mapping held on file by Ordnance Survey of Ireland (6 inch colour 1829-1841 and 25 inch black and white 1897-1913) was consulted to ascertain the previous use of the site. The site appears to have been undeveloped and in agricultural use. It is noted from both the 1829-1841 and 1897-1913 surveys that the land ownership boundary of the embankment area is marked and similar in size to the ownership boundary existing today. The 1897-1913 survey indicates that the boundary has expanded and is slightly larger than the current boundary. A number of quarries are noted south of the site in the 1829-1841 survey map which are not present on the later 1897-1913 survey map.

2. GROUND CONDITIONS

The exploratory investigation made provision for five (5) boreholes to a maximum depth of 9.30m below ground level. The site investigation logs indicate that the site is underlain by the following general sequence:

- Made Ground
- Peat
- Glacial Till
- Bedrock (Limestone and Sandstone)

3. GROUNDWATER CONDITIONS

During the site investigation, shallow groundwater was encountered within the overburden deposits and deep groundwater was encountered within the underlying bedrock.

4. GROUND CONTAMINATION

Chemical analysis of soil results indicated that all samples recorded contaminant concentrations below generic screening values for a commercial end use.

5. GROUNDWATER CONTAMINATION

Chemical analysis of groundwater samples indicated that the shallow groundwater beneath the site has been impacted by Ammoniacal Nitrogen, Metals, Hydrocarbons and PAHs. The deep groundwater in the bedrock aquifer in both downstream and upstream locations has been impacted to a lesser extent by Ammoniacal Nitrogen. The bedrock aquifer upstream sample has been impacted by Hydrocarbons and PAHs the source of which is unknown and is unlikely to be related to the historic landfill.

Chemical analysis of upstream and downstream surface water samples indicates that the downstream drainage ditch has been impacted by Ammoniacal Nitrogen during one monitoring round only however the source of the Ammoniacal Nitrogen is likely to be natural e.g. peat.

6. GAS ASSESSMENT

Concentrations of Methane and Carbon Dioxide were monitored within three boreholes on four occasions. Low levels of Methane and slightly elevated levels of Carbon Dioxide were detected and the risk to adjacent residential receptors is deemed to be low.

7. RISK ASSESSMENT

A review of the CSM indicated that contaminant linkages in relation to human health do not exist at the site. In relation to environmental receptors, the laboratory results indicate that the contaminated shallow groundwater beneath the site has been impacted. The underlying karst aquifer appears to have been impacted by off-site sources and the impact from the historic landfill appears to be low. There is no significant evidence to suggest that the adjacent surface water receptors have been impacted by the site and as such the risk is considered to be low.

8. REMEDIAL RECOMMENDATIONS

As the risk to surface water quality is Low, no remedial measures are required other than the decommissioning of boreholes upon EPA agreement. It is proposed that the five boreholes present onsite including dual installation BH03 (BH01, BH02, BH03S, BH03D, BH04, BH05) should be decommissioned in line with Scottish Environment Protection Agency (SEPA) guidance ‘Good Practice for Decommissioning Redundant Boreholes and Wells’. Decommissioning works involve the backfilling, sealing and capping of the boreholes at an estimated cost of €2,100.00. A clean/pick of visible residual waste materials on the surface of the site and fencing of the waste area using livestock is recommended at an estimated cost of €1,550.00.

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1 INTRODUCTION

1.1 Terms of Reference

RPS was commissioned by Donegal County Council (DCC) to undertake a Tier 1, 2, and 3 Environmental Site Investigation and Risk Assessment of an area of land to the north of Dunkineely, Co. Donegal in accordance with the EPA Code of Practice for Environmental Risk Assessments for Unregulated Waste Disposal Sites (2007).

This report should not be read in isolation from the Tier 1 Preliminary Assessment Report and the Tier 2 Exploratory Investigation and Risk Assessment Report. It is intended that only selected information that is included within the Tier I and Tier 2 reports is repeated within this report for clarification purposes. This Tier 3 report supersedes any previous revisions.

1.2 Objectives

The specific aims of the assessment were to:

- Confirm the lateral extent and identify the vertical extent of buried waste material within the site boundaries;
- Assess any potential risks to human or environmental receptors associated with the presence of the waste material; and,
- Provide an outline strategy in relation to the management and remediation of the site, if deemed necessary.

1.3 Overall Methodology

In order to achieve the above objectives, the following scope of work was undertaken:

- Design and Implementation of a Soil and Groundwater Site Investigation in accordance with BS 10175.
- Quantitative assessment of risks to human and environmental receptors in accordance with the Environmental Protection Agency (EPA) Code of Practice for the Environmental Risk Assessment for Unregulated Waste Disposal Sites, 2007.
- Preparation of a report as per Chapter 8 “Reporting Requirements” in the EPA Code of Practice for Environmental Risk Assessment for Unregulated Waste Disposal Sites, 2007.

2 TIER 2 - PRELIMINARY SITE INVESTIGATION WORKS

2.1 Objectives

The overall objective of the preliminary site investigation was to reduce the uncertainty with regard to the site, by obtaining information on:

- The nature of the waste;
- The volume and extent of waste;

2.2 Site Investigation Strategy

RPS undertook a Tier 2 Exploratory Site Investigation in May 2012 which involved advancing a number of trial pits across the site.

The site investigation works were undertaken with reference to the following best practice guides for Contaminated Soils and Groundwater site investigations:

- *BS 10175:* Investigation of potentially contaminated sites - Code of practice;
- Land Contaminated Risk Management published by the UK Environment Agency, October 2020.
- *ISO standards* for soil and groundwater analysis and sampling;
- Relevant Health and Safety Regulations and Guidance (including the Health, Safety and Welfare at Work Act 2005, and Safety, Health and Welfare at Work (Construction) Regulations 2006, SI 504/06;
- EPA Code of Practice Environmental Risk Assessment for Unregulated Waste Disposal Sites, 2007, and,
- Environment Agency (EA) Guidance on Assessment of Risks from Landfill Sites.

2.3 Site Management

The site investigation works were carried out on 2nd May 2012 by an Environmental Scientist from RPS in conjunction with a 20-tonne tracked excavator operated by a private contractor.

2.4 Underground Service Location

No underground site services exist across the site.

2.5 Trial Pitting

Seven trial pits (TP01 to TP07) were excavated within and around the site ranging in depth between 0.5 and 3.7m bgl.

All trial pits were excavated using a mechanical excavator and were back filled on completion by replacing material in the order in which it was excavated. The following information was recorded during the excavations:

- Material descriptions;
- Groundwater presence;
- Visual evidence and extent of contamination; and,
- Olfactory evidence of contamination.

The geological strata were described from visual inspection of the excavation walls and from the arisings brought to the surface. Particular attention was paid to any evidence of contamination, visual or olfactory, on soil or in groundwater. The number of soil samples taken was dependent upon the variability of materials encountered and the perceived level of contamination.

2.6 Chemical Analysis of Samples

The laboratory used for chemical analysis of soil and groundwater samples was ALcontrol Laboratories. The laboratory is ISO 17025, UKAS and MCERT accredited.

The analytical suite of tests used for both soil and groundwater analyses were determined as most suitable to assess environmental risk.

Soil and groundwater samples were analysed for the general suite of parameters listed in Table 2.1.

Table 2.1 Summary of Laboratory Analysis

Soil Analysis Suite	Groundwater Analysis Suite	Surface Water Analysis Suite
▪ Heavy Metals ▪ Sulphate, Sulphide, Chloride, Cyanide, Thiocyanate, Asbestos ▪ pH ▪ Organic matter content ▪ Petroleum Hydrocarbons ▪ Polychlorinated Biphenyls (PCBs) ▪ Benzene, Toluene, Ethylbenzene & Xylene (BTEX) ▪ Polycyclic Aromatic Hydrocarbons (PAH) ▪ Volatile Organic Compounds (VOCs) and Semi Volatile Organic Compounds (SVOCs) ▪ Waste Acceptance Criteria (WAC) eluate analysis	▪ Heavy Metals ▪ Sulphate, Sulphide, Ammoniacal Nitrogen, Chloride, Total Alkalinity, Total Organic Carbon, Total Organic Nitrogen, Sodium, Potassium, Calcium, BOD, COD, Nitrite, Nitrate, Magnesium , Manganese, Phosphate and Chloride ▪ Organic matter content ▪ Petroleum Hydrocarbons ▪ BTEX ▪ Volatile Organic Compounds (VOCs) and Semi Volatile Organic Compounds (SVOCs) ▪ Polycyclic Aromatic Hydrocarbons (PAH) ▪ PCBs ▪ Organochlorine Pesticides ▪ Herbicides ▪ Phenoxy Acid herbicides ▪ Organophosphorous Pesticides	▪ Heavy Metals ▪ Sulphate, Sulphide, Ammoniacal Nitrogen, Chloride, Total Alkalinity, Total Organic Carbon, Total Organic Nitrogen, Sodium, Potassium, Calcium, BOD, COD, Nitrite, Nitrate, Magnesium , Manganese, Phosphate and Chloride ▪ Organic matter content ▪ Petroleum Hydrocarbons ▪ BTEX ▪ Volatile Organic Compounds (VOCs) and Semi Volatile Organic Compounds (SVOCs) ▪ Polycyclic Aromatic Hydrocarbons (PAH) ▪ PCBs ▪ Organochlorine Pesticides ▪ Herbicides ▪ Phenoxy Acid herbicides ▪ Organophosphorous Pesticides

2.7 Environmental Soil Sampling

A total of eleven soil investigation samples were collected from the trial pits and sent for laboratory analysis after visual and olfactory screening.

2.8 Environmental Groundwater & Surface Water Sampling

Two grab samples of groundwater were obtained from groundwater ingressing into TP03 and TP05. The surface drain along the western site boundary was found to be dry and could not be sampled. The spring and small stream outside the north eastern site boundary was also dry on the day of the site investigation.

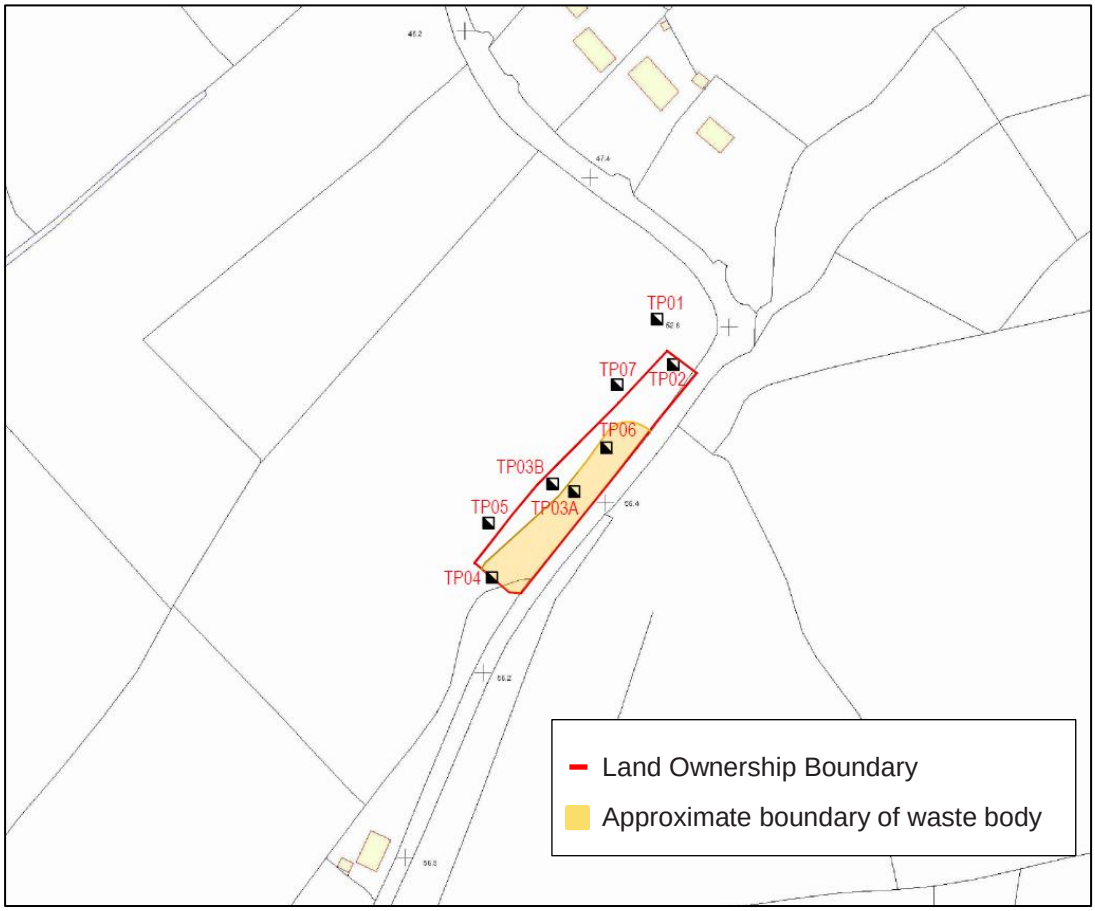
It is acknowledged that sampling groundwater from trial pits is not considered best practice in accordance with the guidance presented within BS 10175 as ground disturbance may lead to a sample that is not fully representative of the groundwater beneath the site. However, the guidance does state that such a sample may be used to provide preliminary information on groundwater quality.

2.9 Tier 2 Preliminary Investigation Conclusions

The Tier 2 preliminary assessment concluded the following:

- Waste material appears to be confined to a narrow strip of land along the eastern embankment. The approximate boundary of the waste body identified is shown in Figure 2.1 below.
- Waste material comprising of glass, metal, plastic and tyres was evident on the surface within the overgrown embankment area.
- Waste material comprising metal and plastic was evident within sub-soils in TP03A to a maximum depth of 1.0m bgl but were not evident within TP03B which was advanced in line with TP03A but at the toe of the embankment and into the field. Trial pit TP06 also comprised surface waste within the topsoil.
- Limestone bedrock was encountered within TP01, TP02, TP04 and TP06. Bedrock was encountered at the surface in TP02 and at a maximum depth of 2.7m bgl in TP06.
- Shallow groundwater was encountered within TP03B, TP05, TP06 and TP07 between 0.70m and 1.20m bgl.
- Chemical analysis of soil results indicated that all samples recorded contaminant concentrations below generic screening values for a commercial end use.
- Chemical analysis of two groundwater ‘grab’ samples from TP03 and TP05 indicated that a number of contaminants (Chloride, Potassium, Manganese and PAHs) recorded concentrations above the EPA IGVs.
- It is likely that the shallow groundwater has been impacted by contaminants leaching from the waste however due to grab sampling the groundwater from trial pits, this cannot be fully quantified.

Figure 2.1 Approximate boundary of waste body identified from trial pit investigation



2.10 Tier 2 Preliminary Investigation Recommendations

The Tier 2 preliminary investigation recommended that the following additional works should be undertaken as part of a Tier 2 Main Site Investigation:

- A number of boreholes should be advanced within the site with at least one borehole upstream and downstream of the waste body. Boreholes should be targeted to both the shallow groundwater and the deeper karst aquifer within the bedrock (to ascertain any impact on the karst aquifer). Caution should be taking during these intrusive works to ensure that new pathways for contaminant migration are not created by drilling into the limestone bedrock.
- At least two rounds of monitoring of shallow and deep groundwater should be undertaken for a similar suite of analysis as carried out during this assessment.
- A number of these boreholes should also be used for gas monitoring to assess the gas risk (if any) from the site. At least four rounds of monitoring should be undertaken over at least a one month period with one round at low atmospheric pressure (<1000 mb).
- Although the horizontal extent of the waste along the embankment has been clarified, the vertical extent of the waste higher up on the embankment is unknown. Given the access restrictions (due

to the heavily overgrown vegetation and soft ground), it may be necessary to utilise a 'long reach' excavator which is capable of working in soft, peaty ground to access the waste material higher up on the embankment. Alternatively, it may be possible to advance a borehole from the top of the embankment down through the waste which would provide a good profile of the waste material deposited over time. The practicality of either option should be fully explored and assessed before proceeding to site.

- At the time of the investigation, the drainage ditch along the western boundary was dry. However during the initial site walkover in January 2012, this ditch was noted to contain brown coloured water. Therefore this ditch should be checked when carrying out the two groundwater sampling rounds above and sampled if sufficient water is present.
- It is unknown also if the drainage ditch eventually discharges into the un-named stream located 300m west of the site. Further investigation should be carried out in this matter as the stream discharges into the unpolluted McSwines Bay.

The conceptual model of the site and the risk assessment should be updated and modified as part of a Tier 3 Assessment depending on the outcome of the additional investigation and monitoring.

3 TIER 2 – MAIN SITE INVESTIGATION WORKS

3.1 Objectives

The overall objective of the main site investigation was to reduce the uncertainty with regard to the site, by obtaining information on:

- The volume and extent of waste;
- The presence of any leachate or gas produced within the waste;
- The risks posed to surface water and the groundwater beneath the site; and
- The risks posed to nearby human health receptors.

The nature of the waste was previously confirmed during the trial pitting activities undertaken during the Tier 2 exploratory site investigation.

3.2 Site Investigation Strategy

A Tier 2 Main Site Investigation was undertaken in October 2012 by Causeway Geotech Ltd under the supervision of RPS. The investigation comprised the following;

- Five (5) boreholes to a maximum depth of 9.30m
- Collection of soil and groundwater samples
- Monitoring of ground borne gases (Carbon Dioxide and Methane)

The site investigation works were carried out with reference to the following best practice guides for Contaminated Soils and Groundwater site investigations:

- *BS 10175* Investigation of potentially contaminated sites - Code of practice;
- Land Contaminated Risk Management published by the UK Environment Agency, October 2020.
- *ISO standards* for soil and groundwater analysis and sampling;
- Relevant Health and Safety Regulations and Guidance (including the Health, Safety and Welfare at Work Act 2005, and Safety, Health and Welfare at Work (Construction) Regulations 2006, SI 504/06;
- EPA Code of Practice Environmental Risk Assessment for Unregulated Waste Disposal Sites, 2007, and,
- Environment Agency (EA) Guidance on Assessment of Risks from Landfill Sites.

3.3 Site Management

The site investigation works were carried out on 23rd and 24th October 2012 by Causeway Geotech Ltd.

3.4 Underground Service Location

No underground site services exist across the site.

3.5 Boreholes - Deep

Three boreholes (BH01, BH02 & BH03D) were advanced outside of the main waste body to a maximum depth of 9.30m using a Commacchio 205 dual purpose dynamic sampling and rotary drilling rig. The boreholes were advanced through the natural strata with follow rotary drilling into the underlying Limestone and Sandstone bedrock. The locations of the boreholes are presented in Figure 3.1. The borehole logs are presented in Appendix A.

The geological strata were described from visual inspection of the arisings brought to the surface. Particular attention was paid to any evidence of contamination, visual or olfactory, on soil or in groundwater. The number of soil samples taken was dependent upon the variability of materials encountered and the perceived level of contamination.

All three boreholes were installed with 50mm HDPE groundwater monitoring standpipes with the response zone based within the bedrock. Borehole BH03 was drilled to a maximum depth of 8.50m bgl and was installed with two standpipes to target two strata; the deeper install is referred to as BH03D and targets the underlying Sandstone strata.

3.6 Boreholes - Shallow

Borehole BH03 was drilled to a maximum depth of 8.50m bgl and was installed with two standpipes to target two strata; the shallow install is referred to as BH03S and targets natural Clay.

Two boreholes (BH04 & BH05) were advanced at the bottom of the slope outside the waste body to a maximum depth of 3.00m using a Dando Terrier rig. The boreholes were advanced through the underlying natural strata and were terminated on encountering bedrock. The locations of the boreholes are presented in Figure 3.1. The borehole logs are presented in Appendix A.

The geological strata were described from visual inspection of the arisings brought to the surface. Particular attention was paid to any evidence of contamination, visual or olfactory, on soil or in groundwater. The number of soil samples taken was dependent upon the variability of materials encountered and the perceived level of contamination.

BH04 and BH05 were installed with 50mm HDPE groundwater monitoring standpipes to facilitate groundwater sampling.

3.7 Chemical Analysis of Samples

The laboratories used for chemical analysis of soil and groundwater samples were Chemtest and ALcontrol. The laboratories are ISO 17025, UKAS and MCERT accredited.

The analytical suite of tests used for both soil and groundwater analyses were determined as most suitable to assess environmental risk.

Soil and groundwater samples were analysed for the general suite of parameters listed in Table 3.1.

Table 3.1 Summary of Laboratory Analysis

Soil Analysis Suite	Groundwater Analysis Suite	Surface Water Analysis Suite
• Heavy Metals • Sulphate, Sulphide, Chloride, Cyanide, Thiocyanate, Asbestos, Phenols • pH • Organic matter content • Petroleum Hydrocarbons • Polycyclic Aromatic Hydrocarbons (PAH) • Polychlorinated Biphenyls (PCBs) • Benzene, Toluene, Ethylbenzene & Xylene (BTEX) • Volatile Organic Compounds (VOCs) and Semi Volatile Organic Compounds (SVOCs) • Waste Acceptance Criteria (WAC) eluate analysis	• Heavy Metals • Sulphate, Sulphide, pH, Ammoniacal Nitrogen, Electrical Conductivity, Chloride, Total Alkalinity, Total Organic Carbon, Total Oxidised Nitrogen, Total Nitrogen, Sodium, Potassium, Calcium, BOD, COD, Nitrite, Nitrate, Magnesium , Manganese, Fluoride, Phosphate, Cyanide, Suspended Solids, Phenols • Organic matter content • Petroleum Hydrocarbons • Polycyclic Aromatic Hydrocarbons (PAH) • Polycyclic Biphenyls (PCBs) • BTEX • Volatile Organic Compounds (VOCs) and Semi Volatile Organic Compounds (SVOCs) • Combined Pesticides / Herbicides • Phenoxy Acid herbicides	• Heavy Metals • Sulphate, Sulphide, pH, Ammoniacal Nitrogen, Electrical Conductivity, Chloride, Total Alkalinity, Total Organic Carbon, Total Oxidised Nitrogen, Total Nitrogen, Sodium, Potassium, Calcium, BOD, COD, Nitrite, Nitrate, Magnesium , Manganese, Fluoride, Phosphate, Cyanide, Suspended Solids, Phenols • Organic matter content • Petroleum Hydrocarbons • Polycyclic Aromatic Hydrocarbons (PAH) • Polycyclic Biphenyls (PCBs) • BTEX • Volatile Organic Compounds (VOCs) and Semi Volatile Organic Compounds (SVOCs) • Combined Pesticides / Herbicides • Phenoxy Acid herbicides

3.8 Environmental Soil Sampling

A total of 12 soil investigation samples were collected from the boreholes and sent for laboratory analysis after visual and olfactory screening. The results are presented in Appendix A.

3.9 Environmental Groundwater & Surface Water Sampling

Two rounds of groundwater and surface water sampling was undertaken in November 2012. As per the guidance contained within the EPA Landfill Monitoring Guidelines 2003, the first round was analysed for

a full suite of parameters whilst the second round was analysed for an indicator suite of parameters (Table C2 of the Landfill Monitoring Guidelines). An initial screen of the laboratory results indicated the presence of elevated levels of hydrocarbons and PAHs in a number of groundwater samples. As a result, a third round of groundwater and surface water monitoring was carried out in January 2013. Both shallow and deep boreholes were targeted, and surface water samples were obtained from SW01 and SW02 during these three sampling rounds.

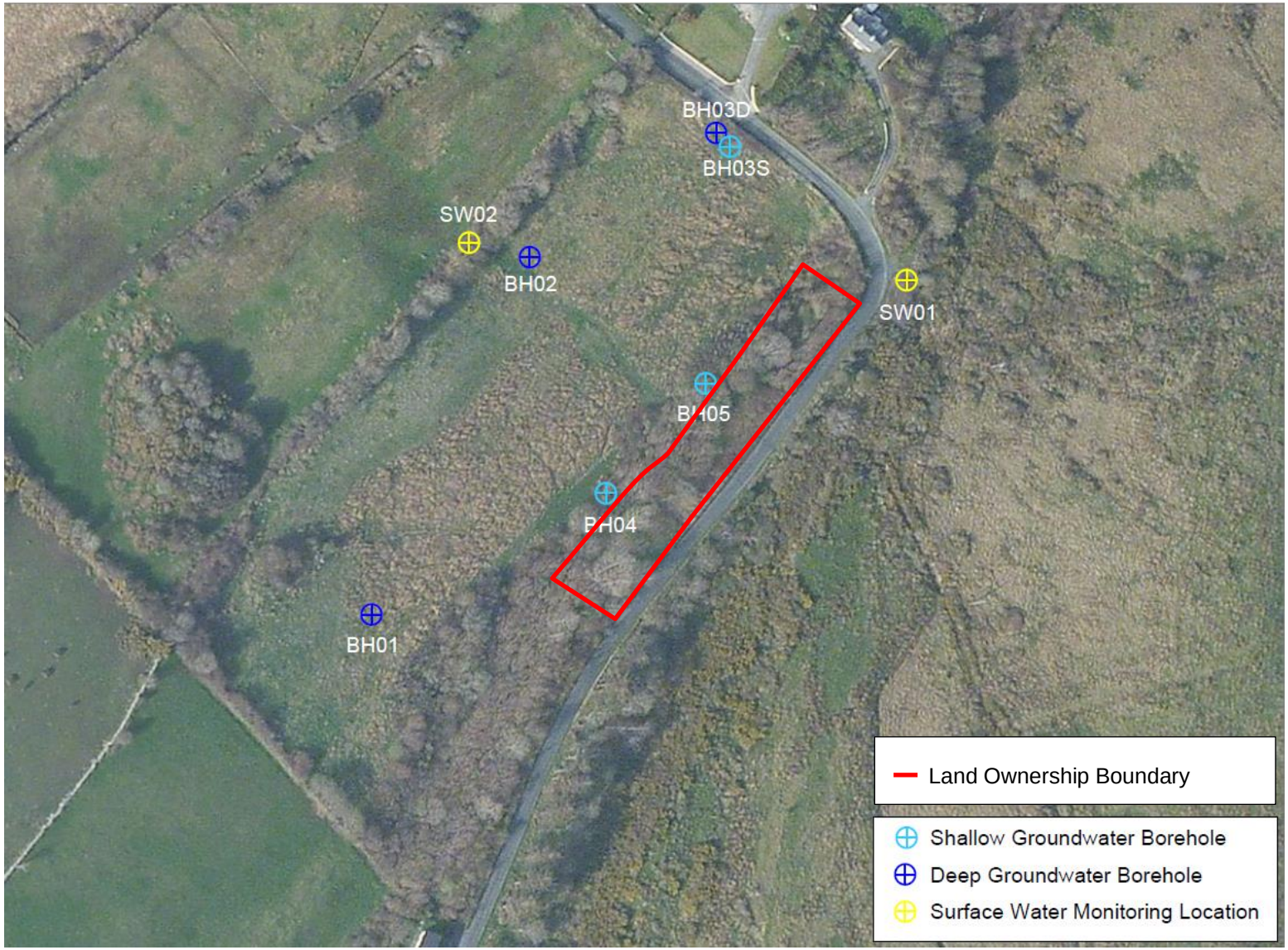
The laboratory analytical results are presented within Appendix B.

3.9.1 Supplemental Monitoring

A further two rounds of groundwater and surface water monitoring (one upstream and one downstream) were undertaken in October 2020 to confirm the findings of the 2012 and 2013 monitoring. Surface water, deep boreholes BH02 and BH03D and shallow boreholes BH03S, BH04 and BH05 were monitored in Rounds 4-5. Unfortunately, deep borehole BH01 could not be located and no samples were able to be taken from this borehole. The groundwater and surface water samples were sent to ALS Life Sciences Ltd for laboratory analysis (See Section 6.0) and the results (Rounds 4-5) are presented in Appendix B.

The location of the groundwater and surface water sampling points is presented in Figure 3.1.

Figure 3.1 Groundwater and Surface Water Sampling Locations



4 SUMMARY OF GROUND CONDITIONS ENCOUNTERED

4.1 Sub-Soils

The ground conditions indicated by the exploratory investigations are described in the exploratory hole logs presented in Appendix A and are briefly summarised below.

The site investigation logs indicate that the site is underlain by the following general sequence:

- Made Ground
- Peat
- Glacial Till
- Bedrock

4.1.1 Made Ground

Made Ground was encountered within BH04 and BH05 from 0.0m to 2.10m bgl and predominantly consisted of;

- Soft dark brown organic CLAY with roots and rootlets, pieces of wood and low cobble content.
- Soft dark brown sandy gravelly CLAY with low cobble content with roots and rootlets. Sand is fine. Gravel is subangular to subrounded.

4.1.2 Peat

Peat was encountered within BH02 from between 0.15m to 1.90m bgl which consisted of;

- Spongy dark brown pseudo-fibrous PEAT

4.1.3 Glacial Till

Glacial Till was encountered within all boreholes ranging in thickness from 0.85m (BH01) to 3.20m (BH04) and predominantly consisted of;

- Soft brown peaty CLAY.
- Firm grey silty CLAY.
- Firm brown sandy gravelly silty CLAY with frequent cobbles and boulders.
- Soft brown and grey sandy gravelly CLAY with occasional cobble content.
- Firm grey sandy gravelly CLAY

- Soft to firm light grey sandy gravelly CLAY with occasional cobble content

4.1.4 Bedrock

Limestone bedrock was encountered within BH01 and BH02 at a depth of 1.0m and 4.50m bgl respectively. Sandstone bedrock was encountered within BH03 at a depth of 3.20m bgl. Possible bedrock was encountered within BH04 and BH05 at depths of 3.0m and 2.60m bgl respectively.

4.1.5 Waste Material

No evidence of waste was encountered at any of the boreholes during the main site investigation works.

During the Tier 2 preliminary site investigation works, waste material was evident on the surface at the locations of TP03A and TP06, with little evidence of surface waste at the location of TP04. Waste material was encountered at a maximum depth of 1.0m bgl in TP03A during this preliminary investigation.

Given the evidence from borehole and trial pit logs, the area of the waste body is estimated to be 0.07 hectares. Based on the maximum depth of 1.0m bgl, the volume of waste material beneath the site is estimated to be 700m^3. In accordance with the EPA Code of Practice, waste tonnages should be calculated with the conversion table set out in Schedule 1 to the Waste Management (Landfill Levy) Regulations 2015 (SI No 189 of 2015). As the waste falls into either the “Household waste – not compacted” or “Household waste – compacted (includes all bulk disposals” categories, the higher conversion factor of 0.4 cubic metres to tonnes was used in accordance with the regulations. This equates to 280 tonnes of waste.

4.2 Hydrogeology

4.2.1 Groundwater Observations

During the site investigation, groundwater was encountered within four of the five test locations and are summarised in Table 4.1. Two groundwater bodies were evident during the site investigation; shallow groundwater perched on boulder clay beneath the waste body and deep groundwater within the underlying Limestone bedrock.

Table 4.1 Summary of Water Strikes During Drilling

Exploratory hole	Depth of Water Strikes / Seepages (m.b.g.l)	Depth of Water Strikes / Seepages (m.b.g.l)	Summary of Ground Conditions where Water Strikes / Seepages Encountered
BH01	No groundwater encountered	No groundwater encountered	n/a
BH02	Strike at 5.50m	37.888	Limestone Bedrock

BH03	Strike at 1.80m Strike at 3.20m	44.546 43.146	Soft grey sandy Gravelly CLAY Sandstone bedrock
BH04	Strike at 2.00m	41.982	MADE GROUND: Soft dark brown organic CLAY with roots and pieces of wood
BH05	Strike at 2.00m	42.870	Soft to firm light grey sandy gravelly CLAY with low cobble content

4.2.2 Standing Groundwater

Standing groundwater levels within installed boreholes were monitored on four occasions between 12th November 2012 and 14th January 2013, using an acoustic dip-meter. Groundwater levels were also recorded during purging on 5th and 19th October 2020. Groundwater levels are presented in Table 4.2.

Table 4.2 Groundwater Monitoring (12/11/2012 to 19/10/2020)

Borehole No.	Surface Level (mOD)	Groundwater Level (mOD)					
		12-Nov-12	19-Nov-12	5-Dec-12	13-Jan-13	5-Oct-20	19-Oct-20
BH01	**45.721**	45.419	45.721	45.569	45.721	NM	NM
BH02	**43.388**	43.388*	43.388*	43.388*	43.388*	43.088	42.978
BH03S	**46.346**	45.708	45.888	45.688	45.658	45.746	45.196
BH03D	**46.346**	45.088	44.468	45.828	44.908	45.206	45.046
BH04	**43.982**	43.808	43.982*	43.838	43.858	43.552	43.482
BH05	**44.870**	43.986	44.036	43.866	43.876	43.62	43.61

*Groundwater at surface NM = Not monitored as borehole could not be located.

The monitoring indicates that the groundwater flow in the deep and shallow aquifer is in a westerly direction towards BH02.

5 GROUND CONTAMINATION

5.1 Introduction

The results of the laboratory analysis were used to carry out a generic quantitative risk assessment (GQRA).

A summary of the geochemical test results are presented in Appendix C. Within these tables, those cells with no recorded values, indicate that the samples were not scheduled for that particular suite of analysis.

5.2 Risk Assessment Methodology

5.2.1 Human Health Risk Assessment Framework

In the absence of Irish legislation and guidance in relation to human health risk assessment, reference has been made to UK guidance. The UK Environment Agency has published guidance in relation to assessing the potential risk from contaminated land to human health. Science Report SR2 'Human Health Toxicological Assessment of Contaminants in Soil' and Science Report SR3 'Updated Technical Background to the CLEA Model' are intended to replace CLR 9 and 10 respectively and together with Land Contamination Risk Management (LCRM) provide the most up to date framework for human health risk assessment within the UK.

CLR10 previously stated that 'the contamination is assumed to be at or within 1m of the surface' (CLR10 pg 10). SR3 contains a brief discussion of contamination depth on p13 and although it does not specifically mention a depth of 1.0m it states that *'it is assumed that the pollution is at the surface or close to it'* and *'whether or not soil contamination at greater depth or beneath hard standing poses a risk to health depends on the importance of the contact pathways (primarily ingestion and dermal contact) and the likelihood that such soils may be brought to the surface through activities such as gardening or building works'.* For the purpose of this assessment therefore, it is considered that at depths greater than 1m, the probability of human exposure via the direct contact pathways are significantly reduced.

5.2.2 Published Generic Site Assessment Criteria

In order to assess the human health and environmental risks posed by potential contaminants within the underlying soils, RPS undertook an initial screen of the laboratory results using the 2015 LQM/CIEH Suitable 4 Use Levels (S4ULs) (Copyright Land Quality management Limited reproduced with permission; Publication Number S4UL3474. All Rights Reserved) as trigger values. Where contamination results are recorded above these S4ULs, further assessment of the risks or remedial action may be needed.

These LQM/CIEH S4ULs replace the second edition of the LQM/CIEH Generic Assessment Criteria (GAC) published in 2009. Differences in modelling assumptions and added land uses and substances

create the difference between these S4ULs and the previous GAC. These values are provided for 6 land use classifications:

- Residential with homegrown produce
- Residential without homegrown produce
- Allotments
- Commercial
- Public open space near residential housing
- Public open space Park

These values have been adopted within this investigation as they provide the most up to date trigger values that are based on appropriate and rationale assumptions. Similarly to the previous GAC, the S4ULs are provided for 1%, 2.5% and 6% soil organic matter (SOM). In the absence of complete analysis of SOM at the site, generic values derived for a SOM value of 1% have been utilised in the risk assessment where possible to ensure the most conservative approach is taken.

For pollutants with no relevant S4ULs, assessment criteria were provided by the following publications:

- Soil Guideline Values (SGVs)
- The Soil Generic Assessment Criteria (GAC) for Human Health Risk Assessment – CL:AIRE December 2009

In light of the publication of SR2 and SR3 the Environment Agency published SGVs for Benzene, Toluene, Ethylbenzene, Xylene, Selenium, Mercury, Arsenic, Cadmium, Phenol, Nickel and Sum of PCDDs, PCDFs and dioxin-like PCBs for the following standard land use scenarios assuming a Sandy Loam soil and Soil Organic Matter (SOM) content of 6%:

- Residential
- Allotments
- Commercial

CL:AIRE in association with The Environmental Industries Commission (EIC) and Association of Geotechnical and Geo-environmental Specialists (AGS) published a set of Generic Assessment Criteria in 2009 for previously unpublished contaminants which are intended to complement the SGVs derived by the Environment Agency. The GACs have been derived predominantly for VOCs and SVOCs using CLEA v1.06 for a number of different Soil Organic Matter contents (1%, 2.5% and 6%).

All soil samples have been screened against generic values derived for a commercial end use.

5.3 Discussion of the Soil Chemical Results

5.3.1 Contaminants Below Laboratory Detection Limits

The following soil contaminant concentrations were at or below the method detection limit and have therefore not been considered further within this report; Total Cyanide, Free Cyanide, Total Phenols, o-Xylene, Hexavalent Chromium, Mercury, All 16 PAHs, Benzene, Ethylbenzene, MTBE, Aliphatics and Aromatics EC C5-C6, PCBs and all VOCs and SVOCs.

5.3.2 Contaminants above detection limits but below SGV or GAC

The following soil contaminants were recorded at concentrations above the method detection limit but below their SGV or GAC value; Thicyanide, Arsenic, Cadmium, Total Chromium, Copper, Lead, , Nickel, Selenium, Zinc, Boron, TPH Aliphatic and Aromatic EC C6-C44, Toluene, m/p-Xylene. Contaminants exceeding SGV or GAC.

All contaminants recorded concentrations below their respective screening values as indicated above.

5.3.3 Asbestos Containing Material (ACM)

No samples recorded the presence of ACM.

6 GROUNDWATER AND SURFACE WATER CONTAMINATION

6.1 Introduction

Groundwater and surface water analytical results used as part of the site assessment are presented in Appendix D.

Groundwater and surface water results have been screened against the following:

- European Communities Environmental Objectives (Groundwater) Regulations 2010 and (Amendment) Regulations 2016 - Overall Threshold Value Ranges (GTV);
- European Communities Environmental Objectives (Surface Waters) Regulations 2009 and (Amendment) Regulations 2015 and 2019 – Environmental Quality Standards for Inland Surface Waters (EQS);
- EPA Towards Setting Guideline Values for the Protection of Groundwater in Ireland 2003 – Interim Guideline Values (IGV); and
- European Union (Drinking Water) Regulations 2014 – Parametric values (DWR); and
- Guidance on the Authorisation of Discharges to Groundwater 2011 (Version 1) – EPA Hazardous Substances Minimum Reporting Values (MRV).

Groundwater concentrations were initially compared to the GTV screening values. Surface water concentrations were screening against the EQS for inland surface waters in the first instance. Where available, the Mean Allowable Concentration (MAC) EQS was used rather than the Annual Average (AA) EQS. In the absence of a GTV or EQS screening value for a parameter, results were screened against IGVs for comparison purposes only. It is noted that IGVs are guideline values only which were developed in 2003 and are superseded by the GTVs. The DWR screening values provide a very conservative risk assessment as groundwater is not utilised for drinking water in the area of the site and are not suitable for assessing the potential impacts to environmental receptors such as surface waters. The DWR values are included within the screening tables for comparison purposes only.

Groundwater and surface water concentrations were also compared to the minimum reporting values (MRVs) outlined in Appendix C of the EPA guidance document ‘Guidance on the Authorisation of Discharges to Groundwater’ (Version 1, 2011). The EPA produced a list of concentrations considered as appropriate MRVs for hazardous substances where standards do not yet exist. An MRV is the lowest concentration of a substance that can be determined with a known degree of confidence using commonly available laboratory analytical methods, but it it’s not necessary equivalent to the limit of detection. The MRVs are based on a set of values published by the Environment Agency H1 Technical Annex to Annex J: Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control Levels and Compliance Limits (2010).

6.2 Groundwater & Surface Water Sampling

As discussed in Section 3.9, groundwater samples were taken from all boreholes on two occasions in November 2012. As per the guidance contained with the EPA Landfill Monitoring Guidelines 2003, the first round was analysed for a full suite of parameters whilst the second round was analysed for an indicator suite of parameters (Table C2 of the Landfill Monitoring Guidelines). An initial screen of these results indicated elevated levels of hydrocarbons and PAHs. Therefore, a third round of monitoring for these contaminants of concern was undertaken in January 2013. Two surface water samples (one upstream SW01 and downstream SW02) were also taken from the upstream spring/stream and the downstream drainage ditch which runs along the western boundary.

Further supplemental groundwater of both shallow and deep boreholes, and surface water monitoring at SW01 and SW02 was undertaken on the 6th and 20th October 2020 to confirm the findings of the 2012 and 2013 monitoring. Unfortunately, BH01 could not be located and no samples were able to be taken from this borehole. The groundwater and surface water samples were sent to ALS Life Sciences Ltd. The laboratory analytical results are contained in Appendix B.

The groundwater and surface water samples were analysed for the suite of parameters outlined in Table 6.1.

Table 6.1 Summary of Laboratory Analysis

Groundwater Analysis Suite	Surface Water Analysis Suite
• Heavy Metals • Sulphate, Sulphide, pH, Ammoniacal Nitrogen, Electrical Conductivity, Chloride, Total Alkalinity, Total Organic Carbon, Total Oxidised Nitrogen, Total Nitrogen, Sodium, Potassium, Calcium, BOD, COD, Nitrite, Nitrate, Magnesium , Manganese, Fluoride, Phosphate, Cyanide, Suspended Solids, Phenols • Organic matter content • Petroleum Hydrocarbons • Polycyclic Aromatic Hydrocarbons (PAH) • Polycyclic Biphenyls (PCBs) • BTEX • Volatile Organic Compounds (VOCs) and Semi Volatile Organic Compounds (SVOCs) • Combined Pesticides / Herbicides • Phenoxy Acid herbicides	• Heavy Metals • Sulphate, Sulphide, pH, Ammoniacal Nitrogen, Electrical Conductivity, Chloride, Total Alkalinity, Total Organic Carbon, Total Oxidised Nitrogen, Total Nitrogen, Sodium, Potassium, Calcium, BOD, COD, Nitrite, Nitrate, Magnesium , Manganese, Fluoride, Phosphate, Cyanide, Suspended Solids, Phenols • Organic matter content • Petroleum Hydrocarbons • Polycyclic Aromatic Hydrocarbons (PAH) • Polycyclic Biphenyls (PCBs) • BTEX • Volatile Organic Compounds (VOCs) and Semi Volatile Organic Compounds (SVOCs) • Combined Pesticides / Herbicides • Phenoxy Acid herbicides ▪

6.3 Groundwater & Surface Water Chemical Results

6.3.1 Round 1 – 12th November 2012

Parameters analysed in groundwater and surface water samples during monitoring Round 1 that exceeded their respective screening values are outlined in Table 6.2.

Table 6.2 Round 1 (12th November 2012) Exceedances

Contaminant	Screening Value[1]	Exceeding Concentrations	Locations Exceeding
Ammoniacal Nitrogen as N	0.175 mg/l (GTV)	0.251 mg/l 0.208 mg/l 0.683 mg/l 0.254 mg/l	BH03S BH03D BH04 BH05
Chloride	30 mg/l (IGV)	53.8 mg/l 37.5 mg/l 37.4 mg/l 37.3 mg/l	BH02 BH03S BH04 BH05
Manganese	50 µg/l (IGV)	224 µg/l 222 µg/l 1,070 µg/l 922 µg/l 1,260 µg/l 503 µg/l	BH01 BH02 BH03S BH03D BH04 BH05
Iron	0.2 mg/l (IGV)	0.562 mg/l 0.258 mg/l 0.472 mg/l	BH04 SW01 SW02
Total Aliphatics & Aromatics >C5-35	7.5 µg/l (GTV)	761 µg/l 446 µg/l	BH01 BH04
Naphthalene	∑PAH6[2] 0.075 µg/l (GTV)	0.403 µg/l 0.138 µg/l 0.15 µg/l 0.169 µg/l 0.398 µg/l	BH01 BH02 BH03S BH03D BH04
Anthracene	∑PAH[2] 0.075 µg/l (GTV)	0.0332 µg/l 0.0336 µg/l	BH01 BH04
Benzo(b)fluoranthene	∑PAH[2] 0.075 µg/l (GTV)	0.184 µg/l 0.0532 µg/l 0.116 µg/l 0.0602 µg/l	BH01 BH03S BH04 BH05

[1] AA = Annual Mean, MAC = Maximum Allowable Concentration

[2] GTV for Sum of Total Polycyclic Aromatic Hydrocarbons including anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene and naphthalene.

Contaminant	Screening Value[1]	Exceeding Concentrations	Locations Exceeding
Benzo(k)fluoranthene	∑PAH[2] 0.075 µg/l (GTV)	0.0287 µg/l 0.107 µg/l 0.0452 µg/l	BH01 BH04 BH05
Benxo(g,h,i)perylene	∑PAH[2] 0.075 µg/l (GTV)	0.0439 µg/l 0.0225 µg/l 0.09 µg/l 0.0353 µg/l	BH01 BH03S BH04 BH05
Indeno(1,2,3-cd)pyrene	∑PAH[2] 0.075 µg/l (GTV)	0.021 µg/l 0.07 µg/l 0.0304 µg/l	BH01 BH04 BH05
Benzo(a)pyrene	0.0075 µg/l (GTV)	0.0365 µg/l 0.0133 µg/l 0.11 µg/l 0.0511 µg/l	BH01 BH03S BH04 BH05
Total PAH	∑PAH[2] 0.075 µg/l (GTV)	2.99 µg/l 0.556 µg/l 1.73 µg/l 0.571 µg/l	BH01 BH03S BH04 BH05
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GTV)	**European Communities Environmental Objectives (Surface Water) Regulations 2009 as amended (EQS)**	**EPA Interim Guideline Values (IGV)**	

6.3.2 Round 2 – 19th November 2012

Parameters analysed in groundwater and surface water samples during monitoring Round 2 that exceeded their respective screening values are outlined in Table 6.3. TPH, PCBs, VOCs, SVOCs, pesticides and herbicides were not analysed during Round 2.

Table 6.3 Round 2 (12th November 2012) Exceedances

Contaminant	Screening Value[3]	Exceeding Concentrations	Locations Exceeding
Ammoniacal Nitrogen as N	0.175 mg/l (GTV)	0.361 mg/l 0.251 mg/l 0.533 mg/l	BH02 BH03S BH04
	0.14 mg/l MAC (EQS Good Status)	0.241 mg/l	SW02
Chloride	30 mg/l (IGV)	43.8 mg/l 33.1 mg/l 37.6 mg/l 35.7 mg/l	BH02 BH03S BH04 BH05

[3] AA = Annual Mean, MAC = Maximum Allowable Concentration

Contaminant	Screening Value[3]	Exceeding Concentrations	Locations Exceeding
Cyanide	0.0375 mg/l (GTV)	0.08 mg/l	BH02
BOD	2.6 mg/l MAC (EQS Good Status)	2.79 mg/l	SW02
Manganese	50 µg/l (IGV)	215 µg/l 134 µg/l 1,160 µg/l 901 µg/l 760 µg/l 454 µg/l	BH01 BH02 BH03S BH03D BH04 BH05
Iron	0.2 mg/l (IGV)	0.724 mg/l	SW02
Total PAH	∑PAH[4] 0.075 µg/l (GTV)	0.29 µg/l	BH01

European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GTV)	European Communities Environmental Objectives (Surface Water) Regulations 2009 as amended (EQS)	EPA Interim Guideline Values (IGV)

6.3.3 Round 3 – 14th January 2013

Parameters analysed in groundwater and surface water samples during monitoring Round 3 that exceeded their respective screening values are outlined in Table 6.4. PCBs, VOCs, SVOCs, pesticides and herbicides were not analysed during Round 3.

Table 6.4 Round 3 (14th January 2013) Exceedances

Contaminant	Screening Value[5]	Exceeding Concentrations	Locations Exceeding
Ammoniacal Nitrogen as N	0.175 mg/l (GTV)	1.11 mg/l 0.26 mg/l	BH04 BH05
	0.14 mg/l MAC (EQS Good Status)	0.224 mg/l	SW02
Chloride	30 mg/l (IGV)	46.1 mg/l 30.6 mg/l 36.6 mg/l 34.4 mg/l	BH02 BH03S BH04 BH05
BOD	2.6 mg/l MAC (EQS Good Status)	4.78 mg/l	SW02

[4] GTV for Sum of Total Polycyclic Aromatic Hydrocarbons including anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene and naphthalene.

[5] AA = Annual Mean, MAC = Maximum Allowable Concentration

Contaminant	Screening Value[5]	Exceeding Concentrations	Locations Exceeding
Manganese	50 µg/l (IGV)	510 µg/l 89.4 µg/l 1,430 µg/l 1,280 µg/l 155 µg/l 310 µg/l 68.9 µg/l	BH01 BH02 BH03S BH03D BH04 BH05 SW01
Iron	0.2 mg/l (IGV)	0.867 mg/l	SW02
Total Aliphatics & Aromatics >C5-35	7.5 µg/l (GTV)	4,030 µg/l 144 µg/l	BH01 BH04
Naphthalene	∑PAH6[6] 0.075 µg/l (GTV)	0.604 µg/l	BH01
Anthracene	∑PAH[6] 0.075 µg/l (GTV)	0.102 µg/l	BH01
Benzo(b)fluoranthene	∑PAH[6] 0.075 µg/l (GTV)	0.371 µg/l	BH01
Benzo(k)fluoranthene	∑PAH[6] 0.075 µg/l (GTV)	0.063 µg/l	BH01
Benxo(g,h,i)perylene	∑PAH[6] 0.075 µg/l (GTV)	0.0865 µg/l	BH01
Indeno(1,2,3-cd)pyrene	∑PAH[6] 0.075 µg/l (GTV)	0.0483 µg/l	BH01
Benzo(a)pyrene	0.0075 µg/l (GTV)	0.063 µg/l 0.0114 µg/l	BH01 BH04
Total PAH	∑PAH[6] 0.075 µg/l (GTV)	5.5 µg/l	BH01

European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GTV)	**European Communities Environmental Objectives (Surface Water) Regulations 2009 as amended (EQS)**	**EPA Interim Guideline Values (IGV)**

6.3.4 Round 4 – 6th October 2020

Parameters analysed in groundwater and surface water samples during monitoring Round 4 that exceeded their respective screening values are outlined in Table 6.5. PCBs, pesticides and herbicides were not monitored during Round 4 of sampling.

[6]GTV for Sum of Total Polycyclic Aromatic Hydrocarbons including anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene and naphthalene.

Table 6.5 Round 4 (6th October 2020) Exceedances

Contaminant	Screening Value[7]	Exceeding Concentrations	Locations Exceeding
Ammoniacal Nitrogen as N	0.175 mg/l (GTV)	0.869 mg/l 0.266 mg/l	BH04 BH05
Chloride	30 mg/l (IGV)	79.5 mg/l 34.1 mg/l 36.4 mg/l 31.1 mg/l	BH02 BH03D BH04 BH05
BOD	2.6 mg/l MAC (EQS Good Status)	3.42 mg/l	SW01
Aluminium	150 µg/l (GTV)	210 µg/l	SW02
Barium	100 µg/l (IGV)	695 µg/l 112 µg/l	BH02 BH03D
Manganese	50 µg/l (IGV)	91.5 µg/l 581 µg/l 1,060 µg/l 316 µg/l 462 µg/l 42.2 µg/l	BH02 BH03S BH03D BH04 BH05 SW02
Iron	0.2 mg/l (IGV)	2.15 mg/l 4.82 mg/l 2.05 mg/l 4.09 mg/l 0.314 mg/l 0.422 mg/l	BH03S BH03D BH04 BH05 SW01 SW02
Total Aliphatics & Aromatics >C5-35	7.5 µg/l (GTV)	262 µg/l	BH02

European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GTV)	European Communities Environmental Objectives (Surface Water) Regulations 2009 as amended (EQS)	EPA Interim Guideline Values (IGV)

6.3.5 Round 5 – 20th October 2020

Parameters analysed in groundwater and surface water samples during monitoring Round 5 that exceeded their respective screening values are outlined in Table 6.6. PCBs, pesticides and herbicides were not monitored during Round 5 of sampling.

[7] AA = Annual Mean, MAC = Maximum Allowable Concentration

Table 6.6 Round 5 (20th October 2020) Exceedances

Contaminant	Screening Value[8]	Exceeding Concentrations	Locations Exceeding
Ammoniacal Nitrogen as N	0.175 mg/l (GTV)	0.904 mg/l	BH04
Chloride	30 mg/l (IGV)	69.1 mg/l 30.9 mg/l 36.4 mg/l	BH02 BH03D BH04
Aluminium	150 µg/l (GTV)	202 µg/l	SW02
Barium	100 µg/l (IGV)	474 µg/l	BH02
Manganese	50 µg/l (IGV)	362 µg/l 356 µg/l 459 µg/l 53.1 µg/l	BH03D BH04 BH05 SW02
Potassium	5 mg/l (IGV)	5.05 mg/l 7.78 mg/l	BH02 BH05
Iron	0.2 mg/l (IGV)	1.42 mg/l 5.34 mg/l 4.3 mg/l 0.204 mg/l 0.568 mg/l	BH03D BH04 BH05 SW01 SW02
Phenol	0.5 µg/l (IGV)	1.16 µg/l	BH05

European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GTV)	European Communities Environmental Objectives (Surface Water) Regulations 2009 as amended (EQS)	EPA Interim Guideline Values (IGV)

6.4 Significance of Water Chemical Results

6.4.1 Monitoring Rounds 1-3 (2012-2013)

This section will summarise the parameters that exceeded the screening values in groundwater and surface water results during monitoring Round 1 (12th November 2012), Round 2 (19th November 2012) and Round 3 (14th January 2013).

[8] AA = Annual Mean, MAC = Maximum Allowable Concentration

Ammoniacal Nitrogen

Elevated concentrations of Ammoniacal Nitrogen above the GTV of 0.14 mg/l (good status) were detected within all shallow boreholes (BH03S, BH04 and BH05) at times with the highest concentrations recorded in BH04. Concentrations in shallow groundwater boreholes ranged from <0.2 - 1.11 mg/l.

With regards to the deep groundwater within bedrock, elevated levels of Ammoniacal Nitrogen were detected within upgradient borehole BH03D on one occasion (0.208 mg/l in Round 1) and in downgradient borehole BH02 on one occasion (0.361 mg/l in Round 2). Concentrations in deep groundwater boreholes ranged from <0.2 - 0.361 mg/L which are lower than that recorded in the shallow boreholes (<0.2 - 1.11 mg/L).

The downstream surface water sample (SW02) recorded elevated levels of Ammoniacal Nitrogen on two occasions (0.241 mg/l in Round 2 and 0.224 mg/l in Round 3).

Chloride

Chloride concentrations exceeded the IGV of 30 mg/l in all shallow groundwater boreholes (BH03S, BH04 and BH05) and in deep groundwater borehole BH02 during all monitoring rounds but were below the GTV of 187.5 mg/l. Concentrations ranged from 30.6-37.6 mg/l in shallow groundwater and from 18-53.8 mg/l in deep groundwater.

Manganese

Elevated concentrations of Manganese above the IGV of 50 ug/l were recorded in all shallow and deep groundwater boreholes throughout the three monitoring rounds. Given that elevated concentrations were recorded in both upgradient and downgradient boreholes, it is likely that the elevated concentrations are naturally occurring.

Iron

Iron concentrations exceeded the IGV of 0.2 mg/l at shallow groundwater borehole BH04 in November 2012. Elevated iron concentrations were also recorded in surface water samples upstream (SW01) on one occurrence (0.258 mg/l) and at downstream location SW02 through the three monitoring rounds ranging from 0.472 - 0.867 mg/l.

