St. Modwen Developments Limited

Coed Darcy

Crymlyn Tip - Environmental Monitoring Annual Report 2023

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PJA
Park Point
High Street
Longbridge
Birmingham
B31 2UQ
pja.co.uk

Version Control and Approval

Version	Date	Main Contributor	Reviewed by	Approved by
A	March 2024	Liam Clark	Charlotte Smith	Charlotte Smith

Prepared for

St. Modwen Developments Limited
2 Devon Way
Longbridge
Birmingham
B31 2TS

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1 Introduction

1.1 Overview

This report has been prepared in line with Condition 4.2.2 (a) of Crymlyn Tip Environmental Permit EPR/AP3990LR and subsequent variations (the Permit), which states:

'4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency [now Natural Resources Wales] by 31 January (or other date agreed in writing by [NRW] each year. The report(s) shall include as a minimum:

a) A review of the results of the monitoring and assessment carried out in accordance with this permit against the relevant assumptions, parameters and results in the risk assessments submitted in relation to this site and any agreed amendments thereto.'

This report covers the monitoring period January 1st 2023 to December 31st 2023.

1.2 Background

St. Modwen Developments Limited (St. Modwen) acquired responsibility for Crymlyn Tip (the Tip) in 2008, when they purchased the former Llandarcy Oil Refinery from BP. For the Tip to enter 'definitive' closure NRW must be satisfied that a Closure and Aftercare Management Plan has been produced.

St. Modwen appointed Englobe in 2022 to address Improvement Requirements IP1 and IP2 of permit EPR/AP3990LR, including preparation of a Closure and Aftercare Management Plan for agreement by NRW.

Works associated with IP1 and IP2 are reported under separate cover by Englobe and are subject to separate, ongoing discussions with NRW.

1.3 Summary of Works

The environmental monitoring programme was initially undertaken by Atkins on behalf of St. Modwen until March 2019. From April 2019, PJA were appointed by St. Modwen to undertake elements of the monitoring and to prepare annual reports for submission to NRW.

PJA collect groundwater and surface water samples on a monthly basis as part of the monitoring programme.

GeoEnvironmental Applications Ltd (GAL) have been contracted by St. Modwen to manage the recovery of local free phase oil within the Tip and its peripheries. Alongside oil recovery, GAL carry

out groundwater level and free phase hydrocarbon monitoring within boreholes/sumps and obtain monthly gas readings from available boreholes within/surrounding the Tip.

A programme of environmental monitoring consistent with previous years has been undertaken during 2023.

1.4 Supporting Documents

The previous annual monitoring report covering the year 2022 was produced by PJA and submitted to NRW:

- PJA Crymlyn Tip Environmental Monitoring Annual Report. Ref: 04020-PJA-23-XX-RP-R-0084. Dated June 2023

Additional information relating to the history, operation, previous assessments, and risk assessments of the Tip are presented in the following reports:

- Atkins (2013) Coed Darcy – Hydrogeological Risk Assessment Crymlyn Tip;
- Atkins (2013) – Coed Darcy – Landfill Gas Risk Assessment and Gas Management Plan;
- Atkins (2017) – Coed Darcy Crymlyn Tip Partial Surrender of Coed Darcy Wetlands. EPR/AP3990LR/S003 Site Condition Report. Ref 5041216-RAP-RPT-0001788;
- Atkins (2019) – Coed Darcy Crymlyn Tip – Environmental Permit Monitoring. Ref: 5041216. Dated: 31/01/2019;
- Natural Resources Wales (2019) – Compliance Assessment Report. Ref: CAR_NRW0034811. Dated: 13/03/2019;
- PJA (2019) – Coed Darcy – Crymlyn Tip Factual Summary Report, April – September 2019: Ref: 4020-PJA-19-XX-TN-R-005. Dated 22/10/2019; and
- PJA (2020) – Crymlyn Tip – Environmental Monitoring Annual Report. Ref: 04020/OUT/0027. Dated April 2020.
- Coed Darcy (2021) – Crymlyn Tip Environmental Monitoring Annual Report, February 2021 –Ref: 4020-PJA-20-XX-RP-R-0045
- PJA (2022) – Crymlyn Tip – Environmental Monitoring Annual Report. Ref: 04020-PJA-21-XX-RP-R-0063. Dated March 2022.
- PJA (2023) – Crymlyn Tip – Environmental Monitoring Annual Report. Ref: 04020-PJA-23-XX-RP-R-0085. Dated June 2023.

It is assumed that the reader has access to the above documentation and is familiar with previous assessments undertaken. This report is not intended to repeat or reproduce findings of previous assessments in any great detail.

1.5 Limitations

This report has been prepared by PJA, on behalf of St. Modwen, for submission to NRW. This report shall not be relied upon or transferred to any other parties. If an unauthorised third party comes into possession of this report, they rely on its contents at their own risk.

The findings within this report are based upon information gained from a variety of sources and field measurements as detailed within this report which PJA believes are reliable. Nevertheless, PJA cannot guarantee the authenticity or reliability of third-party information.

The conclusions made within this report are based on relevant guidance available at the time of writing.

2 Site Setting

2.1 Site Location and Description

The Tip is located in the historical 'Containment Area' in the western section of the wider Coed Darcy development at the former Llandarcy Oil Refinery. The 'Containment Area' also includes a series of lagoons and wetlands. The containment area is shown in Appendix A on PJA drawing 04020-A-0110-00: Notable Areas & NRW Discharge Consent Points.

The area covered by the Permit, and to which this report relates, is shown on drawing 04020-A-SK201-P2 and consists of the 'lower tip' in the west and the 'main tip' in the centre and east. To the north is Crymlyn Bog and to the south of the permitted area are the wetlands within the Containment Area which were surrendered from the Permit in 2017.

2.2 Brief Site History

When the refinery opened in the early 1920s the 'Containment Area' comprised a series of lagoons and wetlands, congruent with Crymlyn Bog. The lagoons were initially constructed during the operational years of the refinery and were intended to intercept oil, preventing it from entering Crymlyn Bog. There are three lagoons in the Containment Area: Crymlyn Bog Lagoon (approx. 10,500m^3), South Bay (approx. 4,450m^3) and West Bay (approx. 1,500m^3).

Prior to the Second World War an ash bund was constructed around the Containment Area to provide a containment area for oil, which may have otherwise flowed into Crymlyn Bog if the tank farm area had been struck by bombs during the war. The ash bund also contained drainage systems, serving the southern half of the former refinery.

In 1977 a waste disposal licence was granted for the Containment Area. The licence granted the deposition of refinery waste, including both inert and potentially hazardous materials. Waste was filled in the area north of the wetlands. No waste has been accepted since 1999 and the landfill has been non-operational since July 2001.

Remedial works have taken place within the wetlands (South Bay, West Bay, and Crymlyn Bog Lagoon) between 2011 and 2015. These works were summarised as part of the submission for the partial surrender of the waterbodies from the permitted area. The partial surrender report (Atkins report reference- 5041216-RAP-RPT-0001788) was submitted to NRW and the Coed Darcy wetlands removed from the permitted area in 2017. The remaining permitted area is outlined in red on drawing 04020-A-SK201-P2.

3 Environmental Setting

3.1 Geology

Published British Geological Survey records indicate superficial deposits at the Tip to predominantly comprise Peat underlain by Devensian Till; however, Peat is absent from the eastern portion of the Tip. Bedrock of the Pennant Sandstone Formation underlies the superficial deposits.

Based on historical borehole logs Made Ground/waste thicknesses are variable but extend to depths in excess of 17mbgl locally. Made Ground generally comprises grey, brown, and black, sandy, gravelly clay, with sand, gravels, and cobbles. Gravels and cobbles consist of bricks, concrete, timber, metal, and ash. Much of the infill material is consistent with waste derived from refinery operations. There are areas where asbestos waste is reported to have been deposited as well as tank sludges, other industrial waste by-products, oil, and tar residues.

Available borehole logs are presented in Appendix B.

3.2 Hydrogeology

Peat is classified as Unproductive Strata and Till as a Secondary (Undifferentiated) Aquifer. The underlying bedrock is classified as a Secondary A Aquifer.

Following an investigation across the wider Llandarcy Oil Refinery, including the Tip, URS produced groundwater contour plots for the bedrock and superficial aquifers (URS Report: 39991-044-785: Final Factual Report Whole Site Investigation BP Llandarcy Refinery 12th August 2005). These plots indicated groundwater in the bedrock beneath the Tip to flow from south to north across the permitted area. Artesian and sub-artesian conditions may be present in the bedrock around the boundary between the Tip and Crymlyn Bog. Monitoring of shallow groundwater beneath the Tip indicates possible local radial flow although this may be distorted by the presence of residual oil and by the heterogeneous nature of the waste material.

For reference the groundwater contour plots taken from the original URS report are presented in Appendix C.

3.3 Hydrology

A ‘peripheral trench’ separating the Tip from Crymlyn Bog to the north is a narrow channel that intercepts groundwater flowing to the north from the Tip. A plywood wall in the trench traps free phase oil, whilst allowing groundwater to flow underneath the plywood into the bog. Oil is periodically collected from the trench (and from sumps and boreholes within the Tip) and sent for offsite processing.

Three water bodies located in the south of the wider Containment Area, namely South Bay, West Bay, and Crymlyn Bog Lagoon, were surrendered from the Permit in 2017.

3.3.1 South Bay

South Bay has a capacity of approximately 4,450m^3 and is located to the south of the Tip. The waterbody was originally created to intercept uncontrolled discharge of free product from the refinery and prevent it from entering Crymlyn Bog.

3.3.2 West Bay

West Bay is approximately 1,500m^3 in capacity and lies to the south west of the Tip. Similar to South Bay, West Bay was installed to intercept uncontrolled discharge of free product from the western section of southern tank farm and prevent it from entering Crymlyn Bog.

3.3.3 Crymlyn Bog Lagoon

Located to the south of the Tip, Crymlyn Bog Lagoon receives inputs from both South Bay and West Bay, prior to discharging into Crymlyn Bog. Discharge to the bog from Crymlyn Bog Lagoon is via a siphon valve and a historical oil-water interceptor located within the ash bund. The outfall from the siphon valve is a NRW consented discharge point, W3, under Environmental Permit EPR/ LB3293HN which is held by St. Modwen.

4 Surface Water and Groundwater Monitoring and Sampling

4.1 Monitoring and Sampling Locations

Current sampling locations are shown on PJA drawing 04020-A-SK201-P3 in Appendix A and are summarised in Table 1.