Hydrocarbons & PAHs

Elevated concentrations of PAHs above the GTV were detected in all shallow boreholes (BH03S, BH04 and BH05) during monitoring Round 1 and at BH04 in Round 3. TPH concentrations above the GTV were also recorded in BH04 in Round 1 and 3. TPH were not analysed in groundwater boreholes during Round 2.

Elevated PAH concentrations above the GTV were detected in all deep groundwater boreholes (BH01, BH02 and BH03D) in Rounds 1 and in BH01 in Round 2 and 3. Hydrocarbons were also detected above

the GTV in BH01 in Rounds 1 and 3. The highest hydrocarbon and PAHs concentrations were detected within the sample from the deep upstream borehole BH01. The source of these elevations is unknown as there are no obvious sources in the surrounding area upstream of the borehole apart from residential properties which may have home heating fuel oil storage. However the carbon bands where elevations were detected are predominantly in the heavy fractions C12-C35 which would rule out kerosene as a source. As the waste body is downstream of the borehole, it can be effectively ruled out as a source. In addition, the hydrocarbon fractions detected (C16-C35) are not considered to be very mobile.

Other Parameters

- Cyanide concentration exceeded the IGV (0.01 mg/l) in BH02 (0.08 mg/l) during Round 2.
- BOD concentrations exceeded the EQS (2.6 mg/l) for good status at SW02 in Round 2 (2.79 mg/l) and Round 3 (4.78 mg/l).

6.4.2 Monitoring Rounds 4-5 (2020)

This section will summarise the parameters that exceeded the screening values in groundwater and surface water results during monitoring Round 4 (6th October 2020) and Round 5 (20th October 2020).

Ammoniacal Nitrogen

Similarly, to monitoring Rounds 1-3, elevated Ammoniacal Nitrogen concentrations above the GTV were recorded in shallow boreholes BH04 and BH05 during 2020 monitoring, with the highest concentrations recorded in BH04. Concentrations in shallow groundwater boreholes ranged from 0.03-0.904 mg/l in Round 4 and 5.

With regards deep groundwater, no exceedances of Ammoniacal Nitrogen concentrations above the screening values were recorded in groundwater and surface water samples in monitoring Rounds 4 and 5. Overall Ammoniacal Nitrogen concentrations were lower in 2020 than in 2012-2013 monitoring.

Chloride

Fewer exceedances of the IGV for chloride were recorded in shallow groundwater during Rounds 4-5 compared to Rounds 1-3 with exceedances recorded in BH05 in one occurrence and BH04. Exceedances of the IGV were also recorded in deep groundwater boreholes BH02 (69.1 – 79.5 mg/l) and BH3B (30.9 – 34.1 mg/l). However no exceedances were recorded in BH03D during Rounds 1-3. It should be noted that all concentrations were below the GTV of 187.5 mg/l.

Manganese

Similar to monitoring Rounds 1-3, manganese concentrations above the IGV were recorded at all borehole locations during 2020 monitoring except shallow groundwater borehole BH03S and deep groundwater borehole BH02 in Round 5. Elevated concentrations were recorded in both upgradient and downgradient boreholes therefore it is likely that these are naturally occurring.

Iron

Iron concentrations were generally higher during 2020 monitoring with exceedances above the IGV recorded at all borehole locations except shallow groundwater borehole BH03S in Round 5 and deep groundwater borehole BH02 throughout the monitoring period.

Hydrocarbons & PAHs

In contrast to monitoring Rounds 1-3, hydrocarbons or PAHs were not detected above the GTV at any groundwater borehole during monitoring Rounds 4 and 5 except for an elevated TPH concentration (262 ug/l) at deep borehole BH02 in Round 4.

Other Parameters

- Similarly to monitoring Rounds 1-3, BOD concentrations exceeded the EQS (2.6 mg/l) for good status at SW01 in Round 4 (3.42 mg/l).
- Barium concentrations exceeded the IGV (100 ug/l) at deep boreholes BH02 in Round 4 and 5 and at BH03D in Round 5. Barium was not monitored during Rounds 1-3.
- Aluminium concentration exceeded the GTV (150 ug/l) at SW02 in Round 4 (210 ug/l) and Round 5 (202 ug/l). Aluminium was not monitored during Rounds 1-3.
- Potassium concentrations exceeded the IGV (5 mg/l) at shallow borehole BH05 (7.78 mg/l) and deep borehole BH02 (5.05 mg/l) in Round 5.
- Phenol concentration exceeded the IGV (0.5 mg/l) at shallow borehole BH05 (1.16 mg/l) in Round 5.

7 GROUND BORNE GAS SURVEY

7.1 Introduction

Ground borne gas is produced as a result of the decomposition of organic materials. The principal components of ground borne gas are methane and carbon dioxide, but other gases such as hydrogen sulphide and carbon monoxide can also be present. Ground borne gas can present a hazard to end users of a site and can enter buildings, thus presenting a toxic, asphyxiation or explosion hazard.

Guidance on gas risk assessment and the design of gas protection measures is set-out in the following documentation:

- The Local Authority Guide to Ground Gas (Chartered Institute of Environmental Health 2008),and
- CIRIA Report C665 (2007)[9]

7.2 Gas Survey Results

The maximum recorded gas volumes (methane and carbon dioxide) and flow rate results recorded at each borehole location are summarised in Appendix E – Table 1. The maximum recorded concentrations (volume gas/volume air) in each borehole were recorded as 5.80 vol/vol% for carbon dioxide and 0.3 vol/vol% for Methane.

The gas concentration and flow rate was used to calculate the gas screening value (GSV = Gas Concentration % x Borehole Flow Rate) for each borehole, which was calculated as 0.0001 to 0.0005 l/hour for methane, and 0.0001 to 0.0188 l/hour for carbon dioxide.

7.3 Gas Risk Assessment

Methane and carbon dioxide are classified as hazardous gases. Table 7.1 summarises the toxic and explosive effects and specified exposure or trigger limits for these gases.

Table 7.1 Significant Gas Concentrations in Air[10]

Gas	Concentration	Exposure Limits
Methane	<1%	Building Regulations Limit
	0.25%	Ventilation required in tunnels and other confined spaces
	5%	Potentially explosive when mixed with air (LEL)
	30%	Potentially explosive when mixed with air (UEL), Asphyxiation

[9] CIRIA C665 Assessing risks posed by hazardous ground gases to buildings (2007)

[10] CIRIA Report 152 (1995) Risk Assessment for Methane and other Gases from the Ground

Gas	Concentration	Exposure Limits
Carbon Dioxide	0.5%	8 hour exposure limit (OEL)
	1.5%	10 min exposure limit (OEL) and Building Regulations Limit
	>3%	Breathing difficulties
	>5%	Asphyxiation

Guidance on gas risk assessment and the design of gas protection measures is set-out in the following documentation:

- DOE Waste Management Paper 27,
- UK Building Regulations (1991),
- CARD Geotechnics Research Report (1999),
- CIRIA Report 149 (1995),
- NHBC and RSK Group 10627-R01 (2007),
- CIRIA Report C665 (2007)[11], and
- Local Authority Guide to Ground Gas (2008)

CIRIA report C665 represents the current best practice guidance. It outlines a holistic approach to gas risk assessment, which takes account of the following factors:

- Nature of source and migration pathway
- Borehole flow rate and surface emission rate
- Frequency and distribution of elevated gas concentrations
- Nature of the proposed development
- Confidence and reliability of results

The most important aspect relating to the classification of a sites gas regime is governed by the concentration of the gas and how quickly it is coming out of the ground. This is reflected by the limiting volume flow rate of the gas, which is calculated as the concentration gas (expressed as a volumetric fraction) multiplied by the borehole flow rate. The limiting borehole gas volume flow has been renamed

[11] CIRIA C665 Assessing risks posed by hazardous ground gases to buildings (2007)

as the gas screening value (GSV) in CIRIA C665. This GSV is applied to six characteristic situations, the threshold criteria for which are listed in Appendix E - Table 2.

7.4 Discussion of the Gas Results

The monitoring results indicate that the gas regime of the site is classified as Characteristic Situation 2 in accordance with CIRIA C665. Based upon the monitoring data and outcome of the generic gas risk assessment, a detailed gas QRA was not considered necessary.

8 RISK ASSESSMENT AND REFINEMENT OF CONCEPTUAL SITE MODEL

Using the methodology outlined in previous sections, the laboratory analytical results were used to carry out a generic quantitative risk assessment (GQRA).

8.1 Overview of Sources, Pathways and Receptors

8.1.1 Sources – Ground Contamination

All soil samples returned contaminant concentrations below their respective generic screening values for a commercial end use.

8.1.2 Sources – Groundwater Contamination

The primary sources of contamination at the site are:

- Shallow groundwater in direct contact with waste (Ammoniacal Nitrogen, Chloride, TPH and PAHs contamination) and a number of heavy metals including manganese, iron, potassium, and zinc.

Analysis of deep groundwater samples indicates that both the upgradient (BH03D) and downgradient (BH02) samples have been impacted by Ammoniacal Nitrogen. As the upgradient sample has been impacted, it is not possible to state that the waste is the main source of this contamination. The surrounding area is mainly in agricultural use and activities related to agriculture may be potential offsite sources of contamination. In addition, areas where peat is present may have naturally elevated levels of Ammoniacal Nitrogen.

Samples from upgradient location BH01 have been impacted by TPH and PAH contamination during Rounds 1-3. BH01 was not monitored during Rounds 4 and 5 as it could not be located. The source of this contamination is unknown but the waste material is ruled out as the source as it is located downgradient of BH01. No obvious off-site sources were noted however a number of residential properties are located south (upgradient) of BH01. The contamination recorded in BH01 has not migrated across the site due to the relatively low mobility of the heavy hydrocarbon fractions encountered (C16-C35). Samples from shallow groundwater in BH04 have also been impacted by TPH and PAH contamination which is likely to be leaching from the waste body.

An isolated occurrence of elevated TPH (aliphatic EC21-35) was recorded in groundwater sampled from BH02 on 6th October 2020. There has been no evidence of elevated TPH concentrations in groundwater at this location during 2012 and 2013 monitoring, and concentrations were found to be below the laboratory detection limits during a follow up monitoring round undertaken on 20th October 2020. Furthermore, there is no evidence to suggest the adjacent surface water receptor is influenced or subject to TPH contamination from a review of all available data from 2012 – 2020.

8.1.3 Sources – Ground Borne Gases

The monitoring of soil borne gases indicated that Methane levels were generally low whilst marginally elevated levels of Carbon Dioxide were detected.

8.1.4 Pathways

- Pathways associated with impacts to human health through dermal contact, ingestion and dust inhalation are not present on the site as it is currently in agricultural use.
- Groundwater is not abstracted for potable use in the immediate area and therefore the pathway for groundwater contamination to impact human health is non-existent.
- A pathway exists for rainfall/precipitation to infiltrate from the surface, through the waste and leach into the shallow groundwater.
- A pathway exists for contaminated shallow groundwater to migrate vertically into the underlying karst aquifer however the presence of boulder clay underlying the waste body will minimise this potential. Although elevated levels of Ammoniacal Nitrogen have been detected in the downstream borehole BH02, elevated levels were also recorded in samples from the upstream borehole BH03D. The source of this contamination is likely to be off-site.
- A pathway exists for the contaminants identified in the upstream deep borehole (BH01) to migrate horizontally. An elevated TPH concentration was recorded at downgradient borehole BH02 during recent monitoring Round 4.
- It is not likely that the shallow groundwater is in hydraulic continuity with the drainage stream on the western boundary. This is borne out by analysis of conductivity measurements which reveals different levels between shallow groundwater samples (0.4-0.5 mS/cm) and the samples from SW2 (0.11 – 0.16 mS/cm). Although elevated levels of Ammoniacal Nitrogen have been detected in SW2 (0.224 – 0.241 mg/L) these may be naturally occurring (due to peat deposits) and not directly attributable to the waste body.
- It is not known if the western drain joins the Bogside stream 300m west of the site. However for the purposes of this assessment and adopting a conservative approach, it will be assumed that the drain joins this stream which eventually discharges into Mc Swyne's Bay. On this basis, the risk to the Bogside stream is low given the distance to the stream and the slightly elevated levels of Ammoniacal Nitrogen recorded in the samples from the drainage ditch which are likely to be naturally occurring.
- In relation to gas migration pathways, any gas produced may migrate horizontally. Horizontal migration however will be limited as there are no known services beneath the site and any gas generated will vertically escape to the atmosphere as the waste body is not capped.

8.1.5 Receptors

Current Site-Users

The site is in agricultural use (cattle grazing) and therefore human receptors (apart from occasional visits from the landowner/farmer) are not permanently present.

Off-Site Human Health Receptors

Four residential properties are located north of the site with the closest residential receptor at a distance of approximately 75m from the waste body. The main risk posed to these receptors is from landfill gas migration. However as outlined above, the potential for horizontal migration is limited due to an absence of pathways (underground services). In addition, the receptors are located upgradient of the waste body.

Shallow Groundwater

Shallow groundwater has been impacted by contamination from the waste material.

Aquifer

The site is underlain by a karst aquifer (Rk) of extreme vulnerability which has been impacted to a limited extent by Ammoniacal Nitrogen, Chloride, Hydrocarbon and PAHs. The highest concentrations of these contaminants were detected in samples from upstream borehole BH01 during monitoring Rounds 1-3, therefore it is not possible to attribute the contamination to the waste body. However, BH01 could not be located during monitoring Rounds 4 and 5 and therefore was not sampled. Hydrocarbons and PAHs were not detected during the recent 2020 monitoring except for an elevated TPH concentration (262 ug/l) recorded at deep borehole BH02 in Round 4 which is considered an isolated event, with no evidence to suggest this had migrated towards SW02.

Aluminium concentrations exceeded the GTV in monitoring Rounds 4 and 5 at downstream surface water location SW02 but concentrations were below the GTV in groundwater samples.

Elevated barium and potassium concentrations above the superseded IGV were recorded in groundwater at times during monitoring Rounds 4 and 5.

Elevated concentrations of iron and manganese above the superseded IGVs were recorded at times throughout the five monitoring rounds. Given that elevated levels were recorded at both upstream and downstream sampling points, it is likely that the elevated levels are naturally occurring.

Bogside Stream

The Bogside Stream is a potential receptor for contamination from the site. However as outlined above, the impacted shallow groundwater is not in continuity with the adjacent drain and therefore in turn with the stream. In addition, the distance from the waste body to the stream is estimated to be 300m.

8.2 Risk Assessment and Revised Conceptual Model

The revised site conceptual model is illustrated in Table 8.4 and Tables 8.1-8.3 summarise the contaminant linkages on site.

Table 8.1 Diagram for Leachate Migration through Groundwater Pathway

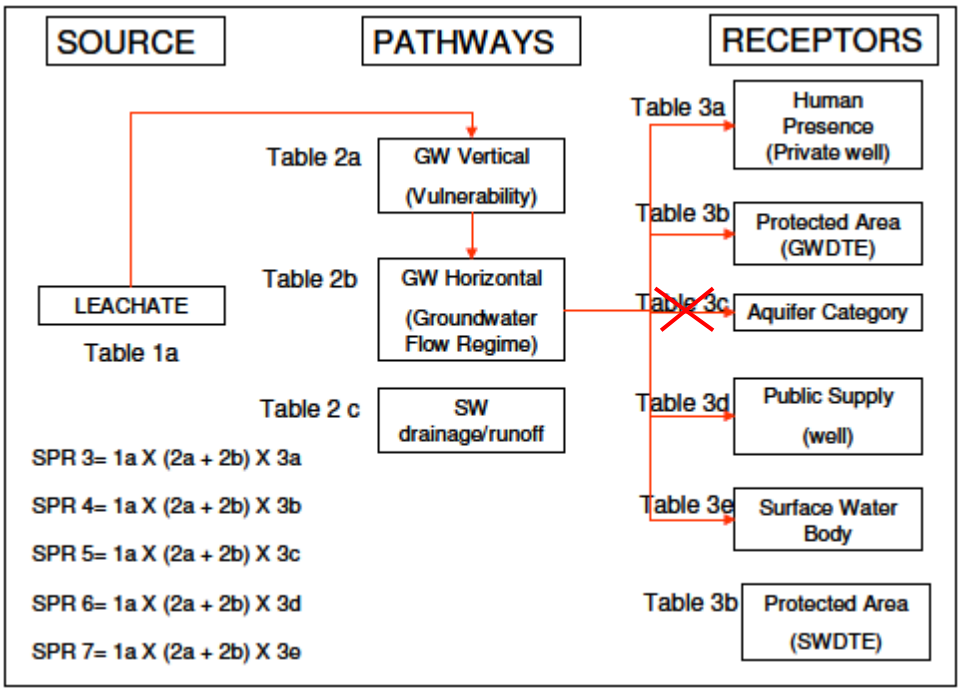


Table 8.2 Diagram for Leachate Migration through Surface Water Pathway

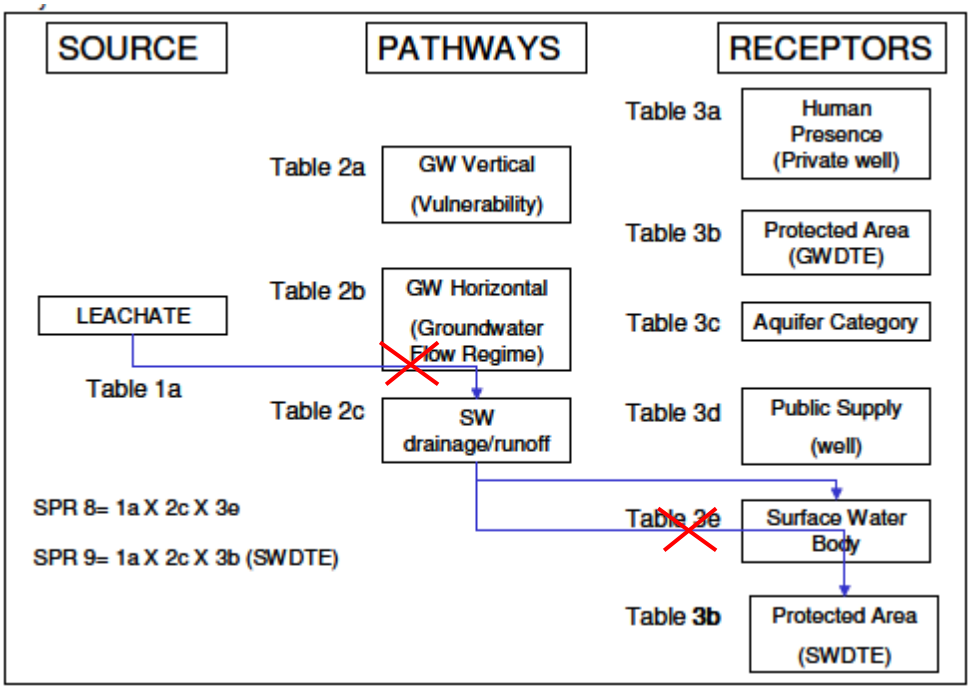


Table 8.3 Diagram for Landfill Gas Migration Pathways

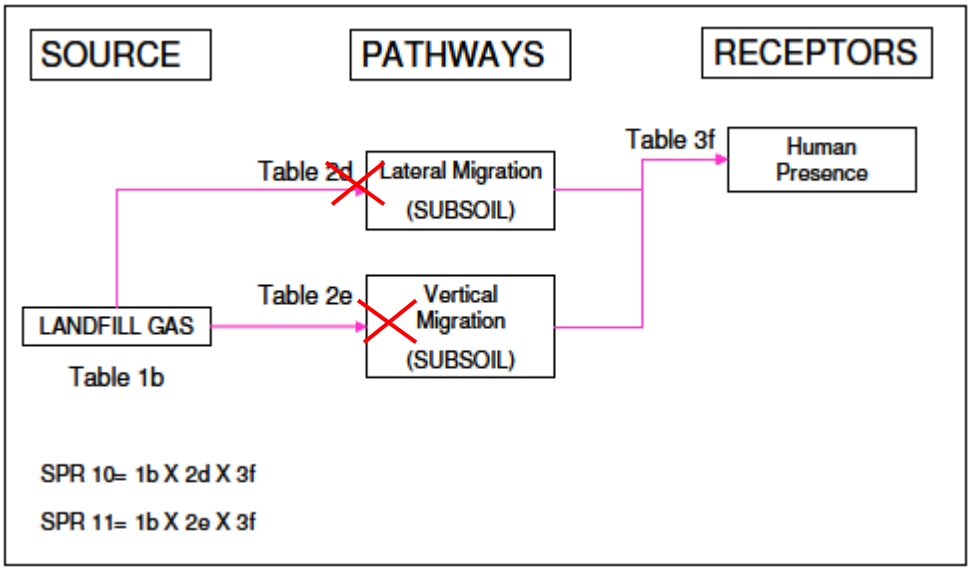


Table 8.4 Refined Risk Assessment & Site Conceptual Model

Source	Pathway(s)	Receptors(s)	Relevant Source – Pathway – Receptor Linkage (SPR)	Mitigation Measures/Recommendations
Contaminants in sub-soils from waste material	Direct contact, ingestion and inhalation	Human Health Grazing Livestock	**Low** There are no human health receptors present on the site and all contaminants recorded concentrations below their respective generic screening values for a commercial end use.	**Yes** Surface pick of the visible waste and removal off-site. Fence off the waste stockpile using livestock fencing.
Contaminants in shallow groundwater – Ammoniacial Nitrogen, heavy metals, TPH and PAHs	Subsurface infiltration Leaching and Infiltration Vertical Migration Horizontal Migration off-site	Bedrock Aquifer (Karst) Bogside Stream	**Low** The shallow groundwater appears to have been impacted by contaminants from the waste.	**No**
Contaminants in Deep groundwater upstream of the site – Hydrocarbons and PAHs in BH01, Ammoniacal Nitrogen in BH03S	Horizontal Migration	Bedrock Aquifer (Karst)	**Low** The source of the upstream contamination is unknown	**No**
Ground Borne Gases	Migration to Indoor Air	Humans in the form of future site users	**Low** Low levels of Methane and slightly elevated levels of Carbon Dioxide were monitored on site. The potential for vertical and horizontal migration of gas off site to impact on the nearby residential receptors is minimal.	**No**

Upon refinement of the CSM, the initial risk screening and score has also been revised and is presented in Table 8.5 and 8.6.

Table 8.5 Risk Screening Exercise

Table	Score	Rationale
1a Leachate Hazard	5	The extent of the waste area within the site is approximately 0.08 Ha. The site was council owned and was in operation from 1975 until 1983 accepting municipal waste.
1b Landfill Gas Hazard	5	The extent of the waste area within the site is approximately 0.08 Ha. The site was council owned and was in operation from 1975 until 1983 accepting municipal waste.
2a Leachate Migration-GW Vulnerability	3	Groundwater vulnerability is E (rock near surface or karst) - From GSI Interim Vulnerability Map.
2b Leachate Migration-GW Flow Regime	5	Regionally important aquifer - Karstified
2c Leachate Migration-SW Drainage	0	There is no direct connection
2d Landfill Gas -Lateral Migration	3	The nearest resident is within 250m of the site. The site is located karstified limestone bedrock at surface, sandstone and cutover peat. From GSI Teagasc subsoil map.
2e Landfill Gas -Vertical Migration	5	No receptors currently located above source. Residential receptors located 75m from waste boundary. The site is located karstified limestone bedrock at surface, sandstone and cutover peat. From GSI Teagasc subsoil map.
3a Leachate Migration-Human Presence	2	The nearest resident is within 75m of the site.
3b Leachate Migration-Protected Areas	0	NHA/SAC greater than 1km of the waste body(St Johns Point pNHA and SAC, Donegal Bay SPA) There are no groundwater dependent terrestrial ecosystems within 1km of the site. Corine data indicates that the site is located on pastures.
3c Leachate Migration-Aquifer Category	5	Groundwater vulnerability is E (rock near surface or karst) - From GSI Vulnerability Map. Regionally important aquifer - Karstified Rk
3d Leachate Migration-Public Water Supplies	3	Greater than one 1km but karst aquifer present
3e Leachate Migration-Surface Water Bodies	2	Greater than 50m but less than 250m
3f Landfill Gas - Human Presence	3	The nearest resident is within 75m of the site.

Table 8.6 Risk Screening Exercise (cont…)

SPR	Equation	SPR Linkage Score	Maximum linkage score	Linkage	Normalised score %
1	1aX(2a+2b+2c)X 3e	80	300	Leachate Migration through groundwater and surface water	26.7
2	1aX(2a+2b+2c)X 3e (SWDTE)	0	300	Leachate Migration through groundwater and surface water	0.0
3	1aX(2a+2b)X 3a	80	240	Leachate Migration through groundwater pathway	33.3
4	1aX(2a+2b)X 3b	0	240	Leachate Migration through groundwater pathway	0.0
5	1aX(2a+2b)X 3c	200	400	Leachate Migration through groundwater pathway	50.0
6	1aX(2a+2b)X 3d	120	560	Leachate Migration through groundwater pathway	21.4
7	1aX(2a+2b)X 3e	80	240	Leachate Migration through groundwater pathway	33.3
8	1aX2cX 3e	0	60	Leachate Migration through surface water pathway	0.0
9	1aX2cX 3b (SWDTE)	0	60	Leachate Migration through surface water pathway	0.0
10	1bX2dX 3f	45	150	Landfill Migration Pathways	30.0
11	1bX2eX 3f	75	250	Landfill Migration Pathways	30.0

Although the site is classified as Moderate Risk (Class B) from the scoring matrix, an analysis of the laboratory results and revised CSM indicates that the risk to the Karst aquifer is Low.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

An environmental risk assessment has been carried out with respect to an historic landfill. The assessment was undertaken in accordance with the EPA Code of Practice for Environmental Risk Assessment of Unregulated Waste Disposal Sites, 2007, and comprised Tier 1 Preliminary Assessment and Screening; Tier 2 Exploratory Site investigation and Testing, and Tier 3 Conceptual Model Refinement and Generic Quantitative Risk Assessment.

The assessment has concluded the following:

- Chemical analysis of soil results indicated that all samples recorded contaminant concentrations below generic screening values for a commercial end use.
- Chemical analysis of groundwater samples indicated that the shallow groundwater beneath the waste body has been impacted by Ammoniacal Nitrogen, Chloride, Hydrocarbons and PAHs.
- The deep groundwater in the bedrock aquifer has not been impacted by Hydrocarbons and PAHs. Elevated levels of Ammoniacal Nitrogen were detected in both upstream and downstream samples. The elevated concentrations in the upstream sample would suggest a source independent of the waste.
- Chemical analysis of upstream and downstream surface water samples indicates that the adjacent surface water receptor has not been impacted by Hydrocarbons and PAHs.
- The laboratory results indicate that the impacted shallow groundwater beneath the waste body is not impacting upon the adjacent surface water receptor and the risk to surface water quality is low.
- Levels of Methane were recorded to be low whilst slightly elevated levels of Carbon Dioxide were detected. The risk to the adjacent residential receptor is deemed to be low due to the lack of a significant horizontal and vertical migration pathway.

9.2 Remedial Recommendations

As the risk to surface water quality is Low, no remedial measures are required other than the decommissioning of boreholes upon agreement with the EPA. The removal of visible surface waste is recommended as the field immediately adjacent to the council owned land is used for grazing livestock.

9.2.1 Decommissioning of Boreholes

Improperly abandoned boreholes may act as preferential pathways for groundwater or contaminant transport which may result in groundwater contamination, mixing of groundwaters of variable quality from different aquifers or present a physical hazard. It is proposed that the five boreholes including dual installation BH03 (BH01, BH02, BH03S, BH03D, BH04, BH05) present onsite should be decommissioned in line with Scottish Environment Protection Agency (SEPA) guidance ‘Good Practice for Decommissioning Redundant Boreholes

and Wells'. It is recommended the advice of a specialist well contractor is sought prior to decommissioning works.

The ground conditions of the site and health and safety must be carefully considered prior to decommissioning works.

Headworks and casing

All above ground headworks should be removed. Purging pipework should also be removed to prevent any interference with the sealing of the hole.

Backfilling

The borehole should be backfilled with clean, inert, uncontaminated or excavated materials so that the permeability of the selected materials is similar to the properties of the geological strata against which they are placed. This will protect groundwater flow and quality. Suitable materials recommended in the SEPA guidance include pea gravel, sand, shingle, concrete, bentonite, cement grout and uncontaminated rock.

Deep boreholes (BH01, BH02 & BH03D) installed with a response zone in the Limestone and Sandstone bedrock should be backfilled with permeable aggregates such as sand and pea gravel adjacent to the aquifer horizon in the schist bedrock. The boreholes should then be backfilled with low permeability materials such as concrete or bentonite cement grout from the schist bedrock back to ensure that a vertical pathway is not created.

For shallow boreholes BH04 & BH05 installed with a response zone in the waste material and BH03S with a response zone in natural clay, the entire borehole should be backfilled with low permeability material such as concrete or bentonite cement grout.

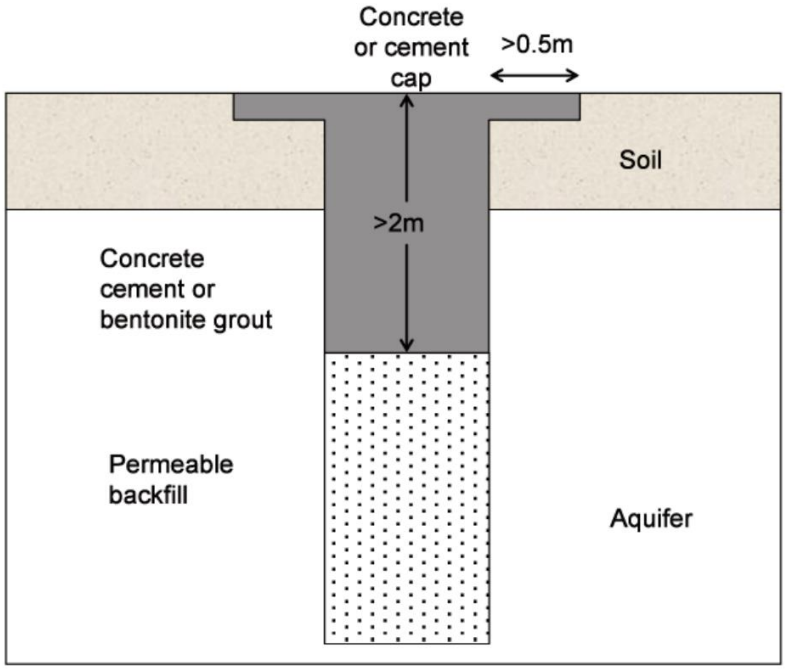
The geochemical environment of the borehole should be considered when backfilling as materials may behave differently under different environmental conditions.

The grain size of the aggregates should be selected that allows easy delivery into the borehole and should be delivered in a controlled manner to prevent 'bridging' or the creation of voids in the borehole. The volume of backfill should be monitored as it is placed to check for 'bridging' within the borehole or any loss to formation.

Sealing of borehole

The backfilled borehole should be complete with an impermeable plug and cap to prevent potentially contaminated surface runoff entering the backfilled borehole. The top two meters should be filled with cement, concrete or bentonite grout. A concrete cap of suitable strength with a diameter at least one metre greater than the width of the backfilled borehole should then be installed as per Figure 9.1.

Figure 9.1 Sealing and capping of borehole (Source: SEPA 'Good practice for decommissioning redundant boreholes and wells')



Recording

The following details should be recorded during the decommissioning of boreholes to verify that they have been decommissioned in accordance with the outlined procedures:

- Reason for abandonment of borehole;
- Measured of depth of borehole and groundwater level prior to backfilling;
- The depth and position of each layer of backfilling and sealing materials;
- The type and quantity of backfilling and sealing materials used;
- Any changes made to borehole during the abandonment;
- Any problems encountered during the abandonment procedure.

Estimate of Costs

An estimated cost for the decommissioning of six boreholes is €2,100.00 as outlined in Table 9.1.

Table 9.1 Cost estimate for decommissioning of boreholes

Item	Cost Estimate
Materials	€700.00
Contractor	€1,000.00

Item	Cost Estimate
Environmental consultant (1 day)	€400.00
Total	**€2,100.00**

9.2.2 Surface clean of waste

RPS propose a clean / pick of visible residual waste materials on the surface of the site. A specialist contractor should be instructed to remove visible waste using a track excavator and skip, before removing the waste off site to a suitable licenced waste facility. A watching brief should be undertaken by a competent environmental consultant during the waste picking exercise. The waste area should be fenced off using livestock fencing to prevent future access and grazing of the waste from livestock, and to prevent this area from being subject to fly-tipping in the future.

Estimate of Costs

An estimated cost for the above exercise is outlined in Table 9.2.

Table 9.2 Cost estimate for surface clean of waste

Item	Cost Estimate
1 Ton Mini Digger Excavator hire (1 day)	€250.00
Environmental consultant (1 day)	€400.00
Skip Hire	€250.00
Livestock barbed wire and posts	€650.00
Total	**€1,550.00**

Appendix A
Causeway Geotech Site Investigation Report

FINAL
FOR ISSUE

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Site Investigation at Dunkineely Historic Landfill, Donegal

Primary Author:	Darren O'Mahony
Client:	Donegal County Council
Client's Representative:	RPS Group
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CAUSEWAY GEOTECH

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Appendix D Laboratory test results

Document Control Sheet

Report No.: 12-390

Project title: Site Investigation at Dunkineely Landfill, Donegal

Client: Donegal County Council

Client's Representative: RPS Group

Revision	Status	Report prepared by:	Report reviewed by:	Issue date
A01	Final	Darren O'Mahony BSc MSc	Paul Dunlop BEng PhD CEng MIEI	26 November 2012

The works were conducted in accordance with:

Site Investigation in Construction Part 3: Specification for Ground Investigation, Site Investigation Steering Group, published by Thomas Telford Ltd (1993)

British Standards Institute (2010) *BS 5930:1999 + A2: 2010, Code of practice for site investigations.* Incorporating Amendment Nos. 1 and 2, as partially replaced by:

- BS EN 1997-2:2007: *Eurocode 7. Geotechnical design. Ground investigation and testing*
- BS EN ISO 22475-1:2006: *Geotechnical investigation and testing. Sampling methods and groundwater measurements. Technical principles for execution*
- BS EN ISO 14688-1:2002: *Geotechnical investigation and testing. Identification and classification of soil. Identification and description*
- BS EN ISO 14688-2:2004: *Geotechnical investigation and testing. Identification and classification of soil. Principles for a classification*
- BS EN ISO 14689-1:2003: *Geotechnical investigation and testing. Identification and classification of rock. Identification and description*
- BS EN ISO 22476-2:2005: *Geotechnical investigation and testing. Field testing. Dynamic probing*
- BS EN ISO 22476-3:2005: *Geotechnical investigation and testing. Field testing. Standard penetration test*

Methods of describing soils and rocks

Soil and rock descriptions are based on the guidance in Section 6 of BS 5930: 1999 + A2: 2010, *The Code of Practice for Site Investigation.* The amendments revised the Standard to remove text superseded by BS EN ISO 14688-1:2002, BS EN ISO 14688-2:2004 and EN ISO 14689-1:2003 and refers to the relevant standard for each affected subclause. However, the following terms are used in the description of fine-grained soils, where applicable:

- soft to firm: fine-grained soil with consistency description close to the boundary between soft and firm soil (Table 13 of BS5930).
- firm to stiff: fine-grained soil with consistency description close to the boundary between firm and stiff soil (Table 13 of BS5930).

Abbreviations used on exploratory hole logs	
U	Nominal 100mm diameter undisturbed open tube sample
P	Nominal 100mm diameter undisturbed piston sample
B	Bulk disturbed sample
D	Small disturbed sample
W	Water sample
ES / EW	Soil sample for environmental testing / Water sample for environmental testing
SPT	Standard penetration test using a split spoon sampler (small disturbed sample obtained)
SPT (C)	Standard penetration test using 60 degree solid cone
x,x/x,x,x,x	Blows per increment during the standard penetration test. The initial two values relate to the seating drive (150mm) and the remaining four to the 75mm increments of the test length. The length achieved is stated (mm) for any test increment less than 75mm
N=X	SPT blow count 'N' given by the summation of the blows 'X' required to drive the full test length (300mm)
N=X/Z	Incomplete standard penetration test where the full test length was not achieved. The blows 'X' represent the total blows for the given test length 'Z' (mm)
V **VR**	Shear vane test (borehole) Hand vane test (trial pit) Shear strength stated in kPa V: undisturbed vane shear strength VR: remoulded vane shear strength
dd/mm/yy: 1.0 **dd/mm/yy: dry**	Date & water level at the borehole depth at the end of shift and the start of the following shift
Abbreviations relating to rock core - reference Clause 44.4.4 of BS 5930: 1999	
TCR (%)	Total Core Recovery: Ratio of rock/soil core recovered (both solid and non-intact) to the total length of core run.
SCR (%)	Solid Core Recovery: Ratio of *solid core* to the total length of core run. *Solid core* has a full diameter, uninterrupted by natural discontinuities, but not necessarily a full circumference and is measured along the core axis between natural fractures.
RQD (%)	Rock Quality Designation: Ratio of total length of *solid core* pieces greater than 100mm to the total length of core run.
FI	Fracture Index: Number of natural discontinuities per metre over an indicated length of core of similar intensity of fracturing.
NI	Non Intact: Used where the rock material was recovered fragmented, for example as fine to coarse gravel size particles.
AZCL	Assessed zone of core loss: The estimated depth range where core was not recovered.
DIF	Drilling induced fracture: A fracture of non-geological origin brought about by the rock coring.

Site Investigation at Dunkineely Landfill, Donegal

1 AUTHORITY

On the instructions of Consulting Engineers, RPS Group ("the Client's Representative"), on behalf of Donegal County Council ("the Client"), a ground investigation was undertaken at the above location to provide geotechnical and environmental information relating to the site of a historic town landfill.

This report details the work carried out both on site and in the geotechnical and chemical testing laboratories; it contains a description of the site and the works undertaken, the exploratory hole logs and the laboratory test results. A discussion on the recommendation for construction is also provided.

All information given in this report is based upon the ground conditions encountered during the site investigation works, and on the results of the laboratory and field tests performed. However, there may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions between or below exploratory holes. It should be noted that groundwater levels usually vary due to seasonal and/or other effects and may at times differ to those measured during the investigation.

This report was prepared by Causeway Geotech Ltd for the use of the Client and the Client's Representative in response to particular instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

2 SCOPE

The extent of the investigation, as instructed by the Client's Representative, included boreholes, soil sampling, in-situ and laboratory testing, and the preparation of a factual report on the findings.

3 DESCRIPTION OF SITE

As shown on the site location plan in Appendix A, the works were conducted on an agricultural site located off the Mart Road, approximately 500m north of the centre of Dunkineely, Co. Donegal. The site is bounded by an embankment to the east which is overgrown with scrub. The site slopes gently towards the southeast end, while two large mounds occupy the southwestern portion.

4 SITE OPERATIONS

The Site Operations, conducted on 23 October - 24 October 2012, comprised:

- five percussion boreholes
- three rotary follow-on boreholes
- a standpipe installation in each borehole
- in-situ permeability testing by variable head method in each standpipe.

The exploratory holes and in-situ tests were located as instructed by the Client's Representative, as shown on the exploratory hole location plan in Appendix A.

4.1 Boreholes

Three boreholes (BH01 - BH03) were put down in 150mm diameter using a Comacchio 205 dual dynamic sampling and rotary drilling rig.

The boreholes were put down through soils to rockhead using dynamic sampling methods (light percussion boring). Limestone bedrock was encountered in boreholes BH01 and BH02 at depths of 1m and 4.5m respectively. Sandstone bedrock was present in borehole BH03 at 3.2m. The boreholes were then taken to their scheduled completion depths into bedrock by means of Symmetrix full-hole drilling methods.

Two environmental boreholes, BH04 and BH05, were put down in 150mm diameter by light percussion boring through overburden using a Dando Terrier light percussion boring rig.

Disturbed (bulk and small bag) samples and environmental samples were taken within the encountered strata.

Standard penetration tests were carried out at 1m depth intervals in overburden using the split spoon sampler (SPT). The penetrations are stated for those tests for which the full 150mm seating drive or 300mm test drive was not possible.

Any water strikes encountered during boring were recorded along with any changes in their levels as the borehole proceeded.

Appendix B presents the borehole logs.

4.2 Standpipe installations

A groundwater monitoring standpipe was installed in all boreholes, as instructed by the Client's Representative.

Details of the installations, including the diameter of the pipe and depth range of the response zone, are provided in Appendix B on the sheet following the relevant borehole log.

4.3 Falling head permeability tests

Variable head permeability tests were conducted, in accordance with BS 5930:1999 (incorporating Amendment 1 of December 2007) in the standpipe installations.

Appendix C provides the readings and analyses of the tests.

5 LABORATORY WORK

Upon their receipt in the laboratory, all disturbed samples were carefully examined and accurately described and their descriptions incorporated into the borehole logs.

Environmental laboratory testing, as specified by the Client's Representative, was conducted on selected environmental samples by Chemtest at its laboratory in Newmarket, Suffolk. Details of environmental testing are presented in the associated Environmental Report, presented in Appendix D.

6 GROUND CONDITIONS

The exploratory holes encountered the following ground types:

- Topsoil: encountered in boreholes BH01 and BH02 in 150mm thickness.
- Peat: encountered in borehole BH02 to a depth of 1.90m
- Glacial Till: sandy gravelly clay, frequently with low cobble content, typically firm or stiff in upper horizons, becoming very stiff with increasing depth.
- Limestone/Sandstone Bedrock

6.1 Groundwater

Groundwater was encountered, during exploration, in boreholes BH02 - BH05 to depths ranging from 1.80m - 5.50m.

7 REFERENCES

British Standards Institute (1990) *BS 1377:1990, Methods of test for soils for civil engineering purposes. Parts 1 to 9.*

British Standards Institute (1999) *BS 5930:1999, Code of practice for site investigations. Incorporating Amendment No. 1 of December 2007.*

APPENDIX A

Site and exploratory hole location plans

KEY:

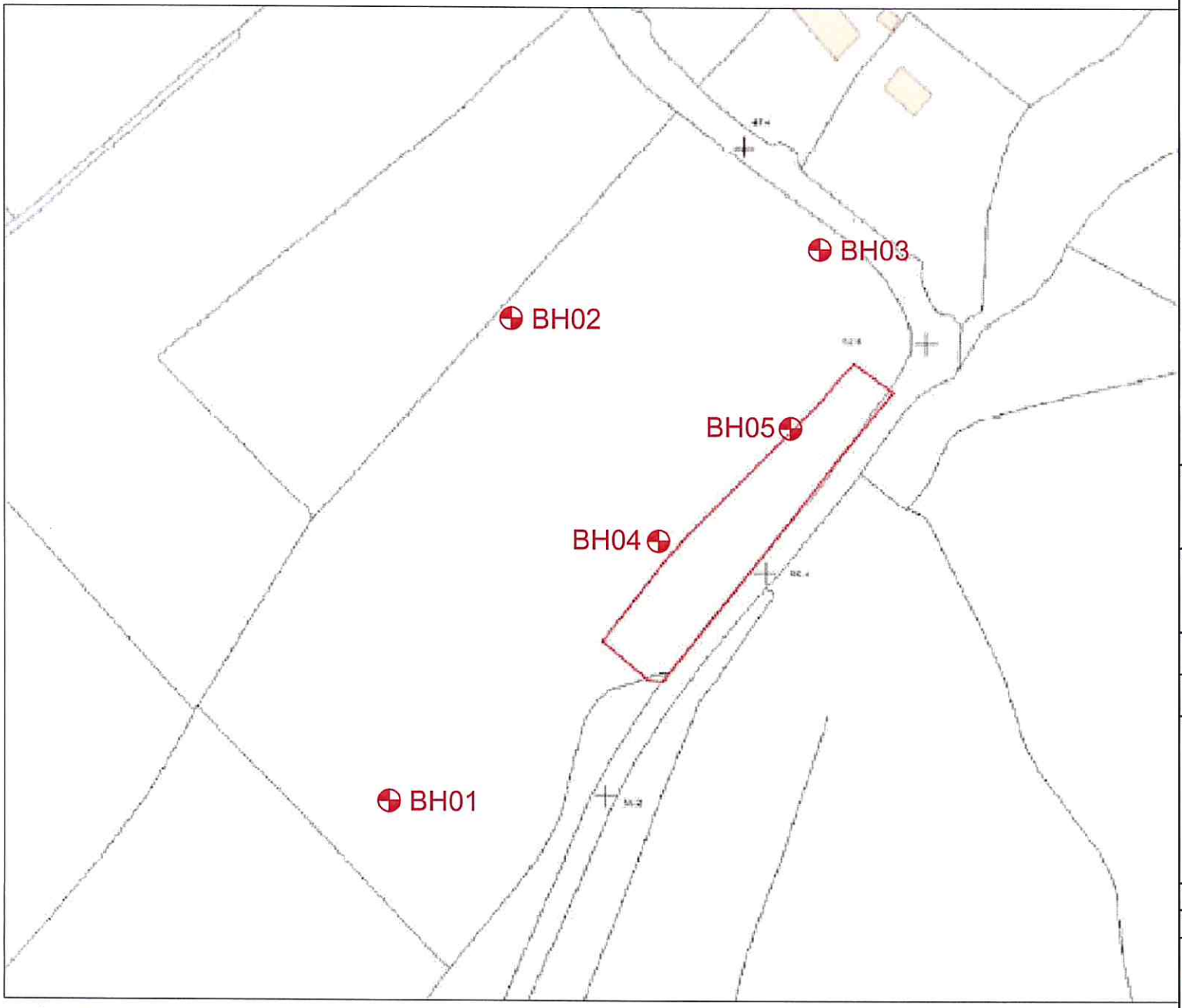
N

ENGINEER:	RPS
CLIENT:	Donegal County Council
PROJECT NAME:	Dunkineely Landfill GQRA
SITE ADDRESS (IF APPLICABLE):	
TITLE:	Site location plan

SCALE:		DATE:	
NTS		23/11/12	
DWG NO:	REV:	DRWN:	CHCK:
12-390		MD	DOM

CAUSEWAY GEOTECH

Causeway Geotech
8 Drumahiskey Road
Balnamore
Ballymoney
Co. Antrim, BT53 7QL



KEY:

BH - Borehole

N

ENGINEER:

RPS

CLIENT:

Donegal County Council

PROJECT NAME:

Dunkineely Landfill GQRA

SITE ADDRESS (IF APPLICABLE):

TITLE:

Exploratory hole location plan

SCALE:		DATE:	
NTS		23/11/12	
DWG No: 12-390	REV:	DRWN: MD	CHCK: DOM

CAUSEWAY GEOTECH
Causeway Geotech
8 Drumahiskey Road
Balnamore
Ballymoney
Co. Antrim, BT53 7QL

APPENDIX B

Borehole and standpipe logs

Causeway Geotech Ltd

Project No.	Project Name:	Borehole No.
12-390	Dunkineely Landfill, Donegal	BH01

Method and Equipment:
Percussion boring 0.00-1.30m
Rotary drilling 1.30-9.30m

Co-ords: -
-

Client: Donegal County Council

Engineer: RPS Group

Ground Level: -

Dates: 23/10/2012

Sheet 1 of 1

Scale: 1:50

Driller: JG

Logger: PD

Depth (m)	Sample / Test	Casing Depth (m)	Water Depth (m)	Field Records	Level	Depth (Thickness)	Stratum Description	Legend & Water Strikes	Backfill & Installs
						0.15	TOPSOIL		
						(0.85)	Soft brown peaty CLAY		
0.90	ES								
1.00	SPT	1.00	dry	50/25mm		1.00	LIMESTONE		
1.00	B			25mm (25,50)					
						1.30	LIMESTONE		
						(8.00)			
				23/10/2012 dry		9.30	End of Borehole at 9.30 m		

Type

Remarks:
Standpipe installed.

Chiseling:
From (m) to (m) time (hh:mm)

Water Strikes:
Struck (m) rising to (m) time (min)
No Groundwater Encountered

Casing:
to (m) dia. (mm)

Last Revised:
30/10/2012

www.causewaygeotech.com

Causeway Geotech Ltd

Project No.	Project Name:	Borehole No.
12-390	Dunkineely Landfill, Donegal	BH01

Installation Type: SP1 - Standpipe to 9.30m (50mm dia)

Cover Type: Upright cover fitted.

Co-ords: - -

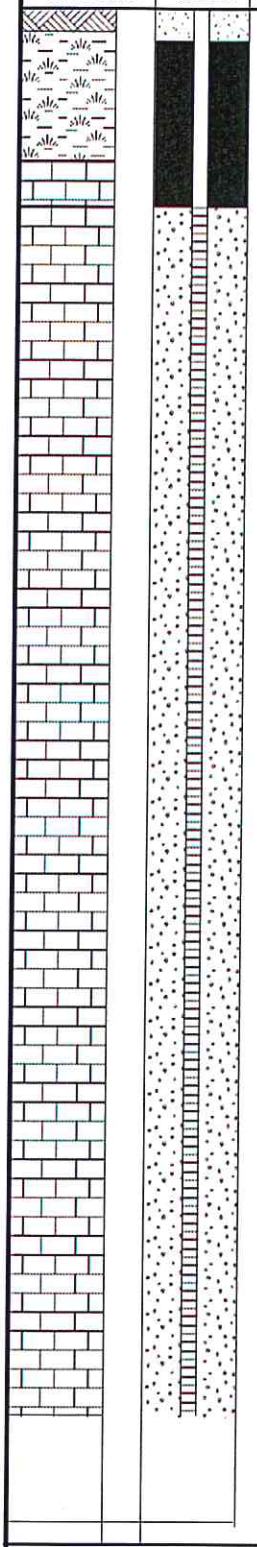
Client: Donegal County Council

Engineer: RPS Group

Ground Level: -

Date of installation: 23/10/2012

Sheet 1 of 1 | **Scale:** 1:50 | **Driller:** JG | **Logger:** PD



Legend & Water Strikes	Backfill/ Installs	Level (m)	Depth (m)	Description
			0.20	Concrete
				Bentonite
			1.30	
				Gravel filter
			9.30	

Groundwater Strikes During Drilling

Date	Time	Strike Number	Depth Struck (m)	Rise Details	Further Details	Casing Depth (m)	Depth Sealed (m)
				No Groundwater Encountered			

Groundwater Observations During Drilling

Date	Start of Shift					End of Shift				
	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (m)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level BH01
23/10/12						1200	9.30	-	-	-

Groundwater Monitoring Results

Install I.D.	Date	Time	Water Depth (m)	Water Level (m)

Gas Monitoring Results

Install I.D.	Date	Time	Oxygen (%)	Carbon Dioxide (%)	Methane (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Atmospheric Pressure (mB)	Gas Flow (l/hour)	LEL

Remarks:

Last Revised: 30/10/2012

ISO 9002 AGS

www.causewaygeotech.com

Causeway Geotech Ltd

Project No.	Project Name:	Borehole No.
12-390	Dunkineely Landfill, Donegal	BH02

Method and Equipment:
Percussion boring 0.00-2.50m
Rotary drilling 2.50-4.50m Symmetrix Drilling
Rotary drilling 4.50-9.20m

Co-ords: -, -

Ground Level: -

Client: Donegal County Council

Engineer: RPS Group

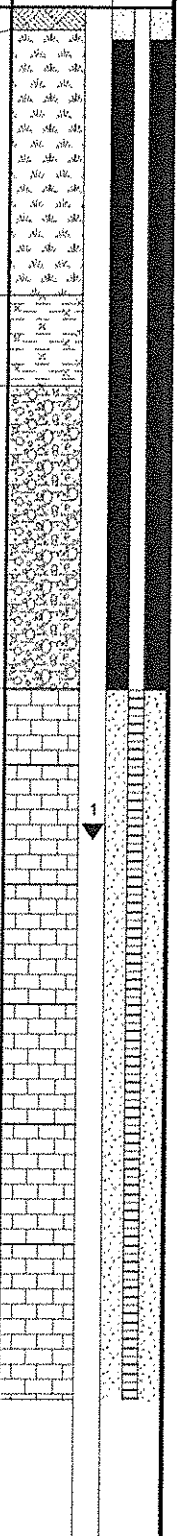
Dates: 24/10/2012

Sheet 1 of 1 | **Scale:** 1:50 | **Driller:** JG | **Logger:** PD

Depth (m)	Sample / Test	Casing Depth (m)	Water Depth (m)	Field Records	Level Depth (Thickness)	Stratum Description
					0.15	TOPSOIL
						PEAT
0.90	ES					
1.00	SPT	1.00	dry	N=4	(1.75)	
1.00	B			N=4 (1,1,1,1,1,1)		
1.90	ES				1.90	
2.00	SPT	2.00	dry	N=12		Firm grey silty CLAY
2.00	B			N=12 (1,2,2,3,2,5)	(0.60)	
2.50	ES				2.50	
						Firm brown sandy gravelly silty CLAY with cobbles and boulders
					(2.00)	
					4.50	
						LIMESTONE
					(4.70)	
				24/10/2012 5.50m	9.20	
						End of Borehole at 9.20 m

Type

Legend & Water Strikes | Backfill/Installs



Remarks:
Standpipe installed.

Chiseling:
From (m) | to (m) | time (hh:mm)

Water Strikes:
Struck (m) | rising to (m) | time (min)
5.50 | - | -

Casing:
to (m) | dia. (mm)

Last Revised: 30/10/2012

ISO 9001 | AGS

www.causewaygeotech.com

Causeway Geotech Ltd

Project No.	Project Name:	Borehole No.
12-390	Dunkineely Landfill, Donegal	BH02

Installation Type: SP2 - Standpipe to 9.20m (50mm dia)

Cover Type: Upright cover fitted.