Table 1: Summary of Monitoring and Sampling Locations

Location ID	Monitoring Type	Response Zone
SW1 –SW6	Surface water	Surface water
Sumps 14 – 21 & 24-28	Groundwater monitoring and oil recovery	Made Ground
CBH2	Groundwater monitoring	Made Ground
CBH13	Groundwater monitoring	Made Ground
CBH19	Groundwater monitoring	Made Ground
CBH20	Gas, groundwater monitoring and sampling	Made Ground
CBH23	Gas, groundwater monitoring and sampling	Made Ground
CBH25	Groundwater monitoring	Made Ground and Peat
CBH28	Groundwater monitoring	Made Ground
CBH29	Groundwater monitoring and sampling	Made Ground
CBH30	Groundwater monitoring	Made Ground
CBH32	Gas and groundwater monitoring	Made Ground
CBH34	Groundwater monitoring	Made Ground
CBH36	Groundwater monitoring	Made Ground
CBH37	Groundwater monitoring	Made Ground
CBH38	Groundwater monitoring	Made Ground
CBH39	Groundwater monitoring	Made Ground
CBH42	Groundwater monitoring	Made Ground
CBH43	Groundwater monitoring	Made Ground
CBH46	Groundwater monitoring and sampling	No borehole log
CBH49	Gas and Groundwater monitoring	Made Ground
CBH51	Gas and groundwater monitoring	Made Ground
CBH52	Gas and groundwater monitoring	Made Ground
CBH57	Gas, groundwater monitoring and sampling	Made Ground
CBH59	Groundwater monitoring	Made Ground
CBH60	Groundwater monitoring	Made Ground
CBH61	Groundwater monitoring	Made Ground and Peat
CBH64	Groundwater monitoring and sampling	Made Ground and Peat
CBH65	Groundwater monitoring	Made Ground and Peat
CARW008	Gas, groundwater monitoring and sampling	Made Ground
CARW009	Gas, groundwater monitoring and sampling	Made Ground and Silt
CARW034	Groundwater sampling	Made Ground and Silt
MSMW034D	Groundwater monitoring and sampling	Mudstone (Coal Measures Formation)
MSMW034S	Groundwater monitoring and sampling	Gravel (Glacial Deposits)

Location ID	Monitoring Type	Response Zone
MSMW035	Groundwater monitoring	Sandstone (Coal Measures Formation)
MSMW91	Gas and groundwater monitoring	Gravel (Glacial Deposits)
MSMW155D	Gas, groundwater monitoring, and sampling	No borehole log (presumed bedrock)
MSMW155S	Gas, groundwater monitoring, and sampling	No borehole log (presumed superficial deposits)
MSMW227	Groundwater monitoring	Made Ground
MSMW231	Gas and groundwater monitoring	Made Ground
MSMWs232	Groundwater monitoring	Made Ground
MSMW238	Groundwater monitoring	Made Ground

GAL carry out field measurements, monitoring of the groundwater levels and record gas readings from locations installed with a gas bung and tap using a GA5000 gas analyser. PJA carry out monthly groundwater and surface water sampling. Sampling is carried out using a peristaltic pump where possible or bailer where excessive groundwater depth or the presence of free phase prevent the use of the pump.

4.2 Laboratory Analysis

A total of 131 groundwater samples and 70 surface water samples were scheduled for the following suite of laboratory analysis during 2023:

- pH
- Ammoniacal Nitrogen as N*;
- Chloride*;
- Total hardness as $CaCO_3$;
- Dissolved Organic Carbon;
- Dissolved and total metals (arsenic, boron, cadmium, calcium, chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc)*;
- Hardness (total as $CaCO_3$ unfiltered)*;
- Total Petroleum Hydrocarbons Criteria Working Group (TPHCWG);
- BTEX compounds (Benzene, Toluene, Ethylbenzene and Xylenes);
- MTBE (methyl tertiary butyl ether); and
- Polycyclic Aromatic Hydrocarbons (PAH) US EPA 16 (aqueous).

*Analysis not scheduled on samples collected on 3rd August due to a scheduling error.

4.3 Surface Water Sampling Regime

The six surface water locations, SW1 to SW6, were all sampled on twelve occasions during 2023, with the exception of SW1 during the monitoring round undertaken on 11th July, due to the sample point being dry and SW2 on 30th October because of inaccessibility.

Groundwater Sampling Regime

Table 2 shows when each of the groundwater locations has been sampled over the course of 2023. During each sampling visit, collection of groundwater samples is attempted from a number of locations within and surrounding the Tip to provide good spatial distribution. During some sampling rounds it may not have been possible to obtain a sample because of any one or a combination of the following factors:

- difficulty in obtaining a sample due to the presence of free phase hydrocarbons;
- sampling equipment error;
- dense vegetation growth preventing access to the sample point.

Table 2: Groundwater Sampling Regime

Sampling location	01/02	28/02	04/04 and 11/04	02/05 and 09/05	06/06	11/07	03/08	24/08	14/09	30/10	23/11	14/12
CBH20	✓	✓	✓	✓	×	×	×	×	×	✓	✓	✓
CBH23	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
CBH29	✓	✓	✓	✓	×	×	×	×	×	×	×	×
CBH46	✓	✓	✓	✓	✓	✓	✓	✓	×	×	✓	✓
CBH57	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CBH64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CARW008	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
CARW009	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
CARW034	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	✓
MSMW155S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MSMW155D	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
MSMW034S	✓	✓	✓	✓	×	×	✓	✓	×	×	✓	✓
MSMW034D	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓

✓groundwater sample taken

× groundwater sample not taken

5 Groundwater and Non-Aqueous Phase Liquid Monitoring Results

5.1 Introduction

Groundwater level and non-aqueous phase liquid (NAPL) monitoring was undertaken in boreholes and sumps at the Tip during 2023. PJA Drawing 04020-A-SK201-P3 which shows all monitoring locations is presented in Appendix A.

Available borehole logs, presented in Appendix B, have been reviewed to identify response zones for each of the monitoring locations. Response zones are constructed within either waste material, superficial deposits, or bedrock. In a small number of locations, the response zone spans Made Ground and the upper strata of the superficial deposits.

It was not possible to monitor every monitoring location on every round because of access restrictions and blockages within the boreholes. The number of monitoring rounds completed at each location during 2023 is recorded in Table 3.

5.2 Groundwater Level Monitoring

Monthly groundwater level monitoring was carried out across a total of 38 borehole locations during 2023. A summary of the groundwater levels recorded during 2023 is provided in Table 3.

5.3 Non-Aqueous Phase Liquid Levels (NAPL)

Light non-aqueous phase liquids (LNAPL) have been recorded in boreholes and/or sumps during 2023. A summary of LNAPL recorded in boreholes is presented in Table 4 LNAPL recorded in sumps is presented in Table 5. No suspected dense non-aqueous phase liquids (DNAPL) were detected in any of the monitoring locations during 2023.