Co-ords: - -

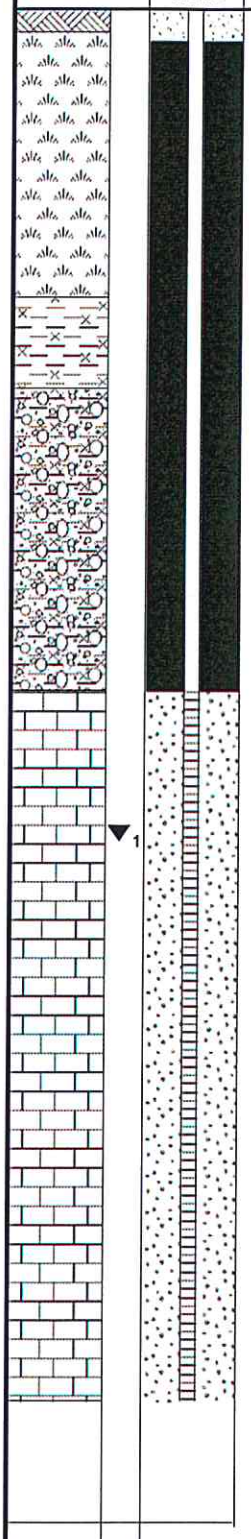
Ground Level: -

Client: Donegal County Council

Engineer: RPS Group

Date of installation: 24/10/2012

Sheet 1 of 1 | **Scale:** 1:50 | **Driller:** JG | **Logger:** PD



Legend & Water Strikes	Backfill/ Installs	Level (m)	Depth (m)	Description
			0.20	Concrete
			4.50	Bentonite
			9.20	Gravel filter

Groundwater Strikes During Drilling

Date	Time	Strike Number	Depth Struck (m)	Rise Details	Further Details	Casing Depth (m)	Depth Sealed (m)
24/10/12	0000	1	5.50	-	Water Strike	-	-

Groundwater Observations During Drilling

Date	Start of Shift					End of Shift				
	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (m)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level BH02
24/10/12						1400	9.20	-	5.50	-

Groundwater Monitoring Results

Install I.D.	Date	Time	Water Depth (m)	Water Level (m)

Gas Monitoring Results

Install I.D.	Date	Time	Oxygen (%)	Carbon Dioxide (%)	Methane (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Atmospheric Pressure (mB)	Gas Flow (l/hour)	LEL

Remarks:

Last Revised: 30/10/2012

Causeway Geotech Ltd

Project No.	Project Name:	Borehole No.
12-390	Dunkineely Landfill, Donegal	BH03

Method and Equipment:
Percussion boring 0.00-3.00m
Rotary drilling 3.00-8.50m

Co-ords: -
-

Client: Donegal County Council

Engineer: RPS Group

Ground Level: -

Dates: 23/10/2012 - 24/10/2012

Sheet 1 of 1 | **Scale:** 1:50 | **Driller:** JC | **Logger:** PD

Depth (m)	Sample / Test	Casing Depth (m)	Water Depth (m)	Field Records	Level (Thickness)	Depth	Stratum Description
					(1.30)		Soft brown sandy gravelly CLAY with low cobble content, roots and rootlets. Sand is fine. Gravel is subangular to subrounded fine to medium. Cobbles are subangular to subrounded
1.00	ES					1.30	
1.50	ES						Soft dark brown organic CLAY with roots and rootlets
						1.60	
					(1.60)		Soft grey sandy gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse. Cobbles are subangular to subrounded
3.00	ES			23/10/2012 1.80m 24/10/2012 dry		3.20	SANDSTONE
					(5.30)		
				24/10/2012 dry		8.50	End of Borehole at 8.50 m
	Type						

Legend & Water Strikes: 1, 2

Backfill & Installs

Remarks:
Double standpipe installed.

Chiseling:

From (m)	to (m)	time (hh:mm)

Water Strikes:

Struck (m)	rising to (m)	time (min)
1.80	-	-
3.20	-	-

Casing:

to (m)	dia. (mm)
3.00	150

Last Revised: 26/11/2012

Causeway Geotech Ltd

Project No.	Project Name:	Borehole No.
12-390	Dunkineely Landfill, Donegal	BH03

Installation Type:
SP03 1 - Standpipe to 2.50m (50mm dia)
SP03 2 - Standpipe to 8.50m (50mm dia)

Cover Type:
Upright covers fitted.

Co-ords: - -

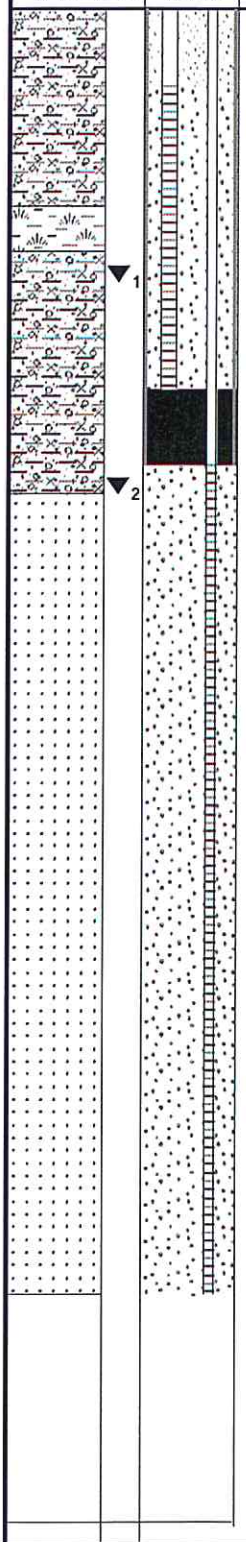
Client: Donegal County Council

Engineer: RPS Group

Ground Level: -

Date of installation: 24/10/2012

Sheet 1 of 1 | **Scale:** 1:50 | **Driller:** JC | **Logger:** PD



Legend & Water Strikes	Backfill/ Installs	Level (m)	Depth (m)	Description
			0.50	Concrete
			2.50	Gravel filter
			3.00	Bentonite
			8.50	Gravel filter

Groundwater Strikes During Drilling

Date	Time	Strike Number	Depth Struck (m)	Rise Details	Further Details	Casing Depth (m)	Depth Sealed (m)
23/10/12	0000	1	1.80	-	Water Strike	1.80	-
24/10/12	0000	2	3.20	-	Water Strike	-	-

Groundwater Observations During Drilling

Date	Start of Shift					End of Shift				
	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (m)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level BH03
23/10/12						0900	3.00	3.00	1.80	-
24/10/12	0800	-	-	-	-					
24/10/12						1200	8.50	-	-	-

Groundwater Monitoring Results

Install I.D.	Date	Time	Water Depth (m)	Water Level (m)

Gas Monitoring Results

Install I.D.	Date	Time	Oxygen (%)	Carbon Dioxide (%)	Methane (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Atmospheric Pressure (mB)	Gas Flow (l/hour)	LEL

Remarks:

Last Revised: 26/11/2012

Causeway Geotech Ltd

Project No.	Project Name:	Borehole No.
12-390	Dunkineely Landfill, Donegal	BH04

Method and Equipment: Percussion boring 0.00-3.00m

Co-ords: - -

Client: Donegal County Council

Engineer: RPS Group

Ground Level: -

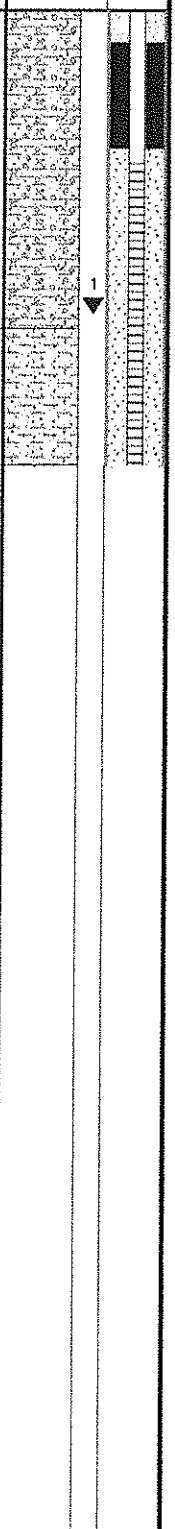
Dates: 23/10/2012

Sheet 1 of 1 | **Scale:** 1:50 | **Driller:** JC | **Logger:** PD

Depth (m)	Sample / Test	Casing Depth (m)	Water Depth (m)	Field Records	Level (Thickness)	Depth	Stratum Description
1.00	ES				(2.10)		Soft dark brown organic CLAY with roots and rootlets, pieces of wood and low cobble content. Cobbles are subangular to subrounded
2.10	ES					2.10	
				23/10/2012 dry	(0.90)		Firm grey sandy gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to coarse
						3.00	End of Borehole at 3.00 m

Type

Legend & Water Strikes / Backfill & Installs



Remarks: Standpipe installed.

Chiseling:

From (m)	to (m)	time (hh:mm)

Water Strikes:

Struck (m)	rising to (m)	time (min)
2.00	-	-

Casing:

to (m)	dia. (mm)
3.00	150

Last Revised: 24/10/2012

Causeway Geotech Ltd

Project No.	Project Name:	Borehole No.
12-390	Dunkineely Landfill, Donegal	BH04

Installation Type: SP4 - Standpipe to 3.00m (50mm dia)

Cover Type: Upright cover fitted.

Co-ords: - -

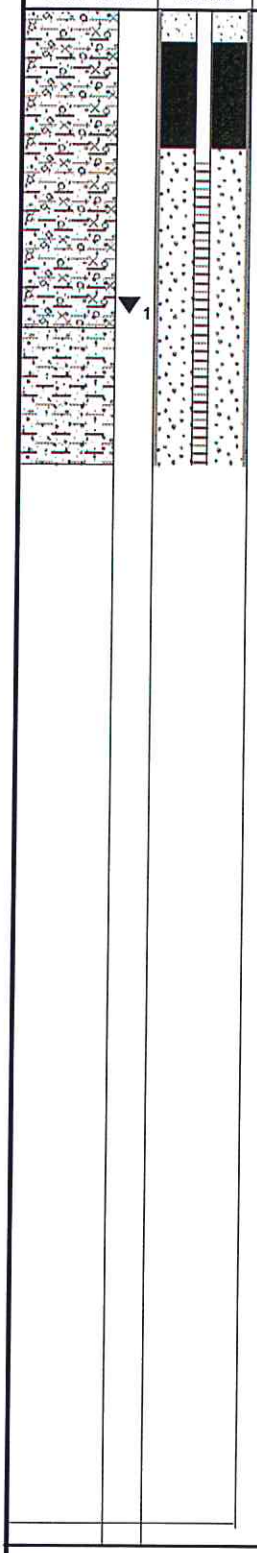
Ground Level: -

Client: Donegal County Council

Engineer: RPS Group

Date of installation: 23/10/2012

Sheet 1 of 1 | **Scale:** 1:50 | **Driller:** JC | **Logger:** PD



Legend & Water Strikes	Backfill/ Installs	Level (m)	Depth (m)	Description
			0.20	Concrete
			0.90	Bentonite
			3.00	Gravel filter

Groundwater Strikes During Drilling

Date	Time	Strike Number	Depth Struck (m)	Rise Details	Further Details	Casing Depth (m)	Depth Sealed (m)
23/10/12	0000	1	2.00	-	Water Strike	2.00	-

Groundwater Observations During Drilling

Date	Start of Shift					End of Shift				
	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (m)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level BH04
23/10/12						1000	3.00	3.00	-	-

Groundwater Monitoring Results

Install I.D.	Date	Time	Water Depth (m)	Water Level (m)

Gas Monitoring Results

Install I.D.	Date	Time	Oxygen (%)	Carbon Dioxide (%)	Methane (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Atmospheric Pressure (mB)	Gas Flow (l/hour)	LEL

Remarks:

Last Revised: 24/10/2012

Causeway Geotech Ltd

Project No. 12-390	**Project Name:** Dunkineely Landfill, Donegal		**Borehole No.** BH05
Method and Equipment: Percussion boring 0.00-2.60m	**Co-ords:** - -	**Client:** Donegal County Council	Sheet 1 of 1
		Engineer: RPS Group	**Scale:** 1:50
	Ground Level: -	**Dates:** 23/10/2012	**Driller:** JC
			Logger: PD

Depth (m)	Sample / Test	Casing Depth (m)	Water Depth (m)	Field Records	Level	Depth (Thickness)	Stratum Description
						(0.50)	Soft dark brown sandy gravelly CLAY with low cobble content with roots and rootlets. Sand is fine. Gravel is subangular to subrounded fine. Cobbles are subangular to subrounded
0.50	ES					0.50	
						(0.70)	Soft dark brown organic CLAY with large roots and rootlets
1.00	ES					1.20	
							Soft to firm light grey sandy gravelly CLAY with low cobble content. Sand is fine. Gravel is subangular to subrounded fine to medium. Cobbles are subangular to subrounded
						(1.40)	
2.60	ES			23/10/2012 0.50m		2.60	
							End of Borehole at 2.60 m
	Type						

Legend & Water Strikes: 1

Backfill/ Installs

Remarks:
Standpipe installed.

Chiseling:

From (m)	to (m)	time (hh:mm)

Water Strikes:

Struck (m)	rising to (m)	time (min)
2.00	-	-

Casing:

to (m)	dia. (mm)
2.60	150

Last Revised: 24/10/2012

Causeway Geotech Ltd

Project No.	Project Name:	Borehole No.
12-390	Dunkineely Landfill, Donegal	BH05

Installation Type: SP5 - Standpipe to 2.60m (50mm dia)

Cover Type: Upright cover fitted.

Co-ords: - -

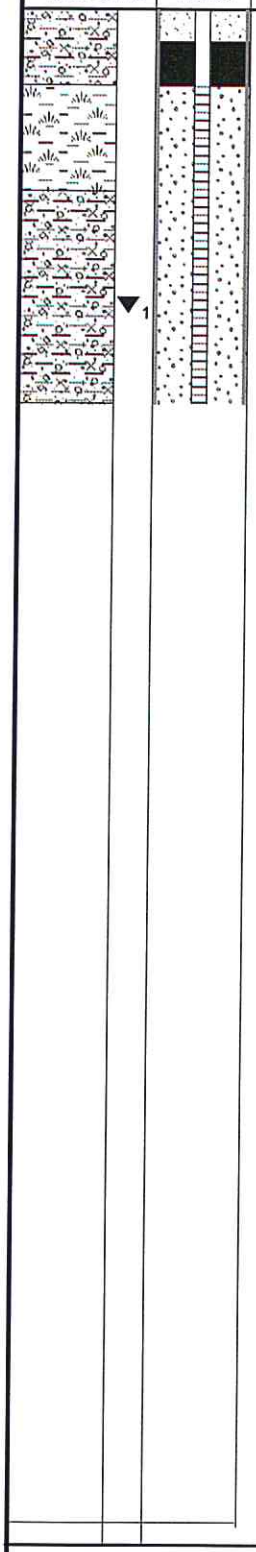
Ground Level: -

Client: Donegal County Council

Engineer: RPS Group

Date of installation: 23/10/2012

Sheet 1 of 1 | **Scale:** 1:50 | **Driller:** JC | **Logger:** PD



Legend & Water Strikes	Backfill/ Installs	Level (m)	Depth (m)	Description
			0.20	Concrete
			0.50	Bentonite
				Gravel filter
			2.60	

Groundwater Strikes During Drilling

Date	Time	Strike Number	Depth Struck (m)	Rise Details	Further Details	Casing Depth (m)	Depth Sealed (m)
23/10/12	0000	1	2.00	-	Water Strike	2.00	-

Groundwater Observations During Drilling

Date	Start of Shift					End of Shift				
	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (m)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level BH05
23/10/12						1100	2.60	2.60	0.50	-

Groundwater Monitoring Results

Install I.D.	Date	Time	Water Depth (m)	Water Level (m)

Gas Monitoring Results

Install I.D.	Date	Time	Oxygen (%)	Carbon Dioxide (%)	Methane (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Atmospheric Pressure (mB)	Gas Flow (l/hour)	LEL

Remarks:

Last Revised: 24/10/2012

APPENDIX C

Falling head permeability test results

VARIABLE HEAD PERMEABILITY TEST (STANDPIPE PIEZOMETER)

CONTRACT: Dunkineely Landfill BOREHOLE No.: BH01 TEST No.: 1

DATE: 5-Nov-12

TYPE OF TEST: *Rising* HEAD

Diameter of standpipe (d): *50* (mm)

Height of TOP of standpipe above ground level: *0.40* (m) (use -ve values if BELOW g.l.)

Depth to centre of piezo. tip below ground level (m): *NA* (m)

Depth to top of filter below ground level (m): *1.30* (m)

Depth to bottom of filter below ground level (m): *9.30* (m)

Diameter of filter (D): *125* (mm)

Standing ground water level SWL (mbgl): *0.65* (m) on: 5-Nov-12

"DATUM:All depths to water level measured from top of casing." i.e.SWL 1.05 m below datum.

TIME ELAPSED (mins)	WATER LEVEL* (m)	HEAD H (m)	HEAD RATIO H/Ho
0	1.89	0.84	1.0000
0.5	1.79	0.74	0.8810
1	1.78	0.73	0.8690
1.5	1.77	0.72	0.8571
2	1.76	0.71	0.8452
2.5	1.75	0.7	0.8333
3	1.74	0.69	0.8214
3.5	1.73	0.68	0.8095
4	1.72	0.67	0.7976
4.5	1.71	0.66	0.7857
5	1.7	0.65	0.7738
6	1.7	0.65	0.7738
7	1.67	0.62	0.7381
8	1.64	0.59	0.7024
9	1.6	0.55	0.6548
10	1.57	0.52	0.6190
12	1.53	0.48	0.5714
14	1.48	0.43	0.5119
16	1.44	0.39	0.4643
18	1.4	0.35	0.4167
20	1.38	0.33	0.3929
22	1.36	0.31	0.3690
24	1.34	0.29	0.3452
26	1.32	0.27	0.3214
28	1.32	0.27	0.3214
30	1.32	0.27	0.3214

CALCULATION OF PERMEABILITY OF SOIL:

Employing Hvorslev formula: k = A/FT

where:

k is the permeability of soil

A is the cross-section area of standpipe

F is the intake factor (see below)

T is the basic time lag factor

Values of intake factors (F/D) for various cylindrical intake zones of length to diameter ratio (L/D) are given in BS 5930:1999; also Dunn and Razouki formula:

F/D = 2.32*PI*(L/D)/loge[1.1*(L/D)+{1+1.1*(L/D)^2}^0.5]

L/D ratio = 64.00 thus F/D= 94.74

i.e. F = 11.84 (m)

and A = 0.00196 (m^2)

and T = 22 mins

(see graph of log H/Ho v Time.)

hence, k = **1.3E-07** m/s

i.e., k = **1.3×10^{-7}** m/s

VARIABLE HEAD PERMEABILITY TEST (STANDPIPE PIEZOMETER)

CONTRACT: Dunkineely Landfill BOREHOLE No.: BH02 TEST No.: 1

DATE: 5-Nov-12

TYPE OF TEST: *Rising* HEAD

Diameter of standpipe (d): *50* (mm)

Height of TOP of standpipe above ground level: *0.45* (m) (use -ve values if BELOW g.l.)

Depth to centre of piezo. tip below ground level (m): *NA* (m)

Depth to top of filter below ground level (m): *4.50* (m)

Depth to bottom of filter below ground level (m): *9.20* (m)

Diameter of filter (D): *125* (mm)

Standing ground water level SWL (mbgl): *0.37* (m) on: 5-Nov-12

DATUM:All depths to water level measured from top of casing. i.e.SWL 0.82 m below datum.

TIME ELAPSED (mins)	WATER LEVEL* (m)	HEAD H (m)	HEAD RATIO H/Ho
0	1.6	0.78	1.0000
0.5	1.02	0.2	0.2564
1	0.87	0.05	0.0641
1.5	0.79	-0.03	-0.0385
2	0.72	-0.1	-0.1282
2.5	0.69	-0.13	-0.1667
3	0.66	-0.16	-0.2051
3.5	0.64	-0.18	-0.2308
4	0.62	-0.2	-0.2564
4.5	0.6	-0.22	-0.2821
5	0.58	-0.24	-0.3077
6	0.56	-0.26	-0.3333
7	0.54	-0.28	-0.3590
8	0.52	-0.3	-0.3846
9	0.51	-0.31	-0.3974
10	0.5	-0.32	-0.4103
12	0.48	-0.34	-0.4359
14	0.46	-0.36	-0.4615
16	0.44	-0.38	-0.4872
18	0.42	-0.4	-0.5128
20	0.4	-0.42	-0.5385
22	0.4	-0.42	-0.5385
24	0.39	-0.43	-0.5513
26	0.39	-0.43	-0.5513
28	0.39	-0.43	-0.5513
30	0.39	-0.43	-0.5513

CALCULATION OF PERMEABILITY OF SOIL:

Employing Hvorslev formula: k = A/FT

where:

k is the permeability of soil

A is the cross-section area of standpipe

F is the intake factor (see below)

T is the basic time lag factor

Values of intake factors (F/D) for various cylindrical intake zones of length to diameter ratio (L/D) are given in BS 5930:1999; also Dunn and Razouki formula:

F/D = 2.32*PI*(L/D)/loge[1.1*(L/D)+{1+1.1*(L/D)^2}^0.5]

L/D ratio = 37.60 thus F/D= 62.40

i.e. F = 7.80 (m)

and A = 0.00196 (m^2)

and T = 0.4 mins

(see graph of log H/Ho v Time.)

hence, I **1.0E-05** **m/s**

i.e., **k = 1.0×10^{-5} m/s**

VARIABLE HEAD PERMEABILITY TEST (STANDPIPE PIEZOMETER)

CONTRACT: Dunkineely Landfill BOREHOLE No.: BH03 TEST No.: 1

DATE: 5-Nov-12

TYPE OF TEST: *Rising* HEAD

Diameter of standpipe (d): *50* (mm)

Height of TOP of standpipe above ground level: *0.40* (m) (use -ve values if BELOW g.l.)

Depth to centre of piezo. tip below ground level (m): *NA* (m)

Depth to top of filter below ground level (m): *3.20* (m)

Depth to bottom of filter below ground level (m): *8.50* (m)

Diameter of filter (D): *125* (mm)

Standing ground water level SWL (mbgl): *1.11* (m) on: 5-Nov-12

DATUM:All depths to water level measured from top of casing. i.e.SWL 1.51 m below datum.

TIME ELAPSED (mins)	WATER LEVEL* (m)	HEAD H (m)	HEAD RATIO H/Ho
0	2.19	0.68	1.0000
0.5	1.86	0.35	0.5147
1	1.79	0.28	0.4118
1.5	1.7	0.19	0.2794
2	1.63	0.12	0.1765
2.5	1.57	0.06	0.0882
3	1.54	0.03	0.0441
3.5	1.49	-0.02	-0.0294
4	1.48	-0.03	-0.0441
4.5	1.44	-0.07	-0.1029
5	1.42	-0.09	-0.1324
6	1.39	-0.12	-0.1765
7	1.35	-0.16	-0.2353
8	1.33	-0.18	-0.2647
9	1.3	-0.21	-0.3088
10	1.29	-0.22	-0.3235
12	1.26	-0.25	-0.3676
14	1.24	-0.27	-0.3971
16	1.22	-0.29	-0.4265
18	1.21	-0.3	-0.4412
20	1.2	-0.31	-0.4559
22	1.19	-0.32	-0.4706
24	1.18	-0.33	-0.4853
26	1.17	-0.34	-0.5000
28	1.17	-0.34	-0.5000
30	1.17	-0.34	-0.5000

test carried out in deep installation

CALCULATION OF PERMEABILITY OF SOIL:

Employing Hvorslev formula: k = A/FT

where:

k is the permeability of soil

A is the cross-section area of standpipe

F is the intake factor (see below)

T is the basic time lag factor

Values of intake factors (F/D) for various cylindrical intake zones of length to diameter ratio (L/D) are given in BS 5930:1999; also Dunn and Razouki formula:

F/D = 2.32*PI*(L/D)/loge[1.1*(L/D)+{1+1.1*(L/D)^2}^0.5]

L/D ratio = 42.40 thus F/D= 68.49

i.e. F = 8.56 (m)

and A = 0.00196 (m^2)

and T = 1.1 mins

(see graph of log H/Ho v Time.)

hence, I **3.5E-06** **m/s**

i.e., k = 3.5×10^{-6} m/s

VARIABLE HEAD PERMEABILITY TEST (STANDPIPE PIEZOMETER)

CONTRACT: Dunkineely Landfill BOREHOLE No.: BH04 TEST No.: 1

DATE: 5-Nov-12

TYPE OF TEST: *Rising* HEAD

Diameter of standpipe (d): *50* (mm)

Height of TOP of standpipe above ground level: *0.35* (m) (use -ve values if BELOW g.l.)

Depth to centre of piezo. tip below ground level (m): *NA* (m)

Depth to top of filter below ground level (m): *1.00* (m)

Depth to bottom of filter below ground level (m): *3.00* (m)

Diameter of filter (D): *125* (mm)

Standing ground water level SWL (mbgl): *0.41* (m) on: 5-Nov-12

DATUM:All depths to water level measured from top of casing. i.e.SWL 0.76 m below datum.

TIME ELAPSED (mins)	WATER LEVEL* (m)	HEAD H (m)	HEAD RATIO H/Ho
0	1.52	0.76	1.0000
0.5	1.43	0.67	0.8816
1	1.17	0.41	0.5395
1.5	1.04	0.28	0.3684
2	0.96	0.2	0.2632
2.5	0.91	0.15	0.1974
3	0.87	0.11	0.1447
3.5	0.83	0.07	0.0921
4	0.8	0.04	0.0526
4.5	0.77	0.01	0.0132
5	0.75	-0.01	-0.0132
6	0.72	-0.04	-0.0526
7	0.71	-0.05	-0.0658
8	0.69	-0.07	-0.0921
9	0.67	-0.09	-0.1184
10	0.66	-0.1	-0.1316
12	0.63	-0.13	-0.1711
14	0.6	-0.16	-0.2105
16	0.57	-0.19	-0.2500
18	0.55	-0.21	-0.2763
20	0.53	-0.23	-0.3026
22	0.52	-0.24	-0.3158
24	0.51	-0.25	-0.3289
26	0.5	-0.26	-0.3421
28	0.49	-0.27	-0.3553
30	0.49	-0.27	-0.3553
35	0.49	-0.27	-0.3553

CALCULATION OF PERMEABILITY OF SOIL:

Employing Hvorslev formula: k = A/FT

where:

k is the permeability of soil

A is the cross-section area of standpipe

F is the intake factor (see below)

T is the basic time lag factor

Values of intake factors (F/D) for various cylindrical intake zones of length to diameter ratio (L/D) are given in BS 5930:1999; also Dunn and Razouki formula:

F/D = 2.32*PI*(L/D)/loge[1.1*(L/D)+{1+1.1*(L/D)^2}^0.5]

L/D ratio = 16.00 thus F/D= 32.96

i.e. F = 4.12 (m)

and A = 0.00196 (m^2)

and T = 1.5 mins

(see graph of log H/Ho v Time.)

hence, i **5.3E-06** **m/s**

i.e., k = **5.3×10^{-6}** **m/s**

VARIABLE HEAD PERMEABILITY TEST (STANDPIPE PIEZOMETER)

CONTRACT: Dunkineely Landfill BOREHOLE No.: BH05 TEST No.: 1

DATE: 5-Nov-12

TYPE OF TEST: *Rising* HEAD

Diameter of standpipe (d):	*50*	(mm)
Height of TOP of standpipe above ground level:	*0.50*	(m) (use -ve values if BELOW g.l.)
Depth to centre of piezo. tip below ground level (m):	*NA*	(m)
Depth to top of filter below ground level (m):	*0.50*	(m)
Depth to bottom of filter below ground level (m):	*2.60*	(m)
Diameter of filter (D):	*125*	(mm)
Standing ground water level SWL (mbgl):	*0.2*	(m) on: 5-Nov-12

DATUM:All depths to water level measured from top of casing. i.e.SWL 0.70 m below datum.

TIME ELAPSED (mins)	WATER LEVEL* (m)	HEAD H (m)	HEAD RATIO H/Ho
0	2.7	2	1.0000
0.5	2.1	1.4	0.7000
1	2.04	1.34	0.6700
1.5	1.97	1.27	0.6350
2	1.91	1.21	0.6050
2.5	1.87	1.17	0.5850
3	1.84	1.14	0.5700
3.5	1.8	1.1	0.5500
4	1.77	1.07	0.5350
4.5	1.75	1.05	0.5250
5	1.73	1.03	0.5150
6	1.7	1	0.5000
7	1.68	0.98	0.4900
8	1.64	0.94	0.4700
9	1.63	0.93	0.4650
10	1.62	0.92	0.4600
12	1.61	0.91	0.4550
14	1.57	0.87	0.4350
16	1.55	0.85	0.4250
18	1.55	0.85	0.4250
20	1.53	0.83	0.4150
22	1.52	0.82	0.4100
24	1.51	0.81	0.4050
26	1.51	0.81	0.4050
28	1.5	0.8	0.4000
30	1.49	0.79	0.3950
35	1.47	0.77	0.3850
40	1.45	0.75	0.3750
45	1.43	0.73	0.3650
50	1.43	0.73	0.3650
55	1.42	0.72	0.3600
60	1.42	0.72	0.3600

CALCULATION OF PERMEABILITY OF SOIL:

Employing Hvorslev formula: k = A/FT

where:

k is the permeability of soil

A is the cross-section area of standpipe

F is the intake factor (see below)

T is the basic time lag factor

Values of intake factors (F/D) for various cylindrical intake zones of length to diameter ratio (L/D) are given in BS 5930:1999; also Dunn and Razouki formula:

F/D = 2.32*PI*(L/D)/loge[1.1*(L/D)+{1+1.1*(L/D)^2}^0.5]

L/D ratio = 16.80 thus F/D= 34.14

i.e. F = 4.27 (m)

and A = 0.00196 (m^2)

and T = 40 mins

(see graph of log H/Ho v Time.)

hence, I **1.9E-07** **m/s**

i.e., k = 1.9×10^{-7} m/s

APPENDIX D

Laboratory test results

Causeway Geotech Ltd.
8 Drumahiskey Road
Balnamore, Ballymoney
Co. Antrim
BT53 7QL

FAO Paul Dunlop

LABORATORY TEST REPORT

Results of analysis of 12 samples
received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Chemtest
The right chemistry to deliver results

Report Date
14 November 2012

Login Batch No					215816					
Chemtest LIMS ID					AH92554	AH92555	AH92556	AH92557	AH92558	AH92559
Sample ID					BH01	BH02	BH02	BH02	BH03	BH03
Sample No										
Sampling Date					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
Depth					0.90m	0.90m	1.90m	2.50m	1.00m	1.50m
Matrix					*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
SOP↓	Determinand↓	CAS No↓	Units↓	*						
2010	pH			M	7.6	6.6	6.6	7.2	6.8	6.4
2300	Cyanide (free)	57125	mg kg-1	M	< 0.5	< 0.5	0.5	< 0.5	0.5	< 0.5
	Cyanide (total)	57125	mg kg-1	M	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Thiocyanate	302045	mg kg-1	M	< 5.0	5.0	< 5.0	< 5.0	< 5.0	7.0
2325	Sulfide (Easily Liberatable)	18496258	mg kg-1	M	59	15	64	8.1	4.1	7.4
2625	Organic matter		%	M	1.7	36	36	1.6	5.3	17
2120	Boron (hot water soluble)	7440428	mg kg-1	M	<0.4	0.6	0.7	<0.4	0.5	0.6
2490	Chromium (hexavalent)	18540299	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2430	Sulfate (total) as SO4		mg kg-1	M	1100	75000	25000	3000	3300	27000
2450	Arsenic	7440382	mg kg-1	M	12	18	8.9	14	3.0	10
	Cadmium	7440439	mg kg-1	M	0.25	0.41	0.91	0.22	0.15	1.3
	Chromium	7440473	mg kg-1	M	14	12	13	30	8.7	6.9
	Copper	7440508	mg kg-1	M	8.7	33	24	48	11	15
	Mercury	7439976	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Nickel	7440020	mg kg-1	M	9.0	14	9.5	48	9.7	16
	Lead	7439921	mg kg-1	M	20	11	13	29	9.8	9.5
	Selenium	7782492	mg kg-1	M	0.35	1.5	1.6	<0.20	0.25	1.2
	Zinc	7440666	mg kg-1	M	35	65	74	78	26	43
2675	TPH aliphatic >C5-C6		mg kg-1	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aliphatic >C6-C8		mg kg-1	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aliphatic >C8-C10		mg kg-1	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aliphatic >C10-C12		mg kg-1	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aliphatic >C12-C16		mg kg-1	M	< 1	< 1	< 1	< 1	< 1	< 1

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

All tests undertaken between 06/11/2012 and 12/11/2012

* Accreditation status

This report should be interpreted in conjuction with the notes on the accompanying cover page.

Causeway Geotech Ltd.
8 Drumahiskey Road
Balnamore, Ballymoney
Co. Antrim
BT53 7QL

FAO Paul Dunlop

LABORATORY TEST REPORT

Results of analysis of 12 samples received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Chemtest
The right chemistry to deliver results

Report Date
14 November 2012

Login Batch No					215816					
Chemtest LIMS ID					AH92560	AH92561	AH92562	AH92563	AH92564	AH92565
Sample ID					BH03	BH04	BH04	BH05	BH05	BH05
Sample No										
Sampling Date					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
Depth					3.00m	1.00m	2.10m	0.50m	1.00m	2.60m
Matrix					*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
SOP↓	Determinand↓	CAS No↓	Units↓	*						
2010	pH			M	7.3	6.5	8.2	7.0	6.7	8.3
2300	Cyanide (free)	57125	mg kg-1	M	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5
	Cyanide (total)	57125	mg kg-1	M	< 0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5
	Thiocyanate	302045	mg kg-1	M	< 5.0	5.0	< 5.0	< 5.0	< 5.0	< 5.0
2325	Sulfide (Easily Liberatable)	18496258	mg kg-1	M	4.3	6.1	5.8	2.7	3.1	4.5
2625	Organic matter		%	M	0.69	11	1.6	6.9	7.1	0.76
2120	Boron (hot water soluble)	7440428	mg kg-1	M	<0.4	<0.4	<0.4	1.1	0.6	<0.4
2490	Chromium (hexavalent)	18540299	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2430	Sulfate (total) as SO4		mg kg-1	M	700	65000	3800	3300	3900	800
2450	Arsenic	7440382	mg kg-1	M	11	19	23	18	3.8	31
	Cadmium	7440439	mg kg-1	M	0.36	2.0	0.65	0.57	0.34	0.83
	Chromium	7440473	mg kg-1	M	21	13	34	29	13	33
	Copper	7440508	mg kg-1	M	39	27	52	33	15	55
	Mercury	7439976	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Nickel	7440020	mg kg-1	M	35	23	50	23	11	60
	Lead	7439921	mg kg-1	M	25	17	47	40	17	46
	Selenium	7782492	mg kg-1	M	0.45	3.9	<0.20	2.2	1.2	<0.20
	Zinc	7440666	mg kg-1	M	74	220	180	160	59	200
2675	TPH aliphatic >C5-C6		mg kg-1	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aliphatic >C6-C8		mg kg-1	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aliphatic >C8-C10		mg kg-1	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aliphatic >C10-C12		mg kg-1	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aliphatic >C12-C16		mg kg-1	M	< 1	< 1	< 1	< 1	< 1	< 1

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

* Accreditation status

This report should be interpreted in conjuction with the notes on the accompanying cover page.

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FAO Paul Dunlop

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received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Chemtest
The right chemistry to deliver results

Report Date
14 November 2012

					215816					
					AH92554	AH92555	AH92556	AH92557	AH92558	AH92559
					BH01	BH02	BH02	BH02	BH03	BH03
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					0.90m	0.90m	1.90m	2.50m	1.00m	1.50m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2675	TPH aliphatic >C16-C21		mg kg^{-1}	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aliphatic >C21-C35		mg kg^{-1}	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aliphatic >C35-C44		mg kg^{-1}	N	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aromatic >C5-C7		mg kg^{-1}	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aromatic >C7-C8		mg kg^{-1}	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aromatic >C8-C10		mg kg^{-1}	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aromatic >C10-C12		mg kg^{-1}	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aromatic >C12-C16		mg kg^{-1}	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aromatic >C16-C21		mg kg^{-1}	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aromatic >C21-C35		mg kg^{-1}	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aromatic >C35-C44		mg kg^{-1}	N	< 1	< 1	< 1	< 1	< 1	< 1
	Total Petroleum Hydrocarbons		mg kg^{-1}	N	< 10	< 10	< 10	< 10	< 10	< 10
2760	Methyl tert-butyl ether	1634044	µg kg^{-1}	N	< 1	< 1	< 1	< 1	< 1	< 1
	Dichlorodifluoromethane	75718	µg kg^{-1}	U	< 1.0	< 1.0		< 1.0	< 1.0	
	Chloromethane	74873	µg kg^{-1}	M	< 1.0	< 1.0		< 1.0	< 1.0	
	Vinyl chloride	75014	µg kg^{-1}	M	< 1.0	< 1.0		< 1.0	< 1.0	
	Bromomethane	74839	µg kg^{-1}	U	< 20	< 20		< 20	< 20	
	Chloroethane	75003	µg kg^{-1}	U	< 2.0	< 2.0		< 2.0	< 2.0	
	Trichlorofluoromethane	75694	µg kg^{-1}	U	< 1.0	< 1.0		< 1.0	< 1.0	
	1,1-Dichloroethene	75354	µg kg^{-1}	U	< 1.0	< 1.0		< 1.0	< 1.0	
	Dichloromethane	75092	µg kg^{-1}	N	ne	ne		ne	ne	
	trans-1,2-Dichloroethene	156605	µg kg^{-1}	U	< 1.0	< 1.0		< 1.0	< 1.0	
	1,1-Dichloroethane	75343	µg kg^{-1}	M	< 1.0	< 1.0		< 1.0	< 1.0	
	cis-1,2-Dichloroethene	156592	µg kg^{-1}	M	< 1.0	< 1.0		< 1.0	< 1.0	

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

All tests undertaken between 06/11/2012 and 12/11/2012

* Accreditation status

This report should be interpreted in conjuction with the notes on the accompanying cover page.

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8 Drumahiskey Road
Balnamore, Ballymoney
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LABORATORY TEST REPORT

Results of analysis of 12 samples
received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Chemtest
The right chemistry to deliver results

Report Date
14 November 2012

					215816					
					AH92560	AH92561	AH92562	AH92563	AH92564	AH92565
					BH03	BH04	BH04	BH05	BH05	BH05
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					3.00m	1.00m	2.10m	0.50m	1.00m	2.60m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2675	TPH aliphatic >C16-C21		mg kg-1	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aliphatic >C21-C35		mg kg-1	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aliphatic >C35-C44		mg kg-1	N	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aromatic >C5-C7		mg kg-1	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aromatic >C7-C8		mg kg-1	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aromatic >C8-C10		mg kg-1	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	TPH aromatic >C10-C12		mg kg-1	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aromatic >C12-C16		mg kg-1	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aromatic >C16-C21		mg kg-1	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aromatic >C21-C35		mg kg-1	M	< 1	< 1	< 1	< 1	< 1	< 1
	TPH aromatic >C35-C44		mg kg-1	N	< 1	< 1	< 1	< 1	< 1	< 1
	Total Petroleum Hydrocarbons		mg kg-1	N	< 10	< 10	< 10	< 10	< 10	< 10
2760	Methyl tert-butyl ether	1634044	µg kg-1	N	< 1	< 1	< 1	< 1	< 1	< 1
	Dichlorodifluoromethane	75718	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Chloromethane	74873	µg kg-1	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Vinyl chloride	75014	µg kg-1	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Bromomethane	74839	µg kg-1	U	< 20	< 20	< 20	< 20	< 20	< 20
	Chloroethane	75003	µg kg-1	U	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	Trichlorofluoromethane	75694	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,1-Dichloroethene	75354	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Dichloromethane	75092	µg kg-1	N	ne	ne	ne	ne	ne	ne
	trans-1,2-Dichloroethene	156605	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,1-Dichloroethane	75343	µg kg-1	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	cis-1,2-Dichloroethene	156592	µg kg-1	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

* Accreditation status

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Causeway Geotech Ltd.
8 Drumahiskey Road
Balnamore, Ballymoney
Co. Antrim
BT53 7QL

FAO Paul Dunlop

LABORATORY TEST REPORT

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12-390- Dunkineely Landfill, Donegal

Chemtest
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Report Date
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					215816					
					AH92554	AH92555	AH92556	AH92557	AH92565	AH92566
					BH01	BH02	BH02	BH02	BH03	BH03
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					0.90m	0.90m	1.90m	2.50m	1.00m	1.50m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2760	Bromochloromethane	74975	µg kg^{-1}	U	< 1.0	< 1.0		< 1.0	< 1.0	
	Trichloromethane	67663	µg kg^{-1}	M	< 1.0	< 1.0		< 1.0	< 1.0	
	1,1,1-Trichloroethane	71556	µg kg^{-1}	M	< 1.0	< 1.0		< 1.0	< 1.0	
	Tetrachloromethane	56235	µg kg^{-1}	M	< 1.0	< 1.0		< 1.0	< 1.0	
	1,1-Dichloropropene	563586	µg kg^{-1}	U	< 1.0	< 1.0		< 1.0	< 1.0	
	Benzene	71432	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,2-Dichloroethane	107062	µg kg^{-1}	U	< 2.0	< 2.0		< 2.0	< 2.0	
	Trichloroethene	79016	µg kg^{-1}	U	< 1.0	< 1.0		< 1.0	< 1.0	
	1,2-Dichloropropane	78875	µg kg^{-1}	U	< 1.0	< 1.0		< 1.0	< 1.0	
	Dibromomethane	74953	µg kg^{-1}	U	< 10	< 10		< 10	< 10	
	Bromodichloromethane	75274	µg kg^{-1}	U	< 5.0	< 5.0		< 5.0	< 5.0	
	cis-1,3-Dichloropropene	10061015	µg kg^{-1}	N	< 10	< 10		< 10	< 10	
	Toluene	108883	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	trans-1,3-Dichloropropene	10061026	µg kg^{-1}	N	< 10	< 10		< 10	< 10	
	1,1,2-Trichloroethane	79005	µg kg^{-1}	U	< 10	< 10		< 10	< 10	
	Tetrachloroethene	127184	µg kg^{-1}	M	< 1.0	< 1.0		< 1.0	< 1.0	
	1,3-Dichloropropane	142289	µg kg^{-1}	U	< 2.0	< 2.0		< 2.0	< 2.0	
	Dibromochloromethane	124481	µg kg^{-1}	U	< 10	< 10		< 10	< 10	
	1,2-Dibromoethane	106934	µg kg^{-1}	U	< 5.0	< 5.0		< 5.0	< 5.0	
	Chlorobenzene	108907	µg kg^{-1}	M	< 1.0	< 1.0		< 1.0	< 1.0	
	1,1,1,2-Tetrachloroethane	630206	µg kg^{-1}	M	< 2.0	< 2.0		< 2.0	< 2.0	
	Ethylbenzene	100414	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	m- & p-Xylene	1330207	µg kg^{-1}	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	o-Xylene	95476	µg kg^{-1}	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

All tests undertaken between 06/11/2012 and 12/11/2012

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Co. Antrim
BT53 7QL

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LABORATORY TEST REPORT

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received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Chemtest
The right chemistry to deliver results

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					AH92560	AH92561	AH92562	AH92563	AH92564	AH92565
					BH03	BH04	BH04	BH05	BH05	BH05
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					3.00m	1.00m	2.10m	0.50m	1.00m	2.60m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2760	Bromochloromethane	74975	µg kg^{-1}	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Trichloromethane	67663	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,1,1-Trichloroethane	71556	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Tetrachloromethane	56235	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,1-Dichloropropene	563586	µg kg^{-1}	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Benzene	71432	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,2-Dichloroethane	107062	µg kg^{-1}	U	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	Trichloroethene	79016	µg kg^{-1}	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,2-Dichloropropane	78875	µg kg^{-1}	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Dibromomethane	74953	µg kg^{-1}	U	< 10	< 10	< 10	< 10	< 10	< 10
	Bromodichloromethane	75274	µg kg^{-1}	U	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	cis-1,3-Dichloropropene	10061015	µg kg^{-1}	N	< 10	< 10	< 10	< 10	< 10	< 10
	Toluene	108883	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	trans-1,3-Dichloropropene	10061026	µg kg^{-1}	N	< 10	< 10	< 10	< 10	< 10	< 10
	1,1,2-Trichloroethane	79005	µg kg^{-1}	U	< 10	< 10	< 10	< 10	< 10	< 10
	Tetrachloroethene	127184	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,3-Dichloropropane	142289	µg kg^{-1}	U	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	Dibromochloromethane	124481	µg kg^{-1}	U	< 10	< 10	< 10	< 10	< 10	< 10
	1,2-Dibromoethane	106934	µg kg^{-1}	U	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
	Chlorobenzene	108907	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,1,1,2-Tetrachloroethane	630206	µg kg^{-1}	M	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	Ethylbenzene	100414	µg kg^{-1}	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	m- & p-Xylene	1330207	µg kg^{-1}	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	o-Xylene	95476	µg kg^{-1}	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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					215816					
					AH92554	AH92555	AH92556	AH92557	AH92558	AH92559
					BH01	BH02	BH02	BH02	BH03	BH03
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					0.90m	0.90m	1.90m	2.50m	1.00m	1.50m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2760	Styrene	100425	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	Tribromomethane	75252	µg kg-1	U	< 10	< 10		< 10	< 10	
	Isopropylbenzene	98828	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	Bromobenzene	108861	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	1,2,3-Trichloropropane	96184	µg kg-1	N	< 50	< 50		< 50	< 50	
	n-Propylbenzene	103651	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	2-Chlorotoluene	95498	µg kg-1	M	< 1.0	< 1.0		< 1.0	< 1.0	
	1,2,4-Trimethylbenzene	95636	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	4-Chlorotoluene	106434	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	tert-Butylbenzene	98066	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	1,3,5-Trimethylbenzene	108678	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	sec-Butylbenzene	135988	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	1,3-Dichlorobenzene	541731	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	4-Isopropyltoluene	99876	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	1,4-Dichlorobenzene	106467	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	n-Butylbenzene	104518	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	1,2-Dichlorobenzene	95501	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	1,2-Dibromo-3-chloropropane	96128	µg kg-1	U	< 50	< 50		< 50	< 50	
	1,2,4-Trichlorobenzene	120821	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
	Hexachlorobutadiene	87683	µg kg-1	U	< 1.0	< 1.0		< 1.0	< 1.0	
2790	Phenol	108952	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	bis(2-Chloroethyl)ether	111444	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2-Chlorophenol	95578	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	1,3-Dichlorobenzene	541731	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

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					BH03	BH04	BH04	BH05	BH05	BH05
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					3.00m	1.00m	2.10m	0.50m	1.00m	2.60m
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2760	Styrene	100425	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Tribromomethane	75252	µg kg-1	U	< 10	< 10	< 10	< 10	< 10	< 10
	Isopropylbenzene	98828	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Bromobenzene	108861	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,2,3-Trichloropropane	96184	µg kg-1	N	< 50	< 50	< 50	< 50	< 50	< 50
	n-Propylbenzene	103651	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	2-Chlorotoluene	95498	µg kg-1	M	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,2,4-Trimethylbenzene	95636	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	4-Chlorotoluene	106434	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	tert-Butylbenzene	98066	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,3,5-Trimethylbenzene	108678	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	sec-Butylbenzene	135988	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,3-Dichlorobenzene	541731	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	4-Isopropyltoluene	99876	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,4-Dichlorobenzene	106467	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	n-Butylbenzene	104518	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,2-Dichlorobenzene	95501	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	1,2-Dibromo-3-chloropropane	96128	µg kg-1	U	< 50	< 50	< 50	< 50	< 50	< 50
	1,2,4-Trichlorobenzene	120821	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	Hexachlorobutadiene	87683	µg kg-1	U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2790	Phenol	108952	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	bis(2-Chloroethyl)ether	111444	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-Chlorophenol	95578	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,3-Dichlorobenzene	541731	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

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					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					0.90m	0.90m	1.90m	2.50m	1.00m	1.50m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2790	1,4-Dichlorobenzene	106467	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	1,2-Dichlorobenzene	95501	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2-Methylphenol	95487	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	bis(2-Chloroisopropyl)ether	108601	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	4-Methylphenol	106445	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	N-Nitrosodi-n-propylamine	621647	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Hexachloroethane	67721	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Nitrobenzene	98953	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Isophorone	78591	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2-Nitrophenol	88755	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2,4-Dimethylphenol	105679	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	bis(2-Chloroethoxy)methane	111911	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2,4-Dichlorophenol	120832	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	1,2,4-Trichlorobenzene	120821	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Naphthalene	91203	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	4-Chloroaniline	106478	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Hexachlorobutadiene	87683	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	4-Chloro-3-methylphenol	59507	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2-Methylnaphthalene	91576	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Hexachlorocyclopentadiene	77474	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2,4,6-Trichlorophenol	88062	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2,4,5-Trichlorophenol	95954	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2-Chloronaphthalene	91587	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2-Nitroaniline	88744	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

All tests undertaken between 06/11/2012 and 12/11/2012

* Accreditation status

This report should be interpreted in conjuction with the notes on the accompanying cover page.

Causeway Geotech Ltd.
8 Drumahiskey Road
Balnamore, Ballymoney
Co. Antrim
BT53 7QL

FAO Paul Dunlop

LABORATORY TEST REPORT

Results of analysis of 12 samples received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Chemtest
The right chemistry to deliver results

Report Date
14 November 2012

					215816					
					AH92560	AH92561	AH92562	AH92563	AH92564	AH92565
					BH03	BH04	BH04	BH05	BH05	BH05
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					3.00m	1.00m	2.10m	0.50m	1.00m	2.60m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2790	1,4-Dichlorobenzene	106467	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,2-Dichlorobenzene	95501	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-Methylphenol	95487	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	bis(2-Chloroisopropyl)ether	108601	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	4-Methylphenol	106445	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	N-Nitrosodi-n-propylamine	621647	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Hexachloroethane	67721	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Nitrobenzene	98953	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Isophorone	78591	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-Nitrophenol	88755	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2,4-Dimethylphenol	105679	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	bis(2-Chloroethoxy)methane	111911	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2,4-Dichlorophenol	120832	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,2,4-Trichlorobenzene	120821	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Naphthalene	91203	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	4-Chloroaniline	106478	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Hexachlorobutadiene	87683	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	4-Chloro-3-methylphenol	59507	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-Methylnaphthalene	91576	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Hexachlorocyclopentadiene	77474	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2,4,6-Trichlorophenol	88062	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2,4,5-Trichlorophenol	95954	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-Chloronaphthalene	91587	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-Nitroaniline	88744	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

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8 Drumahiskey Road
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Co. Antrim
BT53 7QL

FAO Paul Dunlop

LABORATORY TEST REPORT

Results of analysis of 12 samples
received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Chemtest
The right chemistry to deliver results

Report Date
14 November 2012

					215816					
					AH92554	AH92555	AH92556	AH92557	AH92558	AH92559
					BH01	BH02	BH02	BH02	BH03	BH03
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					0.90m	0.90m	1.90m	2.50m	1.00m	1.50m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2790	Dimethylphthalate	131113	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2,6-Dinitrotoluene	606202	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Acenaphthylene	208968	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	3-Nitroaniline	99092	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Acenaphthene	83329	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Dibenzofuran	132649	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2,4-Dinitrotoluene	121142	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Diethylphthalate	84662	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Fluorene	86737	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	4-Chlorophenylphenylether	7005723	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	4-Nitroaniline	100016	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2-Methyl-4,6-dinitrophenol	534521	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Azobenzene	103333	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	4-Bromophenylphenylether	101553	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Hexachlorobenzene	118741	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Pentachlorophenol	87865	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Phenanthrene	85018	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Anthracene	120127	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Carbazole	86748	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Di-n-butylphthalate	84742	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Fluoranthene	206440	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Pyrene	129000	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Butylbenzylphthalate	85687	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Benzo[a]anthracene	56553	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

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FAO Paul Dunlop

LABORATORY TEST REPORT

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12-390- Dunkineely Landfill, Donegal

Chemtest
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					215816					
					AH92560	AH92561	AH92562	AH92563	AH92564	AH92565
					BH03	BH04	BH04	BH05	BH05	BH05
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					3.00m	1.00m	2.10m	0.50m	1.00m	2.60m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2790	Dimethylphthalate	131113	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2,6-Dinitrotoluene	606202	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Acenaphthylene	208968	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3-Nitroaniline	99092	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Acenaphthene	83329	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Dibenzofuran	132649	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2,4-Dinitrotoluene	121142	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Diethylphthalate	84662	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Fluorene	86737	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	4-Chlorophenylphenylether	7005723	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	4-Nitroaniline	100016	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-Methyl-4,6-dinitrophenol	534521	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Azobenzene	103333	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	4-Bromophenylphenylether	101553	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Hexachlorobenzene	118741	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Pentachlorophenol	87865	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Phenanthrene	85018	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Anthracene	120127	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Carbazole	86748	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Di-n-butylphthalate	84742	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Fluoranthene	206440	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Pyrene	129000	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Butylbenzylphthalate	85687	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[a]anthracene	56553	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

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BT53 7QL

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LABORATORY TEST REPORT

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12-390- Dunkineely Landfill, Donegal

Chemtest
The right chemistry to deliver results

Report Date
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					215816					
					AH92554	AH92555	AH92556	AH92557	AH92558	AH92559
					BH01	BH02	BH02	BH02	BH03	BH03
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					0.90m	0.90m	1.90m	2.50m	1.00m	1.50m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2790	Chrysene	218019	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	bis(2-Ethylhexyl)phthalate	117817	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Di-n-octylphthalate	117840	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Benzo[b]fluoranthene	205992	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Benzo[k]fluoranthene	207089	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Benzo[a]pyrene	50328	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Indeno[1,2,3-cd]pyrene	193395	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Dibenzo[a,h]anthracene	53703	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	Benzo[g,h,i]perylene	191242	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	2,4-Dinitrophenol	51285	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
	4-Nitrophenol	100027	mg kg-1	N	<0.5	<0.5		<0.5	<0.5	
2800	Naphthalene	91203	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Acenaphthylene	208968	mg kg-1	N	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Acenaphthene	83329	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Fluorene	86737	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Phenanthrene	85018	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Anthracene	120127	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Fluoranthene	206440	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Pyrene	129000	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Benzo[a]anthracene	56553	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Chrysene	218019	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Benzo[b]fluoranthene	205992	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Benzo[k]fluoranthene	207089	mg kg-1	N	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Benzo[a]pyrene	50328	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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12-390- Dunkineely Landfill, Donegal

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					215816					
					AH92560	AH92561	AH92562	AH92563	AH92564	AH92565
					BH03	BH04	BH04	BH05	BH05	BH05
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					3.00m	1.00m	2.10m	0.50m	1.00m	2.60m
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2790	Chrysene	218019	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	bis(2-Ethylhexyl)phthalate	117817	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Di-n-octylphthalate	117840	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b]fluoranthene	205992	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[k]fluoranthene	207089	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[a]pyrene	50328	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Indeno[1,2,3-cd]pyrene	193395	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Dibenzo[a,h]anthracene	53703	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[g,h,i]perylene	191242	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2,4-Dinitrophenol	51285	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	4-Nitrophenol	100027	mg kg-1	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2800	Naphthalene	91203	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Acenaphthylene	208968	mg kg-1	N	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Acenaphthene	83329	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Fluorene	86737	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Phenanthrene	85018	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Anthracene	120127	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Fluoranthene	206440	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Pyrene	129000	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Benzo[a]anthracene	56553	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Chrysene	218019	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Benzo[b]fluoranthene	205992	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Benzo[k]fluoranthene	207089	mg kg-1	N	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Benzo[a]pyrene	50328	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

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					215816					
					AH92554	AH92555	AH92556	AH92557	AH92558	AH92559
					BH01	BH02	BH02	BH02	BH03	BH03
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					0.90m	0.90m	1.90m	2.50m	1.00m	1.50m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2800	Dibenzo[a,h]anthracene	53703	mg kg-1	N	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Indeno[1,2,3-cd]pyrene	193395	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Benzo[g,h,i]perylene	191242	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Total (of 16) PAHs		mg kg-1	N	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
2815	PCB 23		mg kg-1		<0.01	<0.01		<0.01	<0.01	
	PCB 77	32598133	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
	PCB 81	70362504	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
	PCB 105	32598144	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
	PCB 114	74472370	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
	PCB 118	31508006	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
	PCB 123	65510443	mg kg-1	N	<0.01	<0.01		<0.01		
	PCB 126	57465288	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
	PCB 156	38380084	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
	PCB 157	69782907	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
	PCB 167	52663726	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
	PCB 169	32774166	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
	PCB 189	39635319	mg kg-1	N	<0.01	<0.01		<0.01	<0.01	
2920	Phenols (total)		mg kg-1	N	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

All tests undertaken between 06/11/2012 and 12/11/2012

* Accreditation status

This report should be interpreted in conjuction with the notes on the accompanying cover page.