Table 3: Summary of Recorded Groundwater Levels in Boreholes

Monitoring Locations	Response Zone	Number of Monitoring Rounds	Depth to Base	Maximum Recorded Depth to Water Level		Minimum Recorded Depth to Water Level		Average	Variability
				Depth	Month	Depth	Month		
CBH2	Waste/Made Ground	12	5.00m bgl	2.11m bgl 11.55m aod	July	1.12m bgl 12.54m aod	November	1.65m bgl	0.99m
CBH13	Waste/Made Ground	12	10.70m bgl	7.58m bgl 7.70m aod	December	6.07m bgl 9.21m aod	August	6.96m bgl	1.51m
CBH20	Waste/Made Ground	9	7.72m bgl	6.63m bgl 8.99m aod	May	4.31m bgl 11.31m aod	December	5.17m bgl	2.32m
CBH23	Waste/Made Ground	12	7.15m bgl	6.04m bgl 8.56m aod	June	5.28m bgl 9.32m aod	January	5.45m bgl	0.76m
CBH25	Waste/Made Ground and Peat	12	8.00 m bgl	7.47m bgl	June	6.34m bgl	May	6.66m bgl	1.13m
CBH28	Waste/Made Ground	3	11.74m bgl	8.47m bgl	February	8.34m bgl	March	8.41m bgl	0.13m
CBH29	Waste/Made Ground	3	9.54m bgl	2.59m bgl	January	2.42m bgl	March	2.49m bgl	0.17m
CBH30	Waste/Made Ground	3	4.58m bgl	1.87m bgl	January	1.62m bgl	March	1.76m bgl	0.25m
CBH32	Waste/Made Ground	12	11.75m bgl	9.67m bgl 7.01m aod	June	6.95m bgl 9.73m aod	November	8.45m bgl	2.72m
CBH34	Waste/Made Ground	3	Unknown	2.43m bgl	February	2.31m bgl	March	2.38m bgl	0.12m
CBH36	Waste/Made Ground	3	11.54m bgl	9.68m bgl	January	9.58m bgl	March	9.62 m bgl	0.10m
CBH37	Waste/Made Ground	3	10.95m bgl	2.35m bgl	February	2.31m bgl	March	2.33 m bgl	0.04m
CBH38	Waste/Made Ground	3	4.03m bgl	2.63m bgl	January	2.47m bgl	March	2.56m bgl	0.16m
CBH39	Made Ground	9	12.10m bgl	9.31m bgl	October	8.41m bgl	March	8.82m bgl	0.90m
CBH42	Waste/Made Ground	3	6.46m bgl	2.25m bgl	February	2.24m bgl	January and March	2.24 m bgl	0.01m
CBH43	Waste/Made Ground	3	4.87m bgl	1.63m bgl	January	1.46m bgl	March	1.53 m bgl	0.17m
CBH46	No borehole log	12	9.00m bgl	5.96m bgl	June	2.37m bgl	November	3.75m bgl	3.59m

Monitoring Locations	Response Zone	Number of Monitoring Rounds	Depth to Base	Maximum Recorded Depth to Water Level		Minimum Recorded Depth to Water Level		Average	Variability
				Depth	Month	Depth	Month		
CBH49	Waste/Made Ground	12	5.00m bgl	4.27m bgl 9.56m aod	April	1.57m bgl 12.26m aod	March	2.66m bgl	2.70m
CBH51	Waste/Made Ground	11	7.03m bgl	7.03m bgl 7.81m aod	June	5.78m bgl 9.06m aod	January	6.45m bgl	1.25m
CBH52	Waste/Made Ground	12	6.20m bgl	5.63m bgl 9.33m aod	January and March	3.98m bgl 10.98m aod	September	4.90m bgl	1.65m
CBH57	Waste/Made Ground	12	10.09m bgl	7.68m bgl 8.37m aod	June	5.43m bgl 10.62m aod	February and November	6.33m bgl	2.25m
CBH59	Waste/Made Ground	3	10.97m bgl	9.48m bgl	January	9.41m bgl	March	9.45 m bgl	0.07m
CBH60	Waste/Made Ground	3	10.92m bgl	8.57m bgl	February	8.33m bgl	March	8.47 m bgl	0.24m
CBH61	Waste/Made Ground and Peat	3	Unknown	2.39m bgl	January	2.33m bgl	February	2.36 m bgl	0.06m
CBH64	Waste/Made Ground and Peat	3	5.36m bgl	3.92m bgl	January	3.79m bgl	March	3.86 m bgl	0.13m
CBH65	Waste/Made Ground and Peat	3	7.14m bgl	2.52m bgl	January	2.39m bgl	March	2.45 m bgl	0.13m
CARW008	Waste/Made Ground	12	3.46m bgl	0.95m bgl 10.35m aod	May	0.52m bgl 10.78m aod	November	0.67m bgl	0.43m
CARW009	Waste/Made Ground and Silt	12	3.10m bgl	0.96m bgl 10.37m aod	February	0.73m bgl 10.60m aod	November	0.84m bgl	0.23m
MSMW034S	Gravel (Glacial Deposits)	12	9.00m bgl	Groundwater constantly at ground level – 9.00m water column.					
MSMW034D	Mudstone (Coal Measures)	12	13.50m bgl	Groundwater constantly at ground level – 13.50m water column.					
MSMW035	Sandstone bedrock	3	11.04m bgl	1.25m bgl	February	1.21m bgl	January	1.23m bgl	0.04m
MSMW091	Gravel (Glacial Deposits)	10	4.08m bgl	2.63m bgl 7.46m aod	June	1.36m bgl 8.73m aod	March	2.16m bgl	1.27m

Monitoring Locations	Response Zone	Number of Monitoring Rounds	Depth to Base	Maximum Recorded Depth to Water Level		Minimum Recorded Depth to Water Level		Average	Variability
				Depth	Month	Depth	Month		
MSMW155S	Presumed Superficial Deposits	12	8.82m bgl	0.96m bgl 8.26m aod	June	0.50m bgl 8.72m aod	October	0.72m bgl	0.46m
MSMW155D	Presumed Bedrock	12	11.64m bgl	0.67m bgl 8.71m aod	June	0.27m bgl 9.11m aod	November	0.43m bgl	0.40m
MSMW227	Waste/Made Ground	3	12.17m bgl	10.24m bgl	January	10.05m bgl	March	10.16m bgl	0.19m
MSMW231	Waste/Made Ground	12	10.87m bgl	7.59m bgl	June	5.67m bgl	October	7.17m bgl	1.92m
MSMWs232	Waste/Made Ground	3	10.74m bgl	6.97m bgl	January	6.79m bgl	March	6.86m bgl	0.18m
MSMW238	Waste/Made Ground	11	8.80m bgl	6.37m bgl 8.48m aod	June	5.23m bgl 9.62m aod	October	5.72m bgl	1.14m

Table 4: Summary of Recorded LNAPL in Boreholes

Borehole ID	Response Zone	Depth to base	Number of LNAPL Occurrences	Depth to LNAPL		Average Depths
				Minimum (date)	Maximum (date)	
CBH2	Waste/Made Ground	5.00m bgl	11/12	1.09m (November)	2.07m (July)	1.61m
CBH13	Waste/Made Ground	10.70m bgl	12/12	6.03m (August)	7.47m (December)	6.85m
CBH20	Waste/Made Ground	7.72m bgl	2/9	4.27m (December)	4.31m (November)	4.29m
CBH23	Waste/Made Ground	7.15m bgl	2/12	5.38m (November)	5.46m (December)	5.42m
CBH25	Made Ground and Peat	8.00m bgl	12/12	6.23m (April)	7.32m (June)	6.57m
CBH28	Waste/Made Ground	11.74m bgl	3/3	8.27m (March)	8.39m (February)	8.33m
CBH32	Waste/Made Ground	11.75m bgl	12/12	6.78m (November)	8.96m (July)	8.04m
CBH34	Waste/Made Ground	Unknown	3/3	2.25m (March)	2.31m (January)	2.28m

Borehole ID	Response Zone	Depth to base	Number of LNAPL Occurrences	Depth to LNAPL		Average Depths
				Minimum (date)	Maximum (date)	
CBH36	Waste/Made Ground	11.54m bgl	3/3	9.37m (January)	9.51m (March)	9.45m
CBH37	Waste/Made Ground	10.95m bgl	3/3	2.28m (January and March)	2.31m (February)	2.29m
CBH38	Waste/Made Ground	4.03m bgl	3/3	2.42m (March)	2.56m (January)	2.49m
CBH39	Waste/Made Ground	12.10m bgl	12/12	8.26m (March)	8.95m (July)	8.61m
CBH42	Waste/Made Ground	6.46m bgl	3/3	2.13m (January)	2.21m (March)	2.17m
CBH46	Waste/Made Ground	9.00m bgl	12/12	2.28m (November)	5.87m (June)	3.66m
CBH49	Made Ground	5.00m bgl	12/12	1.52m (March)	4.21m (April)	2.55m
CBH51	Waste/Made Ground	7.03m bgl	10/11	5.62m (January)	6.96m (June)	6.42m
CBH52	Waste/Made Ground	6.20m bgl	8/12	4.26m (May)	5.49m (January)	4.95m
CBH57	Waste/Made Ground	10.09m bgl	2/12	5.39m (November)	5.57m (December)	5.48m
CBH59	Waste/Made Ground	10.97m bgl	3/3	9.27m (January)	9.34m (March)	9.31m
CBH60	Waste/Made Ground	10.92m bgl	3/3	8.28m (March)	8.37m (January)	8.33m
CBH61	Waste/Made Ground and Peat	Unknown	3/3	2.28m (January)	2.33m (March)	2.31m
CARW008	Waste/Made Ground	3.46m bgl	1/12	0.75m (January)		
CARW009	Made Ground	3.10m bgl	2/12	0.85m (June)	0.87m (January)	0.86m
MSMW227	Waste/Made Ground	12.17m bgl	3/3	9.98m (March)	10.02m (January)	10.00m
MSMW231	Waste/Made Ground	10.87m bgl	12/12	5.48m (October)	7.19m (June)	6.67m
MSMW238	Waste/Made Ground	8.80m bgl	11/11	5.19m (October)	6.28m (June)	5.65m

Table 5: Summary of Recorded LNAPL in Sumps

Sump ID	Response Zone	Number of LNAPL Occurrences	NAPL Depth		Average Depth
			Minimum (date)	Maximum (date)	
18	Waste/Made Ground	11/12	2.03m (March)	3.39m (January)	2.92m
19	Waste/Made Ground	12/12	2.15m (March)	3.48m (May)	2.79m
20	Waste/Made Ground	4/12	3.69m (March)	4.24m (April)	3.97m
21	Waste/Made Ground	11/12	2.37m (March)	3.64m (May)	2.80m
25	Waste/Made Ground	12/12	1.49m (March)	2.17m (June)	1.89m
27	Waste/Made Ground	12/12	2.46m (May)	3.29m (June)	3.05m

N.B. Only sumps where NAPL was detected are shown in

Table 5.

5.4 Groundwater and LNAPL Levels Discussion

5.4.1 Groundwater Levels

A review of groundwater level monitoring data collected over the monitoring period shows the majority of lowest groundwater levels were recorded during January and June and the highest groundwater levels were recorded in March.