Causeway Geotech Ltd.
8 Drumahiskey Road
Balnamore, Ballymoney
Co. Antrim
BT53 7QL

FAO Paul Dunlop

LABORATORY TEST REPORT

Results of analysis of 12 samples
received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Chemtest
The right chemistry to deliver results

Report Date
14 November 2012

					215816					
					AH92560	AH92561	AH92562	AH92563	AH92564	AH92565
					BH03	BH04	BH04	BH05	BH05	BH05
					Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
					3.00m	1.00m	2.10m	0.50m	1.00m	2.60m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2800	Dibenzo[a,h]anthracene	53703	mg kg-1	N	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Indeno[1,2,3-cd]pyrene	193395	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Benzo[g,h,i]perylene	191242	mg kg-1	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Total (of 16) PAHs		mg kg-1	N	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
2815	PCB 23		mg kg-1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 77	32598133	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 81	70362504	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 105	32598144	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 114	74472370	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 118	31508006	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 123	65510443	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 126	57465288	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 156	38380084	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 157	69782907	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 167	52663726	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 169	32774166	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PCB 189	39635319	mg kg-1	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2920	Phenols (total)		mg kg-1	N	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3

[1]No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised. The accreditation for these results remains unaffected.

* Accreditation status

This report should be interpreted in conjuction with the notes on the accompanying cover page.

Causeway Geotech Ltd.
8 Drumahiskey Road
Balnamore, Ballymoney
Co. Antrim
BT53 7QL

FAO Paul Dunlop

LABORATORY TEST REPORT
Asbestos in Soils

Chemtest

Results of analysis of 12 samples
received 6 November 2012
12-390- Dunkineely Landfill, Donegal

Report Date
20 November 2012

Login Batch No: 215816

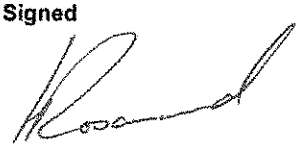
Qualitative Results

					SOP 2190
				ACM Type	Asbestos Identification
Chemtest ID	Sample ID	Sample Desc	Depth (m)		
AH92554		BH01	0.90	-	No Asbestos Detected
AH92555		BH02	0.90	-	No Asbestos Detected
AH92556		BH02	1.90	-	No Asbestos Detected
AH92557		BH02	2.50	-	No Asbestos Detected
AH92558		BH03	1.00	-	No Asbestos Detected
AH92559		BH03	1.50	-	No Asbestos Detected
AH92560		BH03	3.00	-	No Asbestos Detected
AH92561		BH04	1.00	-	No Asbestos Detected
AH92562		BH04	2.10	-	No Asbestos Detected
AH92563		BH05	0.50	-	No Asbestos Detected
AH92564		BH05	1.00	-	No Asbestos Detected
AH92565		BH05	2.60	-	No Asbestos Detected

The detection limit for this method is 0.001%

Signed

Signed



Hollis Rosamond
Asbestos Analyst

All tests undertaken between 13-Nov-2012 and 13-Nov-2012

Chemtest
LABORATORY TEST REPORT

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

Causeway Geotech Ltd.
8 Drumahiskey Road
Balnamore, Ballymoney
Co. Antrim
BT53 7QL

FAO Paul Dunlop

Results of analysis of 6 samples received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Report Date 15 November 2012

Login Batch No	**215823**
Chemtest LIMS ID	AH92626 Soil: AH92623
Sample ID	BH03
Sample No	
Sampling Date	00:00:00
Depth	1.00m

Landfill Waste Acceptance Criteria Limits

Solid Waste Analysis

Determinand ↓	SOP ↓	*	Units ↓			Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	M	%		2.9	3	5	6
Loss on Ignition	2610	N	%		6.72			10
Total BTEX	2761	M	mg kg^{-1}		<0.005	6		
Total PCBs (7 congeners)	2811	N	mg kg^{-1}		<1	1		
TPH Total WAC	2670	M	mg kg^{-1}		< 10	500		
Total (of 17) PAHs	2700	N	mg kg^{-1}		<2	100		
pH	2010	M			7.3		>6	
Acid Neutralisation Capacity	2015		mol kg^{-1}		0.003			

Eluate Analysis

Determinand ↓	SOP ↓	*	2:1 Eluate mg l^{-1}	8:1 Eluate mg l^{-1}	2:1 Eluate mg kg^{-1}	Cumulative 10:1 Eluate mg kg^{-1}	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
Arsenic	1450	N	0.001	<0.001	<0.05	<0.05	0.5	2	25
Barium		N	0.033	0.008	<0.5	<0.5	20	100	300
Cadmium	1450	N	<0.0005	<0.0005	<0.01	<0.01	0.04	1	5
Chromium	1450	N	<0.001	<0.001	<0.05	<0.05	0.5	10	70
Copper	1450	N	0.004	0.001	<0.05	<0.05	2	50	100
Mercury	1450	N	<0.0005	<0.0005	<0.01	<0.01	0.01	0.2	2
Molybdenum	1450	N	0.002	0.002	<0.05	<0.05	0.5	10	30
Nickel	1450	N	<0.001	<0.001	<0.05	<0.05	0.4	10	40
Lead	1450	N	<0.001	<0.001	<0.01	<0.01	0.5	10	50
Antimony	1450	N	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	1450	N	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	1450	N	0.011	0.004	<0.5	<0.5	4	50	200
Chloride	1220	N	8.2	5.1	16.4	52.4	800	15000	25000
Fluoride	1220	N	0.15	0.17	<1	1.69	10	150	500
Sulfate	1220	N	240	59	480	673	1000	20000	50000
Total Dissolved Solids	1040	N	310	91	620	1010	4000	60000	100000
Phenol Index	1920	N	<0.030	<0.030	<0.5	<0.5	1		
Dissolved Organic Carbon	1610	N	34	30	68	302	500	800	1000

Solid Information

Dry mass of test portion/kg	0.175

Leach Test Information

Leachant volume 1st extract/l	0.227
Leachant volume 2nd extract/l	1.4
Eluate recovered from 1st extract/l	0.0805

All tests undertaken between 6-Nov-2012 and 15-Nov-2012
* Accreditation status
This report should be interpreted in conjunction with the notes on the accompanying cover page.

Chemtest
LABORATORY TEST REPORT

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

Causeway Geotech Ltd.
8 Drumahiskey Road
Balnamore, Ballymoney
Co. Antrim
BT53 7QL

FAO Paul Dunlop

Results of analysis of 6 samples received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Report Date 15 November 2012

Login Batch No	**215823**
Chemtest LIMS ID	AH92627 Soil: AH92624
Sample ID	BH04
Sample No	
Sampling Date	00:00:00
Depth	1.00m

Solid Waste Analysis

Determinand ↓	SOP ↓	*	Units ↓			Landfill Waste Acceptance Criteria Limits: Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	M	%		11	3	5	6
Loss on Ignition	2610	N	%		71			10
Total BTEX	2761	M	mg kg^{-1}		<0.005	6		
Total PCBs (7 congeners)	2811	N	mg kg^{-1}		<1	1		
TPH Total WAC	2670	M	mg kg^{-1}		< 10	500		
Total (of 17) PAHs	2700	N	mg kg^{-1}		<2	100		
pH	2010	M			6.7		>6	
Acid Neutralisation Capacity	2015		mol kg^{-1}		<0.002			

Eluate Analysis

Determinand ↓	SOP ↓	*	2:1 Eluate mg l^{-1}	8:1 Eluate mg l^{-1}	2:1 Eluate mg kg^{-1}	Cumulative 10:1 Eluate mg kg^{-1}	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
Arsenic	1450	N	0.005	0.002	<0.05	<0.05	0.5	2	25
Barium		N	0.016	0.008	<0.5	<0.5	20	100	300
Cadmium	1450	N	<0.0005	<0.0005	<0.01	<0.01	0.04	1	5
Chromium	1450	N	<0.001	<0.001	<0.05	<0.05	0.5	10	70
Copper	1450	N	0.007	0.002	<0.05	<0.05	2	50	100
Mercury	1450	N	<0.0005	<0.0005	<0.01	<0.01	0.01	0.2	2
Molybdenum	1450	N	0.004	0.005	<0.05	0.05	0.5	10	30
Nickel	1450	N	0.007	<0.001	<0.05	<0.05	0.4	10	40
Lead	1450	N	<0.001	<0.001	<0.01	<0.01	0.5	10	50
Antimony	1450	N	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	1450	N	0.003	0.003	0.01	0.03	0.1	0.5	7
Zinc	1450	N	0.011	0.005	<0.5	<0.5	4	50	200
Chloride	1220	N	28	7.4	56	86.2	800	15000	25000
Fluoride	1220	N	0.34	0.078	<1	<1	10	150	500
Sulfate	1220	N	120	54	240	579	1000	20000	50000
Total Dissolved Solids	1040	N	230	98	460	1060	4000	60000	100000
Phenol Index	1920	N	<0.030	<0.030	<0.5	<0.5	1		
Dissolved Organic Carbon	1610	N	63	40	126	414	500	800	1000

Solid Information

Dry mass of test portion/kg	0.175

Leach Test Information

Leachant volume 1st extract/l	0.202
Leachant volume 2nd extract/l	1.4
Eluate recovered from 1st extract/l	0.104

All tests undertaken between 6-Nov-2012 and 15-Nov-2012
* Accreditation status
This report should be interpreted in conjunction with the notes on the accompanying cover page.

Chemtest
LABORATORY TEST REPORT

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

Causeway Geotech Ltd.
8 Drumahiskey Road
Balnamore, Ballymoney
Co. Antrim
BT53 7QL

FAO Paul Dunlop

Results of analysis of 6 samples received 6 November 2012

12-390- Dunkineely Landfill, Donegal

Report Date 15 November 2012

Login Batch No	**215823**
Chemtest LIMS ID	AH92628 Soil: AH92625
Sample ID	BH05
Sample No	
Sampling Date	00:00:00
Depth	0.50m

Solid Waste Analysis

Determinand ↓	SOP ↓	*	Units ↓			Landfill Waste Acceptance Criteria Limits: Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	M	%		3.7	3	5	6
Loss on Ignition	2610	N	%		10.9			10
Total BTEX	2761	M	mg kg^{-1}		<0.005	6		
Total PCBs (7 congeners)	2811	N	mg kg^{-1}		<1	1		
TPH Total WAC	2670	M	mg kg^{-1}		< 10	500		
Total (of 17) PAHs	2700	N	mg kg^{-1}		<2	100		
pH	2010	M			7.1		>6	
Acid Neutralisation Capacity	2015		mol kg^{-1}		0.003			

Eluate Analysis

Determinand ↓	SOP ↓	*	2:1 Eluate mg l^{-1}	8:1 Eluate mg l^{-1}	2:1 Eluate mg kg^{-1}	Cumulative 10:1 Eluate mg kg^{-1}	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
Arsenic	1450	N	0.002	<0.001	<0.05	<0.05	0.5	2	25
Barium		N	0.019	0.008	<0.5	<0.5	20	100	300
Cadmium	1450	N	<0.0005	<0.0005	<0.01	<0.01	0.04	1	5
Chromium	1450	N	0.003	<0.001	<0.05	<0.05	0.5	10	70
Copper	1450	N	0.005	0.001	<0.05	<0.05	2	50	100
Mercury	1450	N	<0.0005	<0.0005	<0.01	<0.01	0.01	0.2	2
Molybdenum	1450	N	0.002	0.002	<0.05	<0.05	0.5	10	30
Nickel	1450	N	0.003	<0.001	<0.05	<0.05	0.4	10	40
Lead	1450	N	0.013	0.006	0.03	0.06	0.5	10	50
Antimony	1450	N	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	1450	N	0.002	0.002	<0.01	0.02	0.1	0.5	7
Zinc	1450	N	0.009	0.004	<0.5	<0.5	4	50	200
Chloride	1220	N	16	4	32	44.1	800	15000	25000
Fluoride	1220	N	0.16	0.14	<1	1.41	10	150	500
Sulfate	1220	N	38	9.5	76	105	1000	20000	50000
Total Dissolved Solids	1040	N	170	75	340	783	4000	60000	100000
Phenol Index	1920	N	<0.030	<0.030	<0.5	<0.5	1		
Dissolved Organic Carbon	1610	N	44	17	88	179	500	800	1000

Solid Information

Dry mass of test portion/kg	0.175

Leach Test Information

Leachant volume 1st extract/l	0.198
Leachant volume 2nd extract/l	1.4
Eluate recovered from 1st extract/l	0.06

All tests undertaken between 6-Nov-2012 and 15-Nov-2012
* Accreditation status
This report should be interpreted in conjunction with the notes on the accompanying cover page.

Appendix B
Laboratory Analytical Results - Waters

ALcontrol Laboratories

Unit 18A
Rosemount Business Park
Ballycoolin
Dublin 11
Tel : (0035) 3188 29893

RPS Consultants Ltd
Elmwood House
74 Boucher Road
Belfast

Attention: Joseph McGrath

CERTIFICATE OF ANALYSIS

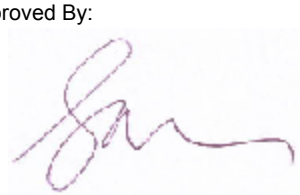
Date:	22 November 2012
Customer:	D_RPSCON_BFT
Sample Delivery Group (SDG):	121114-42
Your Reference:	
Location:	Dunkineely
Report No:	202755

We received 10 samples on Tuesday November 13, 2012 and 8 of these samples were scheduled for analysis which was completed on Thursday November 22, 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

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
6498002	BH01			12/11/2012
6498003	BH02			12/11/2012
6503438	BH02			07/11/2012
6498006	BH04			12/11/2012
6498009	BH05			12/11/2012
6498004	BH03A			12/11/2012
6498005	BH03B			12/11/2012
6498010	SW1			12/11/2012
6498011	SW2			12/11/2012
6503440	SW2			07/11/2012

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

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

LIQUID

Results Legend

X Test

N No Determination Possible

	Lab Sample No(s)		6498002						6498003			6498006						6498009						6498004						6498005						6498010						6498011
	Customer Sample Reference		BH01						BH02			BH04						BH05						BH03A						BH03B						SW1						SW2
	AGS Reference																																									
	Depth (m)																																									
	Container		1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	0.5l glass bottle (AL	1l green glass bottle	1lplastic (ALE221)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	1l green glass bottle
Acid Herbicides (W)	All	NDPs: 0 Tests: 8	X							X		X						X						X						X						X						X
Alkalinity as CaCO3	All	NDPs: 0 Tests: 8		X							X		X						X						X						X						X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8			X						X			X						X						X						X						X				
Anions by Kone (w)	All	NDPs: 0 Tests: 8		X							X		X						X						X						X						X					
BOD True Total	All	NDPs: 0 Tests: 8		X							X		X						X						X						X						X					
COD Unfiltered	All	NDPs: 0 Tests: 8		X							X		X						X						X						X						X					
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 8		X							X		X						X						X						X						X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 8				X				X					X						X						X						X						X			
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8		X							X		X						X						X						X						X					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 4						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
Fluoride	All	NDPs: 0 Tests: 8		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						X						X						X		

CERTIFICATE OF ANALYSIS

SDG: 121114-42
Job: D_RPSCON_BFT-73
Client Reference:

Location: Dunkineely
Customer: RPS Consultants Ltd
Attention: Joseph McGrath

Order Number: 240467740
Report Number: 202755
Superseded Report:

LIQUID

Results Legend

X Test

N No Determination Possible

Lab Sample No(s)			6498002						6498003			6498006						6498009						6498004						6498005						6498010						6498011
Customer Sample Reference			BH01						BH02			BH04						BH05						BH03A						BH03B						SW1						SW2
AGS Reference																																										
Depth (m)																																										
Container			1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	0.5l glass bottle (AL	1l green glass bottle	1lplastic (ALE221)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc	1l green glass bottle
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8		X							X		X						X						X						X						X					
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 8		X							X		X						X						X						X						X					
Mercury Dissolved	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					
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8				X					X				X						X						X						X						X			
OC, OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 8	X							X		X						X						X						X						X						X
PAH Spec MS - Aqueous (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					
Phenols by HPLC (W)	All	NDPs: 0 Tests: 8			X					X				X						X						X						X						X				
Sulphide	All	NDPs: 0 Tests: 4															X						X						X						X							
Suspended Solids	All	NDPs: 0 Tests: 8		X							X		X						X						X						X						X					
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 8	X							X		X						X						X						X						X						X
Total Nitrogen	All	NDPs: 0 Tests: 8		X							X		X						X						X						X						X					
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8	X							X		X						X						X						X						X						X

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

LIQUID

Results Legend

X Test

N No Determination Possible

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
TPH CWG (W)	All	NDPs: 0 Tests: 8	6498002	BH01			1l green glass bottle
			6498003	BH02			1l plastic (ALE221)
			6498006	BH04			H2SO4 (ALE244)
			6498009	BH05			NaOH (ALE245)
			6498004	BH03A			Vial (ALE297)
			6498005	BH03B			ZnAc
			6498010	SW1			0.5l glass bottle (AL
			6498011	SW2			1l green glass bottle
VOC MS (W)	All	NDPs: 0 Tests: 8	6498002	BH01			1l green glass bottle
			6498003	BH02			1l plastic (ALE221)
			6498006	BH04			H2SO4 (ALE244)
			6498009	BH05			NaOH (ALE245)
			6498004	BH03A			Vial (ALE297)
			6498005	BH03B			ZnAc
			6498010	SW1			1l green glass bottle
			6498011	SW2			1l plastic (ALE221)
							H2SO4 (ALE244)
							NaOH (ALE245)
							Vial (ALE297)
							ZnAc
							1l green glass bottle

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

LIQUID

Results Legend

X **Test**

N **No Determination Possible**

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container				
			6498011	SW2			1plastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	ZnAc
Alkalinity as CaCO3	All	NDPs: 0 Tests: 8					X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8						X			
Anions by Kone (w)	All	NDPs: 0 Tests: 8					X				
BOD True Total	All	NDPs: 0 Tests: 8					X				
COD Unfiltered	All	NDPs: 0 Tests: 8					X				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 8					X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 8							X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8					X				
Easily Liberated Sulphide	All	NDPs: 0 Tests: 4									X
Fluoride	All	NDPs: 0 Tests: 8					X				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8								X	
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8					X				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 8					X				
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 8					X				
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8							X		

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

LIQUID

Results Legend

X **Test**

N **No Determination Possible**

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container			
			6498011	SW2			1plastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297) ZnAc
pH Value	All	NDPs: 0 Tests: 8					X			
Phenols by HPLC (W)	All	NDPs: 0 Tests: 8						X		
Suspended Solids	All	NDPs: 0 Tests: 8					X			
Total Nitrogen	All	NDPs: 0 Tests: 8					X			
VOC MS (W)	All	NDPs: 0 Tests: 8								X

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
Suspended solids, Total	<2 mg/l	TM022		8970 #	1880 #	4930 #	11300 #	10900 #	1790 #
Alkalinity, Total as CaCO3	<2 mg/l	TM043		2400 #	350 #	290 #	305 #	330 #	245 #
BOD, unfiltered	<1 mg/l	TM045		5.7 #	<2 #	15.5 #	5.15 #	2.06 #	<2 #
Organic Carbon, Total	<3 mg/l	TM090		3.98 § #	3.13 #	10.8 #	3.33 #	4.18 #	6.47 § #
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		<0.2 #	<0.2 #	0.683 #	0.254 #	0.251 #	0.208 #
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099		<0.2 #	<0.2 #	0.829 #	0.308 #	0.305 #	0.253 #
Sulphide	<0.01 mg/l	TM101				<0.01 § #	<0.01 § #	<0.01 § #	<0.01 § #
Fluoride	<0.5 mg/l	TM104		0.686 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #
COD, unfiltered	<7 mg/l	TM107		411 #	168 #	3730 #	880 #	390 #	219 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		0.628 #	0.65 #	0.444 #	0.495 #	0.543 #	0.474 #
Arsenic (diss.filt)	<0.12 µg/l	TM152		1.54 #	0.981 #	2.7 #	1.5 #	1.63 #	1.67 #
Boron (diss.filt)	<9.4 µg/l	TM152		40.9 #	34.5 #	14.3 #	24.7 #	16.1 #	13.5 #
Cadmium (diss.filt)	<0.1 µg/l	TM152		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Chromium (diss.filt)	<0.22 µg/l	TM152		2.1 #	1.99 #	1.8 #	1.69 #	1.69 #	1.73 #
Copper (diss.filt)	<0.85 µg/l	TM152		1.15 #	1.04 #	1.32 #	<0.85 #	<0.85 #	0.866 #
Lead (diss.filt)	<0.02 µg/l	TM152		0.088 #	0.194 #	0.249 #	0.217 #	0.095 #	0.077 #
Manganese (diss.filt)	<0.04 µg/l	TM152		224 #	222 #	1260 #	503 #	1070 #	922 #
Nickel (diss.filt)	<0.15 µg/l	TM152		3.86 #	2.18 #	2.13 #	1.95 #	2.05 #	1.99 #
Selenium (diss.filt)	<0.39 µg/l	TM152		2.34 #	1.54 #	2.15 #	1.42 #	1.35 #	1.42 #
Zinc (diss.filt)	<0.41 µg/l	TM152		3.7 #	1.59 #	0.66 #	1.49 #	0.903 #	1.07 #
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
Nitrite as NO2	<0.05 mg/l	TM184		<0.05 #	<0.05 § #	<0.25 #	<0.05 #	<0.05 #	<0.05 #
Sulphate	<2 mg/l	TM184		21.9 #	22.5 #	<2 #	10.5 #	14.6 #	8.8 #
Chloride	<2 mg/l	TM184		26.8 #	53.8 #	37.4 #	37.3 #	37.5 #	25.3 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184		<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
Nitrate as NO3	<0.3 mg/l	TM184		<0.3 #	1.05 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		<0.1 #	0.244 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
PCB congener 118	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 77	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 81	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 105	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 114	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
PCB congener 123	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 126	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 156	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 157	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 167	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 169	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 189	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Nitrogen, Kjeldahl	<1 mg/l	TM212		<1	<1	1.31	<1	<1	<1
Organic nitrogen, Total	<1 mg/l	TM212		<1	<1	<1	<1	<1	<1
Nitrogen, Total	<1 mg/l	TM212		<1	<1	1.31	<1	<1	<1
Cyanide, Total	<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		119 #	102 #	81.3 #	85.8 #	101 #	89.9 #
Sodium (diss.filt)	<0.076 mg/l	TM228		21.7 #	33.4 #	24 #	26 #	22.4 #	19.9 #
Magnesium (diss.filt)	<0.036 mg/l	TM228		19 #	16.3 #	6.74 #	7.01 #	9.28 #	6.69 #
Potassium (diss.filt)	<2.335 mg/l	TM228		3.24 #	3.22 #	<2.34 #	<2.34 #	<2.34 #	<2.34 #
Iron (diss.filt)	<0.019 mg/l	TM228		<0.019 #	0.0293 #	0.562 #	0.0754 #	0.125 #	0.0353 #
Sulphide, Easily liberated	<0.1 mg/l	TM239		0.26	<0.1				
Chromium, Hexavalent	<0.03 mg/l	TM241		<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #
pH	<1 pH Units	TM256		7.7 #	7.72 #	7.11 #	7.7 #	7.44 #	7.42 #
Phenol	<0.002 mg/l	TM259		<0.002 #	<0.002 § #	<0.002 #	<0.002 #	<0.002 #	<0.002 #
Cresols	<0.006 mg/l	TM259		<0.006 #	<0.006 § #	<0.006 #	<0.006 #	<0.006 #	<0.006 #
Xylenols	<0.008 mg/l	TM259		<0.008 #	<0.008 § #	<0.008 #	<0.008 #	<0.008 #	<0.008 #
2,3,5-Trimethylphenol	<0.003 mg/l	TM259		<0.003 #	<0.003 § #	<0.003 #	<0.003 #	<0.003 #	<0.003 #
2-Isopropylphenol	<0.006 mg/l	TM259		<0.006 #	<0.006 § #	<0.006 #	<0.006 #	<0.006 #	<0.006 #
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259		<0.025	<0.025 §	<0.025	<0.025	<0.025	<0.025
Sulphur, Free	<0.05 mg/l	TM294		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	12/11/2012	12/11/2012				
			Sample Time	.	.				
			Date Received	13/11/2012	13/11/2012				
			SDG Ref	121114-42	121114-42				
			Lab Sample No.(s)	6498010	6498011				
			AGS Reference						
Suspended solids, Total	<2 mg/l	TM022		2.5 #	10.5 #				
Alkalinity, Total as CaCO3	<2 mg/l	TM043		50 #	39 #				
BOD, unfiltered	<1 mg/l	TM045		<2 #	<2 #				
Organic Carbon, Total	<3 mg/l	TM090		17.1 #	17.5 § #				
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		<0.2 #	<0.2 #				
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099		<0.2 #	<0.2 #				
Fluoride	<0.5 mg/l	TM104		<0.5 #	<0.5 #				
COD, unfiltered	<7 mg/l	TM107		42.1 #	41.9 #				
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		0.12 #	0.116 #				
Arsenic (diss.filt)	<0.12 µg/l	TM152		0.762 #	1.13 #				
Boron (diss.filt)	<9.4 µg/l	TM152		<9.4 #	10.1 #				
Cadmium (diss.filt)	<0.1 µg/l	TM152		<0.1 #	<0.1 #				
Chromium (diss.filt)	<0.22 µg/l	TM152		0.606 #	0.782 #				
Copper (diss.filt)	<0.85 µg/l	TM152		1.33 #	2.04 #				
Lead (diss.filt)	<0.02 µg/l	TM152		0.094 #	0.176 #				
Manganese (diss.filt)	<0.04 µg/l	TM152		2.6 #	49.9 #				
Nickel (diss.filt)	<0.15 µg/l	TM152		0.996 #	1.78 #				
Selenium (diss.filt)	<0.39 µg/l	TM152		1.45 #	2.12 #				
Zinc (diss.filt)	<0.41 µg/l	TM152		1.88 #	5.87 #				
Mercury (diss.filt)	<0.01 µg/l	TM183		0.0107 #	<0.01 #				
Nitrite as NO2	<0.05 mg/l	TM184		<0.05 #	<0.05 #				
Sulphate	<2 mg/l	TM184		<2 #	<2 #				
Chloride	<2 mg/l	TM184		16.8 #	15.1 #				
Phosphate (ortho) as PO4	<0.05 mg/l	TM184		<0.05 #	<0.05 #				
Nitrate as NO3	<0.3 mg/l	TM184		0.559 #	<0.3 #				
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.132 #	<0.1 #				
PCB congener 118	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 77	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 81	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 105	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 114	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 123	<0.015 µg/l	TM197		<0.015	<0.015				

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
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*	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	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	12/11/2012	12/11/2012				
			Sample Time	.	.				
			Date Received	13/11/2012	13/11/2012				
			SDG Ref	121114-42	121114-42				
			Lab Sample No.(s)	6498010	6498011				
			AGS Reference						
PCB congener 126	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 156	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 157	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 167	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 169	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 189	<0.015 µg/l	TM197		<0.015	<0.015				
Nitrogen, Kjeldahl	<1 mg/l	TM212		1.08	1.04				
Organic nitrogen, Total	<1 mg/l	TM212		1.01	<1				
Nitrogen, Total	<1 mg/l	TM212		1.08	1.04				
Cyanide, Total	<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		13.9 #	12.4 #				
Sodium (diss.filt)	<0.076 mg/l	TM228		10.8 #	10.6 #				
Magnesium (diss.filt)	<0.036 mg/l	TM228		1.89 #	2.16 #				
Potassium (diss.filt)	<2.335 mg/l	TM228		3.24 #	3.09 #				
Iron (diss.filt)	<0.019 mg/l	TM228		0.258 #	0.472 #				
Sulphide, Easily liberated	<0.1 mg/l	TM239		<0.1	<0.1				
Chromium, Hexavalent	<0.03 mg/l	TM241		<0.03 #	<0.03 #				
pH	<1 pH Units	TM256		7.6 #	7.06 #				
Phenol	<0.002 mg/l	TM259		<0.002 #	<0.002 #				
Cresols	<0.006 mg/l	TM259		<0.006 #	<0.006 #				
Xylenols	<0.008 mg/l	TM259		<0.008 #	<0.008 #				
2,3,5-Trimethylphenol	<0.003 mg/l	TM259		<0.003 #	<0.003 #				
2-Isopropylphenol	<0.006 mg/l	TM259		<0.006 #	<0.006 #				
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259		<0.025	<0.025				
Sulphur, Free	<0.05 mg/l	TM294		<0.05	<0.05				

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Acid Herbicides (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
Phenoxyacetic acid (PAA)	<0.031 µg/l	TM186		0.261 #	<0.031 #	0.118 #	<0.031 #	<0.031 #	0.0896 #
Dicamba	<0.033 µg/l	TM186		<0.033 #	<0.033 #	<0.033 #	<0.033 #	<0.033 #	<0.033 #
Phenoxypropionic acid (PPA)	<0.023 µg/l	TM186		<0.023	<0.023	<0.023	<0.023	<0.023	<0.023
4-Chlorophenoxyacetic acid (4-CPA)	<0.037 µg/l	TM186		<0.037 #	<0.037 #	<0.037 #	<0.037 #	<0.037 #	<0.037 #
4-Phenoxybutyric acid	<0.019 µg/l	TM186		<0.019 #	<0.019 #	<0.019 #	<0.019 #	<0.019 #	<0.019 #
Bentazone	<0.018 µg/l	TM186		<0.018 #	<0.018 #	<0.018 #	<0.018 #	<0.018 #	<0.018 #
Bromoxynil	<0.022 µg/l	TM186		<0.022	<0.022	<0.022	<0.022	<0.022	<0.022
2,4-Dichlorophenoxy acetic acid (2,4-D)	<0.026 µg/l	TM186		<0.026 #	<0.026 #	<0.026 #	<0.026 #	<0.026 #	<0.026 #
2-methyl-4-Chlorophenoxy acetic acid (MCPA)	<0.03 µg/l	TM186		<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #
2-methyl-4,6-Dinitrophenol	<0.041 µg/l	TM186		<0.041	<0.041	<0.041	<0.041	<0.041	<0.041
Triclopyr	<0.022 µg/l	TM186		<0.022 #	<0.022 #	<0.022 #	<0.022 #	<0.022 #	<0.022 #
Ioxynil	<0.017 µg/l	TM186		<0.017	<0.017	<0.017	<0.017	<0.017	<0.017
2,4-Dichlorophenoxy acetic acid (2,4-DP)	<0.015 µg/l	TM186		<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #
2,4,5-Trichlorophenol (2,4,5-T)	<0.029 µg/l	TM186		<0.029 #	<0.029 #	<0.029 #	<0.029 #	<0.029 #	<0.029 #
Mecoprop (MCPP)	<0.025 µg/l	TM186		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
4-(2,4-Dichlorophenoxy) butyric acid (2,4-D)	<0.022 µg/l	TM186		<0.022 #	<0.022 #	<0.022 #	<0.022 #	<0.022 #	<0.022 #
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)	<0.029 µg/l	TM186		<0.029 #	<0.029 #	<0.029 #	<0.029 #	<0.029 #	<0.029 #
2-(2,4,5-Trichlorophenoxy) proprionic acid	<0.024 µg/l	TM186		<0.024 #	<0.024 #	<0.024 #	<0.024 #	<0.024 #	<0.024 #
Dinoseb	<0.027 µg/l	TM186		<0.027	<0.027	<0.027	<0.027	<0.027	<0.027
Pentachlorophenol	<0.032 µg/l	TM186		<0.032	<0.032	<0.032	<0.032	<0.032	<0.032

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Acid Herbicides (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	12/11/2012	12/11/2012				
			Sample Time	.	.				
			Date Received	13/11/2012	13/11/2012				
			SDG Ref	121114-42	121114-42				
			Lab Sample No.(s)	6498010	6498011				
			AGS Reference						
Phenoxyacetic acid (PAA)	<0.031 µg/l	TM186		<0.031 #	<0.031 #				
Dicamba	<0.033 µg/l	TM186		<0.033 #	<0.033 #				
Phenoxypropionic acid (PPA)	<0.023 µg/l	TM186		<0.023	<0.023				
4-Chlorophenoxyacetic acid (4-CPA)	<0.037 µg/l	TM186		<0.037 #	<0.037 #				
4-Phenoxybutyric acid	<0.019 µg/l	TM186		<0.019 #	<0.019 #				
Bentazone	<0.018 µg/l	TM186		<0.018 #	<0.018 #				
Bromoxynil	<0.022 µg/l	TM186		<0.022	<0.022				
2,4-Dichlorophenoxy acetic acid (2,4-D)	<0.026 µg/l	TM186		<0.026 #	<0.026 #				
2-methyl-4-Chlorophenoxy acetic acid (MCPA)	<0.03 µg/l	TM186		<0.03 #	<0.03 #				
2-methyl-4,6-Dinitrophenol	<0.041 µg/l	TM186		<0.041	<0.041				
Triclopyr	<0.022 µg/l	TM186		<0.022 #	<0.022 #				
Ioxynil	<0.017 µg/l	TM186		<0.017	<0.017				
2,4-Dichlorophenoxy acetic acid (2,4-DP)	<0.015 µg/l	TM186		<0.015 #	<0.015 #				
2,4,5-Trichlorophenol (2,4,5-T)	<0.029 µg/l	TM186		<0.029 #	<0.029 #				
Mecoprop (MCPP)	<0.025 µg/l	TM186		<0.025	<0.025				
4-(2,4-Dichlorophenoxy) butyric acid (2,4-D)	<0.022 µg/l	TM186		<0.022 #	<0.022 #				
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)	<0.029 µg/l	TM186		<0.029 #	<0.029 #				
2-(2,4,5-Trichlorophenoxy) proprionic acid	<0.024 µg/l	TM186		<0.024 #	<0.024 #				
Dinoseb	<0.027 µg/l	TM186		<0.027	<0.027				
Pentachlorophenol	<0.032 µg/l	TM186		<0.032	<0.032				

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

OC, OP Pesticides and Triazine Herb

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
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Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
Atrazine	<1 µg/l	TM231		<1	<1	<1	<1	<1	<1
Simazine	<1 µg/l	TM231		<1	<1	<1	<1	<1	<1
Dichlorvos	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mevinphos	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tecnazene	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobenzene	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Trifluralin	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Quintozene (PCNB)	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Diazinon	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Triallate	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Etrimphos	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Disulfoton	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Propetamphos	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chlorpyriphos methyl	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dimethoate	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aldrin	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chlorothalonil	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
beta-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chlorpyriphos	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Telodrin	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Methyl parathion	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Isodrin	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Malathion	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fenitrothion	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor epoxide	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Triadimefon	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pendimethalin	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

OC, OP Pesticides and Triazine Herb

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
Parathion	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o,p-DDE	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chlorfenvinphos	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulphan I	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Trans-chlordane	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
cis-Chlordane	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p,p-DDE	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o,p-TDE (DDD)	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endrin	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o,p-DDT	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p,p-TDE (DDD)	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ethion	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulphan II	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p,p-DDT	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Carbophenothion	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o,p-Methoxychlor	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Triazophos	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p,p-Methoxychlor	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulphan sulphate	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Permethrin I	<0.01 µg/l	TM231		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phosalone	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Permethrin II	<0.01 µg/l	TM231		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-methyl	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Azinphos-ethyl	<0.01 µg/l	TM231		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

OC, OP Pesticides and Triazine Herb

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
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*	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
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Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	12/11/2012	12/11/2012				
			Sample Time	.	.				
			Date Received	13/11/2012	13/11/2012				
			SDG Ref	121114-42	121114-42				
			Lab Sample No.(s)	6498010	6498011				
			AGS Reference						
Atrazine	<1 µg/l	TM231		<1	<1				
Simazine	<1 µg/l	TM231		<1	<1				
Dichlorvos	<0.01 µg/l	TM231		<0.01	<0.01				
Mevinphos	<0.01 µg/l	TM231		<0.01	<0.01				
Tecnazene	<0.01 µg/l	TM231		<0.01	<0.01				
Hexachlorobenzene	<0.01 µg/l	TM231		<0.01	<0.01				
Trifluralin	<0.01 µg/l	TM231		<0.01	<0.01				
alpha-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231		<0.01	<0.01				
Quintozene (PCNB)	<0.01 µg/l	TM231		<0.01	<0.01				
Diazinon	<0.01 µg/l	TM231		<0.01	0.0105				
Triallate	<0.01 µg/l	TM231		<0.01	<0.01				
Etrimphos	<0.01 µg/l	TM231		<0.01	<0.01				
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231		<0.01	<0.01				
Disulfoton	<0.01 µg/l	TM231		<0.01	<0.01				
Propetamphos	<0.01 µg/l	TM231		<0.01	<0.01				
Heptachlor	<0.01 µg/l	TM231		<0.01	<0.01				
Chlorpyriphos methyl	<0.01 µg/l	TM231		<0.01	<0.01				
Dimethoate	<0.01 µg/l	TM231		<0.01	<0.01				
Aldrin	<0.01 µg/l	TM231		<0.01	<0.01				
Chlorothalonil	<0.01 µg/l	TM231		<0.01	<0.01				
Pirimiphos-methyl	<0.01 µg/l	TM231		<0.01	<0.01				
beta-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231		<0.01	<0.01				
Chlorpyriphos	<0.01 µg/l	TM231		<0.01	<0.01				
Telodrin	<0.01 µg/l	TM231		<0.01	<0.01				
Methyl parathion	<0.01 µg/l	TM231		<0.01	<0.01				
Isodrin	<0.01 µg/l	TM231		<0.01	<0.01				
Malathion	<0.01 µg/l	TM231		<0.01	<0.01				
Fenthion	<0.01 µg/l	TM231		<0.01	<0.01				
Fenitrothion	<0.01 µg/l	TM231		<0.01	<0.01				
Heptachlor epoxide	<0.01 µg/l	TM231		<0.01	<0.01				
Triadimefon	<0.01 µg/l	TM231		<0.01	<0.01				
Pendimethalin	<0.01 µg/l	TM231		<0.01	<0.01				

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

OC, OP Pesticides and Triazine Herb

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	12/11/2012	12/11/2012				
			Sample Time	.	.				
			Date Received	13/11/2012	13/11/2012				
			SDG Ref	121114-42	121114-42				
			Lab Sample No.(s)	6498010	6498011				
			AGS Reference						
Parathion	<0.01 µg/l	TM231		<0.01	<0.01				
o,p-DDE	<0.01 µg/l	TM231		<0.01	<0.01				
Chlorfenvinphos	<0.01 µg/l	TM231		<0.01	<0.01				
Endosulphan I	<0.01 µg/l	TM231		<0.01	<0.01				
Trans-chlordane	<0.01 µg/l	TM231		<0.01	<0.01				
cis-Chlordane	<0.01 µg/l	TM231		<0.01	<0.01				
p,p-DDE	<0.01 µg/l	TM231		<0.01	<0.01				
Dieldrin	<0.01 µg/l	TM231		<0.01	<0.01				
o,p-TDE (DDD)	<0.01 µg/l	TM231		<0.01	<0.01				
Endrin	<0.01 µg/l	TM231		<0.01	<0.01				
o,p-DDT	<0.01 µg/l	TM231		<0.01	<0.01				
p,p-TDE (DDD)	<0.01 µg/l	TM231		<0.01	<0.01				
Ethion	<0.01 µg/l	TM231		<0.01	<0.01				
Endosulphan II	<0.01 µg/l	TM231		<0.01	<0.01				
p,p-DDT	<0.01 µg/l	TM231		<0.01	<0.01				
Carbophenothion	<0.01 µg/l	TM231		<0.01	<0.01				
o,p-Methoxychlor	<0.01 µg/l	TM231		<0.01	<0.01				
Triazophos	<0.01 µg/l	TM231		<0.01	<0.01				
p,p-Methoxychlor	<0.01 µg/l	TM231		<0.01	<0.01				
Endosulphan sulphate	<0.01 µg/l	TM231		<0.01	<0.01				
Permethrin I	<0.01 µg/l	TM231		<0.02	<0.02				
Phosalone	<0.01 µg/l	TM231		<0.01	<0.01				
Permethrin II	<0.01 µg/l	TM231		<0.02	<0.02				
Azinphos-methyl	<0.01 µg/l	TM231		<0.01	<0.01				
Azinphos-ethyl	<0.01 µg/l	TM231		<0.01	<0.01				

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
Naphthalene (aq)	<0.1 µg/l	TM178		0.403 #	0.138 #	0.398 #	<0.1 #	0.15 #	0.169 #
Acenaphthene (aq)	<0.015 µg/l	TM178		<0.015 #	<0.015 #	<0.03 #	<0.015 #	<0.015 #	<0.015 #
Acenaphthylene (aq)	<0.011 µg/l	TM178		<0.011 #	<0.011 #	<0.022 #	<0.011 #	<0.011 #	<0.011 #
Fluoranthene (aq)	<0.017 µg/l	TM178		0.0488 #	<0.017 #	0.183 #	0.0596 #	0.018 #	<0.017 #
Anthracene (aq)	<0.015 µg/l	TM178		0.0332 #	<0.015 #	0.0336 #	<0.015 #	<0.015 #	<0.015 #
Phenanthrene (aq)	<0.022 µg/l	TM178		1.09 #	0.0267 #	0.0927 #	0.0751 #	0.154 #	<0.022 #
Fluorene (aq)	<0.014 µg/l	TM178		0.551 #	<0.014 #	<0.028 #	0.0195 #	0.0423 #	<0.014 #
Chrysene (aq)	<0.013 µg/l	TM178		0.401 #	0.0139 #	0.161 #	0.0672 #	0.0792 #	<0.013 #
Pyrene (aq)	<0.015 µg/l	TM178		0.0842 #	<0.015 #	0.167 #	0.0544 #	0.0235 #	<0.015 #
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178		0.0346 #	<0.017 #	0.134 #	0.0534 #	<0.017 #	<0.017 #
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178		0.184 #	<0.023 #	0.116 #	0.0602 #	0.0532 #	<0.023 #
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178		0.0287 #	<0.027 #	0.107 #	0.0452 #	<0.027 #	<0.027 #
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178		0.0365 #	<0.009 #	0.11 #	0.0511 #	0.0133 #	<0.009 #
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178		0.0279 #	<0.016 #	<0.032 #	0.0191 #	<0.016 #	<0.016 #
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178		0.0439 #	<0.016 #	0.09 #	0.0353 #	0.0225 #	<0.016 #
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178		0.021 #	<0.014 #	0.07 #	0.0304 #	<0.014 #	<0.014 #
PAH, Total Detected USEPA 16 (aq)	<0.247 µg/l	TM178		2.99	<0.247	1.73	0.571	0.556	<0.247

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2
			Depth (m)	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012
			Sample Time	.	.
			Date Received	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42
			Lab Sample No.(s)	6498010	6498011
			AGS Reference		
Naphthalene (aq)	<0.1 µg/l	TM178		0.125 #	0.131 #
Acenaphthene (aq)	<0.015 µg/l	TM178		<0.015 #	<0.015 #
Acenaphthylene (aq)	<0.011 µg/l	TM178		<0.011 #	<0.011 #
Fluoranthene (aq)	<0.017 µg/l	TM178		<0.017 #	<0.017 #
Anthracene (aq)	<0.015 µg/l	TM178		<0.015 #	<0.015 #
Phenanthrene (aq)	<0.022 µg/l	TM178		<0.022 #	<0.022 #
Fluorene (aq)	<0.014 µg/l	TM178		<0.014 #	<0.014 #
Chrysene (aq)	<0.013 µg/l	TM178		<0.013 #	<0.013 #
Pyrene (aq)	<0.015 µg/l	TM178		<0.015 #	<0.015 #
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178		<0.017 #	<0.017 #
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178		<0.023 #	<0.023 #
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178		<0.027 #	<0.027 #
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178		<0.009 #	<0.009 #
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178		<0.016 #	<0.016 #
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178		<0.016 #	<0.016 #
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178		<0.014 #	<0.014 #
PAH, Total Detected USEPA 16 (aq)	<0.247 µg/l	TM178		<0.247	<0.247

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2-Chlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2-Methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
3-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Azobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2	<2	<2	<2	<2	<2
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Carbazole (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Dibenzofuran (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
Diethyl phthalate (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Dimethyl phthalate (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<5	<5	<5	<5	<5	<5
Hexachlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Pentachlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Phenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Hexachloroethane (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Nitrobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Isophorone (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	12/11/2012	12/11/2012				
			Sample Time	.	.				
			Date Received	13/11/2012	13/11/2012				
			SDG Ref	121114-42	121114-42				
			Lab Sample No.(s)	6498010	6498011				
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1	<1				
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1				
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1				
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1				
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1	<1				
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1	<1				
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1	<1				
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1	<1				
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1	<1				
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1	<1				
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1	<1				
2-Chlorophenol (aq)	<1 µg/l	TM176		<1	<1				
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1	<1				
2-Methylphenol (aq)	<1 µg/l	TM176		<1	<1				
2-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1				
2-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1				
3-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1				
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1	<1				
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1	<1				
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1				
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1	<1				
4-Methylphenol (aq)	<1 µg/l	TM176		<1	<1				
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1				
4-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1				
Azobenzene (aq)	<1 µg/l	TM176		<1	<1				
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1	<1				
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1	<1				
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2	<2				
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1	<1				
Carbazole (aq)	<1 µg/l	TM176		<1	<1				
Dibenzofuran (aq)	<1 µg/l	TM176		<1	<1				
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1	<1				

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	12/11/2012	12/11/2012				
			Sample Time	.	.				
			Date Received	13/11/2012	13/11/2012				
			SDG Ref	121114-42	121114-42				
			Lab Sample No.(s)	6498010	6498011				
			AGS Reference						
Diethyl phthalate (aq)	<1 µg/l	TM176		<1	<1				
Dimethyl phthalate (aq)	<1 µg/l	TM176		<1	<1				
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<5	<5				
Hexachlorobenzene (aq)	<1 µg/l	TM176		<1	<1				
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<1	<1				
Pentachlorophenol (aq)	<1 µg/l	TM176		<1	<1				
Phenol (aq)	<1 µg/l	TM176		<1	<1				
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<1	<1				
Hexachloroethane (aq)	<1 µg/l	TM176		<1	<1				
Nitrobenzene (aq)	<1 µg/l	TM176		<1	<1				
Isophorone (aq)	<1 µg/l	TM176		<1	<1				
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<1	<1				
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<1	<1				

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

TPH CWG (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
GRO Surrogate % recovery**	%	TM245		92	98 §	84	90	88	95
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		19	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174		721	<10	308	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174		740	<10	308	<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		20	<10	121	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174		20	<10	121	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174		761	<10	446	<10	<10	<10

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

TPH CWG (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	12/11/2012	12/11/2012				
			Sample Time	.	.				
			Date Received	13/11/2012	13/11/2012				
			SDG Ref	121114-42	121114-42				
			Lab Sample No.(s)	6498010	6498011				
			AGS Reference						
GRO Surrogate % recovery**	%	TM245		90	99				
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:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
Dibromofluoromethane**	%	TM208		113	111 §	110	113	111	111
Toluene-d8**	%	TM208		101	100 §	95.8	99	98.5	100
4-Bromofluorobenzene**	%	TM208		101	97.6 §	80.9	93.2	90.8	97.8
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Chloromethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Bromomethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208		<3 #	<3 § #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1 §	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208		<1	<1 §	<1	<1	<1	<1
Benzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Trichloroethene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1	<1 §	<1	<1	<1	<1
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 § #	1.34 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208		<1	<1 §	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1 §	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012	13/11/2012
			SDG Ref	121114-42	121114-42	121114-42	121114-42	121114-42	121114-42
			Lab Sample No.(s)	6498002	6498003	6498006	6498009	6498004	6498005
			AGS Reference						
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 § #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1 §	<1	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	12/11/2012	12/11/2012				
			Sample Time	.	.				
			Date Received	13/11/2012	13/11/2012				
			SDG Ref	121114-42	121114-42				
			Lab Sample No.(s)	6498010	6498011				
			AGS Reference						
Dibromofluoromethane**	%	TM208		114	109				
Toluene-d8**	%	TM208		99.9	100				
4-Bromofluorobenzene**	%	TM208		98.4	98.5				
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 #				

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	12/11/2012	12/11/2012				
			Sample Time	.	.				
			Date Received	13/11/2012	13/11/2012				
			SDG Ref	121114-42	121114-42				
			Lab Sample No.(s)	6498010	6498011				
			AGS Reference						
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #				
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #				
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #				
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 #				

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

VOC MS (W)

Results Legend		Customer Sample R	SW1	SW2				
#	ISO17025 accredited.							
M	*m*CERTS accredited.							
§	Deviating sample.							
aq	Aqueous / settled sample.	Depth (m)	.	.				
diss.filt	Dissolved / filtered sample.	Sample Type	Water(GW/SW)	Water(GW/SW)				
tot.unfilt	Total / unfiltered sample.	Date Sampled	12/11/2012	12/11/2012				
*	Subcontracted test.	Sample 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	13/11/2012	13/11/2012				
		SDG Ref	121114-42	121114-42				
		Lab Sample No.(s)	6498010	6498011				
(F)	Trigger breach confirmed	AGS Reference						

Component	LOD/Units	Method						
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #				
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1				

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
6504285	BH02		LIQUID	Phenols by HPLC (W)	2,3,5-Trimethylphenol	Analysis carried out on unpreserved sample
6504285	BH02		LIQUID	Phenols by HPLC (W)	2-Isopropylphenol	Analysis carried out on unpreserved sample
6504285	BH02		LIQUID	Phenols by HPLC (W)	Cresols	Analysis carried out on unpreserved sample
6504285	BH02		LIQUID	Phenols by HPLC (W)	Phenol	Analysis carried out on unpreserved sample
6504285	BH02		LIQUID	Phenols by HPLC (W)	Phenols, Total Detected 5 speciated	Analysis carried out on unpreserved sample
6504285	BH02		LIQUID	Phenols by HPLC (W)	Xylenols	Analysis carried out on unpreserved sample
6502372	SW2		LIQUID	Total Organic and Inorganic Carbon	Organic Carbon, Total	Sample holding time exceeded
6503315	BH01		LIQUID	Total Organic and Inorganic Carbon	Organic Carbon, Total	Sample holding time exceeded
6503427	BH03B		LIQUID	Total Organic and Inorganic Carbon	Organic Carbon, Total	Sample holding time exceeded
6504011	BH02		LIQUID	Nitrite by Kone (w)	Nitrite as NO2	Sample holding time exceeded
6526306	BH03B		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6532974	BH03A		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6532985	BH05		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6532997	BH04		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6512090	BH02		LIQUID	GRO by GC-FID (W)	Aliphatics >C10-C12	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Aliphatics >C5-C6	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Aliphatics >C6-C8	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Aliphatics >C8-C10	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Aromatics >EC10-EC12	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Aromatics >EC5-EC7	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Aromatics >EC7-EC8	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Aromatics >EC8-EC10	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Benzene	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Ethylbenzene	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	GRO >C5-C12	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	GRO Surrogate % recovery**	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	m,p-Xylene	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	o-Xylene	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Sum of detected BTEX	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Sum of detected Xylenes	Volatile container not received
6512090	BH02		LIQUID	GRO by GC-FID (W)	Toluene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,1,1,2-Tetrachloroethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,1,1-Trichloroethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,1,2,2-Tetrachloroethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,1,2-Trichloroethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,1-Dichloroethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,1-Dichloroethene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,1-Dichloropropene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,2,3-Trichlorobenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,2,3-Trichloropropane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,2,4-Trichlorobenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,2,4-Trimethylbenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,2-Dibromo-3-chloropropane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,2-Dibromoethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,2-Dichlorobenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,2-Dichloroethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,2-Dichloropropane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,3,5-Trichlorobenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,3,5-Trimethylbenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,3-Dichlorobenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,3-Dichloropropane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	1,4-Dichlorobenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	2,2-Dichloropropane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	2-Chlorotoluene	Volatile container not received

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
6512106	BH02		LIQUID	VOC MS (W)	4-Bromofluorobenzene**	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	4-Chlorotoluene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	4-iso-Propyltoluene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Benzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Bromobenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Bromochloromethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Bromodichloromethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Bromoform	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Bromomethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Carbon disulphide	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Carbontetrachloride	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Chlorobenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Chloroethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Chloroform	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Chloromethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	cis-1,2-Dichloroethene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	cis-1,3-Dichloropropene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Dibromochloromethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Dibromofluoromethane**	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Dibromomethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Dichlorodifluoromethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Dichloromethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Ethylbenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Hexachlorobutadiene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Isopropylbenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	m,p-Xylene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Naphthalene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	n-Butylbenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	o-Xylene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Propylbenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	sec-Butylbenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Styrene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	tert-Amyl methyl ether (TAME)	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	tert-Butylbenzene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Tetrachloroethene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Toluene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Toluene-d8**	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	trans-1,2-Dichloroethene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	trans-1,3-Dichloropropene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Trichloroethene	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Trichlorofluoromethane	Volatile container not received
6512106	BH02		LIQUID	VOC MS (W)	Vinyl chloride	Volatile container not received

Note : Test results may be compromised

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters		
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)		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM186	Determination of Acidic Herbicides in Groundwater and Potable Water by LC/MSD Using Selective Ion Monitoring. Agilent Technologies Inc. Application Note 5988-5882EN.	The Determination of Acid Herbicides in Environmental Water Samples and Leachates by LC/MS QQQ.		
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		
TM212	SO/TR 11905-2: 1997. Water quality – Determination of nitrogen –Part 2:Determination of bound nitrogen, after combustion and oxidation to nitrogen dioxide, chemiluminescence detection.	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection		
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		
TM231	Agilent 6890 Gas Chromatograph system using an Agilent 5973 Mass Selective Detector (MSD)	Determination of Organochlorine and Organophosphorus Pesticides and Triazine Herbicides by GCMS		
TM239	Sulphide in Waters and Effluents 1983 (Tentative Methods) HMSO 1983, ISBN 011 7517186	Determination of Easily Liberated Sulphide in Waste waters		
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		
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.

CERTIFICATE OF ANALYSIS

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	6498002	6498003	6498006	6498009	6498004	6498005	6498010	6498011
Customer Sample Ref.	BH01	BH02	BH04	BH05	BH03A	BH03B	SW1	SW2
AGS Ref.								
Depth								
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Acid Herbicides (W)	20-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012	20-Nov-2012	20-Nov-2012	22-Nov-2012	20-Nov-2012
Alkalinity as CaCO3	19-Nov-2012	19-Nov-2012	19-Nov-2012	21-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012
Ammoniacal Nitrogen	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012
Anions by Kone (w)	20-Nov-2012	21-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012
BOD True Total	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012
COD Unfiltered	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012
Conductivity (at 20 deg.C)	15-Nov-2012	15-Nov-2012	15-Nov-2012	16-Nov-2012	15-Nov-2012	15-Nov-2012	15-Nov-2012	15-Nov-2012
Cyanide Comp/Free/Total/Thiocyanate	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012
Dissolved Metals by ICP-MS	16-Nov-2012	16-Nov-2012	19-Nov-2012	16-Nov-2012	19-Nov-2012	19-Nov-2012	16-Nov-2012	16-Nov-2012
Easily Liberated Sulphide	20-Nov-2012	20-Nov-2012					20-Nov-2012	20-Nov-2012
EPH CWG (Aliphatic) Aqueous GC (W)	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012
EPH CWG (Aromatic) Aqueous GC (W)	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012
Fluoride	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012
Free Sulphur	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012
GRO by GC-FID (W)	19-Nov-2012	16-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012
Hexavalent Chromium (w)	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012
Kjeldahl Nitrogen on liquids	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012
Mercury Dissolved	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012
Metals by iCap-OES Dissolved (W)	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012
Nitrite by Kone (w)	15-Nov-2012	16-Nov-2012	15-Nov-2012	16-Nov-2012	15-Nov-2012	15-Nov-2012	15-Nov-2012	16-Nov-2012
OC, OP Pesticides and Triazine Herb	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012
PAH Spec MS - Aqueous (W)	20-Nov-2012	20-Nov-2012	20-Nov-2012	21-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012
PCB Congeners - Aqueous (W)	20-Nov-2012	21-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012
pH Value	15-Nov-2012	15-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	15-Nov-2012
Phenols by HPLC (W)	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012
Sulphide			21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012		
Suspended Solids	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012	16-Nov-2012
SVOC MS (W) - Aqueous	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012
Total Nitrogen	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012
Total Organic and Inorganic Carbon	21-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	20-Nov-2012	21-Nov-2012	20-Nov-2012	21-Nov-2012
TPH CWG (W)	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012	21-Nov-2012
VOC MS (W)	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012	19-Nov-2012

SDG:	121114-42	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	202755
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

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

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

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

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

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

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DCM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOXTHERM	HPLC
PHENOLS BY GCMS	WET	DCM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANE:ACETONE	SOXTHERM	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 CWG BY GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB AROCLOR 1254 / PCB CON	D&C	HEXANE:ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE:ACETONE	MICROWAVE TM218.	GC-MS
>C6-C40	WET	HEXANE:ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE:ACETONE	SHAKER	GC-FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DCM:ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB AROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCP/OPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC MS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL by IR	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FID

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

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

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -
Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

ALcontrol Laboratories

Unit 18A
Rosemount Business Park
Ballycoolin
Dublin 11
Tel : (0035) 3188 29893

RPS Consultants Ltd
Elmwood House
74 Boucher Road
Belfast

Attention: Joseph McGrath

CERTIFICATE OF ANALYSIS

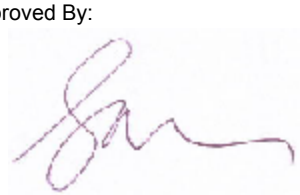
Date:	28 November 2012
Customer:	D_RPSCON_BFT
Sample Delivery Group (SDG):	121121-44
Your Reference:	
Location:	Dunkineely
Report No:	203632

We received 8 samples on Tuesday November 20, 2012 and 8 of these samples were scheduled for analysis which was completed on Wednesday November 28, 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

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
6532917	BH01			19/11/2012
6532918	BH02			19/11/2012
6532922	BH04			19/11/2012
6532923	BH05			19/11/2012
6532920	BH03A			19/11/2012
6532921	BH03B			19/11/2012
6532924	SW1			19/11/2012
6532925	SW2			19/11/2012

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

CERTIFICATE OF ANALYSIS

SDG: 121121-44
Job: D_RPSCON_BFT-73
Client Reference:

Location: Dunkineely
Customer: RPS Consultants Ltd
Attention: Joseph McGrath

Order Number: 240467740
Report Number: 203632
Superseded Report:

LIQUID

Results Legend

X Test

N No Determination Possible

Lab Sample No(s)			6532917				6532918				6532922				6532923				6532920				6532921				6532924				6532925			
Customer Sample Reference			BH01				BH02				BH04				BH05				BH03A				BH03B				SW1				SW2			
AGS Reference																																		
Depth (m)																																		
Container			1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)
Alkalinity as CaCO3	All	NDPs: 0 Tests: 8		X				X				X				X				X				X				X				X		
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				X				X				X				X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8		X				X				X				X				X				X				X				X		
Easily Liberated Sulphide	All	NDPs: 8 Tests: 0		N				N				N				N				N				N				N				N		
Fluoride	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			
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8		X				X				X				X				X				X				X				X		
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 8		X				X				X				X				X				X				X				X		
Mercury Dissolved	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:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

LIQUID

Results Legend

- X Test
- N No Determination Possible

Lab Sample No(s)			6532917				6532918				6532922				6532923				6532920				6532921				6532924				6532925			
Customer Sample Reference			BH01				BH02				BH04				BH05				BH03A				BH03B				SW1				SW2			
AGS Reference																																		
Depth (m)																																		
Container			1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8				X				X				X				X				X				X				X				X
PAH Spec MS - 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 HPLC (W)	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		
Suspended Solids	All	NDPs: 0 Tests: 8		X				X				X				X				X				X				X				X		
Total Nitrogen	All	NDPs: 0 Tests: 8		X				X				X				X				X				X				X				X		
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8	X				X				X				X				X				X				X				X			

CERTIFICATE OF ANALYSIS

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	19/11/2012	19/11/2012	19/11/2012	19/11/2012	19/11/2012	19/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	20/11/2012	20/11/2012	20/11/2012	20/11/2012	20/11/2012	20/11/2012
			SDG Ref	121121-44	121121-44	121121-44	121121-44	121121-44	121121-44
			Lab Sample No.(s)	6532917	6532918	6532922	6532923	6532920	6532921
			AGS Reference						
Suspended solids, Total	<2 mg/l	TM022		7630 #	225 #	1520 #	688 #	6710 #	345 #
Alkalinity, Total as CaCO3	<2 mg/l	TM043		2000 #	305 #	290 #	225 #	325 #	240 #
BOD, unfiltered	<1 mg/l	TM045		4.56 #	<2 #	2.59 #	<2 #	2.09 #	<2 #
Organic Carbon, Total	<3 mg/l	TM090		3.26 #	3.21 #	11.5 #	4.71 #	5.84 #	4.53 #
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		<0.2 #	0.361 #	0.533 #	<0.2 #	0.251 #	<0.2 #
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099		<0.2 #	0.438 #	0.647 #	<0.2 #	0.305 #	<0.2 #
Sulphide	<0.01 mg/l	TM101		<0.01 § #	<0.01 § #	<0.01 § #	<0.01 § #	<0.01 § #	<0.01 § #
Fluoride	<0.5 mg/l	TM104		0.616 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #
COD, unfiltered	<7 mg/l	TM107		390 #	25.2 #	510 #	52.7 #	423 #	58.6 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		0.583 #	0.622 #	0.565 #	0.503 #	0.549 #	0.439 #
Arsenic (diss.filt)	<0.12 µg/l	TM152		1.21 #	0.497 #	0.921 #	0.538 #	1.25 #	0.874 #
Boron (diss.filt)	<9.4 µg/l	TM152		38.7 #	34.4 #	29.9 #	15 #	26.3 #	20.3 #
Cadmium (diss.filt)	<0.1 µg/l	TM152		0.33 #	0.386 #	<0.1 #	0.139 #	<0.1 #	<0.1 #
Chromium (diss.filt)	<0.22 µg/l	TM152		2.6 #	2.05 #	1.82 #	1.88 #	2.05 #	1.81 #
Copper (diss.filt)	<0.85 µg/l	TM152		1.85 #	2.21 #	1.81 #	1.05 #	1.22 #	1.02 #
Lead (diss.filt)	<0.02 µg/l	TM152		0.33 #	0.175 #	0.026 #	<0.02 #	0.166 #	0.027 #
Manganese (diss.filt)	<0.04 µg/l	TM152		215 #	134 #	760 #	454 #	1160 #	901 #
Nickel (diss.filt)	<0.15 µg/l	TM152		5.24 #	2.11 #	3.28 #	2.63 #	3.04 #	2.14 #
Selenium (diss.filt)	<0.39 µg/l	TM152		1.8 #	0.86 #	0.957 #	0.544 #	0.784 #	0.466 #
Zinc (diss.filt)	<0.41 µg/l	TM152		3 #	2.08 #	<0.41 #	<0.41 #	0.949 #	3.17 #
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
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		11.7 #	17.6 #	27.3 #	9.3 #	15.8 #	7.7 #
Chloride	<2 mg/l	TM184		18 #	43.8 #	37.6 #	35.7 #	33.1 #	21.4 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184		<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
Nitrate as NO3	<0.3 mg/l	TM184		<0.3 #	<0.3 #	0.525 #	<0.3 #	<0.3 #	<0.3 #
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		<0.1 #	<0.1 #	0.126 #	<0.1 #	<0.1 #	<0.1 #
Nitrogen, Kjeldahl	<1 mg/l	TM212		<1	<1	<1	<1	<1	<1
Organic nitrogen, Total	<1 mg/l	TM212		<1	<1	<1	<1	<1	<1
Nitrogen, Total	<1 mg/l	TM212		<1	<1	<1	<1	<1	<1
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	0.08 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
Thiocyanate	<0.05 mg/l	TM227		<0.05 #	0.055 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #

CERTIFICATE OF ANALYSIS

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	19/11/2012	19/11/2012	19/11/2012	19/11/2012	19/11/2012	19/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	20/11/2012	20/11/2012	20/11/2012	20/11/2012	20/11/2012	20/11/2012
			SDG Ref	121121-44	121121-44	121121-44	121121-44	121121-44	121121-44
			Lab Sample No.(s)	6532917	6532918	6532922	6532923	6532920	6532921
			AGS Reference						
Calcium (diss.filt)	<0.012 mg/l	TM228		113 #	100 #	93.2 #	87.6 #	101 #	83.5 #
Sodium (diss.filt)	<0.076 mg/l	TM228		15.7 #	27.4 #	37.6 #	25.6 #	21 #	16.5 #
Magnesium (diss.filt)	<0.036 mg/l	TM228		13.4 #	16.5 #	8.95 #	7.82 #	8.9 #	6.09 #
Potassium (diss.filt)	<2.335 mg/l	TM228		<2.34 #	<2.34 #	3.34 #	<2.34 #	<2.34 #	<2.34 #
Iron (diss.filt)	<0.019 mg/l	TM228		<0.019 #	<0.019 #	<0.019 #	<0.019 #	0.0562 #	<0.019 #
Chromium, Hexavalent	<0.03 mg/l	TM241		<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #
pH	<1 pH Units	TM256		7.58 #	7.68 #	7.37 #	7.47 #	7.28 #	7.21 #
Phenol	<0.002 mg/l	TM259		<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #
Cresols	<0.006 mg/l	TM259		<0.006 #	<0.006 #	<0.006 #	<0.006 #	<0.006 #	<0.006 #
Xylenols	<0.008 mg/l	TM259		<0.008 #	<0.008 #	<0.008 #	<0.008 #	<0.008 #	<0.008 #
2,3,5-Trimethylphenol	<0.003 mg/l	TM259		<0.003 #	<0.003 #	<0.003 #	<0.003 #	<0.003 #	<0.003 #
2-Isopropylphenol	<0.006 mg/l	TM259		<0.006 #	<0.006 #	<0.006 #	<0.006 #	<0.006 #	<0.006 #
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Sulphur, Free	<0.05 mg/l	TM294		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

CERTIFICATE OF ANALYSIS

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2
			Depth (m)	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)
			Date Sampled	19/11/2012	19/11/2012
			Sample Time	.	.
			Date Received	20/11/2012	20/11/2012
			SDG Ref	121121-44	121121-44
			Lab Sample No.(s)	6532924	6532925
			AGS Reference		
Suspended solids, Total	<2 mg/l	TM022		<2 #	82 #
Alkalinity, Total as CaCO3	<2 mg/l	TM043		155 #	41.5 #
BOD, unfiltered	<1 mg/l	TM045		<2 #	2.79 #
Organic Carbon, Total	<3 mg/l	TM090		7.82 #	21.6 #
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		<0.2 #	0.241 #
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099		<0.2 #	0.293 #
Sulphide	<0.01 mg/l	TM101		<0.01 § #	<0.01 § #
Fluoride	<0.5 mg/l	TM104		<0.5 #	<0.5 #
COD, unfiltered	<7 mg/l	TM107		16.2 #	103 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		0.271 #	0.137 #
Arsenic (diss.filt)	<0.12 µg/l	TM152		0.186 #	0.374 #
Boron (diss.filt)	<9.4 µg/l	TM152		16.2 #	14.8 #
Cadmium (diss.filt)	<0.1 µg/l	TM152		<0.1 #	<0.1 #
Chromium (diss.filt)	<0.22 µg/l	TM152		2.62 #	1.01 #
Copper (diss.filt)	<0.85 µg/l	TM152		0.93 #	2.31 #
Lead (diss.filt)	<0.02 µg/l	TM152		0.038 #	0.028 #
Manganese (diss.filt)	<0.04 µg/l	TM152		3.02 #	26.8 #
Nickel (diss.filt)	<0.15 µg/l	TM152		1.1 #	4.37 #
Selenium (diss.filt)	<0.39 µg/l	TM152		<0.39 #	0.575 #
Zinc (diss.filt)	<0.41 µg/l	TM152		1.68 #	3.63 #
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 #	<0.01 #
Nitrite as NO2	<0.05 mg/l	TM184		<0.05 #	<0.05 #
Sulphate	<2 mg/l	TM184		<2 #	<2 #
Chloride	<2 mg/l	TM184		17 #	17.3 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184		<0.05 #	<0.05 #
Nitrate as NO3	<0.3 mg/l	TM184		3.55 #	0.337 #
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.808 #	<0.1 #
Nitrogen, Kjeldahl	<1 mg/l	TM212		<1	1.3
Organic nitrogen, Total	<1 mg/l	TM212		<1	1.06
Nitrogen, Total	<1 mg/l	TM212		1.26	1.3
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #
Thiocyanate	<0.05 mg/l	TM227		<0.05 #	<0.05 #

CERTIFICATE OF ANALYSIS

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	19/11/2012	19/11/2012				
			Sample Time	.	.				
			Date Received	20/11/2012	20/11/2012				
			SDG Ref	121121-44	121121-44				
			Lab Sample No.(s)	6532924	6532925				
			AGS Reference						
Calcium (diss.filt)	<0.012 mg/l	TM228		46.3 #	14 #				
Sodium (diss.filt)	<0.076 mg/l	TM228		11.6 #	12.7 #				
Magnesium (diss.filt)	<0.036 mg/l	TM228		2.52 #	2.17 #				
Potassium (diss.filt)	<2.335 mg/l	TM228		<2.34 #	<2.34 #				
Iron (diss.filt)	<0.019 mg/l	TM228		0.0608 #	0.724 #				
Chromium, Hexavalent	<0.03 mg/l	TM241		<0.03 #	<0.03 #				
pH	<1 pH Units	TM256		7.8 #	6.81 #				
Phenol	<0.002 mg/l	TM259		<0.002 #	<0.002 #				
Cresols	<0.006 mg/l	TM259		<0.006 #	<0.006 #				
Xylenols	<0.008 mg/l	TM259		<0.008 #	<0.008 #				
2,3,5-Trimethylphenol	<0.003 mg/l	TM259		<0.003 #	<0.003 #				
2-Isopropylphenol	<0.006 mg/l	TM259		<0.006 #	<0.006 #				
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259		<0.025	<0.025				
Sulphur, Free	<0.05 mg/l	TM294		<0.05	<0.05				

CERTIFICATE OF ANALYSIS

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	BH01	BH02	BH04	BH05	BH03A	BH03B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	19/11/2012	19/11/2012	19/11/2012	19/11/2012	19/11/2012	19/11/2012
			Sample Time	.	.	.	.	.	.
			Date Received	20/11/2012	20/11/2012	20/11/2012	20/11/2012	20/11/2012	20/11/2012
			SDG Ref	121121-44	121121-44	121121-44	121121-44	121121-44	121121-44
			Lab Sample No.(s)	6532917	6532918	6532922	6532923	6532920	6532921
			AGS Reference						
Naphthalene (aq)	<0.1 µg/l	TM178		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Acenaphthene (aq)	<0.015 µg/l	TM178		<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #
Acenaphthylene (aq)	<0.011 µg/l	TM178		<0.011 #	<0.011 #	<0.011 #	<0.011 #	<0.011 #	<0.011 #
Fluoranthene (aq)	<0.017 µg/l	TM178		<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #
Anthracene (aq)	<0.015 µg/l	TM178		<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #
Phenanthrene (aq)	<0.022 µg/l	TM178		0.135 #	<0.022 #	<0.022 #	<0.022 #	0.103 #	<0.022 #
Fluorene (aq)	<0.014 µg/l	TM178		0.0744 #	<0.014 #	<0.014 #	<0.014 #	0.0368 #	<0.014 #
Chrysene (aq)	<0.013 µg/l	TM178		0.0453 #	<0.013 #	<0.013 #	<0.013 #	0.0411 #	<0.013 #
Pyrene (aq)	<0.015 µg/l	TM178		<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178		0.0354 #	<0.017 #	<0.017 #	<0.017 #	0.0365 #	<0.017 #
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178		<0.023 #	<0.023 #	<0.023 #	<0.023 #	0.0277 #	<0.023 #
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178		<0.027 #	<0.027 #	<0.027 #	<0.027 #	<0.027 #	<0.027 #
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178		<0.009 #	<0.009 #	<0.009 #	<0.009 #	<0.009 #	<0.009 #
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178		<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178		<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178		<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #
PAH, Total Detected USEPA 16 (aq)	<0.247 µg/l	TM178		0.29	<0.247	<0.247	<0.247	<0.247	<0.247

CERTIFICATE OF ANALYSIS

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	SW1	SW2
			Depth (m)	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)
			Date Sampled	19/11/2012	19/11/2012
			Sample Time	.	.
			Date Received	20/11/2012	20/11/2012
			SDG Ref	121121-44	121121-44
			Lab Sample No.(s)	6532924	6532925
			AGS Reference		
Naphthalene (aq)	<0.1 µg/l	TM178		<0.1 #	<0.1 #
Acenaphthene (aq)	<0.015 µg/l	TM178		<0.015 #	<0.015 #
Acenaphthylene (aq)	<0.011 µg/l	TM178		<0.011 #	<0.011 #
Fluoranthene (aq)	<0.017 µg/l	TM178		<0.017 #	<0.017 #
Anthracene (aq)	<0.015 µg/l	TM178		<0.015 #	<0.015 #
Phenanthrene (aq)	<0.022 µg/l	TM178		<0.022 #	<0.022 #
Fluorene (aq)	<0.014 µg/l	TM178		<0.014 #	<0.014 #
Chrysene (aq)	<0.013 µg/l	TM178		<0.013 #	<0.013 #
Pyrene (aq)	<0.015 µg/l	TM178		<0.015 #	<0.015 #
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178		<0.017 #	<0.017 #
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178		<0.023 #	<0.023 #
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178		<0.027 #	<0.027 #
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178		<0.009 #	<0.009 #
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178		<0.016 #	<0.016 #
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178		<0.016 #	<0.016 #
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178		<0.014 #	<0.014 #
PAH, Total Detected USEPA 16 (aq)	<0.247 µg/l	TM178		<0.247	<0.247

CERTIFICATE OF ANALYSIS

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
6559834	BH04		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6559841	BH05		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6559865	BH03B		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6559869	BH03A		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6559885	BH02		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6559900	BH01		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6559916	SW1		LIQUID	Sulphide	Sulphide	Sample holding time exceeded
6559967	SW2		LIQUID	Sulphide	Sulphide	Sample holding time exceeded

Note : Test results may be compromised

CERTIFICATE OF ANALYSIS

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Notification of NDPs (No determination possible)

Date Received : 21/11/2012 10:58:08

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
6532917	BH01		Easily Liberated Sulphide	Scheduling Error
6532918	BH02		Easily Liberated Sulphide	Scheduling Error
6532920	BH03A		Easily Liberated Sulphide	Scheduling Error
6532921	BH03B		Easily Liberated Sulphide	Scheduling Error
6532922	BH04		Easily Liberated Sulphide	Scheduling Error
6532923	BH05		Easily Liberated Sulphide	Scheduling Error
6532924	SW1		Easily Liberated Sulphide	Scheduling Error
6532925	SW2		Easily Liberated Sulphide	Scheduling Error

CERTIFICATE OF ANALYSIS

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters		
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		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
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		
TM212	SO/TR 11905-2: 1997. Water quality – Determination of nitrogen –Part 2:Determination of bound nitrogen, after combustion and oxidation to nitrogen dioxide, chemiluminescence detection.	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection		
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		
TM239	Sulphide in Waters and Effluents 1983 (Tentative Methods) HMSO 1983, ISBN 011 7517186	Determination of Easily Liberated Sulphide in Waste waters		
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		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC		
TM294		Determination of Free Sulphur in liquids by HPLC		

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

CERTIFICATE OF ANALYSIS

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	6532917	6532918	6532922	6532923	6532920	6532921	6532924	6532925
Customer Sample Ref.	BH01	BH02	BH04	BH05	BH03A	BH03B	SW1	SW2
AGS Ref.								
Depth								
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Alkalinity as CaCO3	23-Nov-2012	23-Nov-2012	26-Nov-2012	26-Nov-2012	23-Nov-2012	23-Nov-2012	23-Nov-2012	23-Nov-2012
Ammoniacal Nitrogen	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012
Anions by Kone (w)	27-Nov-2012	27-Nov-2012	28-Nov-2012	28-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012
BOD True Total	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012
COD Unfiltered	22-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012
Conductivity (at 20 deg.C)	22-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012
Cyanide Comp/Free/Total/Thiocyanate	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012
Dissolved Metals by ICP-MS	28-Nov-2012	28-Nov-2012	27-Nov-2012	27-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012
Fluoride	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012
Free Sulphur	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012
Hexavalent Chromium (w)	23-Nov-2012	22-Nov-2012	22-Nov-2012	22-Nov-2012	23-Nov-2012	23-Nov-2012	22-Nov-2012	22-Nov-2012
Kjeldahl Nitrogen on liquids	27-Nov-2012	27-Nov-2012	28-Nov-2012	28-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012
Mercury Dissolved	26-Nov-2012	26-Nov-2012	23-Nov-2012	23-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012
Metals by iCap-OES Dissolved (W)	26-Nov-2012	26-Nov-2012	23-Nov-2012	23-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012
Nitrite by Kone (w)	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012	26-Nov-2012
PAH Spec MS - Aqueous (W)	26-Nov-2012	26-Nov-2012	27-Nov-2012	27-Nov-2012	26-Nov-2012	26-Nov-2012	27-Nov-2012	27-Nov-2012
pH Value	23-Nov-2012	23-Nov-2012	22-Nov-2012	22-Nov-2012	23-Nov-2012	23-Nov-2012	22-Nov-2012	22-Nov-2012
Phenols by HPLC (W)	28-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012
Sulphide	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012	28-Nov-2012
Suspended Solids	23-Nov-2012	23-Nov-2012	23-Nov-2012	23-Nov-2012	23-Nov-2012	23-Nov-2012	23-Nov-2012	23-Nov-2012
Total Nitrogen	27-Nov-2012	27-Nov-2012	28-Nov-2012	28-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012	27-Nov-2012
Total Organic and Inorganic Carbon	26-Nov-2012	26-Nov-2012	23-Nov-2012	23-Nov-2012	23-Nov-2012	26-Nov-2012	23-Nov-2012	27-Nov-2012

SDG:	121121-44	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	203632
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point, 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 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

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

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

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

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

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

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DCM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOXTHERM	HPLC
PHENOLS BY GCMS	WET	DCM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANE:ACETONE	SOXTHERM	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 CWG BY GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB AROCLOR 1254 / PCB CON	D&C	HEXANE:ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE:ACETONE	MICROWAVE TM218.	GC-MS
>C6-C40	WET	HEXANE:ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE:ACETONE	SHAKER	GC-FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DCM:ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB AROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCP/OPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC MS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL by IR	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FID

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

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

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -
Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

ALcontrol Laboratories

Unit 18A
Rosemount Business Park
Ballycoolin
Dublin 11
Tel : (0035) 3188 29893

RPS Consultants Ltd
Elmwood House
74 Boucher Road
Belfast

Attention: Joseph McGrath

CERTIFICATE OF ANALYSIS

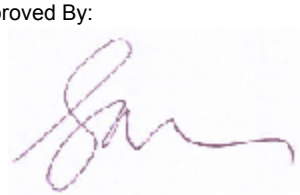
Date:	25 January 2013
Customer:	D_RPSCON_BFT
Sample Delivery Group (SDG):	130116-51
Your Reference:	
Location:	Dunkineely
Report No:	209904

We received 8 samples on Tuesday January 15, 2013 and 8 of these samples were scheduled for analysis which was completed on Friday January 25, 2013. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

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

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
6778029	BH1			14/01/2013
6778031	BH2			14/01/2013
6778034	BH4			14/01/2013
6778036	BH5			14/01/2013
6778032	BH3A			14/01/2013
6778033	BH3B			14/01/2013
6778038	SW1			14/01/2013
6778039	SW2			14/01/2013

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

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

LIQUID

Results Legend

- X — Test
- N — No Determination Possible

Lab Sample No(s)			6778029				6778031					6778034					6778036					6778032					6778033					6778038				6778039				
Customer Sample Reference			BH1				BH2					BH4					BH5					BH3A					BH3B					SW1				SW2				
AGS Reference																																								
Depth (m)																																								
Container			1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)
Alkalinity as CaCO3	All	NDPs: 0 Tests: 8	X					X					X					X					X					X				X					X			
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					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				
Fluoride	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					X					X				X					X
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8	X					X					X					X					X					X				X					X			
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 8	X					X					X					X					X					X				X					X			

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

LIQUID

Results Legend

- X Test
- N No Determination Possible

Lab Sample No(s)			6778029				6778031					6778034					6778036					6778032					6778033					6778038				6778039				
Customer Sample Reference			BH1				BH2					BH4					BH5					BH3A					BH3B					SW1				SW2				
AGS Reference																																								
Depth (m)																																								
Container			1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	1l green glass bottle	1lplastic (ALE221)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)
Mercury Dissolved	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			
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8			X					X					X					X					X					X				X					X	
PAH Spec MS - 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 HPLC (W)	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			
Suspended Solids	All	NDPs: 0 Tests: 8	X					X					X					X					X					X				X					X			
Total Nitrogen	All	NDPs: 0 Tests: 8	X					X					X					X					X					X				X					X			
Total Organic and Inorganic Carbon	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				

16:21:04 25/01/2013

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample R	BH1	BH2	BH4	BH5	BH3A	BH3B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	14/01/2013	14/01/2013	14/01/2013	14/01/2013	14/01/2013	14/01/2013
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2013	15/01/2013	15/01/2013	15/01/2013	15/01/2013	15/01/2013
			SDG Ref	130116-51	130116-51	130116-51	130116-51	130116-51	130116-51
			Lab Sample No.(s)	6778029	6778031	6778034	6778036	6778032	6778033
			AGS Reference						
Suspended solids, Total	<2 mg/l	TM022		16900 #	547 #	1770 #	11600 #	3520 #	378 #
Alkalinity, Total as CaCO3	<2 mg/l	TM043		3670 #	295 #	230 #	245 #	270 #	245 #
BOD, unfiltered	<1 mg/l	TM045		20.5 #	<2 #	4.21 ♦ #	5.21 ♦ #	<2 #	<2 #
Organic Carbon, Total	<3 mg/l	TM090		4.34 #	4.05 ♦ #	8.18 ♦ #	4.85 ♦ #	4.9 ♦ #	5.74 ♦ #
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		<0.2 #	<0.2 #	1.11 #	0.26 #	<0.2 #	<0.2 #
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099		<0.2 #	<0.2 #	1.35 #	0.316 #	<0.2 #	<0.2 #
Sulphide	<0.01 mg/l	TM101		0.03 ♦ #	<0.01 ♦ #	<0.01 ♦ #	<0.01 ♦ #	<0.01 ♦ #	<0.01 ♦ #
Fluoride	<0.5 mg/l	TM104		0.711 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #
COD, unfiltered	<7 mg/l	TM107		1470 #	40.4 #	1440 #	1090 #	199 #	50.4 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		0.57 #	0.629 #	0.479 #	0.437 #	0.525 #	0.486 #
Arsenic (diss.filt)	<0.12 µg/l	TM152		0.829 #	0.404 #	1.04 #	1.11 #	0.643 #	0.591 #
Boron (diss.filt)	<9.4 µg/l	TM152		26.7 #	44 #	20.1 #	22.2 #	12.8 #	15 #
Cadmium (diss.filt)	<0.1 µg/l	TM152		<0.1 #	0.175 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Chromium (diss.filt)	<0.22 µg/l	TM152		5.96 #	2.79 #	3.34 #	4.29 #	5.51 #	2.64 #
Copper (diss.filt)	<0.85 µg/l	TM152		<0.85 #	2.05 #	6.99 #	<0.85 #	<0.85 #	1.14 #
Lead (diss.filt)	<0.02 µg/l	TM152		0.162 #	0.075 #	0.223 #	0.103 #	0.111 #	0.049 #
Manganese (diss.filt)	<0.04 µg/l	TM152		510 #	89.4 #	155 #	310 #	1430 #	1280 #
Nickel (diss.filt)	<0.15 µg/l	TM152		4.11 #	1.49 #	1.59 #	1.79 #	2.94 #	1.79 #
Selenium (diss.filt)	<0.39 µg/l	TM152		0.694 #	0.819 #	2.24 #	0.515 #	<0.39 #	1.06 #
Zinc (diss.filt)	<0.41 µg/l	TM152		5.57 #	<0.41 #	4.21 #	0.986 #	1.47 #	<0.41 #
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
Nitrite as NO2	<0.05 mg/l	TM184		<0.05 #	<0.05 #	<0.25 #	<0.25 #	<0.05 #	<0.05 #
Sulphate	<2 mg/l	TM184		9.8 #	16.9 #	19.9 #	8.5 #	12.8 #	9.9 #
Chloride	<2 mg/l	TM184		19.4 #	46.1 #	36.6 #	34.4 #	30.6 #	26.3 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184		<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
Nitrate as NO3	<0.3 mg/l	TM184		<0.3 #	<0.3 #	0.638 #	<0.3 #	<0.3 #	<0.3 #
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		<0.1 #	<0.1 #	0.137 #	<0.1 #	<0.1 #	<0.1 #
Nitrogen, Kjeldahl	<1 mg/l	TM212		<1	<1	1.29	<1	<1	<1
Organic nitrogen, Total	<1 mg/l	TM212		<1	<1	<1	<1	<1	<1
Nitrogen, Total	<1 mg/l	TM212		<1	<1	1.29	<1	<1	<1
Cyanide, Total	<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 #

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample R	BH1	BH2	BH4	BH5	BH3A	BH3B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	14/01/2013	14/01/2013	14/01/2013	14/01/2013	14/01/2013	14/01/2013
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2013	15/01/2013	15/01/2013	15/01/2013	15/01/2013	15/01/2013
			SDG Ref	130116-51	130116-51	130116-51	130116-51	130116-51	130116-51
			Lab Sample No.(s)	6778029	6778031	6778034	6778036	6778032	6778033
			AGS Reference						
Calcium (diss.filt)	<0.012 mg/l	TM228		114 #	96.9 #	86.6 #	79.6 #	104 #	88.4 #
Sodium (diss.filt)	<0.076 mg/l	TM228		16.4 #	25.5 #	24 #	25.7 #	19.4 #	17.8 #
Magnesium (diss.filt)	<0.036 mg/l	TM228		11.6 #	16.3 #	6.82 #	7.12 #	7.86 #	6.69 #
Potassium (diss.filt)	<2.335 mg/l	TM228		2.67 #	2.62 #	<2.34 #	<2.34 #	<2.34 #	<2.34 #
Iron (diss.filt)	<0.019 mg/l	TM228		0.022 #	0.0436 #	0.0625 #	0.0213 #	0.0923 #	0.0273 #
Chromium, Hexavalent	<0.03 mg/l	TM241		<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #	<0.03 #
pH	<1 pH Units	TM256		7.32 #	8.11 #	7.36 #	7.11 #	7.09 #	7.83 #
Phenol	<0.002 mg/l	TM259		<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #
Cresols	<0.006 mg/l	TM259		<0.006 #	<0.006 #	<0.006 #	<0.006 #	<0.006 #	<0.006 #
Xylenols	<0.008 mg/l	TM259		<0.008 #	<0.008 #	<0.008 #	<0.008 #	<0.008 #	<0.008 #
2,3,5-Trimethylphenol	<0.003 mg/l	TM259		<0.003 #	<0.003 #	<0.003 #	<0.003 #	<0.003 #	<0.003 #
2-Isopropylphenol	<0.006 mg/l	TM259		<0.006 #	<0.006 #	<0.006 #	<0.006 #	<0.006 #	<0.006 #
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Sulphur, Free	<0.05 mg/l	TM294		<0.06	<0.05	<0.05	<0.06	<0.05	<0.05

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample R	SW1	SW2			
			Depth (m)	.	.			
			Sample Type	Water(GW/SW)	Water(GW/SW)			
			Date Sampled	14/01/2013	14/01/2013			
			Sample Time	.	.			
			Date Received	15/01/2013	15/01/2013			
			SDG Ref	130116-51	130116-51			
			Lab Sample No.(s)	6778038	6778039			
			AGS Reference					
Suspended solids, Total	<2 mg/l	TM022		6 #	242 #			
Alkalinity, Total as CaCO3	<2 mg/l	TM043		80 #	46 #			
BOD, unfiltered	<1 mg/l	TM045		<2 ♦ #	4.78 #			
Organic Carbon, Total	<3 mg/l	TM090		10 #	22 #			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		<0.2 #	0.224 #			
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099		<0.2 #	0.272 #			
Sulphide	<0.01 mg/l	TM101		<0.01 ♦ #	<0.01 ♦ #			
Fluoride	<0.5 mg/l	TM104		<0.5 #	<0.5 #			
COD, unfiltered	<7 mg/l	TM107		25.7 #	143 #			
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		0.194 #	0.152 #			
Arsenic (diss.filt)	<0.12 µg/l	TM152		0.184 #	0.396 #			
Boron (diss.filt)	<9.4 µg/l	TM152		<9.4 #	<9.4 #			
Cadmium (diss.filt)	<0.1 µg/l	TM152		<0.1 #	<0.1 #			
Chromium (diss.filt)	<0.22 µg/l	TM152		1.89 #	2.38 #			
Copper (diss.filt)	<0.85 µg/l	TM152		<0.85 #	1.94 #			
Lead (diss.filt)	<0.02 µg/l	TM152		0.059 #	0.13 #			
Manganese (diss.filt)	<0.04 µg/l	TM152		3.24 #	68.9 #			
Nickel (diss.filt)	<0.15 µg/l	TM152		1.26 #	4.73 #			
Selenium (diss.filt)	<0.39 µg/l	TM152		<0.39 #	0.531 #			
Zinc (diss.filt)	<0.41 µg/l	TM152		1.45 #	4.23 #			
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 #	<0.01 #			
Nitrite as NO2	<0.05 mg/l	TM184		<0.05 #	<0.05 #			
Sulphate	<2 mg/l	TM184		<2 #	<2 #			
Chloride	<2 mg/l	TM184		16.3 #	22.1 #			
Phosphate (ortho) as PO4	<0.05 mg/l	TM184		<0.05 #	<0.05 #			
Nitrate as NO3	<0.3 mg/l	TM184		1.26 #	1.08 #			
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.285 #	0.24 #			
Nitrogen, Kjeldahl	<1 mg/l	TM212		<1	1.64			
Organic nitrogen, Total	<1 mg/l	TM212		<1	1.42			
Nitrogen, Total	<1 mg/l	TM212		<1	1.64			
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #			
Thiocyanate	<0.05 mg/l	TM227		<0.05 #	<0.05 #			

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample R	SW1	SW2			
			Depth (m)	.	.			
			Sample Type	Water(GW/SW)	Water(GW/SW)			
			Date Sampled	14/01/2013	14/01/2013			
			Sample Time	.	.			
			Date Received	15/01/2013	15/01/2013			
			SDG Ref	130116-51	130116-51			
			Lab Sample No.(s)	6778038	6778039			
			AGS Reference					
Calcium (diss.filt)	<0.012 mg/l	TM228		30.2 #	15.3 #			
Sodium (diss.filt)	<0.076 mg/l	TM228		11 #	13.8 #			
Magnesium (diss.filt)	<0.036 mg/l	TM228		2.51 #	2.3 #			
Potassium (diss.filt)	<2.335 mg/l	TM228		<2.34 #	<2.34 #			
Iron (diss.filt)	<0.019 mg/l	TM228		0.126 #	0.867 #			
Chromium, Hexavalent	<0.03 mg/l	TM241		<0.03 #	<0.03 #			
pH	<1 pH Units	TM256		7.82 #	6.63 #			
Phenol	<0.002 mg/l	TM259		<0.002 #	<0.002 #			
Cresols	<0.006 mg/l	TM259		<0.006 #	<0.006 #			
Xylenols	<0.008 mg/l	TM259		<0.008 #	<0.008 #			
2,3,5-Trimethylphenol	<0.003 mg/l	TM259		<0.003 #	<0.003 #			
2-Isopropylphenol	<0.006 mg/l	TM259		<0.006 #	<0.006 #			
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259		<0.025	<0.025			
Sulphur, Free	<0.05 mg/l	TM294		<0.05	<0.075			

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample R	BH1	BH2	BH4	BH5	BH3A	BH3B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	14/01/2013	14/01/2013	14/01/2013	14/01/2013	14/01/2013	14/01/2013
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2013	15/01/2013	15/01/2013	15/01/2013	15/01/2013	15/01/2013
			SDG Ref	130116-51	130116-51	130116-51	130116-51	130116-51	130116-51
			Lab Sample No.(s)	6778029	6778031	6778034	6778036	6778032	6778033
			AGS Reference						
Naphthalene (aq)	<0.1 µg/l	TM178		0.604 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Acenaphthene (aq)	<0.015 µg/l	TM178		0.0196 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #
Acenaphthylene (aq)	<0.011 µg/l	TM178		<0.011 #	<0.011 #	<0.011 #	<0.011 #	<0.011 #	<0.011 #
Fluoranthene (aq)	<0.017 µg/l	TM178		0.0785 #	<0.017 #	0.0219 #	<0.017 #	<0.017 #	<0.017 #
Anthracene (aq)	<0.015 µg/l	TM178		0.102 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #
Phenanthrene (aq)	<0.022 µg/l	TM178		2.22 #	0.0352 #	<0.022 #	<0.022 #	0.0604 #	<0.022 #
Fluorene (aq)	<0.014 µg/l	TM178		0.948 #	0.0174 #	<0.014 #	<0.014 #	0.0196 #	<0.014 #
Chrysene (aq)	<0.013 µg/l	TM178		0.703 #	<0.013 #	0.0233 #	<0.013 #	0.0253 #	<0.013 #
Pyrene (aq)	<0.015 µg/l	TM178		0.14 #	<0.015 #	0.0205 #	<0.015 #	<0.015 #	<0.015 #
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178		0.0258 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178		0.371 #	<0.023 #	<0.023 #	<0.023 #	<0.023 #	<0.023 #
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178		0.063 #	<0.027 #	<0.027 #	<0.027 #	<0.027 #	<0.027 #
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178		0.063 #	<0.009 #	0.0114 #	<0.009 #	<0.009 #	<0.009 #
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178		0.0311 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178		0.0865 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178		0.0483 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #
PAH, Total Detected USEPA 16 (aq)	<0.247 µg/l	TM178		5.5	<0.247	<0.247	<0.247	<0.247	<0.247

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4&+§@	Sample deviation (see appendix)

Customer Sample R			SW1	SW2				
Depth (m)			.	.				
Sample Type			Water(GW/SW)	Water(GW/SW)				
Date Sampled			14/01/2013	14/01/2013				
Sample Time			.	.				
Date Received			15/01/2013	15/01/2013				
SDG Ref			130116-51	130116-51				
Lab Sample No.(s)			6778038	6778039				
AGS Reference								
Component	**LOD/Units**	**Method**						
Naphthalene (aq)	<0.1 µg/l	TM178	<0.1 #	<1 #				
Acenaphthene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.15 #				
Acenaphthylene (aq)	<0.011 µg/l	TM178	<0.011 #	<0.11 #				
Fluoranthene (aq)	<0.017 µg/l	TM178	<0.017 #	<0.17 #				
Anthracene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.15 #				
Phenanthrene (aq)	<0.022 µg/l	TM178	<0.022 #	<0.22 #				
Fluorene (aq)	<0.014 µg/l	TM178	<0.014 #	<0.14 #				
Chrysene (aq)	<0.013 µg/l	TM178	<0.013 #	<0.13 #				
Pyrene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.15 #				
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178	<0.017 #	<0.17 #				
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178	<0.023 #	<0.23 #				
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178	<0.027 #	<0.27 #				
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178	<0.009 #	<0.09 #				
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178	<0.016 #	<0.16 #				
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178	<0.016 #	<0.16 #				
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178	<0.014 #	<0.14 #				
PAH, Total Detected USEPA 16 (aq)	<0.247 µg/l	TM178	<0.247	<2.47				

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

TPH CWG (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample R	BH1	BH2	BH4	BH5	BH3A	BH3B
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	14/01/2013	14/01/2013	14/01/2013	14/01/2013	14/01/2013	14/01/2013
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2013	15/01/2013	15/01/2013	15/01/2013	15/01/2013	15/01/2013
			SDG Ref	130116-51	130116-51	130116-51	130116-51	130116-51	130116-51
			Lab Sample No.(s)	6778029	6778031	6778034	6778036	6778032	6778033
			AGS Reference						
GRO Surrogate % recovery**	%	TM245		98	105	102	104	98	95
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		15	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174		71	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174		3270	<10	100	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174		3350	<10	100	<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		45	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174		38	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174		583	<10	40	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174		666	<10	40	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174		4030	<10	144	<10	<10	<10

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

TPH CWG (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample R	SW1	SW2				
			Depth (m)	.	.				
			Sample Type	Water(GW/SW)	Water(GW/SW)				
			Date Sampled	14/01/2013	14/01/2013				
			Sample Time	.	.				
			Date Received	15/01/2013	15/01/2013				
			SDG Ref	130116-51	130116-51				
			Lab Sample No.(s)	6778038	6778039				
			AGS Reference						
GRO Surrogate % recovery**	%	TM245		98	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	<20				
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174		<10	<20				
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174		<10	<20				
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174		<10	<20				
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	<20				
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174		<10	<20				
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174		<10	<20				
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174		<10	<20				
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174		<10	<10				

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters		
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)		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
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		
TM212	SO/TR 11905-2: 1997. Water quality – Determination of nitrogen –Part 2:Determination of bound nitrogen, after combustion and oxidation to nitrogen dioxide, chemiluminescence detection.	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection		
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		
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.

CERTIFICATE OF ANALYSIS

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	6778029	6778031	6778034	6778036	6778032	6778033	6778038	6778039
Customer Sample Ref.	BH1	BH2	BH4	BH5	BH3A	BH3B	SW1	SW2
AGS Ref.								
Depth								
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Alkalinity as CaCO3	21-Jan-2013	21-Jan-2013	21-Jan-2013	21-Jan-2013	21-Jan-2013	21-Jan-2013	18-Jan-2013	21-Jan-2013
Ammoniacal Nitrogen	25-Jan-2013	23-Jan-2013	23-Jan-2013	23-Jan-2013	23-Jan-2013	23-Jan-2013	23-Jan-2013	21-Jan-2013
Anions by Kone (w)	24-Jan-2013	24-Jan-2013	25-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	25-Jan-2013	25-Jan-2013
BOD True Total	21-Jan-2013	21-Jan-2013	22-Jan-2013	22-Jan-2013	21-Jan-2013	21-Jan-2013	22-Jan-2013	21-Jan-2013
COD Unfiltered	17-Jan-2013	17-Jan-2013	17-Jan-2013	17-Jan-2013	17-Jan-2013	17-Jan-2013	17-Jan-2013	17-Jan-2013
Conductivity (at 20 deg.C)	21-Jan-2013	21-Jan-2013	21-Jan-2013	21-Jan-2013	21-Jan-2013	21-Jan-2013	21-Jan-2013	18-Jan-2013
Cyanide Comp/Free/Total/Thiocyanate	21-Jan-2013	21-Jan-2013	21-Jan-2013	21-Jan-2013	21-Jan-2013	21-Jan-2013	18-Jan-2013	21-Jan-2013
Dissolved Metals by ICP-MS	18-Jan-2013	21-Jan-2013	21-Jan-2013	18-Jan-2013	18-Jan-2013	22-Jan-2013	18-Jan-2013	18-Jan-2013
EPH CWG (Aliphatic) Aqueous GC (W)	24-Jan-2013	24-Jan-2013	24-Jan-2013	25-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	21-Jan-2013
EPH CWG (Aromatic) Aqueous GC (W)	24-Jan-2013	24-Jan-2013	24-Jan-2013	25-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	21-Jan-2013
Fluoride	22-Jan-2013	22-Jan-2013	21-Jan-2013	22-Jan-2013	22-Jan-2013	21-Jan-2013	22-Jan-2013	22-Jan-2013
Free Sulphur	24-Jan-2013	24-Jan-2013	22-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013
GRO by GC-FID (W)	24-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013
Hexavalent Chromium (w)	23-Jan-2013	24-Jan-2013	23-Jan-2013	23-Jan-2013	22-Jan-2013	25-Jan-2013	23-Jan-2013	25-Jan-2013
Kjeldahl Nitrogen on liquids	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013
Mercury Dissolved	18-Jan-2013	23-Jan-2013	22-Jan-2013	23-Jan-2013	22-Jan-2013	22-Jan-2013	23-Jan-2013	17-Jan-2013
Metals by iCap-OES Dissolved (W)	18-Jan-2013	21-Jan-2013	21-Jan-2013	17-Jan-2013	18-Jan-2013	21-Jan-2013	18-Jan-2013	18-Jan-2013
Nitrite by Kone (w)	22-Jan-2013	22-Jan-2013	18-Jan-2013	18-Jan-2013	22-Jan-2013	22-Jan-2013	18-Jan-2013	18-Jan-2013
PAH Spec MS - Aqueous (W)	23-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013
pH Value	17-Jan-2013	21-Jan-2013	21-Jan-2013	17-Jan-2013	17-Jan-2013	21-Jan-2013	17-Jan-2013	17-Jan-2013
Phenols by HPLC (W)	23-Jan-2013	23-Jan-2013	22-Jan-2013	22-Jan-2013	25-Jan-2013	23-Jan-2013	22-Jan-2013	22-Jan-2013
Sulphide	24-Jan-2013	24-Jan-2013	25-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013
Suspended Solids	17-Jan-2013	21-Jan-2013	22-Jan-2013	17-Jan-2013	17-Jan-2013	21-Jan-2013	17-Jan-2013	17-Jan-2013
Total Nitrogen	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013
Total Organic and Inorganic Carbon	21-Jan-2013	22-Jan-2013	23-Jan-2013	22-Jan-2013	23-Jan-2013	22-Jan-2013	22-Jan-2013	21-Jan-2013
TPH CWG (W)	24-Jan-2013	24-Jan-2013	24-Jan-2013	25-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013	24-Jan-2013

SDG:	130116-51	**Location:**	Dunkineely	**Order Number:**	240467740
Job:	D_RPSCON_BFT-73	**Customer:**	RPS Consultants Ltd	**Report Number:**	209904
Client Reference:		**Attention:**	Joseph McGrath	**Superseded Report:**	

Appendix
General

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

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

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 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 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

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

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

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

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

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

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

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

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -
Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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

RPS Consultants Ltd
Enterprise Fund Business Centre
Ballyraine
Letterkenny

Attention: Michael Crawford

CERTIFICATE OF ANALYSIS

Date of report Generation:	23 October 2020
Customer:	RPS Consultants Ltd
Sample Delivery Group (SDG):	201009-86
Your Reference:	IBR1266
Location:	Dunkineely
Report No:	572360

We received 7 samples on Friday October 09, 2020 and 7 of these samples were scheduled for analysis which was completed on Friday October 23, 2020. 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.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

Version: 2.6 Version Issued: 23/10/2020

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22999660	BH02			06/10/2020
22999666	BH04			06/10/2020
22999667	BH05			06/10/2020
22999663	BH03D			06/10/2020
22999661	BH03S			06/10/2020
22999668	SW1			06/10/2020
22999669	SW2			06/10/2020

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	22999660	22999666	22999667
			Customer Sample Reference	BH02	BH04	BH05
			AGS Reference			
			Depth (m)			
			Container	0.5l glass bottle (ALE227)	0.5l glass bottle (ALE227)	0.5l glass bottle (ALE227)
			Sample Type	GW	GW	GW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7		X	X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				
Ammonium Low	All	NDPs: 0 Tests: 7				
Anions by Kone (w)	All	NDPs: 0 Tests: 7		X	X	
BOD True Total	All	NDPs: 0 Tests: 7				
COD Unfiltered	All	NDPs: 0 Tests: 7				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7		X	X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7		X		X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
Fluoride	All	NDPs: 0 Tests: 7		X	X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7		X	X	

			Lab Sample No(s)	22999660	22999666	22999667
			Customer Sample Reference	BH02	BH04	BH05
			AGS Reference			
			Depth (m)			
			Container	250ml Amber Gl. PTFE/PE (ALE219)	250ml Amber Gl. PTFE/PE (ALE219)	
			Sample Type	GW	GW	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				
Ammonium Low	All	NDPs: 0 Tests: 7				
Anions by Kone (w)	All	NDPs: 0 Tests: 7				
BOD True Total	All	NDPs: 0 Tests: 7				
COD Unfiltered	All	NDPs: 0 Tests: 7				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7		X	X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7		X	X	
Fluoride	All	NDPs: 0 Tests: 7				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7				

			Lab Sample No(s)	22999660	22999666	22999667
			Customer Sample Reference	BH02	BH04	BH05
			AGS Reference			
			Depth (m)			
			Container	250ml BOD (ALE212)	250ml BOD (ALE212)	
			Sample Type	GW	GW	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				
Ammonium Low	All	NDPs: 0 Tests: 7				
Anions by Kone (w)	All	NDPs: 0 Tests: 7				
BOD True Total	All	NDPs: 0 Tests: 7		X	X	
COD Unfiltered	All	NDPs: 0 Tests: 7		X	X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
Fluoride	All	NDPs: 0 Tests: 7				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7				

			Lab Sample No(s)	22999660	22999666	22999667
			Customer Sample Reference	BH02	BH04	BH05
			AGS Reference			
			Depth (m)			
			Container	500ml Plastic (ALE208)	500ml Plastic (ALE208)	
			Sample Type	GW	GW	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7		X	X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				
Ammonium Low	All	NDPs: 0 Tests: 7				
Anions by Kone (w)	All	NDPs: 0 Tests: 7		X	X	
BOD True Total	All	NDPs: 0 Tests: 7				
COD Unfiltered	All	NDPs: 0 Tests: 7				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7		X	X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
Fluoride	All	NDPs: 0 Tests: 7		X	X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7		X	X	

			Lab Sample No(s)	22999660	22999666	22999667
			Customer Sample Reference	BH02	BH04	BH05
			AGS Reference			
			Depth (m)			
			Container	H2SO4 (ALE244)	H2SO4 (ALE244)	
			Sample Type	GW	GW	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7		X	X	
Ammonium Low	All	NDPs: 0 Tests: 7		X	X	
Anions by Kone (w)	All	NDPs: 0 Tests: 7				
BOD True Total	All	NDPs: 0 Tests: 7				
COD Unfiltered	All	NDPs: 0 Tests: 7				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
Fluoride	All	NDPs: 0 Tests: 7				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7				

			Lab Sample No(s)	22999660	22999666	22999667
			Customer Sample Reference	BH02	BH04	BH05
			AGS Reference			
			Depth (m)			
			Container	HNO3 Filtered (ALE204)	HNO3 Filtered (ALE204)	
			Sample Type	GW	GW	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				
Ammonium Low	All	NDPs: 0 Tests: 7				
Anions by Kone (w)	All	NDPs: 0 Tests: 7				
BOD True Total	All	NDPs: 0 Tests: 7				
COD Unfiltered	All	NDPs: 0 Tests: 7				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7		X	X	
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
Fluoride	All	NDPs: 0 Tests: 7				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7				

			Lab Sample No(s)	22999660	22999666	22999667
			Customer Sample Reference	BH02	BH04	BH05
			AGS Reference			
			Depth (m)			
			Container	NaOH (ALE245)	NaOH (ALE245)	
			Sample Type	GW	GW	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				
Ammonium Low	All	NDPs: 0 Tests: 7				
Anions by Kone (w)	All	NDPs: 0 Tests: 7				
BOD True Total	All	NDPs: 0 Tests: 7				
COD Unfiltered	All	NDPs: 0 Tests: 7				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
Fluoride	All	NDPs: 0 Tests: 7				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7				

			Lab Sample No(s)	22999660	22999666	22999667
			Customer Sample Reference	BH02	BH04	BH05
			AGS Reference			
			Depth (m)			
			Container	Vial (ALE297)	Vial (ALE297)	
			Sample Type	GW	GW	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				
Ammonium Low	All	NDPs: 0 Tests: 7				
Anions by Kone (w)	All	NDPs: 0 Tests: 7				
BOD True Total	All	NDPs: 0 Tests: 7				
COD Unfiltered	All	NDPs: 0 Tests: 7				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
Fluoride	All	NDPs: 0 Tests: 7				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7		X		
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7				

			Lab Sample No(s)	22999660	22999666	22999667
			Customer Sample Reference	BH02	BH04	BH05
			AGS Reference			
			Depth (m)			
			Container	ZnAc (ALE246)	ZnAc (ALE246)	
			Sample Type	GW	GW	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				
Ammonium Low	All	NDPs: 0 Tests: 7				
Anions by Kone (w)	All	NDPs: 0 Tests: 7				
BOD True Total	All	NDPs: 0 Tests: 7				
COD Unfiltered	All	NDPs: 0 Tests: 7				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
Fluoride	All	NDPs: 0 Tests: 7				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7				

			Lab Sample No(s)	22999660	22999666	22999667
			Customer Sample Reference	BH02	BH04	BH05
			AGS Reference			
			Depth (m)			
			Container	0.5l glass bottle (ALE227)	0.5l glass bottle (ALE227)	
			Sample Type	GW	GW	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				
Ammonium Low	All	NDPs: 0 Tests: 7				
Anions by Kone (w)	All	NDPs: 0 Tests: 7				
BOD True Total	All	NDPs: 0 Tests: 7				
COD Unfiltered	All	NDPs: 0 Tests: 7				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7		X		X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7				
Fluoride	All	NDPs: 0 Tests: 7				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7				

22999661	BH03S			500ml Plastic (ALE208)	GW	X			X			X						X		X
				250ml BOD (ALE212)	GW					X	X												
				250ml Amber Gl. PTFE/PE (ALE219)	GW												X	X					
				0.5l glass bottle (ALE227)	GW											X							
22999663	BH03D			ZnAc (ALE246)	GW																		
				Vial (ALE297)	GW																X		
				NaOH (ALE245)	GW								X										
				HNO3 Filtered (ALE204)	GW									X									
				H2SO4 (ALE244)	GW		X	X															
				500ml Plastic (ALE208)	GW	X			X			X						X		X
				250ml BOD (ALE212)	GW					X	X												
				250ml Amber Gl. PTFE/PE (ALE219)	GW												X	X					
				0.5l glass bottle (ALE227)	GW											X							
22999667	BH05			ZnAc (ALE246)	GW																		
				Vial (ALE297)	GW																X		
				NaOH (ALE245)	GW								X										
				HNO3 Filtered (ALE204)	GW									X									
				H2SO4 (ALE244)	GW		X	X															
				500ml Plastic (ALE208)	GW	X			X			X						X		X
				250ml BOD (ALE212)	GW					X	X												
				250ml Amber Gl. PTFE/PE (ALE219)	GW												X	X					