There is an average variability of 0.84m between the lowest and highest recorded groundwater level in any location which shows a decrease to the degree of groundwater level variability recorded in 2022 (1.40m), 2021 (2.57m), and 2020 (2.70m).

Borehole CBH46 (3.59m) and CBH32 (2.72m) exhibited the greatest variability in recorded groundwater levels. Borehole CBH46 is located in the central area of the Tip where a high degree of local heterogeneity would be expected in the waste material. CBH32 is located in the north of the Tip in an area where saturated ash deposits are prevalent.

Boreholes CBH42 (0.01m), CBH37 (0.04m), and MSMW035 (0.04m) recorded the least variability in groundwater levels. Borehole CBH42 is located in the eastern area of the Tip, where soils comprise waste/Made Ground. Borehole CBH37 is located towards the north of the Tip close to where saturated ash deposits are present and MSMW035 is situated in the far south east of the Tip within Sandstone bedrock.

5.4.2 Light Non-Aqueous Phase Liquid (NAPL) Levels and Distribution

LNAPL has been detected in 26 boreholes out of 36 monitored during 2023. Boreholes where no LNAPL was detected were: MSMW034D, MSMW034S, MSMW035, MSMW91, MSMW155S, MSMW155D, MSMWs232, CBH29, CBH30, CBH43, CBH64, and CBH65. These boreholes are mostly located in the eastern area of the Tip with response zones installed in sandstone, mudstone, peat, and waste/Made Ground. Boreholes MSMW155S and MSMW155D are located beyond the waste area to the south west.

The greatest recorded LNAPL thickness of 1.29m was recorded in CBH2 in April. CBH2 is located in the central region of the Tip, with the response zone installed in waste/Made Ground. LNAPL thicknesses of 1.09m and 0.78m were recorded in CBH32 and CBH39 respectively in June (CBH32) and January (CBH39). Both CBH32 and CBH39 are located in the northern part of the eastern area of the Tip.

The lowest recorded LNAPL thickness was recorded in borehole CBH51 where 0.01m of oil was recorded in August. CBH51 is located within the main landfill area of the Tip.

LNAPL has been detected in six sumps during 2023. The greatest thickness of LNAPL in sumps was recorded in November when a 0.28m thickness of LNAPL was recorded in Sump 19 which is located centrally in the north of the Tip. The lowest thickness of LNPAL (0.01m) was recorded in several sumps (Sump 18, Sump 20, Sump 21, and Sump 27) at various times through the year.

6 Groundwater and Surface Water Quality Assessment

6.1 Assessment Criteria

Results from laboratory analysis of groundwater and surface water samples obtained during 2023 have been screened against relevant Water Quality Standards.

Groundwater data have principally been screened against threshold concentrations ('Drinking Water Standards') in The Water Supply (Water Quality) Regulations 2018, and against Environmental Quality Standards (EQS) in The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015. The threshold concentrations in The Water Supply (Water Quality) Regulations 2018 have been used to give a broad indication of overall groundwater quality, however they are overly conservative in this instance, because groundwater is not abstracted from the Tip for water supply purposes. The use of EQS is considered to be overly conservative because EQS apply to the receiving surface water.

Surface water data have been screened against EQS in The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015.

Both surface water and groundwater data have been screened against the specified petroleum hydrocarbon emission limit in environmental permit EPR/LB3293HN for the site drainage from Coed Darcy. Whilst the permit emission limit is not strictly applicable to the SW1-SW6 surface water monitoring locations, or to groundwater in the Tip, it has been used to identify the presence of elevated concentrations of petroleum hydrocarbons in proximity to Crymlyn Bog. The Environmental Permit EPR/ LB3293HN emission limit for 'visible oil and grease' of 5,000 µg/l in surface water has been used to assess total petroleum hydrocarbon concentrations.

Copper, nickel, and zinc have been screened against predicted no effect concentrations (PNEC) values derived using the metal bioavailability tool (M-BAT), taking account of the fact that the respective EQS for these substances relates to bioavailable concentrations. The measured dissolved organic carbon (DOC) concentration recorded within the receiving water body (Crymlyn Bog) exceeded the upper limit of the validated range for copper, nickel, and zinc. As a result, the site-specific PNEC for copper was calculated using a DOC concentration of 15mg/l and site-specific PNEC for nickel and zinc were calculated using a DOC concentration of 20mg/l. The measured pH in Crymlyn Bog exceeded the upper limit of the validated range for zinc and the site-specific PNEC for zinc has been calculated using a pH of 8. Remaining PNEC have been calculated using the average of pH and calcium values recorded in Crymlyn Bog during 2023, in accordance with the WFD UKTAG M-BAT Method Statement (July 2014).

Laboratory analytical data screening is presented in Appendix D.

6.2 Groundwater

Comparison of laboratory analytical data for groundwater against UK Drinking Water Standards (DWS) indicates exceedances for arsenic, lead, and benzene.

There were no exceedances of the available Maximum Allowable Concentration (MAC) EQS for metals with the exception of two exceedances of the MAC-EQS for mercury in CBH29 and CBH46 and two exceedances of the MAC-EQS for lead in CBH64 and MSMW034S. An exceedance of the available MAC-EQS for anthracene was recorded on a single occasion in CBH46.

In relation to the available Annual Average (AA) EQS for metals, the average recorded cadmium concentrations across the groundwater dataset marginally exceed the respective AA-EQS and the average recorded chromium and benzene concentrations exceeds the respective AA-EQS in groundwater.

Twenty-five exceedances of the calculated copper PNEC (3.23µg/l) were recorded out of 120 samples. Copper PNEC exceedances ranged from 4.4µg/l to 31µg/l and were detected in CARW034, MSMW034S, CBH23, CBH29, CBH46, CBH57, and CBH64. The remaining groundwater data are largely compliant with the calculated PNEC for nickel and zinc, with the exception of two recorded zinc concentrations in sample locations CBH57 and CBH64 in early February 2023.