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)				22999660	22999666	22999667
Customer Sample Reference				BH02	BH04	BH05
AGS Reference						
Depth (m)						
Container				0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)
Sample Type				GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 7					X									X						
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 7						X									X					
Low Level TOC	All	NDPs: 0 Tests: 7						X									X					
Mercury Dissolved	All	NDPs: 0 Tests: 7							X									X				
Nitrite by Kone (w)	All	NDPs: 0 Tests: 7								X									X			
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 7		X										X								
pH Value	All	NDPs: 0 Tests: 7					X									X						
Phosphate by Kone (w)	All	NDPs: 0 Tests: 7					X									X						
Sulphide	All	NDPs: 0 Tests: 7										X									X	
Suspended Solids	All	NDPs: 0 Tests: 7					X									X						
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 7	X										X									X
Total Nitrogen	All	NDPs: 0 Tests: 7					X									X						
TPH CWG (W)	All	NDPs: 0 Tests: 7	X										X									X
VOC MS (W)	All	NDPs: 0 Tests: 7									X									X		

22999661	BH03S			500ml Plastic (ALE208)	GW		X												X		X				X				X				
				250ml BOD (ALE212)	GW																												
				250ml Amber Gl. PTFE/PE (ALE219)	GW												X																
				0.5l glass bottle (ALE227)	GW																						X				X		
22999663	BH03D			ZnAc (ALE246)	GW																		X										
				Vial (ALE297)	GW																												X
				NaOH (ALE245)	GW										X																		
				HNO3 Filtered (ALE204)	GW								X																				
				H2SO4 (ALE244)	GW				X		X																						
				500ml Plastic (ALE208)	GW		X												X		X				X				X				
				250ml BOD (ALE212)	GW																												
				250ml Amber Gl. PTFE/PE (ALE219)	GW												X																
				0.5l glass bottle (ALE227)	GW																						X				X		
22999667	BH05			ZnAc (ALE246)	GW																		X										
				Vial (ALE297)	GW																												X
				NaOH (ALE245)	GW										X																		
				HNO3 Filtered (ALE204)	GW								X																				
				H2SO4 (ALE244)	GW				X		X																						
				500ml Plastic (ALE208)	GW		X												X		X				X				X				
				250ml BOD (ALE212)	GW																												
				250ml Amber Gl. PTFE/PE (ALE219)	GW												X																

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)											22999661							22999668				22999669
Customer Sample Reference											BH03S							SW1				SW2
AGS Reference																						
Depth (m)																						
Container											H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)
Sample Type											GW	GW	GW	GW	GW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7																	X									X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7									X									X									X
Ammonium Low	All	NDPs: 0 Tests: 7									X									X									X
Anions by Kone (w)	All	NDPs: 0 Tests: 7																	X									X	
BOD True Total	All	NDPs: 0 Tests: 7																X										X	
COD Unfiltered	All	NDPs: 0 Tests: 7																X										X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7																	X									X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7											X										X						
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7										X												X					
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7														X										X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7															X										X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7															X										X		
Fluoride	All	NDPs: 0 Tests: 7																	X									X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7												X											X				
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7																	X									X	

				22999669
				SW2
HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	
SW	SW	SW	SW	
	X			
X				
		X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	22999661	22999668	22999669
			Customer Sample Reference	BH03S	SW1	SW2
			AGS Reference			
			Depth (m)			
			Container	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)
			Sample Type	GW	GW	GW	GW	GW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 7										X									X	
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 7	X										X										X
Low Level TOC	All	NDPs: 0 Tests: 7	X										X										X
Mercury Dissolved	All	NDPs: 0 Tests: 7		X										X									
Nitrite by Kone (w)	All	NDPs: 0 Tests: 7			X										X								
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 7								X										X			
pH Value	All	NDPs: 0 Tests: 7										X										X	
Phosphate by Kone (w)	All	NDPs: 0 Tests: 7										X										X	
Sulphide	All	NDPs: 0 Tests: 7					X										X						
Suspended Solids	All	NDPs: 0 Tests: 7										X										X	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 7						X										X					
Total Nitrogen	All	NDPs: 0 Tests: 7										X										X	
TPH CWG (W)	All	NDPs: 0 Tests: 7						X										X					
VOC MS (W)	All	NDPs: 0 Tests: 7				X										X							

				22999669
				SW2
HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	
SW	SW	SW	SW	
X				
	X			
			X	
		X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW1
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020
			Sample Time	09:45:00	10:15:00	10:30:00	09:30:00	09:15:00	10:45:00
			Date Received	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020
			SDG Ref	201009-86	201009-86	201009-86	201009-86	201009-86	201009-86
			Lab Sample No.(s)	22999660	22999666	22999667	22999663	22999661	22999668
			AGS Reference						
Suspended solids, Total	<2 mg/l	TM022		532	285 #	318 #	517 #	50.3	7.6 #
Alkalinity, Total as CaCO3	<2 mg/l	TM043		303	238 #	202 #	222 #	185	60 #
BOD, unfiltered	<1 mg/l	TM045		<1 @	4.84 @ #	2.04 @ #	<2 @ #	<1 @	3.42 @ #
Carbon, Organic (diss.filt)	<3 mg/l	TM090		3.13	4.15	10.5	4.75	9.06	15.9
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		<0.2	0.907 #	0.742 #	<0.2 #	<0.2	<0.2 #
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.0547	0.869 #	0.266 #	0.0603 #	0.0371	0.052 #
Sulphide	<0.01 mg/l	TM101		<0.01	0.0175 #	<0.01 #	0.0269 #	<0.01	<0.01
Fluoride	<0.5 mg/l	TM104		<0.5	<0.5 #	<0.5 #	<0.5 #	<0.5	<0.5
COD, unfiltered	<7 mg/l	TM107		241	920 #	306 #	94.2 #	36.6	62.5 #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		0.762	0.528 #	0.431 #	0.501 #	0.404	0.156 #
Aluminium (diss.filt)	<10 µg/l	TM152		<10	<10 #	<10 #	<10 #	<10	72 #
Antimony (diss.filt)	<1 µg/l	TM152		<1	<1 #	<1 #	<1 #	<1	<1 #
Arsenic (diss.filt)	<0.5 µg/l	TM152		<0.5	2.59 #	0.659 #	0.693 #	0.507	<0.5 #
Barium (diss.filt)	<0.2 µg/l	TM152		695	75.8 #	71 #	112 #	84.5	10.6 #
Beryllium (diss.filt)	<0.1 µg/l	TM152		<0.1	<0.1 #	<0.1 #	<0.1 #	<0.1	<0.1 #
Boron (diss.filt)	<10 µg/l	TM152		32.5	22.8 #	28 #	19.7 #	18.2	19.3 #
Cadmium (diss.filt)	<0.08 µg/l	TM152		0.122	<0.08 #	<0.08 #	<0.08 #	0.0903	<0.08 #
Chromium (diss.filt)	<1 µg/l	TM152		<1	<1 #	<1 #	<1 #	<1	<1 #
Copper (diss.filt)	<0.3 µg/l	TM152		0.562	<0.3 #	0.335 #	0.421 #	1.57	2.57 #
Lead (diss.filt)	<0.2 µg/l	TM152		0.265	<0.2 #	<0.2 #	0.723 #	<0.2	0.265 #
Manganese (diss.filt)	<3 µg/l	TM152		91.5	316 #	462 #	1060 #	581	8.96 #
Molybdenum (diss.filt)	<3 µg/l	TM152		<3	<3 #	<3 #	<3 #	<3	<3 #
Nickel (diss.filt)	<0.4 µg/l	TM152		0.916	0.731 #	1.2 #	1.42 #	1.86	1.3 #
Selenium (diss.filt)	<1 µg/l	TM152		<1	<1 #	<1 #	<1 #	<1	<1 #
Vanadium (diss.filt)	<1 µg/l	TM152		<1	<1 #	<1 #	<1 #	<1	<1 #
Zinc (diss.filt)	<1 µg/l	TM152		5.49	2.58 #	4.03 #	5.18 #	3.88	3.72 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152		37.1	22.9 #	24.8 #	19.1 #	18.5	9.23 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		15.1	6.5 #	6.3 #	6.32 #	5.64	2.21 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152		4.04	1.54 #	1.53 #	0.759 #	0.357	2.57 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152		112	90 #	83.8 #	94.5 #	95.4	21 #
Iron (Dis.Filt)	<0.019 mg/l	TM152		0.171	2.05 #	4.09 #	4.82 #	2.15	0.314 #
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01	<0.01 #	<0.01 #	<0.01 #	<0.01	<0.01
Nitrite as NO2	<0.05 mg/l	TM184		<0.05	<0.05 #	<0.05 #	<0.05 #	<0.05	<0.05 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW1
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020
			Sample Time	09:45:00	10:15:00	10:30:00	09:30:00	09:15:00	10:45:00
			Date Received	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020
			SDG Ref	201009-86	201009-86	201009-86	201009-86	201009-86	201009-86
			Lab Sample No.(s)	22999660	22999666	22999667	22999663	22999661	22999668
			AGS Reference						
Sulphate	<2 mg/l	TM184		23.8	16.9 #	4.7 #	21.9 #	19.5	<2 #
Chloride	<2 mg/l	TM184		79.5	36.4 #	31.1 #	34.1 #	14.5	14.8 #
Phosphate (Ortho as P)	<0.02 mg/l	TM184		<0.02	<0.02 #	<0.02 #	<0.02 #	<0.02	<0.02 #
Nitrate as NO3	<0.3 mg/l	TM184		1.79	<0.3	<0.3	<0.3	<0.3	0.711
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.408	<0.1 #	<0.1 #	<0.1 #	<0.1	0.162 #
Nitrogen, Kjeldahl	<1 mg/l	TM212		<1	1.14	<1	<1	<1	<1
Organic nitrogen, Total	<1 mg/l	TM212		<1	<1	<1	<1	<1	<1
Nitrogen, Total	<1 mg/l	TM212		<1	1.14 #	<1 #	<1 #	<1	1.14 #
Cyanide, Total	<0.05 mg/l	TM227		<0.05	<0.05 #	<0.05 #	<0.05 #	<0.05	<0.05
Phenol (low level)	<0.5 µg/l	TM255		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cresols (low level)	<0.5 µg/l	TM255		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenols (low level)	<0.5 µg/l	TM255		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
pH	<1 pH Units	TM256		7.29	6.78 @ #	6.88 #	6.78 #	6.73	7.51 #
Organic Carbon, Total Low Level	<0.1 mg/l	TM295		3.41 @	6.7 @ #	80.4 @ #	4.16 @ #	9.74 @	16 @ #
Low Level Hexavalent Chromium	<0.003 mg/l	TM331		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

		Customer Sample Ref.	SW2
		Depth (m)	.
		Sample Type	Surface Water (SW)
		Date Sampled	06/10/2020
		Sample Time	09:45:00
		Date Received	09/10/2020
		SDG Ref	201009-86
		Lab Sample No.(s)	22999669
		AGS Reference	
Component	**LOD/Units**	**Method**	
Suspended solids, Total	<2 mg/l	TM022	<2 #
Alkalinity, Total as CaCO3	<2 mg/l	TM043	30.4 #
BOD, unfiltered	<1 mg/l	TM045	<1 @ #
Carbon, Organic (diss.filt)	<3 mg/l	TM090	18
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	0.293 #
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	0.0513 #
Sulphide	<0.01 mg/l	TM101	<0.01
Fluoride	<0.5 mg/l	TM104	<0.5
COD, unfiltered	<7 mg/l	TM107	48.9 #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120	0.181 #
Aluminium (diss.filt)	<10 µg/l	TM152	210 #
Antimony (diss.filt)	<1 µg/l	TM152	<1 #
Arsenic (diss.filt)	<0.5 µg/l	TM152	<0.5 #
Barium (diss.filt)	<0.2 µg/l	TM152	14 #
Beryllium (diss.filt)	<0.1 µg/l	TM152	<0.1 #
Boron (diss.filt)	<10 µg/l	TM152	23.9 #
Cadmium (diss.filt)	<0.08 µg/l	TM152	0.107 #
Chromium (diss.filt)	<1 µg/l	TM152	<1 #
Copper (diss.filt)	<0.3 µg/l	TM152	4.51 #
Lead (diss.filt)	<0.2 µg/l	TM152	0.353 #
Manganese (diss.filt)	<3 µg/l	TM152	42.2 #
Molybdenum (diss.filt)	<3 µg/l	TM152	<3 #
Nickel (diss.filt)	<0.4 µg/l	TM152	2.75 #
Selenium (diss.filt)	<1 µg/l	TM152	<1 #
Vanadium (diss.filt)	<1 µg/l	TM152	<1 #
Zinc (diss.filt)	<1 µg/l	TM152	14.2 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152	18.2 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	2.6 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152	1.5 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152	17.5 #
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.422 #
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01
Nitrite as NO2	<0.05 mg/l	TM184	<0.05 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Customer Sample Ref.			SW2
Depth (m)			.
Sample Type			Surface Water (SW)
Date Sampled			06/10/2020
Sample Time			09:45:00
Date Received			09/10/2020
SDG Ref			201009-86
Lab Sample No.(s)			22999669
AGS Reference			
Component	**LOD/Units**	**Method**	
Sulphate	<2 mg/l	TM184	17.3 #
Chloride	<2 mg/l	TM184	28.3 #
Phosphate (Ortho as P)	<0.02 mg/l	TM184	<0.02 #
Nitrate as NO3	<0.3 mg/l	TM184	<0.3
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	<0.1 #
Nitrogen, Kjeldahl	<1 mg/l	TM212	1.26
Organic nitrogen, Total	<1 mg/l	TM212	<1
Nitrogen, Total	<1 mg/l	TM212	1.26 #
Cyanide, Total	<0.05 mg/l	TM227	<0.05
Phenol (low level)	<0.5 µg/l	TM255	<0.5
Cresols (low level)	<0.5 µg/l	TM255	<0.5
Xylenols (low level)	<0.5 µg/l	TM255	<0.5
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5
pH	<1 pH Units	TM256	6.26 #
Organic Carbon, Total Low Level	<0.1 mg/l	TM295	18.2 @ #
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW1
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020
			Sample Time	09:45:00	10:15:00	10:30:00	09:30:00	09:15:00	10:45:00
			Date Received	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020
			SDG Ref	201009-86	201009-86	201009-86	201009-86	201009-86	201009-86
			Lab Sample No.(s)	22999660	22999666	22999667	22999663	22999661	22999668
			AGS Reference						
Naphthalene (aq)	<0.01 µg/l	TM178		<0.01 @	<0.01 @ #	<0.01 @ #	0.0108 @ #	0.0107 @	<0.01 @ #
Acenaphthene (aq)	<0.005 µg/l	TM178		0.0143 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Acenaphthylene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Fluoranthene (aq)	<0.005 µg/l	TM178		0.00635 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Anthracene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Phenanthrene (aq)	<0.005 µg/l	TM178		0.044 @	<0.005 @ #	<0.005 @ #	0.00899 @ #	<0.005 @	<0.005 @ #
Fluorene (aq)	<0.005 µg/l	TM178		0.0184 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Chrysene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Pyrene (aq)	<0.005 µg/l	TM178		0.00808 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178		<0.005 @	0.0116 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178		<0.005 @	0.00525 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178		<0.002 @	0.00572 @ #	<0.002 @ #	<0.002 @ #	<0.002 @	<0.002 @ #
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @	<0.005 @ #
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178		0.0911 @	<0.082 @ #	<0.082 @ #	<0.082 @ #	<0.082 @	<0.082 @ #

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SW2
Depth (m)	.
Sample Type	Surface Water (SW)
Date Sampled	06/10/2020
Sample Time	09:45:00
Date Received	09/10/2020
SDG Ref	201009-86
Lab Sample No.(s)	22999669
AGS Reference	

Component	LOD/Units	Method	
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01 @ #
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Anthracene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Fluorene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Chrysene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Pyrene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002 @ #
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005 @ #
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005 @ #
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082 @ #

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW1
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020
			Sample Time	09:45:00	10:15:00	10:30:00	09:30:00	09:15:00	10:45:00
			Date Received	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020
			SDG Ref	201009-86	201009-86	201009-86	201009-86	201009-86	201009-86
			Lab Sample No.(s)	22999660	22999666	22999667	22999663	22999661	22999668
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2-Chlorophenol (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2-Methylphenol (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2-Nitroaniline (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
2-Nitrophenol (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
3-Nitroaniline (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
4-Chloroaniline (aq)	<1 µg/l	TM176		<4	<4	<20	<8	<4	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
4-Methylphenol (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
4-Nitroaniline (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
4-Nitrophenol (aq)	<1 µg/l	TM176		<4	<4	<20	<8	<4	<1
Azobenzene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Acenaphthylene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Acenaphthene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Anthracene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<8 @	<8 @ #	<40 @ #	<16 @ #	<8 @	<2 @ #
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #

CERTIFICATE OF ANALYSIS

SDG: 201009-86 **Client Reference:** IBR1266 **Report Number:** 572360
Location: Dunkineely **Order Number:** **Superseded Report:**

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW1
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020
			Sample Time	09:45:00	10:15:00	10:30:00	09:30:00	09:15:00	10:45:00
			Date Received	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020
			SDG Ref	201009-86	201009-86	201009-86	201009-86	201009-86	201009-86
			Lab Sample No.(s)	22999660	22999666	22999667	22999663	22999661	22999668
			AGS Reference						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Carbazole (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Chrysene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Dibenzofuran (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Diethyl phthalate (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Dimethyl phthalate (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<20 @	<20 @ #	<100 @ #	<40 @ #	<20 @	<5 @ #
Fluoranthene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Fluorene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Hexachlorobenzene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Pentachlorophenol (aq)	<1 µg/l	TM176		<4	<4	<20	<8	<4	<1
Phenol (aq)	<1 µg/l	TM176		<4	<4	<20	<8	<4	<1
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Hexachloroethane (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Nitrobenzene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Naphthalene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Isophorone (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<4	<4	<20	<8	<4	<1
Phenanthrene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
Pyrene (aq)	<1 µg/l	TM176		<4 @	<4 @ #	<20 @ #	<8 @ #	<4 @	<1 @ #
SVOC TIC (aq)		TM176		Not Detected @	Not Detected @	Not Detected @	Not Detected @	Not Detected @	Not Detected @
Total SVOC TIC	<10 µg/l	TM176		<40	<40	<200	<80	<40	<10

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SW2
Depth (m)	.
Sample Type	Surface Water (SW)
Date Sampled	06/10/2020
Sample Time	09:45:00
Date Received	09/10/2020
SDG Ref	201009-86
Lab Sample No.(s)	22999669
AGS Reference	

Component	LOD/Units	Method	
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<2 @ #
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<2 @ #
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<2 @ #
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<2 @ #
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<2 @ #
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<2 @ #
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<2 @ #
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<2 @ #
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<2 @ #
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<2 @ #
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<2 @ #
2-Chlorophenol (aq)	<1 µg/l	TM176	<2 @ #
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<2 @ #
2-Methylphenol (aq)	<1 µg/l	TM176	<2 @ #
2-Nitroaniline (aq)	<1 µg/l	TM176	<2 @ #
2-Nitrophenol (aq)	<1 µg/l	TM176	<2 @ #
3-Nitroaniline (aq)	<1 µg/l	TM176	<2 @ #
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<2 @ #
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<2 @ #
4-Chloroaniline (aq)	<1 µg/l	TM176	<2
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<2 @ #
4-Methylphenol (aq)	<1 µg/l	TM176	<2 @ #
4-Nitroaniline (aq)	<1 µg/l	TM176	<2 @ #
4-Nitrophenol (aq)	<1 µg/l	TM176	<2
Azobenzene (aq)	<1 µg/l	TM176	<2 @ #
Acenaphthylene (aq)	<1 µg/l	TM176	<2 @ #
Acenaphthene (aq)	<1 µg/l	TM176	<2 @ #
Anthracene (aq)	<1 µg/l	TM176	<2 @ #
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<2 @ #
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<2 @ #
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<4 @ #
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<2 @ #
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<2 @ #

CERTIFICATE OF ANALYSIS

SDG: 201009-86 **Client Reference:** IBR1266 **Report Number:** 572360
Location: Dunkineely **Order Number:** **Superseded Report:**

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Customer Sample Ref.	SW2
Depth (m)	.
Sample Type	Surface Water (SW)
Date Sampled	06/10/2020
Sample Time	09:45:00
Date Received	09/10/2020
SDG Ref	201009-86
Lab Sample No.(s)	22999669
AGS Reference	

Component	LOD/Units	Method	
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<2 @ #
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<2 @ #
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<2 @ #
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<2 @ #
Carbazole (aq)	<1 µg/l	TM176	<2 @ #
Chrysene (aq)	<1 µg/l	TM176	<2 @ #
Dibenzofuran (aq)	<1 µg/l	TM176	<2 @ #
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<2 @ #
Diethyl phthalate (aq)	<1 µg/l	TM176	<2 @ #
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<2 @ #
Dimethyl phthalate (aq)	<1 µg/l	TM176	<2 @ #
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<10 @ #
Fluoranthene (aq)	<1 µg/l	TM176	<2 @ #
Fluorene (aq)	<1 µg/l	TM176	<2 @ #
Hexachlorobenzene (aq)	<1 µg/l	TM176	<2 @ #
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<2 @ #
Pentachlorophenol (aq)	<1 µg/l	TM176	<2
Phenol (aq)	<1 µg/l	TM176	<2
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<2 @ #
Hexachloroethane (aq)	<1 µg/l	TM176	<2 @ #
Nitrobenzene (aq)	<1 µg/l	TM176	<2 @ #
Naphthalene (aq)	<1 µg/l	TM176	<2 @ #
Isophorone (aq)	<1 µg/l	TM176	<2 @ #
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<2
Phenanthrene (aq)	<1 µg/l	TM176	<2 @ #
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<2 @ #
Pyrene (aq)	<1 µg/l	TM176	<2 @ #
SVOC TIC (aq)		TM176	Not Detected @
Total SVOC TIC	<10 µg/l	TM176	<20

Validated

CERTIFICATE OF ANALYSIS

SDG: 201009-86 **Client Reference:** IBR1266 **Report Number:** 572360
Location: Dunkineely **Order Number:** **Superseded Report:**

TPH CWG (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW1
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020
			Sample Time	09:45:00	10:15:00	10:30:00	09:30:00	09:15:00	10:45:00
			Date Received	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020
			SDG Ref	201009-86	201009-86	201009-86	201009-86	201009-86	201009-86
			Lab Sample No.(s)	22999660	22999666	22999667	22999663	22999661	22999668
			AGS Reference						
GRO Surrogate % recovery**	%	TM245		102	92	105	99	103	105
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		262	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174		262	<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		262	<10	<10	<10	<10	<10
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174		262	<10	<10	<10	<10	<10

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

TPH CWG (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SW2							
Depth (m)	.							
Sample Type	Surface Water (SW)							
Date Sampled	06/10/2020							
Sample Time	09:45:00							
Date Received	09/10/2020							
SDG Ref	201009-86							
Lab Sample No.(s)	22999669							
AGS Reference								
Component	**LOD/Units**	**Method**						
GRO Surrogate % recovery**	%	TM245	99					
GRO >C5-C12	<50 µg/l	TM245	<50 #					
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3 #					
Benzene	<7 µg/l	TM245	<7 #					
Toluene	<4 µg/l	TM245	<4 #					
Ethylbenzene	<5 µg/l	TM245	<5 #					
m,p-Xylene	<8 µg/l	TM245	<8 #					
o-Xylene	<3 µg/l	TM245	<3 #					
Sum of detected Xylenes	<11 µg/l	TM245	<11					
Sum of detected BTEX	<28 µg/l	TM245	<28					
Aliphatics >C5-C6	<10 µg/l	TM245	<10					
Aliphatics >C6-C8	<10 µg/l	TM245	<10					
Aliphatics >C8-C10	<10 µg/l	TM245	<10					
Aliphatics >C10-C12	<10 µg/l	TM245	<10					
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10					
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10					
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10					
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10					
Aromatics >EC5-EC7	<10 µg/l	TM245	<10					
Aromatics >EC7-EC8	<10 µg/l	TM245	<10					
Aromatics >EC8-EC10	<10 µg/l	TM245	<10					
Aromatics >EC10-EC12	<10 µg/l	TM245	<10					
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10					
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10					
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10					
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10					
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10					
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174	<10					

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	BH02	BH04	BH05	BH03D	BH03S	SW1
Customer Sample Ref.								
Depth (m)			.	.	.	.	.	.
Sample Type			Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
Date Sampled			06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020
Sample Time			09:45:00	10:15:00	10:30:00	09:30:00	09:15:00	10:45:00
Date Received			09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020
SDG Ref			201009-86	201009-86	201009-86	201009-86	201009-86	201009-86
Lab Sample No.(s)			22999660	22999666	22999667	22999663	22999661	22999668
AGS Reference								
Dibromofluoromethane**	%	TM208	116	113	116	111	116	119
Toluene-d8**	%	TM208	99.2	98.1	98.9	100	100	98.5
4-Bromofluorobenzene**	%	TM208	97.6	96	95	95.2	95.8	95.7
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Chloromethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Vinyl chloride	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Bromomethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Chloroethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Carbon disulphide	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Dichloromethane	<3 µg/l	TM208	<3	<3 #	<3 #	<3 #	<3	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Chloroform	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Carbontetrachloride	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Benzene	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Trichloroethene	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Dibromomethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Bromodichloromethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
Toluene	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1 #	<1 #	<1 #	<1	<1 #

CERTIFICATE OF ANALYSIS

SDG: 201009-86 **Client Reference:** IBR1266 **Report Number:** 572360
Location: Dunkineely **Order Number:** **Superseded Report:**

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW1
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020
			Sample Time	09:45:00	10:15:00	10:30:00	09:30:00	09:15:00	10:45:00
			Date Received	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020
			SDG Ref	201009-86	201009-86	201009-86	201009-86	201009-86	201009-86
			Lab Sample No.(s)	22999660	22999666	22999667	22999663	22999661	22999668
			AGS Reference						
Tetrachloroethene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
Dibromochloromethane	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,2-Dibromoethane	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
Chlorobenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
Ethylbenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
m,p-Xylene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
o-Xylene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
Styrene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
Bromoform	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
Isopropylbenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
Bromobenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
Propylbenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
2-Chlorotoluene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
4-Chlorotoluene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
tert-Butylbenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
sec-Butylbenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
n-Butylbenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
Hexachlorobutadiene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
Naphthalene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1	<1 #	<1 #	<1 #	<1	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW1
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020	06/10/2020
			Sample Time	09:45:00	10:15:00	10:30:00	09:30:00	09:15:00	10:45:00
			Date Received	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020
			SDG Ref	201009-86	201009-86	201009-86	201009-86	201009-86	201009-86
			Lab Sample No.(s)	22999660	22999666	22999667	22999663	22999661	22999668
			AGS Reference						
VOC TIC		TM208		Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sum of detected Xylenes	<2 µg/l	TM208		<2	<2	<2	<2	<2	<2
Total VOC TIC	<10 µg/l	TM208		<10	<10	<10	<10	<10	<10

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SW2
Depth (m)	.
Sample Type	Surface Water (SW)
Date Sampled	06/10/2020
Sample Time	09:45:00
Date Received	09/10/2020
SDG Ref	201009-86
Lab Sample No.(s)	22999669
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM208	114
Toluene-d8**	%	TM208	98.8
4-Bromofluorobenzene**	%	TM208	97.8
Dichlorodifluoromethane	<1 µg/l	TM208	<1 #
Chloromethane	<1 µg/l	TM208	<1 #
Vinyl chloride	<1 µg/l	TM208	<1 #
Bromomethane	<1 µg/l	TM208	<1 #
Chloroethane	<1 µg/l	TM208	<1 #
Trichlorofluoromethane	<1 µg/l	TM208	<1 #
1,1-Dichloroethene	<1 µg/l	TM208	<1 #
Carbon disulphide	<1 µg/l	TM208	<1 #
Dichloromethane	<3 µg/l	TM208	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 #
1,1-Dichloroethane	<1 µg/l	TM208	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 #
2,2-Dichloropropane	<1 µg/l	TM208	<1
Bromochloromethane	<1 µg/l	TM208	<1 #
Chloroform	<1 µg/l	TM208	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 #
1,1-Dichloropropene	<1 µg/l	TM208	<1 #
Carbontetrachloride	<1 µg/l	TM208	<1 #
1,2-Dichloroethane	<1 µg/l	TM208	<1 #
Benzene	<1 µg/l	TM208	<1 #
Trichloroethene	<1 µg/l	TM208	<1 #
1,2-Dichloropropane	<1 µg/l	TM208	<1 #
Dibromomethane	<1 µg/l	TM208	<1 #
Bromodichloromethane	<1 µg/l	TM208	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 #
Toluene	<1 µg/l	TM208	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 #
1,3-Dichloropropane	<1 µg/l	TM208	<1 #

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Customer Sample Ref.	SW2
Depth (m)	.
Sample Type	Surface Water (SW)
Date Sampled	06/10/2020
Sample Time	09:45:00
Date Received	09/10/2020
SDG Ref	201009-86
Lab Sample No.(s)	22999669
AGS Reference	

Component	LOD/Units	Method	
Tetrachloroethene	<1 µg/l	TM208	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 #
Chlorobenzene	<1 µg/l	TM208	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #
Ethylbenzene	<1 µg/l	TM208	<1 #
m,p-Xylene	<1 µg/l	TM208	<1 #
o-Xylene	<1 µg/l	TM208	<1 #
Styrene	<1 µg/l	TM208	<1 #
Bromoform	<1 µg/l	TM208	<1 #
Isopropylbenzene	<1 µg/l	TM208	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #
Propylbenzene	<1 µg/l	TM208	<1 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #
sec-Butylbenzene	<1 µg/l	TM208	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #
Naphthalene	<1 µg/l	TM208	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1

Validated

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Customer Sample Ref.	SW2
Depth (m)	.
Sample Type	Surface Water (SW)
Date Sampled	06/10/2020
Sample Time	09:45:00
Date Received	09/10/2020
SDG Ref	201009-86
Lab Sample No.(s)	22999669
AGS Reference	

Component	LOD/Units	Method	
VOC TIC		TM208	Not Detected
Sum of detected Xylenes	<2 µg/l	TM208	<2
Total VOC TIC	<10 µg/l	TM208	<10

Table of Results - Appendix

Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
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
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM212	SO/TR 11905-2: 1997. Water quality – Determination of nitrogen –Part 2:Determination of bound nitrogen, after combustion and oxidation to nitrogen dioxide, chemiluminescence detection.	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
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
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
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
TM295	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Low Level Total Organic Carbon in Water
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	201009-86	**Client Reference:**	IBR1266	**Report Number:**	572360
Location:	Dunkineely	**Order Number:**		**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	22999660	22999666	22999667	22999663	22999661	22999668	22999669
Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW1	SW2
AGS Ref.							
Depth							
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Surface Water	Surface Water
Alkalinity as CaCO3	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	19-Oct-2020
Ammoniacal Nitrogen	20-Oct-2020	20-Oct-2020	19-Oct-2020	20-Oct-2020	20-Oct-2020	19-Oct-2020	19-Oct-2020
Ammonium Low	19-Oct-2020	19-Oct-2020	20-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020
Anions by Kone (w)	19-Oct-2020	20-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	20-Oct-2020	19-Oct-2020
BOD True Total	15-Oct-2020	15-Oct-2020	15-Oct-2020	15-Oct-2020	15-Oct-2020	15-Oct-2020	15-Oct-2020
COD Unfiltered	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020
Conductivity (at 20 deg.C)	19-Oct-2020	19-Oct-2020	18-Oct-2020	19-Oct-2020	18-Oct-2020	19-Oct-2020	18-Oct-2020
Cyanide Comp/Free/Total/Thiocyanate	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020
Dissolved Metals by ICP-MS	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020
Dissolved Organic/Inorganic Carbon	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020
EPH CWG (Aliphatic) Aqueous GC (W)	21-Oct-2020	21-Oct-2020	21-Oct-2020	21-Oct-2020	21-Oct-2020	21-Oct-2020	21-Oct-2020
EPH CWG (Aromatic) Aqueous GC (W)	21-Oct-2020	21-Oct-2020	21-Oct-2020	21-Oct-2020	21-Oct-2020	21-Oct-2020	21-Oct-2020
Fluoride	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020
GRO by GC-FID (W)	13-Oct-2020	13-Oct-2020	13-Oct-2020	13-Oct-2020	13-Oct-2020	13-Oct-2020	13-Oct-2020
Kjeldahl Nitrogen on liquids	22-Oct-2020	22-Oct-2020	22-Oct-2020	22-Oct-2020	22-Oct-2020	23-Oct-2020	22-Oct-2020
Low Level Hexavalent Chromium (w)	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020
Low Level Phenols by HPLC (W)	20-Oct-2020	20-Oct-2020	21-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020
Low Level TOC	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020	18-Oct-2020
Mercury Dissolved	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020
Nitrite by Kone (w)	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020
PAH Spec MS - Aqueous (W)	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020
pH Value	19-Oct-2020	20-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020	19-Oct-2020
Phosphate by Kone (w)	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020
Sulphide	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020
Suspended Solids	19-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	19-Oct-2020	20-Oct-2020
SVOC MS (W) - Aqueous	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020	20-Oct-2020
Total Nitrogen	22-Oct-2020	22-Oct-2020	22-Oct-2020	22-Oct-2020	22-Oct-2020	23-Oct-2020	22-Oct-2020
TPH CWG (W)	22-Oct-2020	22-Oct-2020	22-Oct-2020	22-Oct-2020	22-Oct-2020	22-Oct-2020	22-Oct-2020
VOC MS (W)	12-Oct-2020	12-Oct-2020	13-Oct-2020	13-Oct-2020	13-Oct-2020	13-Oct-2020	12-Oct-2020

Appendix General

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

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. 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.

4. 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.

5. 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.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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

11. 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.

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

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. 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.

15. 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.

16. 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.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

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 (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (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 ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

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

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

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.

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

RPS Consultants Ltd
Enterprise Fund Business Centre
Ballyraine
Letterkenny

Attention: Michael Crawford

CERTIFICATE OF ANALYSIS

Date of report Generation:	06 November 2020
Customer:	RPS Consultants Ltd
Sample Delivery Group (SDG):	201023-85
Your Reference:	IBR1266
Location:	Dunkineely
Report No:	574439

We received 7 samples on Friday October 23, 2020 and 7 of these samples were scheduled for analysis which was completed on Friday November 06, 2020. 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.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23100498	BH02			20/10/2020
23100502	BH04			20/10/2020
23100503	BH05			20/10/2020
23100501	BH03D			20/10/2020
23100499	BH03S			20/10/2020
23100494	SW01			20/10/2020
23100495	SW02			20/10/2020

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			23100498	BH02			0.5l glass bottle (ALE227)	GW
							PTFE/PE (ALE219)	GW
							250ml Amber Gl. (ALE212)	GW
							250ml BOD (ALE208)	GW
							500ml Plastic H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
							ZnAc (ALE246)	GW
			23100502	BH04			0.5l glass bottle (ALE227)	GW
							PTFE/PE (ALE219)	GW
							250ml Amber Gl. (ALE212)	GW
							250ml BOD (ALE208)	GW
							500ml Plastic H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
							ZnAc (ALE246)	GW
			23100503	BH05			0.5l glass bottle (ALE227)	GW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7						X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7						X
Ammonium Low	All	NDPs: 0 Tests: 7						X
Anions by Kone (w)	All	NDPs: 0 Tests: 7						X
BOD True Total	All	NDPs: 0 Tests: 7						X
COD Unfiltered	All	NDPs: 0 Tests: 7						X
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7						X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7						X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7						X
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7	X					X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7		X				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7		X				
Fluoride	All	NDPs: 0 Tests: 7						X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7						X
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7						X

23100499	BH03S			500ml Plastic (ALE208)	GW		X				X				X							X			X
				250ml BOD (ALE212)	GW								X		X										
				250ml Amber Gl. PTFE/PE (ALE219)	GW																X		X			
				0.5l glass bottle (ALE227)	GW											X			X						
23100501	BH03D			ZnAc (ALE246)	GW																				
				Vial (ALE297)	GW																			X	
				NaOH (ALE245)	GW											X									
				HNO3 Filtered (ALE204)	GW												X								
				H2SO4 (ALE244)	GW			X		X															
				500ml Plastic (ALE208)	GW		X				X				X							X			X
				250ml BOD (ALE212)	GW								X		X										
				250ml Amber Gl. PTFE/PE (ALE219)	GW																X		X			
				0.5l glass bottle (ALE227)	GW														X						
23100503	BH05			ZnAc (ALE246)	GW																				
				Vial (ALE297)	GW																			X	
				NaOH (ALE245)	GW											X									
				HNO3 Filtered (ALE204)	GW												X								
				H2SO4 (ALE244)	GW			X		X															
				500ml Plastic (ALE208)	GW		X				X				X							X			X
				250ml BOD (ALE212)	GW								X		X										
				250ml Amber Gl. PTFE/PE (ALE219)	GW																X		X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			23100498	BH02			0.5l glass bottle (ALE227)	GW
							250ml Amber Gl. PTFE/PE (ALE219)	GW
							250ml BOD (ALE212)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
							ZnAc (ALE246)	GW
			23100502	BH04			0.5l glass bottle (ALE227)	GW
							250ml Amber Gl. PTFE/PE (ALE219)	GW
							250ml BOD (ALE212)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
							ZnAc (ALE246)	GW
			23100503	BH05			0.5l glass bottle (ALE227)	GW
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 7						
							X	
							X	
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 7						
							X	
							X	
Low Level TOC	All	NDPs: 0 Tests: 7						
							X	
							X	
Mercury Dissolved	All	NDPs: 0 Tests: 7						
								X
								X
Nitrite by Kone (w)	All	NDPs: 0 Tests: 7						
							X	
								X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 7						
				X				
							X	
pH Value	All	NDPs: 0 Tests: 7						
				X				
							X	
Phosphate by Kone (w)	All	NDPs: 0 Tests: 7						
				X				
							X	
Sulphide	All	NDPs: 0 Tests: 7						
							X	
								X
Suspended Solids	All	NDPs: 0 Tests: 7						
				X				
							X	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 7						
			X					
							X	
Total Nitrogen	All	NDPs: 0 Tests: 7						
				X				
							X	
TPH CWG (W)	All	NDPs: 0 Tests: 7						
			X					
							X	
								X
VOC MS (W)	All	NDPs: 0 Tests: 7						
							X	
							X	

23100499	BH03S			500ml Plastic (ALE208)	GW		X							X	X		X		X				
				250ml BOD (ALE212)	GW																		
				250ml Amber Gl. PTFE/PE (ALE219)	GW								X										
				0.5l glass bottle (ALE227)	GW						X							X			X		
23100501	BH03D			ZnAc (ALE246)	GW												X						
				Vial (ALE297)	GW																		X
				NaOH (ALE245)	GW						X												
				HNO3 Filtered (ALE204)	GW					X													
				H2SO4 (ALE244)	GW			X	X														
				500ml Plastic (ALE208)	GW		X							X	X		X		X				
				250ml BOD (ALE212)	GW																		
				250ml Amber Gl. PTFE/PE (ALE219)	GW								X										
				0.5l glass bottle (ALE227)	GW													X			X		
23100503	BH05			ZnAc (ALE246)	GW												X						
				Vial (ALE297)	GW																		X
				NaOH (ALE245)	GW						X												
				HNO3 Filtered (ALE204)	GW					X													
				H2SO4 (ALE244)	GW			X	X														
				500ml Plastic (ALE208)	GW		X							X	X		X		X				
				250ml BOD (ALE212)	GW																		
				250ml Amber Gl. PTFE/PE (ALE219)	GW								X										

Validated

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)						23100499									23100494						23100495
Customer Sample Reference						BH03S									SW01						SW02
AGS Reference																					
Depth (m)																					
Container			H2SO4 (ALE244)	HNO3 Filtered (ALE204)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)
Sample Type			GW	GW	GW	GW	SW	SW	SW	SW	SW	SW	SW	SW	SW	GW	GW	GW	GW	GW	GW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7								X									X		
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7	X								X									X	
Ammonium Low	All	NDPs: 0 Tests: 7	X								X									X	
Anions by Kone (w)	All	NDPs: 0 Tests: 7								X									X		
BOD True Total	All	NDPs: 0 Tests: 7							X									X			
COD Unfiltered	All	NDPs: 0 Tests: 7							X									X			
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7								X									X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7											X								
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7		X								X									X
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7					X									X					
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7						X									X				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7						X									X				
Fluoride	All	NDPs: 0 Tests: 7								X									X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7			X									X							
Kjeldahl Nitrogen on liquids	All	NDPs: 0 Tests: 7								X									X		

13:10:16 06/11/2020

23100495	SW02			ZnAc (ALE246)	GW																														
				Vial (ALE297)	GW																											X			
				NaOH (ALE245)	GW																X														

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Lab Sample No(s)			23100499				23100494									23100495					
Customer Sample Reference			BH03S				SW01									SW02					
AGS Reference																					
Depth (m)																					
Container			H2SO4 (ALE244)	HNO3 Filtered (ALE204)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)
Sample Type			GW	GW	GW	GW	SW	SW	SW	SW	SW	SW	SW	SW	SW	GW	GW	GW	GW	GW	GW
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 7								X									X		
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 7	X								X									X	
Low Level TOC	All	NDPs: 0 Tests: 7	X								X									X	
Mercury Dissolved	All	NDPs: 0 Tests: 7		X								X									X
Nitrite by Kone (w)	All	NDPs: 0 Tests: 7											X								
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 7						X									X				
pH Value	All	NDPs: 0 Tests: 7								X									X		
Phosphate by Kone (w)	All	NDPs: 0 Tests: 7								X									X		
Sulphide	All	NDPs: 0 Tests: 7				X									X						
Suspended Solids	All	NDPs: 0 Tests: 7								X									X		
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 7					X									X					
Total Nitrogen	All	NDPs: 0 Tests: 7								X									X		
TPH CWG (W)	All	NDPs: 0 Tests: 7					X									X					
VOC MS (W)	All	NDPs: 0 Tests: 7			X									X							

				23100495
				SW02
NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)		
GW	GW	GW		
X				
		X		
	X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW01
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020
			Sample Time	09:45:00	10:00:00	10:00:00	09:45:00	09:30:00	09:15:00
			Date Received	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020
			SDG Ref	201023-85	201023-85	201023-85	201023-85	201023-85	201023-85
			Lab Sample No.(s)	23100498	23100502	23100503	23100501	23100499	23100494
			AGS Reference						
Suspended solids, Total	<2 mg/l	TM022		6.25	418	197	1410	32.9	5.5
Alkalinity, Total as CaCO3	<2 mg/l	TM043		299	232	240	237	192	87.1
BOD, unfiltered	<1 mg/l	TM045		<1 @	2.03 @	<1 @	<1 @	<1 @	<1 @
Carbon, Organic (diss.filt)	<3 mg/l	TM090		3.5	4.34	6.32	4.46	7.2	11.9
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		<0.2	0.849	<0.2	<0.2	0.233	<0.2
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.0374	0.904	0.132	0.0364	0.03	0.0239
Sulphide	<0.01 mg/l	TM101		<0.01	<0.01	<0.01	0.0302	<0.01	<0.01
Fluoride	<0.5 mg/l	TM104		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
COD, unfiltered	<7 mg/l	TM107		7.12	<7	18.3	19.8	15	36
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		0.711	0.513	0.47	0.499	0.416	0.207
Aluminium (diss.filt)	<10 µg/l	TM152		<10	17.5	99.1	<10	25.5	36.5
Antimony (diss.filt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	<1
Arsenic (diss.filt)	<0.5 µg/l	TM152		<0.5	2.53	1.48	<0.5	<0.5	<0.5
Barium (diss.filt)	<0.2 µg/l	TM152		474	50.1 #	24.2 #	63.3	21.8	14.7
Beryllium (diss.filt)	<0.1 µg/l	TM152		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Boron (diss.filt)	<10 µg/l	TM152		30.2	20.7	20.9	11.1	14.8	15.6
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Chromium (diss.filt)	<1 µg/l	TM152			<1	1.89	2.75 #	3.15	2.2
Copper (diss.filt)	<0.3 µg/l	TM152		1.4	<0.3	1	2.03	3.72	1.9
Lead (diss.filt)	<0.2 µg/l	TM152		2	0.623	0.475	0.411	1.02	<0.2
Manganese (diss.filt)	<3 µg/l	TM152		25	356	459	362	40.5	7.54
Molybdenum (diss.filt)	<3 µg/l	TM152		<3	<3	<3	<3	4.82	<3
Nickel (diss.filt)	<0.4 µg/l	TM152		1.41 #	0.863	2.58	1.4 #	2.05	0.939
Selenium (diss.filt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	<1
Vanadium (diss.filt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	<1
Zinc (diss.filt)	<1 µg/l	TM152		26.6	4.24	3.88	3.02	7.39	6.02
Sodium (Dis.Filt)	<0.076 mg/l	TM152		40.9	22.6	75.5	17.3	16.6	11.1
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		13.2	6.37	5.09	4.94	4.33	2.9
Potassium (Dis.Filt)	<0.2 mg/l	TM152		5.05	1.64	7.78	0.326	<0.2	2.8
Calcium (Dis.Filt)	<0.2 mg/l	TM152		108	85	62.5	81.2	77.4	33.5
Iron (Dis.Filt)	<0.019 mg/l	TM152		<0.019	5.34	4.3	1.42	0.17	0.204
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrite as NO2	<0.05 mg/l	TM184		<0.05	<0.05	<0.05	<0.05	<0.05 2	<0.05

Validated

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW01
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020
			Sample Time	09:45:00	10:00:00	10:00:00	09:45:00	09:30:00	09:15:00
			Date Received	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020
			SDG Ref	201023-85	201023-85	201023-85	201023-85	201023-85	201023-85
			Lab Sample No.(s)	23100498	23100502	23100503	23100501	23100499	23100494
			AGS Reference						
Sulphate	<2 mg/l	TM184		21.1	18.8	3.7	18.9	28	<2
Chloride	<2 mg/l	TM184		69.1	36.4	27.2	30.9	24	16.4
Phosphate (Ortho as P)	<0.02 mg/l	TM184		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nitrate as NO3	<0.3 mg/l	TM184		1.65	<0.3	<0.3	<0.3	0.447 @	1.79
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.376	<0.1	<0.1	<0.1	0.103	0.407
Nitrogen, Kjeldahl	<1 mg/l	TM212		<1	<1	<1	<1	<1	<1
Organic nitrogen, Total	<1 mg/l	TM212		<1	<1	<1	<1	<1	<1
Nitrogen, Total	<1 mg/l	TM212		<1	<1	<1	<1	<1	1.24
Cyanide, Total	<0.05 mg/l	TM227		<0.05 @	<0.05 @	<0.05 @	<0.05 @	<0.05 2	<0.05 @
Phenol (low level)	<0.5 µg/l	TM255		<0.5	<0.5	1.16	<0.5	<0.5	<0.5
Cresols (low level)	<0.5 µg/l	TM255		<0.5	<0.5	1.84	<0.5	<0.5	<0.5
Xylenols (low level)	<0.5 µg/l	TM255		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255		<0.5	<0.5	3	<0.5	<0.5	<0.5
pH	<1 pH Units	TM256		7.29	7	7.14	6.79	6.85	7.63
Organic Carbon, Total Low Level	<0.1 mg/l	TM295		2.45 @	7.02 @	8.59 @	6.19 @	9.73 @	9.4 @
Low Level Hexavalent Chromium	<0.003 mg/l	TM331		<0.003	<0.003	<0.003	<0.003	<0.003	<0.015

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SW02							
Depth (m)	.							
Sample Type	Ground Water (GW)							
Date Sampled	20/10/2020							
Sample Time	09:30:00							
Date Received	23/10/2020							
SDG Ref	201023-85							
Lab Sample No.(s)	23100495							
AGS Reference								
Component	**LOD/Units**	**Method**						
Suspended solids, Total	<2 mg/l	TM022	18.2					
Alkalinity, Total as CaCO3	<2 mg/l	TM043	39.7					
BOD, unfiltered	<1 mg/l	TM045	2.47 @					
Carbon, Organic (diss.filt)	<3 mg/l	TM090	18.6					
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2					
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	0.0393					
Sulphide	<0.01 mg/l	TM101	<0.01					
Fluoride	<0.5 mg/l	TM104	<0.5					
COD, unfiltered	<7 mg/l	TM107	47					
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120	0.172					
Aluminium (diss.filt)	<10 µg/l	TM152	202					
Antimony (diss.filt)	<1 µg/l	TM152	<1					
Arsenic (diss.filt)	<0.5 µg/l	TM152	<0.5					
Barium (diss.filt)	<0.2 µg/l	TM152	12.7					
Beryllium (diss.filt)	<0.1 µg/l	TM152	<0.1					
Boron (diss.filt)	<10 µg/l	TM152	13.4					
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08					
Copper (diss.filt)	<0.3 µg/l	TM152	3.09					
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2					
Manganese (diss.filt)	<3 µg/l	TM152	53.1					
Molybdenum (diss.filt)	<3 µg/l	TM152	<3					
Nickel (diss.filt)	<0.4 µg/l	TM152	2.83 #					
Selenium (diss.filt)	<1 µg/l	TM152	<1					
Vanadium (diss.filt)	<1 µg/l	TM152	<1					
Zinc (diss.filt)	<1 µg/l	TM152	13.1					
Sodium (Dis.Filt)	<0.076 mg/l	TM152	16.5					
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	2.51					
Potassium (Dis.Filt)	<0.2 mg/l	TM152	1.48					
Calcium (Dis.Filt)	<0.2 mg/l	TM152	15.9					
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.568					
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01					
Nitrite as NO2	<0.05 mg/l	TM184	<0.05					
Sulphate	<2 mg/l	TM184	12.3					

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

		Customer Sample Ref.	SW02
		Depth (m)	.
		Sample Type	Ground Water (GW)
		Date Sampled	20/10/2020
		Sample Time	09:30:00
		Date Received	23/10/2020
		SDG Ref	201023-85
		Lab Sample No.(s)	23100495
		AGS Reference	
Component	**LOD/Units**	**Method**	
Chloride	<2 mg/l	TM184	28.2
Phosphate (Ortho as P)	<0.02 mg/l	TM184	<0.02
Nitrate as NO3	<0.3 mg/l	TM184	<0.3
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	<0.1
Nitrogen, Kjeldahl	<1 mg/l	TM212	1.56
Organic nitrogen, Total	<1 mg/l	TM212	1.5
Nitrogen, Total	<1 mg/l	TM212	1.56
Cyanide, Total	<0.05 mg/l	TM227	<0.05 @
Phenol (low level)	<0.5 µg/l	TM255	<0.5
Cresols (low level)	<0.5 µg/l	TM255	<0.5
Xylenols (low level)	<0.5 µg/l	TM255	<0.5
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5
pH	<1 pH Units	TM256	6.18
Organic Carbon, Total Low Level	<0.1 mg/l	TM295	18.7 @
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.015

Validated

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW01
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020
			Sample Time	09:45:00	10:00:00	10:00:00	09:45:00	09:30:00	09:15:00
			Date Received	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020
			SDG Ref	201023-85	201023-85	201023-85	201023-85	201023-85	201023-85
			Lab Sample No.(s)	23100498	23100502	23100503	23100501	23100499	23100494
			AGS Reference						
Naphthalene (aq)	<0.01 µg/l	TM178		<0.01 @	<0.01 @	<0.01 @	<0.01 @	<0.01 @	<0.01 @
Acenaphthene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Acenaphthylene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Fluoranthene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Anthracene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Phenanthrene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	0.0114 @	<0.005 @	<0.005 @
Fluorene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Chrysene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Pyrene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178		<0.002 @	<0.002 @	<0.002 @	<0.002 @	<0.002 @	<0.002 @
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178		<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @	<0.005 @
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178		<0.082 @	<0.082 @	<0.082 @	<0.082 @	<0.082 @	<0.082 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SW02
Depth (m)	.
Sample Type	Ground Water (GW)
Date Sampled	20/10/2020
Sample Time	09:30:00
Date Received	23/10/2020
SDG Ref	201023-85
Lab Sample No.(s)	23100495
AGS Reference	

Component	LOD/Units	Method	
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01 @
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005 @
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005 @
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 @
Anthracene (aq)	<0.005 µg/l	TM178	<0.005 @
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005 @
Fluorene (aq)	<0.005 µg/l	TM178	<0.005 @
Chrysene (aq)	<0.005 µg/l	TM178	<0.005 @
Pyrene (aq)	<0.005 µg/l	TM178	<0.005 @
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005 @
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 @
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 @
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002 @
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005 @
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005 @
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005 @
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082 @

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW01
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020
			Sample Time	09:45:00	10:00:00	10:00:00	09:45:00	09:30:00	09:15:00
			Date Received	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020
			SDG Ref	201023-85	201023-85	201023-85	201023-85	201023-85	201023-85
			Lab Sample No.(s)	23100498	23100502	23100503	23100501	23100499	23100494
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2-Chlorophenol (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2-Methylphenol (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2-Nitroaniline (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
2-Nitrophenol (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
3-Nitroaniline (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<10	<10	<10	<4	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
4-Methylphenol (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
4-Nitroaniline (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<10	<10	<10	<4	<1
Azobenzene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Acenaphthylene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Acenaphthene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Anthracene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2 @	<20 @	<20 @	<20 @	<8 @	<2 @
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<1 @	<10 @	<10 @	<10 @	<4 @	<1 @

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	BH02	BH04	BH05	BH03D	BH03S	SW01
Customer Sample Ref.								
Depth (m)			.	.	.	.	.	.
Sample Type			Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
Date Sampled			20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020
Sample Time			09:45:00	10:00:00	10:00:00	09:45:00	09:30:00	09:15:00
Date Received			23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020
SDG Ref			201023-85	201023-85	201023-85	201023-85	201023-85	201023-85
Lab Sample No.(s)			23100498	23100502	23100503	23100501	23100499	23100494
AGS Reference								
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Carbazole (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Chrysene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Dibenzofuran (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Diethyl phthalate (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Dimethyl phthalate (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<5 @	<50 @	<50 @	<50 @	<20 @	<5 @
Fluoranthene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Fluorene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Hexachlorobenzene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Pentachlorophenol (aq)	<1 µg/l	TM176	<1	<10	<10	<10	<4	<1
Phenol (aq)	<1 µg/l	TM176	<1	<10	<10	<10	<4	<1
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Hexachloroethane (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Nitrobenzene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Naphthalene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Isophorone (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<1	<10	<10	<10	<4	<1
Phenanthrene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
Pyrene (aq)	<1 µg/l	TM176	<1 @	<10 @	<10 @	<10 @	<4 @	<1 @
SVOC TIC (aq)		TM176	Not Detected @	Not Detected @	Not Detected @	Not Detected @	Not Detected @	Not Detected @
Total SVOC TIC	<10 µg/l	TM176	<10	<100	<100	<100	<40	<10

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.			SW02
Depth (m)			.
Sample Type			Ground Water (GW)
Date Sampled			20/10/2020
Sample Time			09:30:00
Date Received			23/10/2020
SDG Ref			201023-85
Lab Sample No.(s)			23100495
AGS Reference			
Component	**LOD/Units**	**Method**	
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<4 @
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<4 @
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<4 @
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<4 @
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<4 @
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<4 @
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<4 @
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<4 @
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<4 @
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<4 @
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<4 @
2-Chlorophenol (aq)	<1 µg/l	TM176	<4 @
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<4 @
2-Methylphenol (aq)	<1 µg/l	TM176	<4 @
2-Nitroaniline (aq)	<1 µg/l	TM176	<4 @
2-Nitrophenol (aq)	<1 µg/l	TM176	<4 @
3-Nitroaniline (aq)	<1 µg/l	TM176	<4 @
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<4 @
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<4 @
4-Chloroaniline (aq)	<1 µg/l	TM176	<4
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<4 @
4-Methylphenol (aq)	<1 µg/l	TM176	<4 @
4-Nitroaniline (aq)	<1 µg/l	TM176	<4 @
4-Nitrophenol (aq)	<1 µg/l	TM176	<4
Azobenzene (aq)	<1 µg/l	TM176	<4 @
Acenaphthylene (aq)	<1 µg/l	TM176	<4 @
Acenaphthene (aq)	<1 µg/l	TM176	<4 @
Anthracene (aq)	<1 µg/l	TM176	<4 @
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<4 @
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<4 @
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<8 @
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<4 @
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<4 @

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

		Customer Sample Ref.	SW02
		Depth (m)	.
		Sample Type	Ground Water (GW)
		Date Sampled	20/10/2020
		Sample Time	09:30:00
		Date Received	23/10/2020
		SDG Ref	201023-85
		Lab Sample No.(s)	23100495
		AGS Reference	
Component	**LOD/Units**	**Method**	
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<4 @
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<4 @
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<4 @
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<4 @
Carbazole (aq)	<1 µg/l	TM176	<4 @
Chrysene (aq)	<1 µg/l	TM176	<4 @
Dibenzofuran (aq)	<1 µg/l	TM176	<4 @
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<4 @
Diethyl phthalate (aq)	<1 µg/l	TM176	<4 @
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<4 @
Dimethyl phthalate (aq)	<1 µg/l	TM176	<4 @
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<20 @
Fluoranthene (aq)	<1 µg/l	TM176	<4 @
Fluorene (aq)	<1 µg/l	TM176	<4 @
Hexachlorobenzene (aq)	<1 µg/l	TM176	<4 @
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<4 @
Pentachlorophenol (aq)	<1 µg/l	TM176	<4
Phenol (aq)	<1 µg/l	TM176	<4
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<4 @
Hexachloroethane (aq)	<1 µg/l	TM176	<4 @
Nitrobenzene (aq)	<1 µg/l	TM176	<4 @
Naphthalene (aq)	<1 µg/l	TM176	<4 @
Isophorone (aq)	<1 µg/l	TM176	<4 @
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<4
Phenanthrene (aq)	<1 µg/l	TM176	<4 @
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<4 @
Pyrene (aq)	<1 µg/l	TM176	<4 @
SVOC TIC (aq)		TM176	Not Detected @
Total SVOC TIC	<10 µg/l	TM176	<40

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

TPH CWG (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW01
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020
			Sample Time	09:45:00	10:00:00	10:00:00	09:45:00	09:30:00	09:15:00
			Date Received	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020
			SDG Ref	201023-85	201023-85	201023-85	201023-85	201023-85	201023-85
			Lab Sample No.(s)	23100498	23100502	23100503	23100501	23100499	23100494
			AGS Reference						
GRO Surrogate % recovery**	%	TM245		104	106	109	105	110	110
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
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174		<10	<10	<10	<10	<10	<10

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

TPH CWG (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SW02
Depth (m)	.
Sample Type	Ground Water (GW)
Date Sampled	20/10/2020
Sample Time	09:30:00
Date Received	23/10/2020
SDG Ref	201023-85
Lab Sample No.(s)	23100495
AGS Reference	

Component	LOD/Units	Method	
GRO Surrogate % recovery**	%	TM245	103
GRO >C5-C12	<50 µg/l	TM245	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3
Benzene	<7 µg/l	TM245	<7
Toluene	<4 µg/l	TM245	<4
Ethylbenzene	<5 µg/l	TM245	<5
m,p-Xylene	<8 µg/l	TM245	<8
o-Xylene	<3 µg/l	TM245	<3
Sum of detected Xylenes	<11 µg/l	TM245	<11
Sum of detected BTEX	<28 µg/l	TM245	<28
Aliphatics >C5-C6	<10 µg/l	TM245	<10
Aliphatics >C6-C8	<10 µg/l	TM245	<10
Aliphatics >C8-C10	<10 µg/l	TM245	<10
Aliphatics >C10-C12	<10 µg/l	TM245	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10
Aromatics >EC5-EC7	<10 µg/l	TM245	<10
Aromatics >EC7-EC8	<10 µg/l	TM245	<10
Aromatics >EC8-EC10	<10 µg/l	TM245	<10
Aromatics >EC10-EC12	<10 µg/l	TM245	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174	<10

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW01
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020
			Sample Time	09:45:00	10:00:00	10:00:00	09:45:00	09:30:00	09:15:00
			Date Received	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020
			SDG Ref	201023-85	201023-85	201023-85	201023-85	201023-85	201023-85
			Lab Sample No.(s)	23100498	23100502	23100503	23100501	23100499	23100494
			AGS Reference						
Dibromofluoromethane**	%	TM208		107	107	106	108	107	109
Toluene-d8**	%	TM208		98.1	97.9	98	98.4	98.7	98
4-Bromofluorobenzene**	%	TM208		95.5	95.3	95.1	95.3	97.3	96.6
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Vinyl chloride	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromomethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Carbon disulphide	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Dichloromethane	<3 µg/l	TM208		<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloroform	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Carbontetrachloride	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Toluene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW01
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020
			Sample Time	09:45:00	10:00:00	10:00:00	09:45:00	09:30:00	09:15:00
			Date Received	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020
			SDG Ref	201023-85	201023-85	201023-85	201023-85	201023-85	201023-85
			Lab Sample No.(s)	23100498	23100502	23100503	23100501	23100499	23100494
			AGS Reference						
Tetrachloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Dibromochloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Ethylbenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
m,p-Xylene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
o-Xylene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Styrene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromoform	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Isopropylbenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Propylbenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
2-Chlorotoluene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
4-Chlorotoluene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
tert-Butylbenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
sec-Butylbenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
4-iso-Propyltoluene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
n-Butylbenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Naphthalene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1

Validated

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW01
			Depth (m)	.	.	.	.	.	.
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
			Date Sampled	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020	20/10/2020
			Sample Time	09:45:00	10:00:00	10:00:00	09:45:00	09:30:00	09:15:00
			Date Received	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020	23/10/2020
			SDG Ref	201023-85	201023-85	201023-85	201023-85	201023-85	201023-85
			Lab Sample No.(s)	23100498	23100502	23100503	23100501	23100499	23100494
			AGS Reference						
VOC TIC		TM208		Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sum of detected Xylenes	<2 µg/l	TM208		<2	<2	<2	<2	<2	<2
Total VOC TIC	<10 µg/l	TM208		<10	<10	<10	<10	<10	<10

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SW02
Depth (m)	.
Sample Type	Ground Water (GW)
Date Sampled	20/10/2020
Sample Time	09:30:00
Date Received	23/10/2020
SDG Ref	201023-85
Lab Sample No.(s)	23100495
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM208	104
Toluene-d8**	%	TM208	98.1
4-Bromofluorobenzene**	%	TM208	94.9
Dichlorodifluoromethane	<1 µg/l	TM208	<1
Chloromethane	<1 µg/l	TM208	<1
Vinyl chloride	<1 µg/l	TM208	<1
Bromomethane	<1 µg/l	TM208	<1
Chloroethane	<1 µg/l	TM208	<1
Trichlorofluoromethane	<1 µg/l	TM208	<1
1,1-Dichloroethene	<1 µg/l	TM208	<1
Carbon disulphide	<1 µg/l	TM208	<1
Dichloromethane	<3 µg/l	TM208	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1
1,1-Dichloroethane	<1 µg/l	TM208	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1
2,2-Dichloropropane	<1 µg/l	TM208	<1
Bromochloromethane	<1 µg/l	TM208	<1
Chloroform	<1 µg/l	TM208	<1
1,1,1-Trichloroethane	<1 µg/l	TM208	<1
1,1-Dichloropropene	<1 µg/l	TM208	<1
Carbontetrachloride	<1 µg/l	TM208	<1
1,2-Dichloroethane	<1 µg/l	TM208	<1
Benzene	<1 µg/l	TM208	<1
Trichloroethene	<1 µg/l	TM208	<1
1,2-Dichloropropane	<1 µg/l	TM208	<1
Dibromomethane	<1 µg/l	TM208	<1
Bromodichloromethane	<1 µg/l	TM208	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1
Toluene	<1 µg/l	TM208	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1
1,1,2-Trichloroethane	<1 µg/l	TM208	<1
1,3-Dichloropropane	<1 µg/l	TM208	<1

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Customer Sample Ref.			SW02
Depth (m)			.
Sample Type			Ground Water (GW)
Date Sampled			20/10/2020
Sample Time			09:30:00
Date Received			23/10/2020
SDG Ref			201023-85
Lab Sample No.(s)			23100495
AGS Reference			
Component	**LOD/Units**	**Method**	
Tetrachloroethene	<1 µg/l	TM208	<1
Dibromochloromethane	<1 µg/l	TM208	<1
1,2-Dibromoethane	<1 µg/l	TM208	<1
Chlorobenzene	<1 µg/l	TM208	<1
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1
Ethylbenzene	<1 µg/l	TM208	<1
m,p-Xylene	<1 µg/l	TM208	<1
o-Xylene	<1 µg/l	TM208	<1
Styrene	<1 µg/l	TM208	<1
Bromoform	<1 µg/l	TM208	<1
Isopropylbenzene	<1 µg/l	TM208	<1
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1
1,2,3-Trichloropropane	<1 µg/l	TM208	<1
Bromobenzene	<1 µg/l	TM208	<1
Propylbenzene	<1 µg/l	TM208	<1
2-Chlorotoluene	<1 µg/l	TM208	<1
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1
4-Chlorotoluene	<1 µg/l	TM208	<1
tert-Butylbenzene	<1 µg/l	TM208	<1
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1
sec-Butylbenzene	<1 µg/l	TM208	<1
4-iso-Propyltoluene	<1 µg/l	TM208	<1
1,3-Dichlorobenzene	<1 µg/l	TM208	<1
1,4-Dichlorobenzene	<1 µg/l	TM208	<1
n-Butylbenzene	<1 µg/l	TM208	<1
1,2-Dichlorobenzene	<1 µg/l	TM208	<1
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1
Hexachlorobutadiene	<1 µg/l	TM208	<1
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1
Naphthalene	<1 µg/l	TM208	<1
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1

Validated

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Customer Sample Ref.			SW02
Depth (m)			.
Sample Type			Ground Water (GW)
Date Sampled			20/10/2020
Sample Time			09:30:00
Date Received			23/10/2020
SDG Ref			201023-85
Lab Sample No.(s)			23100495
AGS Reference			
Component	**LOD/Units**	**Method**	
VOC TIC		TM208	Not Detected
Sum of detected Xylenes	<2 µg/l	TM208	<2
Total VOC TIC	<10 µg/l	TM208	<10

Table of Results - Appendix

Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
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
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM212	SO/TR 11905-2: 1997. Water quality – Determination of nitrogen –Part 2:Determination of bound nitrogen, after combustion and oxidation to nitrogen dioxide, chemiluminescence detection.	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
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
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
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
TM295	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Low Level Total Organic Carbon in Water
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	201023-85	**Client Reference:**	IBR1266	**Report Number:**	574439
Location:	Dunkineely	**Order Number:**	240687404	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	23100498	23100502	23100503	23100501	23100499	23100494	23100495
Customer Sample Ref.	BH02	BH04	BH05	BH03D	BH03S	SW01	SW02
AGS Ref.							
Depth							
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Surface Water	Ground Water
Alkalinity as CaCO3	02-Nov-2020	31-Oct-2020	02-Nov-2020	02-Nov-2020	31-Oct-2020	02-Nov-2020	02-Nov-2020
Ammoniacal Nitrogen	27-Oct-2020	27-Oct-2020	27-Oct-2020	27-Oct-2020	27-Oct-2020	27-Oct-2020	27-Oct-2020
Ammonium Low	28-Oct-2020	27-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020
Anions by Kone (w)	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020
BOD True Total	31-Oct-2020	31-Oct-2020	31-Oct-2020	31-Oct-2020	31-Oct-2020	31-Oct-2020	31-Oct-2020
COD Unfiltered	01-Nov-2020	01-Nov-2020	01-Nov-2020	01-Nov-2020	01-Nov-2020	01-Nov-2020	01-Nov-2020
Conductivity (at 20 deg.C)	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020
Cyanide Comp/Free/Total/Thiocyanate	04-Nov-2020	04-Nov-2020	04-Nov-2020	04-Nov-2020	03-Nov-2020	04-Nov-2020	04-Nov-2020
Dissolved Metals by ICP-MS	05-Nov-2020	05-Nov-2020	05-Nov-2020	05-Nov-2020	04-Nov-2020	04-Nov-2020	05-Nov-2020
Dissolved Organic/Inorganic Carbon	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020
EPH CWG (Aliphatic) Aqueous GC (W)	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020
EPH CWG (Aromatic) Aqueous GC (W)	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020
Fluoride	02-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020
GRO by GC-FID (W)	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020
Kjeldahl Nitrogen on liquids	04-Nov-2020	03-Nov-2020	04-Nov-2020	04-Nov-2020	03-Nov-2020	04-Nov-2020	04-Nov-2020
Low Level Hexavalent Chromium (w)	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020
Low Level Phenols by HPLC (W)	05-Nov-2020	06-Nov-2020	06-Nov-2020	06-Nov-2020	05-Nov-2020	06-Nov-2020	06-Nov-2020
Low Level TOC	29-Oct-2020	29-Oct-2020	29-Oct-2020	29-Oct-2020	29-Oct-2020	29-Oct-2020	29-Oct-2020
Mercury Dissolved	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020
Nitrite by Kone (w)	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020
PAH Spec MS - Aqueous (W)	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020
pH Value	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020
Phosphate by Kone (w)	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	02-Nov-2020
Sulphide	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020
Suspended Solids	02-Nov-2020	02-Nov-2020	01-Nov-2020	01-Nov-2020	02-Nov-2020	01-Nov-2020	01-Nov-2020
SVOC MS (W) - Aqueous	04-Nov-2020	03-Nov-2020	03-Nov-2020	04-Nov-2020	04-Nov-2020	03-Nov-2020	04-Nov-2020
Total Nitrogen	04-Nov-2020	03-Nov-2020	04-Nov-2020	04-Nov-2020	03-Nov-2020	04-Nov-2020	04-Nov-2020
TPH CWG (W)	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020	02-Nov-2020
VOC MS (W)	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020

Appendix General

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

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. 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.

4. 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.

5. 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.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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

11. 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.

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

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. 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.

15. 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.

16. 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.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

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 (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (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 ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

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

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

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.

Appendix C
Summary of Soil Contamination Results

Depth	Sample Identity	Sample Date	Sample Ref. no.	Sample No.		Soil Organic Matter	pH	Total Cyanide	Free Cyanide	Thiocyanate	Sulphide (easily liberated)	Total Sulphate	Phenol	Cresols	Xylenols	2,3,5-Trimethylphenol	2-Isopropylphenol	Total Phenols	Asbestos Screen		Chromium VI	Arsenic	Cadmium	Total Chromium	Copper	Lead
						%	pH Units	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
0.8	TP01	02/05/2012	5544988	1	INORGANICS	1.61	6.37	<1	<1	<1	<15	0.0482	<0.01	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected	METALS	<0.6	7.17	0.698	23.4	36.3	24
1.6	TP01	02/05/2012	5544990	2		1.49	6.37	<1	<1	<1	<15	0.0669	<0.01	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected		<0.6	18.7	3.05	27	63.5	74.3
0.5	TP03	02/05/2012	5544991	3		-	6.55	<1	<1	3.5	<15	0.0651	<0.01	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected		<3	4.23	1.43	12.2	44.9	105
0.5	TP03	02/05/2012	5545504	4		-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
1.6	TP03	02/05/2012	5544992	5		1.04	6.66	<1	<1	<1	<15	0.0456	<0.01	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected		<1.2	4.11	0.533	15.4	14.1	25
0.8	TP04	02/05/2012	5544993	6		48.3	5.92	<1	<1	8.73	<15	0.586	0.04	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected		<0.6	4.44	1.05	9.05	19.5	18
1.2	TP04	02/05/2012	5544994	7		3.09	5.97	<1	<1	<1	<15	0.0986	<0.01	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected		<0.6	5.02	0.416	19.3	17.6	23.1
1	TP05	02/05/2012	5544995	8		77.6	6.64	<1	<1	3.55	<15	0.781	0.063	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected		<1.2	<0.6	0.354	1.62	9.12	1.21
0.6	TP06	02/05/2012	5544996	9		10.7	6.19	<1	<1	6.44	<15	0.154	<0.01	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected		<1.2	4.32	0.774	19.1	28.2	23
1.8	TP06	02/05/2012	5544997	10		2.12	8.04	<1	<1	<1	<15	0.131	<0.01	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected		<0.6	6.06	0.761	19.6	134	21.5
1.2	TP07	02/05/2012	5544998	11		5.24	5.92	<1	<1	1.14	<15	0.188	0.0141	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected		<3	2.44	0.432	6.38	6.31	4.93
2.8	TP07	02/05/2012	5544999	12		1.66	8.2	<1	<1	<1	<15	0.146	<0.01	<0.01	<0.015	<0.01	<0.015	<0.06	Not Detected		<0.6	6.03	0.79	21.7	31.8	18.5
CL:AIRE GAC Commercial (SOM 1%)																										
CL:AIRE GAC Commercial (SOM 2.5%)																										
CL:AIRE GAC Commercial (SOM 6%)																										
SGV commercial (SOM 6%)																						640	230			
S4UL commercial (SOM 1%)																										
S4UL commercial (SOM 2.5%)																										
S4UL commercial (SOM 6%)																					33	640	190	8,600 (CrIII)	68,000	

Mercury	Nickel	Selenium	Zinc	Boron (water soluble)	POLYCYCLIC AROMATIC HYDROCARBONS	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a) anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(123cd) pyrene	Dibenzo(ah) anthracene	Benzo(ghi) perylene	Total 16 EPA PAHs	HYDROCARBONS TPH-CWG	Aliphatics EC C5-C6	Aliphatics EC>C6-C8	Aliphatics EC>C8-C10	Aliphatics EC>C10-C12
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		ug/kg	ug/kg	ug/kg	ug/kg
<0.14	31.8	<1	98.6	<1																				<10	10.5	32.8	261
<0.14	60.1	<10	313	<1																				<10	<10	<10	<10
<0.14	14.3	1.1	132	<1																				<10	23.1	28.1	44.6
-	-	-	-	-																				-	-	-	-
<0.14	21.3	<1	163	<1																				<10	<10	<10	<10
<0.14	16.2	4.3	57.6	2.43																				<10	<10	<10	<10
<0.14	25.8	<1	172	<1																				<10	<10	<10	<10
<0.14	9.3	2.93	6.95	3.95																				<10	<10	<10	12.6
<0.14	15.4	2.78	97.8	<1																				<10	<10	<10	<10
<0.14	24.4	<1	268	<1																				<10	<10	<10	<10
<0.14	6.51	<1	41.2	<1																				<10	<10	<10	<10
<0.14	37.8	<1	159	<1																				<10	<10	<10	<10
26		13,000																									
						190	83,000	84,000	63,000	22,000	520,000	23,000	54,000	170	350	44	1,200	35	500	4	3,900			3,200,000,000	7,800,000	2,000,000	9,700,000
						460	97,000	97,000	68,000	22,000	540,000	23,000	54,000	170	350	44	1,200	35	510	4	4,000			5,900,000	17,000,000	4,800,000	23,000,000
58	980	12,000	730,000	240,000		1,100	100,000	100,000	71,000	23,000	540,000	23,000	54,000	180	350	45	1,200	36	510	4	4,000			12,000,000	40,000,000	11,000,000	47,000,000

Aliphatics EC>C12-C16	Aliphatics EC>C16-C21	Aliphatics EC>C21-C35	Aliphatics EC>C35-C44	Aromatics EC C6-C7	Aromatics EC>C7-C8	Aromatics EC>C8-C10	Aromatics EC>C10-C12	Aromatics EC>C12-C16	Aromatics EC>C16-C21	Aromatics EC>C21-C35	Aromatics EC>C35-C44	TPH (Aliphatic and Aromatic C5-C44)	Mineral Oil >C10-C40	GRO >C5-C12	Benzene	Toluene	Ethyl benzene	m/p-Xylene	o-Xylene	MTBE	PCBs	PCB Congener 81	PCB Congener 77	PCB Congener 123	PCB Congener 114
ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	mg/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		µg/ kg	µg/ kg	µg/ kg	µg/ kg
<100	<100	10600	<100	<10	<10	28.8	174	3040	<100	4750	<100	18900	14.3	514	<10	<2	<3	<6	<3	<5		<3	<3	<3	<3
<100	<100	<100	<100	<10	<10	<10	<10	433	<100	6730	<100	7160	15.4	<44	<10	<2	<3	<6	<3	<5		-	-	-	-
<100	<100	17700	<100	<10	<10	21.5	29.7	3880	3050	32100	11500	56900	28.2	155	<10	<2	<3	<6	<3	<5		<3	<3	<3	<3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-
<100	<100	1980	<100	<10	<10	<10	<10	1910	<100	5930	<100	9820	13.2	<44	<10	<2	<3	<6	<3	<5		<3	<3	<3	<3
5550	16100	91300	1980	<10	<10	12	<10	15200	6870	449000	62600	584000	136	<44	<10	<2	<3	<6	<3	<5		<3	<3	<3	<3
2060	3430	10000	<100	<10	<10	<10	<10	16700	2820	30100	8280	65200	37.8	<44	<10	<2	<3	<6	<3	<5		<3	<3	<3	<3
7000	11600	39400	5870	<10	<10	<10	<10	1950	6540	259000	25500	325000	58	<44	<10	<2	<3	<6	<3	<5		<3	<3	<3	<3
<100	4250	26500	<100	<10	<10	<10	<10	20600	1840	51500	14100	105000	61.8	<44	<10	<2	<3	<6	<3	<5		<3	<3	<3	<3
2750	4150	13000	1060	<10	<10	11.2	<10	1580	1810	12400	1630	35700	16.7	<44	<10	4.2	<3	<6	<3	<5		-	-	-	-
2460	5320	31600	<100	<10	<10	<10	<10	<100	2410	282000	6950	324000	62.4	<44	<10	<2	<3	<6	<3	<5		<3	<3	<3	<3
<100	<100	<100	<100	<10	<10	13.8	<10	21200	468	7850	<100	29500	35.4	<44	<10	3.75	<3	7.5	<3	<5		-	-	-	-
																				7900000					
																				13000000					
																				24000000					
															95,000	4,400,000	2,800,000	3,200,000	2,600,000						
59,000,000	1,600,000,000			########	56,000,000	3,500,000	16,000,000	36,000,000	28,000,000	28,000,000					27,000	56,000,000	5,700,000	5,900,000	6,600,000						
82,000,000	1,700,000,000			########	#########	8,100,000	28,000,000	37,000,000	28,000,000	28,000,000					47,000	110,000,000	13,000,000	14,000,000	15,000,000						
90,000,000	1,800,000,000			########	##########	17,000,000	34,000,000	38,000,000	28,000,000	28,000,000					90,000	180,000,000	27,000,000	30,000,000	33,000,000						

PCB Congener 105	PCB Congener 126	PCB Congener 138	PCB Congener 153	PCB Congener 180	PCB Congener 167	PCB Congener 156	PCB Congener 157	PCB Congener 169	PCB Congener 189	PCB Congener 118	PCB Congener Total	SEMI VOLATILE ORGANIC COMPOUNDS	Phenol	Bis(2-chloroethyl)ether	2-Chlorophenol	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichlorobenzene	2-Methylphenol	4-Methylphenol	N-nitosodi-n-propylamine	Hexachloroethane	Nitrobenzene	Isophorone	2-Nitrophenol	2,4-Dimethylphenol	Bis(2-chloroethoxy)methane	2,4-Dichlorophenol
µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg		µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg
<3	<3	-	-	-	<3	<3	<3	<3	<3	<3	<36		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
-	-	-	-	-	-	-	-	-	-	-	-		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<36		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<3	<3	-	-	-	<3	<3	<3	<3	<3	<3	<36		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<3	<3	-	-	-	<3	<3	<3	<3	<3	<3	<36		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<3	<3	-	-	-	<3	<3	<3	<3	<3	<3	<36		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<3	<3	-	-	-	<3	<3	<3	<3	<3	<3	<36		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<3	<3	-	-	-	<3	<3	<3	<3	<3	<3	<36		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
-	-	-	-	-	-	-	-	-	-	-	-		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<3	<3	-	-	-	<3	<3	<3	<3	<3	<3	<36		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
-	-	-	-	-	-	-	-	-	-	-	-		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
																			160,000*			22000				16,000,000		
																			180,000*			53000				24,000,000		
																			180,000*			120000				30,000,000		
													3,200,000															
													440,000		3,500													3,500
													690,000		4,000													4,000
													1,300,000		4,300													4,300

1,2,4-Trichlorobenzene	4-Chloroaniline	Hexachlorobutadiene	4-Chloro-3-methylphenol	2-Methylnaphthalene	Hexachlorocyclopentadiene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2-Chloronaphthalene	2-Nitroaniline	Dimethyl phthalate	2,6-Dinitrotoluene	3-Nitroaniline	Dibenzofuran	2,4-Dinitrotoluene	Diethyl phthalate	4-Chlorophenylphenylether	4-Nitroaniline	Azobenzene	4-Bromophenylphenylether	Hexachlorobenzene	Pentachlorophenol	Carbazole	Di-n-butyl phthalate	Butylbenzyl phthalate	Chrysene	Bis(2-ethylhexyl) phthalate	n Dioctyl phthalate
µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
								390000			1,900,000			3,700,000	150,000,000									940,000,000		85,000,000	
								960000			1,900,000			3,700,000	220,000,000									940,000,000		86,000,000	
								2,200,000			1,900,000			3,800,000	290,000,000									950,000,000		86,000,000	
220000							3,500													110,000							
530000							4,000													120,000							
1300000							4,300													120,000							

4-Nitrophenol	VOLATILE ORGANIC COMPOUNDS	1.1.1.2-Tetrachloroethane	1.1.1-Trichloroethane	1.1.2-Trichloroethane	1.1-Dichloroethane	1.1-Dichloroethene	1.1-Dichloropropene	1.2.3-Trichloropropane	1.2.4-Trichlorobenzene	1.2.4-Trimethylbenzene	1.2-Dibromo-3-chloropropane	1.2-Dibromoethane	1.2-Dichlorobenzene	1.2-Dichloroethane	1.2-Dichloropropane	1.3.5-Trimethylbenzene	1.3-Dichlorobenzene	1.3-Dichloropropane	1.4-Dichlorobenzene	2-Chlorotoluene	4-Chlorotoluene	4-Isopropyltoluene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromomethane	Chlorobenzene	Chloroethane
µg/ kg		µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
<100		<10	<7	<10	<8	<10	<11	<17	<6	<9	<14	<12	<12	<5	<12	<8	<6	<7	<5	<9	<12	<11	<10	<14	<7	<13		<14
				94000	280000	26000				42000					3300								97000		2100			960000
				190000	450000	46000				99000					5900								220000		3700			1300000
				400000	400000	92000				220000					12000								520000		7600			2100000
		110	660						220				2000	670			30		4400								56	
		250	1300						530				4800	970			73		10000								130	
		560	3000						1300				11000	1700			170		25000								290	

Chloromethane	cis-1-2-Dichloroethene	cis-1-3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Hexachlorobutadiene	Isopropylbenzene	n-Butylbenzene	Propylbenzene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	trans-1-2-Dichloroethene	trans-1-3-Dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl Chloride
µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
<7	<5	<14	<13	<9	<4	<10	<12	<5	<10	<11	<10	<10	<12	<5	<11	<14	<9	<6	<10
1000	14000					270000		1400000				3300000			22000				
1200	24000					360000		3300000				6500000			40000				
1600	47000					560000		7700000				11000000			81000				
							31							19			1.2		59
							66							42			2.6		77
							120							95			5.7		120

Depth	Sample Identity	Sample Date	Sample Ref. no.	Sample No.		Soil Organic Matter	pH	Total Cyanide	Free Cyanide	Thiocyanate	Sulphide (easily liberated)	Total Sulphate	Total Phenols	Asbostos Screen		Chromium VI	Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
						%	pH Units	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
0.9	BH01	23/10/2012	AH92554	1	INORGANICS	1.7	7.6	< 0.5	< 0.5	< 5.0	59	1100	<0.3	Not Detected	METALS	<0.5	12	0.25	14	8.7	20	<0.10	9	0.35	35
0.9	BH02	23/10/2012	AH92555	2		36	6.6	< 0.5	< 0.5	5	15	75000	<0.3	Not Detected		<0.5	18	0.41	12	33	11	<0.10	14	1.5	65
1.9	BH02	23/10/2012	AH92556	3		36	6.6	< 0.5	0.5	< 5.0	64	25000	<0.3	Not Detected		<0.5	8.9	0.91	13	24	13	<0.10	9.5	1.6	74
2.5	BH02	23/10/2012	AH92557	4		1.6	7.2	< 0.5	< 0.5	< 5.0	8.1	3000	<0.3	Not Detected		<0.5	14	0.22	30	48	29	<0.10	48	<0.20	78
1	BH03	23/10/2012	AH92558	5		5.3	6.8	< 0.5	0.5	< 5.0	4.1	3300	<0.3	Not Detected		<0.5	3	0.15	8.7	11	9.8	<0.10	9.7	0.25	26
1.5	BH03	23/10/2012	AH92559	6		17	6.4	< 0.5	< 0.5	7	7.4	27000	<0.3	Not Detected		<0.5	10	1.3	6.9	15	9.5	<0.10	16	1.2	43
3	BH03	23/10/2012	AH92560	7		0.69	7.3	< 0.5	< 0.5	< 5.0	4.3	700	<0.3	Not Detected		<0.5	11	0.36	21	39	25	<0.10	35	0.45	74
1	BH04	23/10/2012	AH92561	8		11	6.5	< 0.5	< 0.5	5	6.1	65000	<0.3	Not Detected		<0.5	19	2	13	27	17	<0.10	23	3.9	220
2.1	BH04	23/10/2012	AH92562	9		1.6	8.2	< 0.5	< 0.5	< 5.0	5.8	3800	<0.3	Not Detected		<0.5	23	0.65	34	52	47	<0.10	50	<0.20	180
0.5	BH05	23/10/2012	AH92563	10		6.9	7	0.5	0.8	< 5.0	2.7	3300	<0.3	Not Detected		<0.5	18	0.57	29	33	40	<0.10	23	2.2	160
1	BH05	23/10/2012	AH92564	11		7.1	6.7	< 0.5	< 0.5	< 5.0	3.1	3900	<0.3	Not Detected		<0.5	3.8	0.34	13	15	17	<0.10	11	1.2	59
2.6	BH05	23/10/2012	AH92565	12		0.76	8.3	< 0.5	< 0.5	< 5.0	4.5	800	<0.3	Not Detected		<0.5	31	0.83	33	55	46	<0.10	60	<0.20	200
CL:AIRE GAC Commercial (SOM 1%)																									
CL:AIRE GAC Commercial (SOM 2.5%)																									
CL:AIRE GAC Commercial (SOM 6%)																									
SGV commercial (SOM 6%)																	640	230				26		13,000	
S4UL commercial (SOM 1%)																									
S4UL commercial (SOM 2.5%)																									
S4UL commercial (SOM 6%)																33	640	190	8,600 (CrIII)	68,000		58	980	12,000	730,000

Depth	Sample Identity	Sample Date	Sample Ref. no.	Sample No.	Boron (water soluble)	POLYCYCLIC AROMATIC HYDROCARBONS	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a) anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(123cd) pyrene	Dibenzo(ah) anthracene	Benzo(ghi) perylene	Total 16 EPA PAHs	HYDROCARBONS TPH-CWG	Aliphatics EC C5-C6
					mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		ug/kg
0.9	BH01	23/10/2012	AH92554	1	<0.4		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
0.9	BH02	23/10/2012	AH92555	2	0.6		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
1.9	BH02	23/10/2012	AH92556	3	0.7		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
2.5	BH02	23/10/2012	AH92557	4	<0.4		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
1	BH03	23/10/2012	AH92558	5	0.5		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
1.5	BH03	23/10/2012	AH92559	6	0.6		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
3	BH03	23/10/2012	AH92560	7	<0.4		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
1	BH04	23/10/2012	AH92561	8	<0.4		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
2.1	BH04	23/10/2012	AH92562	9	<0.4		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
0.5	BH05	23/10/2012	AH92563	10	1.1		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
1	BH05	23/10/2012	AH92564	11	0.6		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
2.6	BH05	23/10/2012	AH92565	12	<0.4		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<2.0		< 0.1
CL:AIRE GAC Commercial (SOM 1%)																									
CL:AIRE GAC Commercial (SOM 2.5%)																									
CL:AIRE GAC Commercial (SOM 6%)																									
SGV commercial (SOM 6%)																									
S4UL commercial (SOM 1%)							190	83,000	84,000	63,000	22,000	520,000	23,000	54,000	170	350	44	1,200	35	500	4	3,900			3,200,000,000
S4UL commercial (SOM 2.5%)							460	97,000	97,000	68,000	22,000	540,000	23,000	54,000	170	350	44	1,200	35	510	4	4,000			5,900,000
S4UL commercial (SOM 6%)					240,000		1,100	100,000	100,000	71,000	23,000	540,000	23,000	54,000	180	350	45	1,200	36	510	4	4,000			12,000,000

Depth	Sample Identity	Sample Date	Sample Ref. no.	Sample No.	Aliphatics EC>C6-C8	Aliphatics EC>C8-C10	Aliphatics EC>C10-C12	Aliphatics EC>C12-C16	Aliphatics EC>C16-C21	Aliphatics EC>C21-C35	Aliphatics EC>C35-C44	Aromatics EC C6-C7	Aromatics EC>C7-C8	Aromatics EC>C8-C10	Aromatics EC>C10-C12	Aromatics EC>C12-C16	Aromatics EC>C16-C21	Aromatics EC>C21-C35	Aromatics EC>C35-C44	TPH (Aliphatic and Aromatic C5-C44)	Mineral Oil >C10-C40	GRO >C5-C12	Benzene
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	mg/kg	ug/kg	ug/kg
0.9	BH01	23/10/2012	AH92554	1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
0.9	BH02	23/10/2012	AH92555	2	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
1.9	BH02	23/10/2012	AH92556	3	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
2.5	BH02	23/10/2012	AH92557	4	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
1	BH03	23/10/2012	AH92558	5	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
1.5	BH03	23/10/2012	AH92559	6	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
3	BH03	23/10/2012	AH92560	7	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
1	BH04	23/10/2012	AH92561	8	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
2.1	BH04	23/10/2012	AH92562	9	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
0.5	BH05	23/10/2012	AH92563	10	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
1	BH05	23/10/2012	AH92564	11	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
2.6	BH05	23/10/2012	AH92565	12	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 1	< 1	< 1	< 10			< 1.0
CL:AIRE GAC Commercial (SOM 1%)																							
CL:AIRE GAC Commercial (SOM 2.5%)																							
CL:AIRE GAC Commercial (SOM 6%)																							
SGV commercial (SOM 6%)																							95,000
S4UL commercial (SOM 1%)					7,800,000	2,000,000	9,700,000	59,000,000	1,600,000,000			########	56,000,000	3,500,000	16,000,000	36,000,000	28,000,000	28,000,000					27,000
S4UL commercial (SOM 2.5%)					17,000,000	4,800,000	23,000,000	82,000,000	1,700,000,000			########	#########	8,100,000	28,000,000	37,000,000	28,000,000	28,000,000					47,000
S4UL commercial (SOM 6%)					40,000,000	11,000,000	47,000,000	90,000,000	1,800,000,000			########	#########	17,000,000	34,000,000	38,000,000	28,000,000	28,000,000					90,000

Depth	Sample Identity	Sample Date	Sample Ref. no.	Sample No.	Toluene	Ethyl benzene	m/p-Xylene	o-Xylene	MTBE	PCBs	PCB Congener 81	PCB Congener 77	PCB Congener 123	PCB Congener 114	PCB Congener 105	PCB Congener 126	PCB Congener 138	PCB Congener 153	PCB Congener 180	PCB Congener 167	PCB Congener 156	PCB Congener 157	PCB Congener 169	PCB Congener 189	PCB Congener 118
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg
0.9	BH01	23/10/2012	AH92554	1	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	<10	<10	<10	-
0.9	BH02	23/10/2012	AH92555	2	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	<10	<10	<10	-
1.9	BH02	23/10/2012	AH92556	3	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.5	BH02	23/10/2012	AH92557	4	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	<10	<10	<10	-
1	BH03	23/10/2012	AH92558	5	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	<10	<10	<10	-
1.5	BH03	23/10/2012	AH92559	6	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	BH03	23/10/2012	AH92560	7	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	<10	<10	<10	-
1	BH04	23/10/2012	AH92561	8	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	<10	<10	<10	-
2.1	BH04	23/10/2012	AH92562	9	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	<10	<10	<10	-
0.5	BH05	23/10/2012	AH92563	10	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	<10	<10	<10	-
1	BH05	23/10/2012	AH92564	11	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	<10	<10	<10	-
2.6	BH05	23/10/2012	AH92565	12	< 1.0	< 1.0	< 1.0	< 1.0	<0.001		<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	<10	<10	<10	-
CL:AIRE GAC Commercial (SOM 1%)									7900000																
CL:AIRE GAC Commercial (SOM 2.5%)									13000000																
CL:AIRE GAC Commercial (SOM 6%)									24000000																
SGV commercial (SOM 6%)					4,400,000	2,800,000	3,200,000	2,600,000																	
S4UL commercial (SOM 1%)					56,000,000	5,700,000	5,900,000	6,600,000																	
S4UL commercial (SOM 2.5%)					110,000,000	13,000,000	14,000,000	15,000,000																	
S4UL commercial (SOM 6%)					180,000,000	27,000,000	30,000,000	33,000,000																	

Depth	Sample Identity	Sample Date	Sample Ref. no.	Sample No.	PCB Congener Total	SEMI VOLATILE ORGANIC COMPOUNDS	Phenol	Bis(2-chloroethyl)ether	2-Chlorophenol	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichlorobenzene	2-Methylphenol	4-Methylphenol	N-nitosodi-n-propylamine	Hexachloroethane	Nitrobenzene	Isophorone	2-Nitrophenol	2,4-Dimethylphenol	Bis(2-chloroethoxy)methane	2,4-Dichlorophenol	1,2,4-Trichlorobenzene	4-Chloroaniline	Hexachlorobutadiene	4-Chloro-3-methylphenol
					µg/ kg		µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg
0.9	BH01	23/10/2012	AH92554	1	<10		<500	<500	<500	<500	<500	<500	<500		<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
0.9	BH02	23/10/2012	AH92555	2	<10		<500	<500	<500	<500	<500	<500	<500		<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
1.9	BH02	23/10/2012	AH92556	3	<10																						
2.5	BH02	23/10/2012	AH92557	4	<10		<500	<500	<500	<500	<500	<500	<500		<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
1	BH03	23/10/2012	AH92558	5	<10		<500	<500	<500	<500	<500	<500	<500		<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
1.5	BH03	23/10/2012	AH92559	6	<10																						
3	BH03	23/10/2012	AH92560	7	<10		<500	<500	<500	<500	<500	<500	<500		<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
1	BH04	23/10/2012	AH92561	8	<10		<500	<500	<500	<500	<500	<500	<500		<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
2.1	BH04	23/10/2012	AH92562	9	<10		<500	<500	<500	<500	<500	<500	<500		<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
0.5	BH05	23/10/2012	AH92563	10	<10		<500	<500	<500	<500	<500	<500	<500		<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
1	BH05	23/10/2012	AH92564	11	<10		<500	<500	<500	<500	<500	<500	<500		<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
2.6	BH05	23/10/2012	AH92565	12	<10		<500	<500	<500	<500	<500	<500	<500		<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
CL:AIRE GAC Commercial (SOM 1%)													160,000*			22000				16,000,000						
CL:AIRE GAC Commercial (SOM 2.5%)													180,000*			53000				24,000,000						
CL:AIRE GAC Commercial (SOM 6%)													180,000*			120000				30,000,000						
SGV commercial (SOM 6%)							3,200,000																			
S4UL commercial (SOM 1%)							440,000		3,500													3,500	220000			
S4UL commercial (SOM 2.5%)							690,000		4,000													4,000	530000			
S4UL commercial (SOM 6%)							1,300,000		4,300													4,300	1300000			

Depth	Sample Identity	Sample Date	Sample Ref. no.	Sample No.	2-Methylnaphthalene	Hexachlorocyclopentadiene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2-Chloronaphthalene	2-Nitroaniline	Dimethyl phthalate	2,6-Dinitrotoluene	3-Nitroaniline	Dibenzofuran	2,4-Dinitrotoluene	Diethyl phthalate	4-Chlorophenylphenylether	4-Nitroaniline	Azobenzene	4-Bromophenylphenylether	Hexachlorobenzene	Pentachlorophenol	Carbazole	Di-n-butyl phthalate	Butylbenzyl phthalate
					µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg
0.9	BH01	23/10/2012	AH92554	1	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
0.9	BH02	23/10/2012	AH92555	2	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
1.9	BH02	23/10/2012	AH92556	3																					
2.5	BH02	23/10/2012	AH92557	4	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
1	BH03	23/10/2012	AH92558	5	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
1.5	BH03	23/10/2012	AH92559	6																					
3	BH03	23/10/2012	AH92560	7	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
1	BH04	23/10/2012	AH92561	8	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
2.1	BH04	23/10/2012	AH92562	9	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
0.5	BH05	23/10/2012	AH92563	10	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
1	BH05	23/10/2012	AH92564	11	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
2.6	BH05	23/10/2012	AH92565	12	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
CL:AIRE GAC Commercial (SOM 1%)									390000			1,900,000			3,700,000	150,000,000									940,000,000
CL:AIRE GAC Commercial (SOM 2.5%)									960000			1,900,000			3,700,000	220,000,000									940,000,000
CL:AIRE GAC Commercial (SOM 6%)									2,200,000			1,900,000			3,800,000	290,000,000									950,000,000
SGV commercial (SOM 6%)																									
S4UL commercial (SOM 1%)								3,500													110,000				
S4UL commercial (SOM 2.5%)								4,000													120,000				
S4UL commercial (SOM 6%)								4,300													120,000				

Depth	Sample Identity	Sample Date	Sample Ref. no.	Sample No.	Chrysene	Bis(2-ethylhexyl) phthalate	n Dioctyl phthalate	4-Nitrophenol	VOLATILE ORGANIC COMPOUNDS	1.1.1.2-Tetrachloroethane	1.1.1-Trichloroethane	1.1.2-Trichloroethane	1.1-Dichloroethane	1.1-Dichloroethene	1.1-Dichloropropene	1.2.3-Trichloropropane	1.2.4-Trichlorobenzene	1.2.4-Trimethylbenzene	1.2-Dibromo-3-chloropropane	1.2-Dibromoethane	1.2-Dichlorobenzene	1.2-Dichloroethane	1.2-Dichloropropane	1.3.5-Trimethylbenzene	1.3-Dichlorobenzene	1.3-Dichloropropane
					µg/ kg	µg/ kg	µg/ kg	µg/ kg		µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg
0.9	BH01	23/10/2012	AH92554	1	<500	<500	<500	<500		< 2.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 50	< 1.0	< 1.0	< 50	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0
0.9	BH02	23/10/2012	AH92555	2	<500	<500	<500	<500		< 2.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 50	< 1.0	< 1.0	< 50	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0
1.9	BH02	23/10/2012	AH92556	3																						
2.5	BH02	23/10/2012	AH92557	4	<500	<500	<500	<500		< 2.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 50	< 1.0	< 1.0	< 50	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0
1	BH03	23/10/2012	AH92558	5	<500	<500	<500	<500		< 2.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 50	< 1.0	< 1.0	< 50	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0
1.5	BH03	23/10/2012	AH92559	6																						
3	BH03	23/10/2012	AH92560	7	<500	<500	<500	<500		< 2.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 50	< 1.0	< 1.0	< 50	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0
1	BH04	23/10/2012	AH92561	8	<500	<500	<500	<500		< 2.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 50	< 1.0	< 1.0	< 50	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0
2.1	BH04	23/10/2012	AH92562	9	<500	<500	<500	<500		< 2.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 50	< 1.0	< 1.0	< 50	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0
0.5	BH05	23/10/2012	AH92563	10	<500	<500	<500	<500		< 2.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 50	< 1.0	< 1.0	< 50	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0
1	BH05	23/10/2012	AH92564	11	<500	<500	<500	<500		< 2.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 50	< 1.0	< 1.0	< 50	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0
2.6	BH05	23/10/2012	AH92565	12	<500	<500	<500	<500		< 2.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 50	< 1.0	< 1.0	< 50	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0
CL:AIRE GAC Commercial (SOM 1%)						85,000,000						94000	280000	26000				42000					3300			
CL:AIRE GAC Commercial (SOM 2.5%)						86,000,000						190000	450000	46000				99000					5900			
CL:AIRE GAC Commercial (SOM 6%)						86,000,000						400000	400000	92000				220000					12000			
SGV commercial (SOM 6%)																										
S4UL commercial (SOM 1%)										110	660						220				2000	670			30	
S4UL commercial (SOM 2.5%)										250	1300						530				4800	970			73	
S4UL commercial (SOM 6%)										560	3000						1300				11000	1700			170	

Depth	Sample Identity	Sample Date	Sample Ref. no.	Sample No.	1,4-Dichlorobenzene	2-Chlorotoluene	4-Chlorotoluene	4-Isopropyltoluene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromomethane	Chlorobenzene	Chloroethane	Chloromethane	cis-1-2-Dichloroethene	cis-1-3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Hexachlorobutadiene	Isopropylbenzene	n-Butylbenzene	Propylbenzene	sec-Butylbenzene
					µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg
0.9	BH01	23/10/2012	AH92554	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 20		< 2.0	< 1.0	< 1.0	< 10	< 10	< 10	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
0.9	BH02	23/10/2012	AH92555	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 20		< 2.0	< 1.0	< 1.0	< 10	< 10	< 10	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.9	BH02	23/10/2012	AH92556	3																						
2.5	BH02	23/10/2012	AH92557	4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 20		< 2.0	< 1.0	< 1.0	< 10	< 10	< 10	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1	BH03	23/10/2012	AH92558	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 20		< 2.0	< 1.0	< 1.0	< 10	< 10	< 10	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.5	BH03	23/10/2012	AH92559	6																						
3	BH03	23/10/2012	AH92560	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 20		< 2.0	< 1.0	< 1.0	< 10	< 10	< 10	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1	BH04	23/10/2012	AH92561	8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 20		< 2.0	< 1.0	< 1.0	< 10	< 10	< 10	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2.1	BH04	23/10/2012	AH92562	9	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 20		< 2.0	< 1.0	< 1.0	< 10	< 10	< 10	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
0.5	BH05	23/10/2012	AH92563	10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 20		< 2.0	< 1.0	< 1.0	< 10	< 10	< 10	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1	BH05	23/10/2012	AH92564	11	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 20		< 2.0	< 1.0	< 1.0	< 10	< 10	< 10	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2.6	BH05	23/10/2012	AH92565	12	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 20		< 2.0	< 1.0	< 1.0	< 10	< 10	< 10	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CL:AIRE GAC Commercial (SOM 1%)									97000		2100			960000	1000	14000					270000		1400000			
CL:AIRE GAC Commercial (SOM 2.5%)									220000		3700			1300000	1200	24000					360000		3300000			
CL:AIRE GAC Commercial (SOM 6%)									520000		7600			2100000	1600	47000					560000		7700000			
SGV commercial (SOM 6%)																										
S4UL commercial (SOM 1%)					4400								56									31				
S4UL commercial (SOM 2.5%)					10000								130									66				
S4UL commercial (SOM 6%)					25000								290									120				

Depth	Sample Identity	Sample Date	Sample Ref. no.	Sample No.	Styrene	tert-Butylbenzene	Tetrachloroethene	trans-1-2-Dichloroethene	trans-1-3-Dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl Chloride
					µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg	µg/ kg
0.9	BH01	23/10/2012	AH92554	1	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0
0.9	BH02	23/10/2012	AH92555	2	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0
1.9	BH02	23/10/2012	AH92556	3								
2.5	BH02	23/10/2012	AH92557	4	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0
1	BH03	23/10/2012	AH92558	5	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0
1.5	BH03	23/10/2012	AH92559	6								
3	BH03	23/10/2012	AH92560	7	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0
1	BH04	23/10/2012	AH92561	8	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0
2.1	BH04	23/10/2012	AH92562	9	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0
0.5	BH05	23/10/2012	AH92563	10	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0
1	BH05	23/10/2012	AH92564	11	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0
2.6	BH05	23/10/2012	AH92565	12	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0
CL:AIRE GAC Commercial (SOM 1%)					3300000			22000				
CL:AIRE GAC Commercial (SOM 2.5%)					6500000			40000				
CL:AIRE GAC Commercial (SOM 6%)					11000000			81000				
SGV commercial (SOM 6%)												
S4UL commercial (SOM 1%)							19			1.2		59
S4UL commercial (SOM 2.5%)							42			2.6		77
S4UL commercial (SOM 6%)							95			5.7		120

Appendix D
Summary of Groundwater & Surface Water Contamination Results

Sample ID	Sample Date	Lab Sample ID	Carbon	Carbon, Organic (diss.filt)	Total Organic Carbon (Low Level)	Inorganics	Ammoniacal Nitrogen as N	Conductivity @ 20 deg.C	Fluoride	Nitrite as NO2	Nitrogen, Kjeldahl	Total Organic Nitrogen	pH	Sulphate	Sulphide	Chloride	COD	Total Nitrogen	Phosphate (Ortho as P)	Cyanide	Nitrate as NO3	BOD	Alkalinity as CaCO3	Suspended solids	Total Oxidised Nitrogen as N	Sulphur, Free	Thiocyanate	Filtered (Dissolved) Metals	Low Level Hexavalent Chromium	Mercury	Arsenic
LOD				<3	<0.1		<0.2	<0.005	<0.5	<0.05	<1	<1	<1	<2	<0.01	<2	<7	<1	<0.05	<0.05	<0.3	<1	<2	<2	<0.1	<0.05	<0.05		<0.03	<0.01	<0.12
Round 1 Monitoring Results				mg/l	mg/l		mg/l	mS/cm	mg/l	mg/l	mg/l	mg/l	pH Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		mg/l	µg/l	µg/l
BH01	12/11/2012	6498002		3.98			<0.2	0.628	0.686	<0.05	<1	<1	7.7	21.9	-	26.8	411	<1	<0.05	<0.05	<0.3	5.7	2400	8970	<0.1	<0.05	<0.05		<0.03	<0.01	1.54
BH02	12/11/2012	6498003		3.13			<0.2	0.65	<0.5	<0.05	<1	<1	7.72	22.5	-	53.8	168	<1	<0.05	<0.05	1.05	<2	350	1880	0.244	<0.05	<0.05		<0.03	<0.01	0.981
BH03S (BH03A)	12/11/2012	6498004		4.18			0.251	0.543	<0.5	<0.05	<1	<1	7.44	14.6	<0.01	37.5	390	<1	<0.05	<0.05	<0.3	2.06	330	10900	<0.1	<0.05	<0.05		<0.03	<0.01	1.63
BH03D (BH03B)	12/11/2012	6498005		6.47			0.208	0.474	<0.5	<0.05	<1	<1	7.42	8.8	<0.01	25.3	219	<1	<0.05	<0.05	<0.3	<2	245	1790	<0.1	<0.05	<0.05		<0.03	<0.01	1.67
BH04	12/11/2012	6498006		10.8			0.683	0.444	<0.5	<0.25	1.31	<1	7.11	<2	<0.01	37.4	3730	1.31	<0.05	<0.05	<0.3	15.5	290	4930	<0.1	<0.05	<0.05		<0.03	<0.01	2.7
BH05	12/11/2012	6498009		3.33			0.254	0.495	<0.5	<0.05	<1	<1	7.7	10.5	<0.01	37.3	880	<1	<0.05	<0.05	<0.3	5.15	305	11300	<0.1	<0.05	<0.05		<0.03	<0.01	1.5
SW01 (Upstream)	12/11/2012	6498010		17.1			<0.2	0.12	<0.5	<0.05	1.08	1.01	7.6	<2	-	16.8	42.1	1.08	<0.05	<0.05	0.559	<2	50	2.5	0.132	<0.05	<0.05		<0.03	0.0107	0.762
SW02 (Western drain)	12/11/2012	6498011		17.5			<0.2	0.116	<0.5	<0.05	1.04	<1	7.06	<2	-	15.1	41.9	1.04	<0.05	<0.05	<0.3	<2	39	10.5	<0.1	<0.05	<0.05		<0.03	<0.01	1.13
Round 2 Monitoring Results																															
BH01	19/11/2012	6532917		3.26			<0.2	0.583	0.616	<0.05	<1	<1	7.58	11.7	<0.01	18	390	<1	<0.05	<0.05	<0.3	4.56	2000	7630	<0.1	<0.05	<0.05		<0.03	<0.01	1.21
BH02	19/11/2012	6532918		3.21			0.361	0.622	<0.5	<0.05	<1	<1	7.68	17.6	<0.01	43.8	25.2	<1	<0.05	0.08	<0.3	<2	305	225	<0.1	<0.05	0.055		<0.03	<0.01	0.497
BH03S (BH03A)	19/11/2012	6532920		5.84			0.251	0.549	<0.5	<0.05	<1	<1	7.28	15.8	<0.01	33.1	423	<1	<0.05	<0.05	<0.3	2.09	325	6710	<0.1	<0.05	<0.05		<0.03	<0.01	1.25
BH03D (BH03B)	19/11/2012	6532921		4.53			<0.2	0.439	<0.5	<0.05	<1	<1	7.21	7.7	<0.01	21.4	58.6	<1	<0.05	<0.05	<0.3	<2	240	345	<0.1	<0.05	<0.05		<0.03	<0.01	0.874
BH04	19/11/2012	6532922		11.5			0.533	0.565	<0.5	<0.05	<1	<1	7.37	27.3	<0.01	37.6	510	<1	<0.05	<0.05	0.525	2.59	290	1520	0.126	<0.05	<0.05		<0.03	<0.01	0.921
BH05	19/11/2012	6532923		4.71			<0.2	0.503	<0.5	<0.05	<1	<1	7.47	9.3	<0.01	35.7	52.7	<1	<0.05	<0.05	<0.3	<2	225	688	<0.1	<0.05	<0.05		<0.03	<0.01	0.538
SW01 (Upstream)	19/11/2012	6532924		7.82			<0.2	0.271	<0.5	<0.05	<1	<1	7.8	<2	<0.01	17	16.2	1.26	<0.05	<0.05	3.55	<2	155	<2	0.808	<0.05	<0.05		<0.03	<0.01	0.186
SW02 (Western drain)	19/11/2012	6532925		21.6			0.241	0.137	<0.5	<0.05	1.3	1.06	6.81	<2	<0.01	17.3	103	1.3	<0.05	<0.05	0.337	2.79	41.5	82	<0.1	<0.05	<0.05		<0.03	<0.01	0.374
Round 3 Monitoring Results																															
BH1	14/01/2013	6778029		4.34			<0.2	0.57	0.711	<0.05	<1	<1	7.32	9.8	0.03	19.4	1470	<1	<0.05	<0.05	<0.3	20.5	3670	16900	<0.1	<0.06	<0.05		<0.03	<0.01	0.829
BH2	14/01/2013	6778031		4.05			<0.2	0.629	<0.5	<0.05	<1	<1	8.11	16.9	<0.01	46.1	40.4	<1	<0.05	<0.05	<0.3	<2	295	547	<0.1	<0.05	<0.05		<0.03	<0.01	0.404
BH03S (BH03A)	14/01/2013	6778032		4.9			<0.2	0.525	<0.5	<0.05	<1	<1	7.09	12.8	<0.01	30.6	199	<1	<0.05	<0.05	<0.3	<2	270	3520	<0.1	<0.05	<0.05		<0.03	<0.01	0.643
BH03D (BH03B)	14/01/2013	6778033		5.74			<0.2	0.486	<0.5	<0.05	<1	<1	7.83	9.9	<0.01	26.3	50.4	<1	<0.05	<0.05	<0.3	<2	245	378	<0.1	<0.05	<0.05		<0.03	<0.01	0.591
BH4	14/01/2013	6778034		8.18			1.11	0.479	<0.5	<0.25	1.29	<1	7.36	19.9	<0.01	36.6	1440	1.29	<0.05	<0.05	0.638	4.21	230	1770	0.137	<0.05	<0.05		<0.03	<0.01	1.04
BH5	14/01/2013	6778036		4.85			0.26	0.437	<0.5	<0.25	<1	<1	7.11	8.5	<0.01	34.4	1090	<1	<0.05	<0.05	<0.3	5.21	245	11600	<0.1	<0.06	<0.05		<0.03	<0.01	1.11
SW01 (Upstream)	14/01/2013	6778038		10			<0.2	0.194	<0.5	<0.05	<1	<1	7.82	<2	<0.01	16.3	25.7	<1	<0.05	<0.05	1.26	<2	80	6	0.285	<0.05	<0.05		<0.03	<0.01	0.184
SW02 (Western drain)	14/01/2013	6778039		22			0.224	0.152	<0.5	<0.05	1.64	1.42	6.63	<2	<0.01	22.1	143	1.64	<0.05	<0.05	1.08	4.78	46	242	0.24	<0.075	<0.05		<0.03	<0.01	0.396
Round 4 Monitoring Results																															
BH02	06/10/2020	22999660		3.13	3.41		0.0547	0.762	<0.5	<0.05	<1	<1	7.29	23.8	<0.01	79.5	241	<1	<0.02	<0.05	1.79	<1	303	532	0.408				<0.003	<0.01	<0.5
BH03S (BH03A)	06/10/2020	22999661		9.06	9.74		0.0371	0.404	<0.5	<0.05	<1	<1	6.73	19.5	<0.01	14.5	36.6	<1	<0.02	<0.05	<0.3	<1	185	50.3	<0.1				<0.003	<0.01	0.507
BH03D (BH03B)	06/10/2020	22999663		4.75	4.16		0.0603	0.501	<0.5	<0.05	<1	<1	6.78	21.9	0.0269	34.1	94.2	<1	<0.02	<0.05	<0.3	<2	222	517	<0.1				<0.003	<0.01	0.693
BH04	06/10/2020	22999666		4.15	6.7		0.869	0.528	<0.5	<0.05	1.14	<1	6.78	16.9	0.0175	36.4	920	1.14	<0.02	<0.05	<0.3	4.84	238	285	<0.1				<0.003	<0.01	2.59
BH05	06/10/2020	22999667		10.5	80.4		0.266	0.431	<0.5	<0.05	<1	<1	6.88	4.7	<0.01	31.1	306	<1	<0.02	<0.05	<0.3	2.04	202	318	<0.1				<0.003	<0.01	0.659
SW01 (Upstream)	06/10/2020	22999668		15.9	16		0.052	0.156	<0.5	<0.05	<1	<1	7.51	<2	<0.01	14.8	62.5	1.14	<0.02	<0.05	0.711	3.42	60	7.6	0.162				<0.003	<0.01	<0.5
SW02 (Western drain)	06/10/2020	22999669		18	18.2		0.0513	0.181	<0.5	<0.05	1.26	<1	6.26	17.3	<0.01	28.3	48.9	1.26	<0.02	<0.05	<0.3	<1	30.4	<2	<0.1				<0.003	<0.01	<0.5
Round 5 Monitoring Results																															
BH02	20/10/2020	23100498		3.5	2.45		0.0374	0.711	<0.5	<0.05	<1	<1	7.29	21.1	<0.01	69.1	7.12	<1	<0.02	<0.05	1.65	<1	299	6.25	0.376				<0.003	<0.01	<0.5
BH03S (BH03A)	20/10/2020	23100499		7.2	9.73		0.03	0.416	<0.5	<0.05	<1	<1	6.85	28	<0.01	24	15	<1	<0.02	<0.05	0.447	<1	192	32.9	0.103				<0.003	<0.01	<0.5
BH03D (BH03B)	20/10/2020	23100501		4.46	6.19		0.0364	0.499	<0.5	<0.05	<1	<1	6.79	18.9	0.0302	30.9	19.8	<1	<0.02	<0.05	<0.3	<1	237	1410	<0.1				<0.003	<0.01	<0.5
BH04	20/10/2020	23100502		4.34	7.02		0.904	0.513	<0.5	<0.05	<1	<1	7	18.8	<0.01	36.4	<7	<1	<0.02	<0.05	<0.3	2.03	232	418	<0.1				<0.003	<0.01	2.53
BH05	20/10/2020	23100503		6.32	8.59		0.132	0.47	<0.5	<0.05	<1	<1	7.14	3.7	<0.01	27.2	18.3	<1	<0.02	<0.05	<0.3	<1	240	197	<0.1				<0.003	<0.01	1.48
SW01 (Upstream)	20/10/2020	23100494		11.9	9.4		0.0239	0.207	<0.5	<0.05	<1	<1	7.63	<2	<0.01	16.4	36	1.24	<0.02	<0.05	1.79	<1	87.1	5.5	0.407				<0.015	<0.01	<0.5
SW02 (Western drain)	20/10/2020	23100495		18.6	18.7		0.0393	0.172	<0.5	<0.05	1.56	1.5	6.18	12.3	<0.01	28.2	47	1.56	<0.02	<0.05	<0.3	2.47	39.7	18.2	<0.1				<0.015	<0.01	<0.5
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (G							0.175	1.875		0.375				187.5		187.5						37.5							0.0075	0.75	7.5
European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended (							0.065 AA 0.14 MAC (good status)		0.5 AA										≤0.035 AA ≤0.075 MAC (good status)	0.01 AA		1.5 AA 2.6 MAC (good status)							3.4 AA	0.07 MAC	25 AA
EPA Interim Guideline Values 2003 (IGV)					NAC		0.15	1	1	0.1		NAC	≥6.5-9.5≤	200		30			0.03	0.01	25		NAC							1	10
European Union (Drinking Water) Regulations 2014 (DWR)					NAC		0.3	2.5	0.8 or 1.5	0.5			≥6.5-9.5≤	250		250				0.05	50									1	10