The Environmental Permit emission limit of 5,000µg/l for 'visible oil and grease' in surface water has been used to make an indicative assessment of TPH concentrations in groundwater. The emission limit was not exceeded in any groundwater samples during 2023.

The EQS for 'total ammonia as N' was exceeded based on a calculation of the 90th percentile value for groundwater across the Tip.

6.3 Surface Waters

Surface water data were largely compliant with MAC-EQS and AA-EQS during 2023.

A single marginal exceedance of the cadmium MAC-EQS was recorded at sample point SW4 in early February 2023 and a single exceedance of the lead MAC-EQS was recorded in a sample collected from SW1 in early February 2023.

The average recorded cadmium concentrations exceed the AA-EQS, principally because the limit of detection is slightly higher than the AA-EQS. The average recorded chromium concentrations marginally exceed the AA-EQS.

No exceedances were reported with respect to TPH and PAH.

The surface water data are compliant with the calculated PNEC for nickel. Nine exceedances of the calculated PNEC for copper were recorded in SW1, SW3, SW4, SW5 and SW6. Three exceedances of the calculated PNEC for zinc were recorded in SW1, SW4 and SW5.

7 Landfill Gas

7.1 Landfill Gas Monitoring

Landfill gas monitoring was undertaken by GAL at 13 boreholes across the Tip and its surroundings, using a GA5000 gas analyser. Due to the age of a number of boreholes across the Tip, some headworks are noted to be damaged, and the boreholes therefore cannot be monitored for gas. Of the 13 boreholes that were monitored during 2023, ten are located within the Permit boundary, and three are located outside of the Permit boundary to the south west, as summarised in Table 6.

Table 6: Landfill Gas Monitoring Location Information

Monitoring locations in the Tip	Monitoring locations outside the Tip
CBH20	MSMW155S (located to the south west)
CBH23	MSMW155D (located to the south west)
CBH32	MSMW91 (located to the south west)
CBH49	
CBH51	
CBH52	
CBH57	
CARW008 (located outside fill area)	
CARW009 (located outside fill area)	
MSMW231	

7.2 Landfill Gas Concentrations

The minimum atmospheric pressure reading was recorded as 1004 millibars (mbar) in January and February 2023, whilst the highest atmospheric pressure was recorded as 1029 mbar in April 2023. Monitoring rounds carried out in February, October, and December 2023 were carried out during falling atmospheric pressure events, which represent conditions when positive flow of landfill gas is most likely to be recorded. Landfill gas monitoring data is presented in Appendix E.

Methane (CH_4)

Based on the graph for boreholes in the Tip presented as Figure 2, methane concentrations during 2023 appear to show some variability. Generally, average methane concentrations within the Tip were below 10% with the exception of CBH20, CBH57 and MSMW231. Recorded methane concentrations in CBH20 ranged from 2.50% (May) to 45.10% (October), in CBH57 from 0.1% (Match and August to October) to 12.9% (January) and in MSMW231 ranged from 0.40% (November) to 56.80% (August). The lowest methane concentration of <0.1% was recorded across several monitoring locations in the Tip during the year.

Outside the Permit Area, a maximum methane concentration of 3.50% was recorded in MSMW91 (assumed to be screened with a response zone in granular superficial deposits) in April 2023. The minimum methane concentration of <0.1% was recorded outside the former landfill area in all three monitoring locations on multiple monitoring rounds. Stable recorded methane concentrations in boreholes located outside of the Permit area are shown on Figure 1.