= Bioavailable, ∑= sum of values, AA = Annual Mean, MAC = Maximum Allowable Concentration

Key (borehole installations):

Borehole screened across CLAY (Shallow)
Borehole screened across LIMESTONE/SANDSTONE BEDROCK (Deep)

Sample ID	Sample Date	Lab Sample ID	Boron	Cadmium	Chromium	Copper	Lead	Manganese	Nickel	Selenium	Zinc	Sodium	Magnesium	Potassium	Calcium	Iron	Aluminium	Antimony	Barium	Beryllium	Molybdenum	Vanadium	Phenols	Phenol	Cresols	Xylenols	2,3,5-Trimethylphenol	2-isopropylphenol	Sum of Detected Monohydric Phenols	TPH Criteria Working Group (TPH CWG)	GRO Surrogate % recovery**	GRO >C5-C12	Methyl tertiary butyl ether (MTBE)
LOD			<9.4	<0.1	<0.22	<0.85	<0.02	<0.04	<0.15	<0.39	<0.41	<0.076	<0.036	<2.335	<0.012	<0.019	<10	<1	<0.2	<0.1	<3.0	<1.0		<0.002	<0.006	<0.008	<0.003	<0.006	<0.025			<50	<3
Round 1 Monitoring Results			µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	mg/l	mg/l	mg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l		µg/l	mg/l	µg/l	mg/l	mg/l	µg/l		%	µg/l	µg/l
BH01	12/11/2012	6498002	40.9	<0.1	2.1	1.15	0.088	224	3.86	2.34	3.7	21.7	19	3.24	119	<0.019								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		92	<50	<3
BH02	12/11/2012	6498003	34.5	<0.1	1.99	1.04	0.194	222	2.18	1.54	1.59	33.4	16.3	3.22	102	0.0293								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		98	<50	<3
BH03S (BH03A)	12/11/2012	6498004	16.1	<0.1	1.69	<0.85	0.095	1070	2.05	1.35	0.903	22.4	9.28	<2.34	101	0.125								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		88	<50	<3
BH03D (BH03B)	12/11/2012	6498005	13.5	<0.1	1.73	0.866	0.077	922	1.99	1.42	1.07	19.9	6.69	<2.34	89.9	0.0353								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		95	<50	<3
BH04	12/11/2012	6498006	14.3	<0.1	1.8	1.32	0.249	1260	2.13	2.15	0.66	24	6.74	<2.34	81.3	0.582								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		84	<50	<3
BH05	12/11/2012	6498009	24.7	<0.1	1.69	<0.85	0.217	503	1.95	1.42	1.49	26	7.01	<2.34	85.8	0.0754								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		90	<50	<3
SW01 (Upstream)	12/11/2012	6498010	<9.4	<0.1	0.606	1.33	0.094	2.6	0.996	1.45	1.88	10.8	1.89	3.24	13.9	0.258								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		90	<50	<3
SW02 (Western drain)	12/11/2012	6498011	10.1	<0.1	0.782	2.04	0.176	49.9	1.78	2.12	5.87	10.6	2.16	3.09	12.4	0.472								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		99	<50	<3
Round 2 Monitoring Results																																	
BH01	19/11/2012	6532917	38.7	0.33	2.6	1.85	0.33	215	5.24	1.8	3	15.7	13.4	<2.34	113	<0.019								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025				
BH02	19/11/2012	6532918	34.4	0.386	2.05	2.21	0.175	134	2.11	0.86	2.08	27.4	16.5	<2.34	100	<0.019								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025				
BH03S (BH03A)	19/11/2012	6532920	26.3	<0.1	2.05	1.22	0.166	1160	3.04	0.784	0.949	21	8.9	<2.34	101	0.0562								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025				
BH03D (BH03B)	19/11/2012	6532921	20.3	<0.1	1.81	1.02	0.027	901	2.14	0.466	3.17	16.5	6.09	<2.34	83.5	<0.019								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025				
BH04	19/11/2012	6532922	29.9	<0.1	1.82	1.81	0.026	760	3.28	0.957	<0.41	37.6	8.95	3.34	93.2	<0.019								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025				
BH05	19/11/2012	6532923	15	0.139	1.88	1.05	<0.02	454	2.63	0.544	<0.41	25.6	7.82	<2.34	87.6	<0.019								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025				
SW01 (Upstream)	19/11/2012	6532924	16.2	<0.1	2.62	0.93	0.038	3.02	1.1	<0.39	1.68	11.6	2.52	<2.34	46.3	0.0608								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025				
SW02 (Western drain)	19/11/2012	6532925	14.8	<0.1	1.01	2.31	0.028	26.8	4.37	0.575	3.63	12.7	2.17	<2.34	14	0.724								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025				
Round 3 Monitoring Results																																	
BH1	14/01/2013	6778029	26.7	<0.1	5.96	<0.85	0.162	510	4.11	0.694	5.57	16.4	11.6	2.67	114	0.022								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		98	<50	<3
BH2	14/01/2013	6778031	44	0.175	2.79	2.05	0.075	89.4	1.49	0.819	<0.41	25.5	16.3	2.62	96.9	0.0436								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		105	<50	<3
BH03S (BH03A)	14/01/2013	6778032	12.8	<0.1	5.51	<0.85	0.111	1430	2.94	<0.39	1.47	19.4	7.86	<2.34	104	0.0923								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		98	<50	<3
BH03D (BH03B)	14/01/2013	6778033	15	<0.1	2.64	1.14	0.049	1280	1.79	1.06	<0.41	17.8	6.69	<2.34	88.4	0.0273								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		95	<50	<3
BH4	14/01/2013	6778034	20.1	<0.1	3.34	6.99	0.223	155	1.59	2.24	4.21	24	6.82	<2.34	86.6	0.0625								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		102	<50	<3
BH5	14/01/2013	6778036	22.2	<0.1	4.29	<0.85	0.103	310	1.79	0.515	0.986	25.7	7.12	<2.34	79.6	0.0213								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		104	<50	<3
SW01 (Upstream)	14/01/2013	6778038	<9.4	<0.1	1.89	<0.85	0.059	3.24	1.26	<0.39	1.45	11	2.51	<2.34	30.2	0.126								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		98	<50	<3
SW02 (Western drain)	14/01/2013	6778039	<9.4	<0.1	2.38	1.94	0.13	68.9	4.73	0.531	4.23	13.8	2.3	<2.34	15.3	0.867								<0.002	<0.006	<0.008	<0.003	<0.006	<0.025		101	<50	<3
Round 4 Monitoring Results																																	
BH02	06/10/2020	22999660	32.5	0.122	<1	0.562	0.265	91.5	0.916	<1	5.49	37.1	15.1	4.04	112	0.171	<10	<1	695	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		102	<50	<3
BH03S (BH03A)	06/10/2020	22999661	18.2	0.0903	<1	1.57	<0.2	581	1.86	<1	3.88	18.5	5.64	0.357	95.4	2.15	<10	<1	84.5	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		103	<50	<3
BH03D (BH03B)	06/10/2020	22999663	19.7	<0.08	<1	0.421	0.723	1060	1.42	<1	5.18	19.1	6.32	0.759	94.5	4.82	<10	<1	112	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		99	<50	<3
BH04	06/10/2020	22999666	22.8	<0.08	<1	<0.3	<0.2	316	0.731	<1	2.58	22.9	6.5	1.54	90	2.05	<10	<1	75.8	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		92	<50	<3
BH05	06/10/2020	22999667	28	<0.08	<1	0.335	<0.2	462	1.2	<1	4.03	24.8	6.3	1.53	83.8	4.09	<10	<1	71	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		105	<50	<3
SW01 (Upstream)	06/10/2020	22999668	19.3	<0.08	<1	2.57	0.265	8.96	1.3	<1	3.72	9.23	2.21	2.57	21	0.314	72	<1	10.6	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		105	<50	<3
SW02 (Western drain)	06/10/2020	22999669	23.9	0.107	<1	4.51	0.353	42.2	2.75	<1	14.2	18.2	2.6	1.5	17.5	0.422	210	<1	14	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		99	<50	<3
Round 5 Monitoring Results																																	
BH02	20/10/2020	23100498	30.2	<0.08	-	1.4	2	25	1.41	<1	26.6	40.9	13.2	5.05	108	<0.019	<10	<1	474	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		104	<50	<3
BH03S (BH03A)	20/10/2020	23100499	14.8	<0.08	3.15	3.72	1.02	40.5	2.05	<1	7.39	16.6	4.33	<0.2	77.4	0.17	25.5	<1	21.8	<0.1	4.82	<1		<0.5	<0.5	<0.5			<0.5		110	<50	<3
BH03D (BH03B)	20/10/2020	23100501	11.1	<0.08	2.75	2.03	0.411	362	1.4	<1	3.02	17.3	4.94	0.326	81.2	1.42	<10	<1	63.3	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		105	<50	<3
BH04	20/10/2020	23100502	20.7	<0.08	<1	<0.3	0.623	356	0.863	<1	4.24	22.6	6.37	1.64	85	5.34	17.5	<1	50.1	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		106	<50	<3
BH05	20/10/2020	23100503	20.9	<0.08	1.89	1	0.475	459	2.58	<1	3.88	75.5	5.09	7.78	62.5	4.3	99.1	<1	24.2	<0.1	<3	<1		1.16	1.84	<0.5			3		109	<50	<3
SW01 (Upstream)	20/10/2020	23100494	15.6	<0.08	2.2	1.9	<0.2	7.54	0.939	<1	6.02	11.1	2.9	2.8	33.5	0.204	36.5	<1	14.7	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		110	<50	<3
SW02 (Western drain)	20/10/2020	23100495	13.4	<0.08	-	3.09	<0.2	53.1	2.83	<1	13.1	16.5	2.51	1.48	15.9	0.568	202	<1	12.7	<0.1	<3	<1		<0.5	<0.5	<0.5			<0.5		103	<50	<3
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GT			750	3.75	37.5	1,500	7.5		15		75	150					150																
European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended (				≤0.08- 0.25 AA ≤0.45-1.5 MAC		5 or 30 AA	1.2 AA 14 MAC #		4 AA 34 MAC #		8 or 50 or 100 AA													8 AA 46 MAC										
EPA Interim Guideline Values 2003 (IGV)			1,000	5	30	30	10	50	20		100	150	50	5	200	0.2	200		100					0.5									
European Union (Drinking Water) Regulations 2014 (DWR)			1,000	5	50	2,000	10	50	20	10		200				0.2	200	5															

= Bioavailable, ∑= sum of values, AA = Annual Mean, MAC = Maximum Allowable Concentration

Key (borehole installations):

Borehole screened across CLAY (Shallow)
Borehole screened across LIMESTONE/SANDSTONE BEDROCK (Deep)

Sample ID	Sample Date	Lab Sample ID	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Sum of detected Xylenes	Sum of detected BTEX	Aliphatics >C5-C6	Aliphatics >C6-C8	Aliphatics >C8-C10	Aliphatics >C10-C12	Aliphatics >C12-C16 (aa)	Aliphatics >C16-C21 (aa)	Aliphatics >C21-C35 (aa)	Total Aliphatics >C12-C35 (aq)	Aromatics >EC6-EC7	Aromatics >EC7-EC8	Aromatics >EC8-EC10	Aromatics >EC10-EC12	Aromatics >EC12-EC16 (aa)	Aromatics >EC16-EC21 (aa)	Aromatics >EC21-EC35 (aa)	Total Aromatics >EC12-EC35 (aq)	Total Aliphatics & Aromatics >C5-35 (aq)	Polycyclic Hydrocarbons (PAHs)	Naphthalene	Acenaphthene	Acenaphthylene	Fluorenthene	Anthracene	Phenanthrene	Fluorene
LOD			<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.1	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
Round 1 Monitoring Results			µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
BH01	12/11/2012	6498002	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	19	721	740	<10	<10	<10	<10	<10	<10	20	20	761		0.403	<0.015	<0.011	0.0488	0.0332	1.09	0.551
BH02	12/11/2012	6498003	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		0.138	<0.015	<0.011	<0.017	<0.015	0.0267	<0.014
BH03S (BH03A)	12/11/2012	6498004	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		0.15	<0.015	<0.011	0.018	<0.015	0.154	0.0423
BH03D (BH03B)	12/11/2012	6498005	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		0.169	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
BH04	12/11/2012	6498006	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	308	308	<10	<10	<10	<10	<10	<10	121	121	446		0.398	<0.03	<0.022	0.183	0.0336	0.0927	<0.028
BH05	12/11/2012	6498009	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.1	<0.015	<0.011	0.0596	<0.015	0.0751	0.0195
SW01 (Upstream)	12/11/2012	6498010	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		0.125	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
SW02 (Western drain)	12/11/2012	6498011	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		0.131	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
Round 2 Monitoring Results																																		
BH01	19/11/2012	6532917																										<0.1	<0.015	<0.011	<0.017	<0.015	0.135	0.0744
BH02	19/11/2012	6532918																										<0.1	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
BH03S (BH03A)	19/11/2012	6532920																										<0.1	<0.015	<0.011	<0.017	<0.015	0.103	0.0368
BH03D (BH03B)	19/11/2012	6532921																										<0.1	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
BH04	19/11/2012	6532922																										<0.1	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
BH05	19/11/2012	6532923																										<0.1	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
SW01 (Upstream)	19/11/2012	6532924																										<0.1	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
SW02 (Western drain)	19/11/2012	6532925																										<0.1	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
Round 3 Monitoring Results																																		
BH1	14/01/2013	6778029	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	15	71	3270	3350	<10	<10	<10	<10	45	38	583	666	4030		0.604	0.0196	<0.011	0.0785	0.102	2.22	0.948
BH2	14/01/2013	6778031	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.1	<0.015	<0.011	<0.017	<0.015	0.0352	0.0174
BH03S (BH03A)	14/01/2013	6778032	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.1	<0.015	<0.011	<0.017	<0.015	0.0604	0.0196
BH03D (BH03B)	14/01/2013	6778033	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.1	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
BH4	14/01/2013	6778034	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	100	100	<10	<10	<10	<10	<10	<10	40	40	144		<0.1	<0.015	<0.011	0.0219	<0.015	<0.022	<0.014
BH5	14/01/2013	6778036	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.1	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
SW01 (Upstream)	14/01/2013	6778038	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.1	<0.015	<0.011	<0.017	<0.015	<0.022	<0.014
SW02 (Western drain)	14/01/2013	6778039	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<20	<20	<20	<20	<10	<10	<10	<10	<20	<20	<20	<20	<10		<1	<0.15	<0.11	<0.17	<0.15	<0.22	<0.14
Round 4 Monitoring Results																																		
BH02	06/10/2020	22999660	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	262	262	262	<10	<10	<10	<10	<10	<10	<10	<10	262		<0.01	0.0143	<0.005	0.00635	<0.005	0.044	0.0184
BH03S (BH03A)	06/10/2020	22999661	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		0.0107	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BH03D (BH03B)	06/10/2020	22999663	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		0.0108	<0.005	<0.005	<0.005	<0.005	0.00899	<0.005
BH04	06/10/2020	22999666	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BH05	06/10/2020	22999667	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
SW01 (Upstream)	06/10/2020	22999668	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
SW02 (Western drain)	06/10/2020	22999669	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Round 5 Monitoring Results																																		
BH02	20/10/2020	23100498	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BH03S (BH03A)	20/10/2020	23100499	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BH03D (BH03B)	20/10/2020	23100501	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	0.0114	<0.005
BH04	20/10/2020	23100502	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BH05	20/10/2020	23100503	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
SW01 (Upstream)	20/10/2020	23100494	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
SW02 (Western drain)	20/10/2020	23100495	<7	<4	<5	<8	<3	<11	<28	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GT			0.75	525																					7.5		∑PAH6 0.075				∑PAH6 0.075		
European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended (			10 AA 50 MAC	10 AA																							2 AA 130 MAC			0.0063 AA 0.12 MAC	0.1 AA 0.1 MAC		
EPA Interim Guideline Values 2003 (IGV)			1	10																					10		1			1	10,000		
European Union (Drinking Water) Regulations 2014 (DWR)			1																														

= Bioavailable, ∑= sum of values, AA = Annual Mean, MAC = Maximum Allowable Concentration

Key (borehole installations):

Borehole screened across CLAY (Shallow)
Borehole screened across LIMESTONE/SANDSTONE BEDROCK (Deep)

Sample ID	Sample Date	Lab Sample ID	Chrysene	Pyrene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	PAH, Total Detected USEPA 16	PCB's	PCB congener 118	PCB congener 77	PCB congener 81	PCB congener 105	PCB congener 114	PCB congener 123	PCB congener 126	PCB congener 156	PCB congener 157	PCB congener 167	PCB congener 169	PCB congener 189	Semi-Volatile Organic Compounds (SVOCs)	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol
LOD			<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		<1	<1	<1	<1	<1	<1	<1	<1
Round 1 Monitoring Results			µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
BH01	12/11/2012	6498002	0.401	0.0842	0.0346	0.184	0.0287	0.0365	0.0279	0.0439	0.021	2.99		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		<1	<1	<1	<1	<1	<1	<1	<1
BH02	12/11/2012	6498003	0.0139	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		<1	<1	<1	<1	<1	<1	<1	<1
BH03S (BH03A)	12/11/2012	6498004	0.0792	0.0235	<0.017	0.0532	<0.027	0.0133	<0.016	0.0225	<0.014	0.556		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		<1	<1	<1	<1	<1	<1	<1	<1
BH03D (BH03B)	12/11/2012	6498005	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		<1	<1	<1	<1	<1	<1	<1	<1
BH04	12/11/2012	6498006	0.161	0.167	0.134	0.116	0.107	0.11	<0.032	0.09	0.07	1.73		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		<1	<1	<1	<1	<1	<1	<1	<1
BH05	12/11/2012	6498009	0.0672	0.0544	0.0534	0.0602	0.0452	0.0511	0.0191	0.0353	0.0304	0.571		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		<1	<1	<1	<1	<1	<1	<1	<1
SW01 (Upstream)	12/11/2012	6498010	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		<1	<1	<1	<1	<1	<1	<1	<1
SW02 (Western drain)	12/11/2012	6498011	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		<1	<1	<1	<1	<1	<1	<1	<1
Round 2 Monitoring Results																																		
BH01	19/11/2012	6532917	0.0453	<0.015	0.0354	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	0.29																						
BH02	19/11/2012	6532918	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
BH03S (BH03A)	19/11/2012	6532920	0.0411	<0.015	0.0365	0.0277	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
BH03D (BH03B)	19/11/2012	6532921	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
BH04	19/11/2012	6532922	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
BH05	19/11/2012	6532923	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
SW01 (Upstream)	19/11/2012	6532924	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
SW02 (Western drain)	19/11/2012	6532925	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
Round 3 Monitoring Results																																		
BH1	14/01/2013	6778029	0.703	0.14	0.0258	0.371	0.063	0.063	0.0311	0.0865	0.0483	5.5																						
BH2	14/01/2013	6778031	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
BH03S (BH03A)	14/01/2013	6778032	0.0253	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
BH03D (BH03B)	14/01/2013	6778033	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
BH4	14/01/2013	6778034	0.0233	0.0205	<0.017	<0.023	<0.027	0.0114	<0.016	<0.016	<0.014	<0.247																						
BH5	14/01/2013	6778036	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
SW01 (Upstream)	14/01/2013	6778038	<0.013	<0.015	<0.017	<0.023	<0.027	<0.009	<0.016	<0.016	<0.014	<0.247																						
SW02 (Western drain)	14/01/2013	6778039	<0.13	<0.15	<0.17	<0.23	<0.27	<0.09	<0.16	<0.16	<0.14	<2.47																						
Round 4 Monitoring Results																																		
BH02	06/10/2020	22999660	<0.005	0.00808	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	0.0911															<4	<4	<4	<4	<4	<4	<4	<4
BH03S (BH03A)	06/10/2020	22999661	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<4	<4	<4	<4	<4	<4	<4	<4
BH03D (BH03B)	06/10/2020	22999663	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<8	<8	<8	<8	<8	<8	<8	<8
BH04	06/10/2020	22999666	<0.005	<0.005	<0.005	0.0116	0.00525	0.00572	<0.005	<0.005	<0.005	<0.082															<4	<4	<4	<4	<4	<4	<4	<4
BH05	06/10/2020	22999667	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<20	<20	<20	<20	<20	<20	<20	<20
SW01 (Upstream)	06/10/2020	22999668	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<1	<1	<1	<1	<1	<1	<1	<1
SW02 (Western drain)	06/10/2020	22999669	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<2	<2	<2	<2	<2	<2	<2	<2
Round 5 Monitoring Results																																		
BH02	20/10/2020	23100498	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<1	<1	<1	<1	<1	<1	<1	<1
BH03S (BH03A)	20/10/2020	23100499	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<4	<4	<4	<4	<4	<4	<4	<4
BH03D (BH03B)	20/10/2020	23100501	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<10	<10	<10	<10	<10	<10	<10	<10
BH04	20/10/2020	23100502	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<10	<10	<10	<10	<10	<10	<10	<10
BH05	20/10/2020	23100503	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<10	<10	<10	<10	<10	<10	<10	<10
SW01 (Upstream)	20/10/2020	23100494	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<1	<1	<1	<1	<1	<1	<1	<1
SW02 (Western drain)	20/10/2020	23100495	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005	<0.082															<4	<4	<4	<4	<4	<4	<4	<4
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GT						∑PAH6 0.075	∑PAH6 0.075	0.0075		∑PAH6 0.075	∑PAH6 0.075	∑PAH6 0.075																						
European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended (						0.017 MAC	0.017 MAC	0.00017 AA 0.27 MAC		0.0082 MAC																								
EPA Interim Guideline Values 2003 (IGV)						0.5	0.05	0.01		0.05	0.05	0.1															0.4	10				200		
European Union (Drinking Water) Regulations 2014 (DWR)						∑PAH4 0.10	∑PAH4 0.10	0.01		∑PAH4 0.10	∑PAH4 0.10																							

= Bioavailable, ∑= sum of values, AA = Annual Mean, MAC = Maximum Allowable Concentration

Key (borehole installations):

Borehole screened across CLAY (Shallow)

Borehole screened across LIMESTONE/SANDSTONE BEDROCK (Deep)

Sample ID	Sample Date	Lab Sample ID	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3-Nitroaniline	4-Bromophenylphenylether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenylphenylether	4-Methylphenol	4-Nitroaniline	4-Nitrophenol	Azobenzene	bis(2-Chloroethyl)ether	bis(2-Chloroethoxy)methane	bis(2-Ethylhexyl) phthalate	Butylbenzyl phtalate	Carbazole	Dibenzofuran	n-Dibutyl phthalate	Diethyl phthalate	Dimethyl phthalate	n-Dioctyl phthalate	Hexachlorobenzene	Hexachlorobutadiene	Pentachlorophenol	n-Nitroso-n-dipropylamine	Hexachloroethane	Nitrobenzene	Isophorone
LOD			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1
Round 1 Monitoring Results			µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
BH01	12/11/2012	6498002	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
BH02	12/11/2012	6498003	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
BH03S (BH03A)	12/11/2012	6498004	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
BH03D (BH03B)	12/11/2012	6498005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
BH04	12/11/2012	6498006	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
BH05	12/11/2012	6498009	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
SW01 (Upstream)	12/11/2012	6498010	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
SW02 (Western drain)	12/11/2012	6498011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
Round 2 Monitoring Results																																					
BH01	19/11/2012	6532917																																			
BH02	19/11/2012	6532918																																			
BH03S (BH03A)	19/11/2012	6532920																																			
BH03D (BH03B)	19/11/2012	6532921																																			
BH04	19/11/2012	6532922																																			
BH05	19/11/2012	6532923																																			
SW01 (Upstream)	19/11/2012	6532924																																			
SW02 (Western drain)	19/11/2012	6532925																																			
Round 3 Monitoring Results																																					
BH1	14/01/2013	6778029																																			
BH2	14/01/2013	6778031																																			
BH03S (BH03A)	14/01/2013	6778032																																			
BH03D (BH03B)	14/01/2013	6778033																																			
BH4	14/01/2013	6778034																																			
BH5	14/01/2013	6778036																																			
SW01 (Upstream)	14/01/2013	6778038																																			
SW02 (Western drain)	14/01/2013	6778039																																			
Round 4 Monitoring Results																																					
BH02	06/10/2020	22999660	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<8	<4	<4	<4	<4	<4	<4	<20	<4	<4	<4	<4	<4	<4	<4	<4
BH03S (BH03A)	06/10/2020	22999661	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<8	<4	<4	<4	<4	<4	<4	<20	<4	<4	<4	<4	<4	<4	<4	<4
BH03D (BH03B)	06/10/2020	22999663	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<16	<8	<8	<8	<8	<8	<8	<40	<8	<8	<8	<8	<8	<8	<8	<8
BH04	06/10/2020	22999666	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<8	<4	<4	<4	<4	<4	<4	<20	<4	<4	<4	<4	<4	<4	<4	<4
BH05	06/10/2020	22999667	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<40	<20	<20	<20	<20	<20	<20	<100	<20	<20	<20	<20	<20	<20	<20	<20
SW01 (Upstream)	06/10/2020	22999668	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
SW02 (Western drain)	06/10/2020	22999669	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2
Round 5 Monitoring Results																																					
BH02	20/10/2020	23100498	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
BH03S (BH03A)	20/10/2020	23100499	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<8	<4	<4	<4	<4	<4	<4	<20	<4	<4	<4	<4	<4	<4	<4	<4
BH03D (BH03B)	20/10/2020	23100501	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<10	<10
BH04	20/10/2020	23100502	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<10	<10
BH05	20/10/2020	23100503	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<10	<10
SW01 (Upstream)	20/10/2020	23100494	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
SW02 (Western drain)	20/10/2020	23100495	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<8	<4	<4	<4	<4	<4	<4	<20	<4	<4	<4	<4	<4	<4	<4	<4
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GT																																					
European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended (																														0.05 MAC	0.6 MAC	0.4 AA 1 MAC					
EPA Interim Guideline Values 2003 (IGV)						200																				2				0.03	0.1	2			10		
European Union (Drinking Water) Regulations 2014 (DWR)																																					

= Bioavailable, ∑= sum of values, AA = Annual Mean, MAC = Maximum Allowable Concentration

Key (borehole installations):

Borehole screened across CLAY (Shallow)
Borehole screened across LIMESTONE/SANDSTONE BEDROCK (Deep)

Sample ID	Sample Date	Lab Sample ID	Hexachlorocyclopentadiene	Volatile Organic Compounds (VOCs)	Dibromofluoromethane	Toluene-d8	4-Bromofluorobenzene	Dichlorodifluoromethane	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane	1,1-Dichloroethene	Carbon disulphide	Dichloromethane	Methyl tertiary butyl ether (MTBE)	trans-1,2-Dichloroethene	1,1-Dichloroethane	cis-1,2-Dichloroethene	2,2-Dichloropropane	Bromochloromethane	Chloroform	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon tetrachloride	1,2-Dichloroethane	Benzene	Trichloroethene	1,2-Dichloropropane	Dibromomethane	Bromodichloromethane	cis-1,3-Dichloropropene	Toluene	trans-1,3-Dichloropropene	1,1,2-Trichloroethane
LOD			<1					<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Round 1 Monitoring Results			µg/l		%	%	%	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
BH01	12/11/2012	6498002	<1		113	101	101	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH02	12/11/2012	6498003	<1		111	100	97.6	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH03S (BH03A)	12/11/2012	6498004	<1		111	98.5	90.8	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH03D (BH03B)	12/11/2012	6498005	<1		111	100	97.8	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH04	12/11/2012	6498006	<1		110	95.8	80.9	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH05	12/11/2012	6498009	<1		113	99	93.2	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW01 (Upstream)	12/11/2012	6498010	<1		114	99.9	98.4	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW02 (Western drain)	12/11/2012	6498011	<1		109	100	98.5	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Round 2 Monitoring Results																																				
BH01	19/11/2012	6532917																																		
BH02	19/11/2012	6532918																																		
BH03S (BH03A)	19/11/2012	6532920																																		
BH03D (BH03B)	19/11/2012	6532921																																		
BH04	19/11/2012	6532922																																		
BH05	19/11/2012	6532923																																		
SW01 (Upstream)	19/11/2012	6532924																																		
SW02 (Western drain)	19/11/2012	6532925																																		
Round 3 Monitoring Results																																				
BH1	14/01/2013	6778029																																		
BH2	14/01/2013	6778031																																		
BH03S (BH03A)	14/01/2013	6778032																																		
BH03D (BH03B)	14/01/2013	6778033																																		
BH4	14/01/2013	6778034																																		
BH5	14/01/2013	6778036																																		
SW01 (Upstream)	14/01/2013	6778038																																		
SW02 (Western drain)	14/01/2013	6778039																																		
Round 4 Monitoring Results																																				
BH02	06/10/2020	22999660	<4		116	99.2	97.6	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH03S (BH03A)	06/10/2020	22999661	<4		116	100	95.8	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH03D (BH03B)	06/10/2020	22999663	<8		111	100	95.2	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH04	06/10/2020	22999666	<4		113	98.1	96	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH05	06/10/2020	22999667	<20		116	98.9	95	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW01 (Upstream)	06/10/2020	22999668	<1		119	98.5	95.7	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW02 (Western drain)	06/10/2020	22999669	<2		114	98.8	97.8	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Round 5 Monitoring Results																																				
BH02	20/10/2020	23100498	<1		107	98.1	95.5	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH03S (BH03A)	20/10/2020	23100499	<4		107	98.7	97.3	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH03D (BH03B)	20/10/2020	23100501	<10		108	98.4	95.3	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH04	20/10/2020	23100502	<10		107	97.9	95.3	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH05	20/10/2020	23100503	<10		106	98	95.1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW01 (Upstream)	20/10/2020	23100494	<1		109	98	96.6	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW02 (Western drain)	20/10/2020	23100495	<4		104	98.1	94.9	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GT										0.375						15	10										2.25	0.75	∑VOC 7.5							
European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended (																20 AA										12 AA	10 AA	10 AA 50 MAC	10 AA						
EPA Interim Guideline Values 2003 (IGV)																10	30					12	500				3	1	70						
European Union (Drinking Water) Regulations 2014 (DWR)										0.5																	3	1	∑2VOC 10						

= Bioavailable, ∑= sum of values, AA = Annual Mean, MAC = Maximum Allowable Concentration

Key (borehole installations):

Borehole screened across CLAY (Shallow)
Borehole screened across LIMESTONE/SANDSTONE BEDROCK (Deep)

Sample ID	Sample Date	Lab Sample ID	1,3-Dichloropropane	Tetrachloroethene	Dibromochloromethane	1,2-Dibromoethane	Chlorobenzene	1,1,1,2-Tetrachloroethane	Ethylbenzene	m,p-Xylene	o-Xylene	Styrene	Bromoform	Isopropylbenzene	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	Bromobenzene	Propylbenzene	2-Chlorotoluene	1,3,5-Trimethylbenzene	4-Chlorotoluene	tert-Butylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	4-Iso-Propyltoluene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	n-Butylbenzene	1,2-Dichlorobenzene	1,2-Dibromo-3-chloropropane	1,2,4-Trichlorobenzene	Hexachlorobutadiene	tert-Amyl methyl ether (TAME)	1,2,3-Trichlorobenzene	1,3,5-Trichlorobenzene	Phenoxyacetic acid (PAA)
LOD			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.031
Round 1 Monitoring Results			µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
BH01	12/11/2012	6498002	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.261
BH02	12/11/2012	6498003	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.031
BH03S (BH03A)	12/11/2012	6498004	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.031
BH03D (BH03B)	12/11/2012	6498005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.0896
BH04	12/11/2012	6498006	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.34	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.118
BH05	12/11/2012	6498009	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.031
SW01 (Upstream)	12/11/2012	6498010	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.031
SW02 (Western drain)	12/11/2012	6498011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.031
Round 2 Monitoring Results																																					
BH01	19/11/2012	6532917																																			
BH02	19/11/2012	6532918																																			
BH03S (BH03A)	19/11/2012	6532920																																			
BH03D (BH03B)	19/11/2012	6532921																																			
BH04	19/11/2012	6532922																																			
BH05	19/11/2012	6532923																																			
SW01 (Upstream)	19/11/2012	6532924																																			
SW02 (Western drain)	19/11/2012	6532925																																			
Round 3 Monitoring Results																																					
BH1	14/01/2013	6778029																																			
BH2	14/01/2013	6778031																																			
BH03S (BH03A)	14/01/2013	6778032																																			
BH03D (BH03B)	14/01/2013	6778033																																			
BH4	14/01/2013	6778034																																			
BH5	14/01/2013	6778036																																			
SW01 (Upstream)	14/01/2013	6778038																																			
SW02 (Western drain)	14/01/2013	6778039																																			
Round 4 Monitoring Results																																					
BH02	06/10/2020	22999660	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
BH03S (BH03A)	06/10/2020	22999661	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
BH03D (BH03B)	06/10/2020	22999663	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
BH04	06/10/2020	22999666	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
BH05	06/10/2020	22999667	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
SW01 (Upstream)	06/10/2020	22999668	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
SW02 (Western drain)	06/10/2020	22999669	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Round 5 Monitoring Results																																					
BH02	20/10/2020	23100498	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
BH03S (BH03A)	20/10/2020	23100499	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
BH03D (BH03B)	20/10/2020	23100501	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
BH04	20/10/2020	23100502	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
BH05	20/10/2020	23100503	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
SW01 (Upstream)	20/10/2020	23100494	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
SW02 (Western drain)	20/10/2020	23100495	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GT				∑VOC 7.5																																	
European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended (				10 AA																																	
EPA Interim Guideline Values 2003 (IGV)				40			1		10	10																											
European Union (Drinking Water) Regulations 2014 (DWR)				∑2VOC 10																																	

= Bioavailable, ∑= sum of values, AA = Annual Mean, MAC = Maximum Allowable Concentration

Phenoxy Acid Herbicides

Key (borehole installations):

Borehole screened across CLAY (Shallow)
Borehole screened across LIMESTONE/SANDSTONE BEDROCK (Deep)

Sample ID	Sample Date	Lab Sample ID	Dicamba	Phenoxypropionic acid (PPA)	4-Chlorophenoxyacetic acid (4-CPA)	4-Phenoxybutyric acid	Bentazone	Bromoxynil	2,4-Dichlorophenoxy acetic acid (2,4-D)	2-methyl-4-Chlorophenoxyacetic acid (MCPA)	2-methyl-4,6-Dinitrophenol	Triclopyr	Ioxynil	2,4-Dichlorophenoxy acetic acid (2,4-DP)	2,4,5-Trichlorophenol (2,4,5-T)	Mecoprop (MCPP)	4-(2,4-Dichlorophenoxy) butyric acid (2,4-D)	4-(4-Chloro-o-toyloxy) butyric acid (MCPB)	2-(2,4,5-Trichlorophenoxy) propionic acid	Dinoseb	Pentachlorophenol	Combined Pesticides / Herbicides	Atrazine	Simazine	Dichlorvos	Mevinphos	Tecnazene	Hexachlorobenzene	Trifluralin	alpha-Hexachlorocyclohexane (HCH / Lindane)	Quintozene (PCNB)	Diazinon	Trialkate	Etrimphos	gamma-Hexachlorocyclohexane (HCH / Lindane)	Disulfoton
LOD			<0.033	<0.023	<0.037	<0.019	<0.018	<0.022	<0.026	<0.03	<0.041	<0.022	<0.017	<0.015	<0.029	<0.025	<0.022	<0.029	<0.024	<0.027	<0.032		<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Round 1 Monitoring Results			µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
BH01	12/11/2012	6498002	<0.033	<0.023	<0.037	<0.019	<0.018	<0.022	<0.026	<0.03	<0.041	<0.022	<0.017	<0.015	<0.029	<0.025	<0.022	<0.029	<0.024	<0.027	<0.032		<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH02	12/11/2012	6498003	<0.033	<0.023	<0.037	<0.019	<0.018	<0.022	<0.026	<0.03	<0.041	<0.022	<0.017	<0.015	<0.029	<0.025	<0.022	<0.029	<0.024	<0.027	<0.032		<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH03S (BH03A)	12/11/2012	6498004	<0.033	<0.023	<0.037	<0.019	<0.018	<0.022	<0.026	<0.03	<0.041	<0.022	<0.017	<0.015	<0.029	<0.025	<0.022	<0.029	<0.024	<0.027	<0.032		<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH03D (BH03B)	12/11/2012	6498005	<0.033	<0.023	<0.037	<0.019	<0.018	<0.022	<0.026	<0.03	<0.041	<0.022	<0.017	<0.015	<0.029	<0.025	<0.022	<0.029	<0.024	<0.027	<0.032		<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH04	12/11/2012	6498006	<0.033	<0.023	<0.037	<0.019	<0.018	<0.022	<0.026	<0.03	<0.041	<0.022	<0.017	<0.015	<0.029	<0.025	<0.022	<0.029	<0.024	<0.027	<0.032		<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH05	12/11/2012	6498009	<0.033	<0.023	<0.037	<0.019	<0.018	<0.022	<0.026	<0.03	<0.041	<0.022	<0.017	<0.015	<0.029	<0.025	<0.022	<0.029	<0.024	<0.027	<0.032		<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW01 (Upstream)	12/11/2012	6498010	<0.033	<0.023	<0.037	<0.019	<0.018	<0.022	<0.026	<0.03	<0.041	<0.022	<0.017	<0.015	<0.029	<0.025	<0.022	<0.029	<0.024	<0.027	<0.032		<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW02 (Western drain)	12/11/2012	6498011	<0.033	<0.023	<0.037	<0.019	<0.018	<0.022	<0.026	<0.03	<0.041	<0.022	<0.017	<0.015	<0.029	<0.025	<0.022	<0.029	<0.024	<0.027	<0.032		<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0105	<0.01	<0.01	<0.01	<0.01
Round 2 Monitoring Results																																				
BH01	19/11/2012	6532917																																		
BH02	19/11/2012	6532918																																		
BH03S (BH03A)	19/11/2012	6532920																																		
BH03D (BH03B)	19/11/2012	6532921																																		
BH04	19/11/2012	6532922																																		
BH05	19/11/2012	6532923																																		
SW01 (Upstream)	19/11/2012	6532924																																		
SW02 (Western drain)	19/11/2012	6532925																																		
Round 3 Monitoring Results																																				
BH1	14/01/2013	6778029																																		
BH2	14/01/2013	6778031																																		
BH03S (BH03A)	14/01/2013	6778032																																		
BH03D (BH03B)	14/01/2013	6778033																																		
BH4	14/01/2013	6778034																																		
BH5	14/01/2013	6778036																																		
SW01 (Upstream)	14/01/2013	6778038																																		
SW02 (Western drain)	14/01/2013	6778039																																		
Round 4 Monitoring Results																																				
BH02	06/10/2020	22999660																																		
BH03S (BH03A)	06/10/2020	22999661																																		
BH03D (BH03B)	06/10/2020	22999663																																		
BH04	06/10/2020	22999666																																		
BH05	06/10/2020	22999667																																		
SW01 (Upstream)	06/10/2020	22999668																																		
SW02 (Western drain)	06/10/2020	22999669																																		
Round 5 Monitoring Results																																				
BH02	20/10/2020	23100498																																		
BH03S (BH03A)	20/10/2020	23100499																																		
BH03D (BH03B)	20/10/2020	23100501																																		
BH04	20/10/2020	23100502																																		
BH05	20/10/2020	23100503																																		
SW01 (Upstream)	20/10/2020	23100494																																		
SW02 (Western drain)	20/10/2020	23100495																																		
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GT							0.075		0.075	0.075						0.075							0.075	0.075						0.075						
European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended (																							0.6 AA 2.0 MAC	1 AA 4 MAC												
EPA Interim Guideline Values 2003 (IGV)								5								10							1	1	0.001					0.1					
European Union (Drinking Water) Regulations 2014 (DWR)																																				

= Bioavailable, ∑= sum of values, AA = Annual Mean, MAC = Maximum Allowable Concentration

Key (borehole installations):

Borehole screened across CLAY (Shallow)
Borehole screened across LIMESTONE/SANDSTONE BEDROCK (Deep)

Sample ID	Sample Date	Lab Sample ID	Propetamphos	Heptachlor	Chlorpyriphos methyl	Dimethoate	Aldrin	Chlorothalonil	Pirimiphos-methyl	beta-Hexachlorocyclohexane (HCH- Lindane)	Chlorpyriphos	Telodrin	Methyl parathion	Isodrin	Malathion	Fenthion	Fenitrothion	Heptachlor epoxide	Triadimefon	Pendimethalin	Parathion	o,p-DDE	Chlorfenvinphos	Endosulphan I	Trans-chlordane	cis-Chlordane	p,p-DDE	Dieldrin	o,p-TDE (DDD)	Endrin
LOD			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Round 1 Monitoring Results			µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
BH01	12/11/2012	6498002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH02	12/11/2012	6498003	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH03S (BH03A)	12/11/2012	6498004	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH03D (BH03B)	12/11/2012	6498005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH04	12/11/2012	6498006	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH05	12/11/2012	6498009	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW01 (Upstream)	12/11/2012	6498010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW02 (Western drain)	12/11/2012	6498011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Round 2 Monitoring Results																														
BH01	19/11/2012	6532917																												
BH02	19/11/2012	6532918																												
BH03S (BH03A)	19/11/2012	6532920																												
BH03D (BH03B)	19/11/2012	6532921																												
BH04	19/11/2012	6532922																												
BH05	19/11/2012	6532923																												
SW01 (Upstream)	19/11/2012	6532924																												
SW02 (Western drain)	19/11/2012	6532925																												
Round 3 Monitoring Results																														
BH1	14/01/2013	6778029																												
BH2	14/01/2013	6778031																												
BH03S (BH03A)	14/01/2013	6778032																												
BH03D (BH03B)	14/01/2013	6778033																												
BH4	14/01/2013	6778034																												
BH5	14/01/2013	6778036																												
SW01 (Upstream)	14/01/2013	6778038																												
SW02 (Western drain)	14/01/2013	6778039																												
Round 4 Monitoring Results																														
BH02	06/10/2020	22999660																												
BH03S (BH03A)	06/10/2020	22999661																												
BH03D (BH03B)	06/10/2020	22999663																												
BH04	06/10/2020	22999666																												
BH05	06/10/2020	22999667																												
SW01 (Upstream)	06/10/2020	22999668																												
SW02 (Western drain)	06/10/2020	22999669																												
Round 5 Monitoring Results																														
BH02	20/10/2020	23100498																												
BH03S (BH03A)	20/10/2020	23100499																												
BH03D (BH03B)	20/10/2020	23100501																												
BH04	20/10/2020	23100502																												
BH05	20/10/2020	23100503																												
SW01 (Upstream)	20/10/2020	23100494																												
SW02 (Western drain)	20/10/2020	23100495																												
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GT																												0.075		
European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended (				0.0000002 AA 0.0003 MAC			∑4Pesticides 0.01 AA							∑4Pesticides 0.01 AA									0.1 AA 0.3 MAC					∑4Pesticides 0.01 AA		∑4Pesticides 0.01 AA
EPA Interim Guideline Values 2003 (IGV)							0.01								0.01									0.001				0.01		
European Union (Drinking Water) Regulations 2014 (DWR)																														

= Bioavailable, ∑= sum of values, AA = Annual Mean, MAC = Maximum Allowable Concentration

Key (borehole installations):

Borehole screened across CLAY (Shallow)
Borehole screened across LIMESTONE/SANDSTONE BEDROCK (Deep)

Sample ID	Sample Date	Lab Sample ID	o,p-DDT	p,p-TDE (DDD)	Ethion	Endosulphan II	p,p-DDT	Carbophenothion	o,p-Methoxychlor	Triazophos	p,p-Methoxychlor	Endosulphan sulphate	Permethrin I	Phosalone	Permethrin II	Azinphos-methyl	Azinphos-ethyl
LOD			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Round 1 Monitoring Results			µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
BH01	12/11/2012	6498002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01
BH02	12/11/2012	6498003	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01
BH03S (BH03A)	12/11/2012	6498004	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01
BH03D (BH03B)	12/11/2012	6498005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01
BH04	12/11/2012	6498006	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01
BH05	12/11/2012	6498009	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01
SW01 (Upstream)	12/11/2012	6498010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01
SW02 (Western drain)	12/11/2012	6498011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01
Round 2 Monitoring Results																	
BH01	19/11/2012	6532917															
BH02	19/11/2012	6532918															
BH03S (BH03A)	19/11/2012	6532920															
BH03D (BH03B)	19/11/2012	6532921															
BH04	19/11/2012	6532922															
BH05	19/11/2012	6532923															
SW01 (Upstream)	19/11/2012	6532924															
SW02 (Western drain)	19/11/2012	6532925															
Round 3 Monitoring Results																	
BH1	14/01/2013	6778029															
BH2	14/01/2013	6778031															
BH03S (BH03A)	14/01/2013	6778032															
BH03D (BH03B)	14/01/2013	6778033															
BH4	14/01/2013	6778034															
BH5	14/01/2013	6778036															
SW01 (Upstream)	14/01/2013	6778038															
SW02 (Western drain)	14/01/2013	6778039															
Round 4 Monitoring Results																	
BH02	06/10/2020	22999660															
BH03S (BH03A)	06/10/2020	22999661															
BH03D (BH03B)	06/10/2020	22999663															
BH04	06/10/2020	22999666															
BH05	06/10/2020	22999667															
SW01 (Upstream)	06/10/2020	22999668															
SW02 (Western drain)	06/10/2020	22999669															
Round 5 Monitoring Results																	
BH02	20/10/2020	23100498															
BH03S (BH03A)	20/10/2020	23100499															
BH03D (BH03B)	20/10/2020	23100501															
BH04	20/10/2020	23100502															
BH05	20/10/2020	23100503															
SW01 (Upstream)	20/10/2020	23100494															
SW02 (Western drain)	20/10/2020	23100495															
European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GT																	
European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended (																	
EPA Interim Guideline Values 2003 (IGV)													20				
European Union (Drinking Water) Regulations 2014 (DWR)																	

= Bioavailable, ∑= sum of values, AA = Annual Mean, MAC = Maximum Allowable Concentration

Key (borehole installations):

Borehole screened across CLAY (Shallow)
Borehole screened across LIMESTONE/SANDSTONE BEDROCK (Deep)

Appendix E
Gas Monitoring Results

Borehole location	Date	Weather	Atmospheric pressure (mb)	Borehole flow rate (l/hr)	Methane		Carbon dioxide		Min. concentration of Oxygen (%vol/vol)	Characteristic Gas Situation
					Max. concentration (%vol/vol)	Gas Screening Value (l/hr)	Max. concentration (%vol/vol)	Gas Screening Value (l/hr)		
BH03B	12/11/2012	Overcast	1019	0.1	0.1	0.0001	4.5	0.0045	15.2	1
	19/11/2012	Overcast & Dry	1019	0.1	0.1	0.0001	4.8	0.0048	15.2	1
	05/12/2012	Overcast & Dry	1014	0.5	0.1	0.0005	0.1	0.0005	19.9	1
	07/01/2013	Overcast & Wet	997	0.1	0.1	0.0001	0.1	0.0001	18.6	1
BH04	12/11/2012	Overcast	1019	0.1	0.1	0.0001	3.6	0.0036	17.4	1
	19/11/2012	Overcast & Dry	1019	0.1	0.1	0.0001	3.2	0.0032	15.9	1
	05/12/2012	Overcast & Dry	1014	0.1	0.3	0.0003	4.9	0.0049	17.9	1
	07/01/2013	Overcast & Wet	997	0.2	0.2	0.0004	2.6	0.0052	17.3	1
BH05	12/11/2012	Overcast	1019	0.1	0.1	0.0001	4.8	0.0048	17.8	1
	19/11/2012	Overcast & Dry	1019	0.4	0.1	0.0004	4.7	0.0188	16.9	1
	05/12/2012	Overcast & Dry	1014	0.1	0.3	0.0003	5.8	0.0058	0.7	2
	07/01/2013	Overcast & Wet	997	0.2	0.1	0.0002	4.2	0.0042	18.2	1

Maximum concentration overall site = 0.2 0.30 5.80

GSV= **0.348,** under wilson and card this falls in a **CS2** situation

Characteristic Situation (CIRIA R149)	Comparable partners in technology gas regime	Risk classification	Gas screening value (CH4 or CO2) (l/hr) Threshold	Additional Limiting Factors	Typical Source of Gas Generation
1	**A**	**Very low risk**	**<0.07**	Methane <1% and Carbon Dioxide <5% Otherwise consider increase to Situation 2.	Natural soils with low organic content 'Typical' made ground
2	**B**	**Low risk**	**<0.7**	Borehole air flow rate >70l/hr increase to Characteristic Situation 3	Natural soil, high peat/organic content 'Typical' made ground
3	**C**	**Moderate risk**	**<3.5**		Old landfill, inert waste, mine working flooded
4	**D**	**Moderate to high risk**	**<15**	Quantitative risk assessment required to evaluate scope of protection measures	Mine working susceptible to flooding, completed landfill, inert waste (WMP 26B criteria)
5	**E**	**High risk**	**<70**		Mine working unflooded inactive
6	**F**	**Very high risk**	**>70**		Recent landfill site