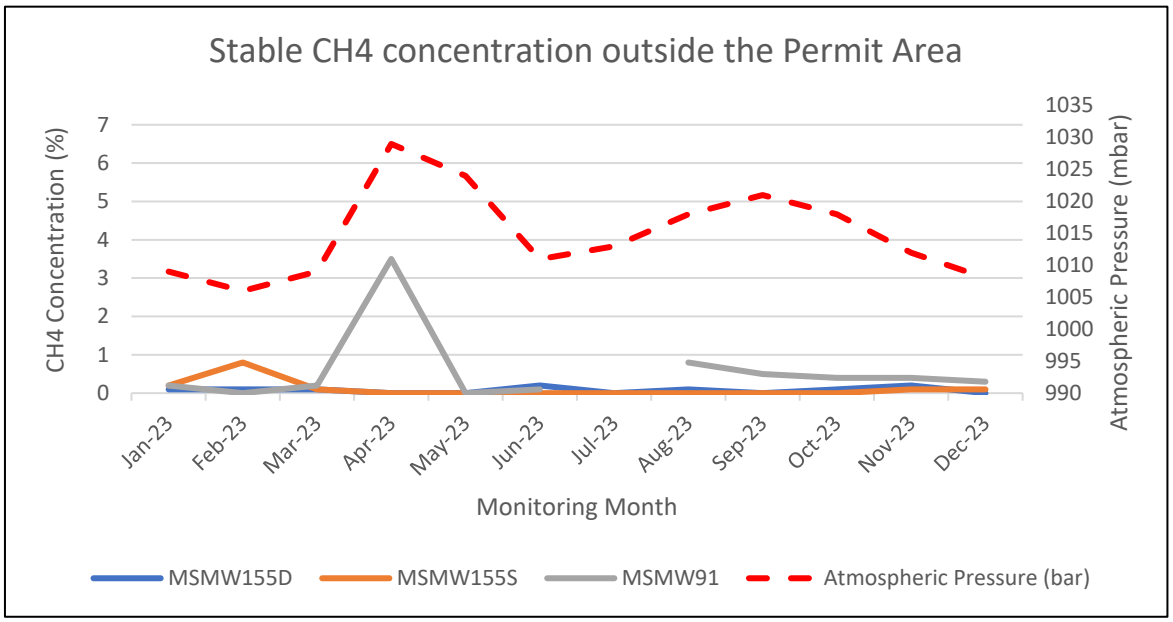


Figure 1: Methane concentrations in boreholes outside Permit Area

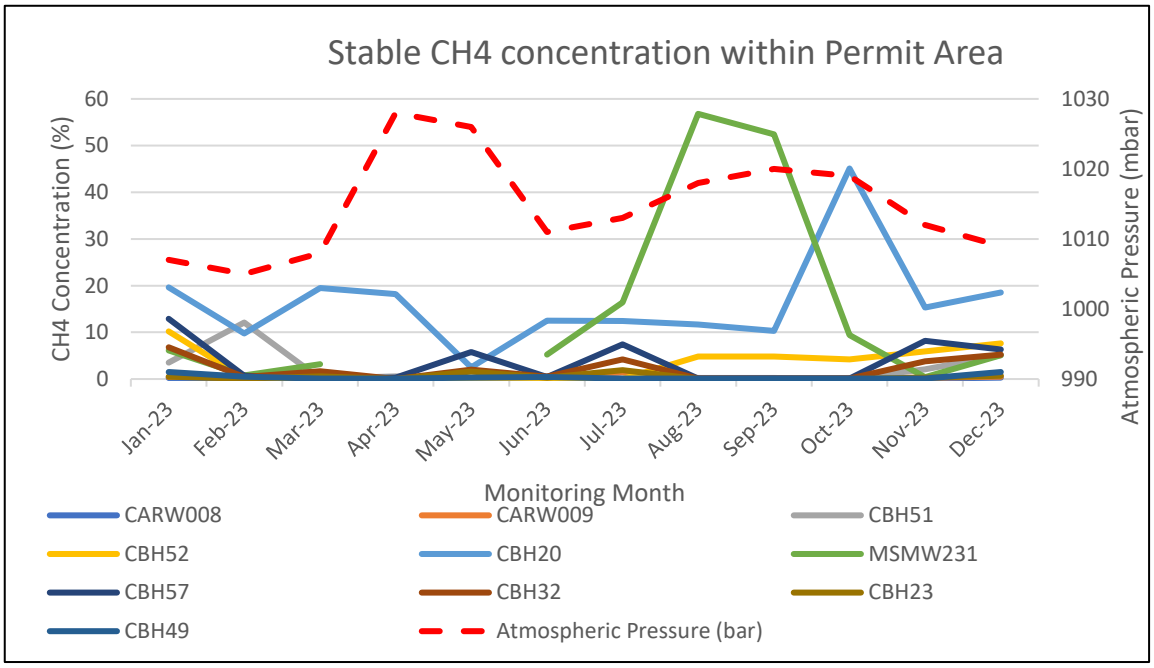


Figure 2: Methane Concentrations in Boreholes within Permit Area

Carbon Dioxide (CO_2)

Based on monitoring data presented in Figure 4 stable carbon dioxide concentrations in the Tip ranged from <0.10% to 11.40%. The maximum carbon dioxide concentration of 11.40% was detected in CBH32 in July and the lowest concentration (<0.10%) detected in several monitoring locations across the Tip.

The maximum carbon dioxide concentration of 5.60% recorded outside of the Tip was in MSMW091 (screened in granular superficial deposits) in April 2023 and the lowest concentration of <0.1% was recorded in MSMW155S and MSMW155D at several points throughout 2023 (screened in superficial deposits and bedrock respectively). Figure 3 presents a graph showing stable recorded carbon dioxide concentrations outside the Permit Area.

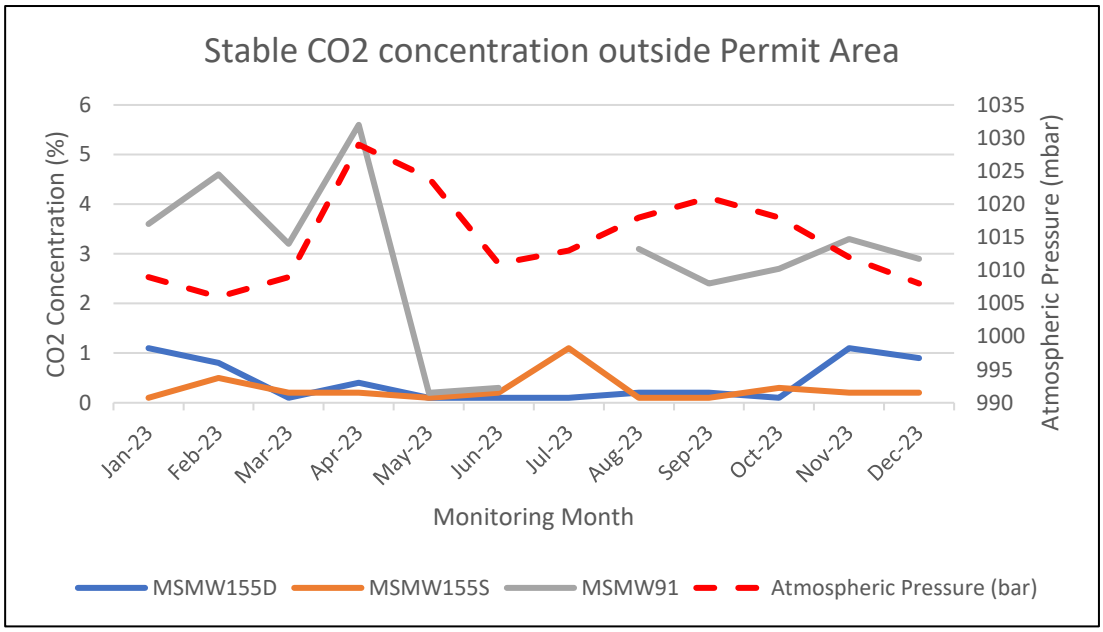


Figure 3: Carbon Dioxide Concentrations in Boreholes Outside Permit Area

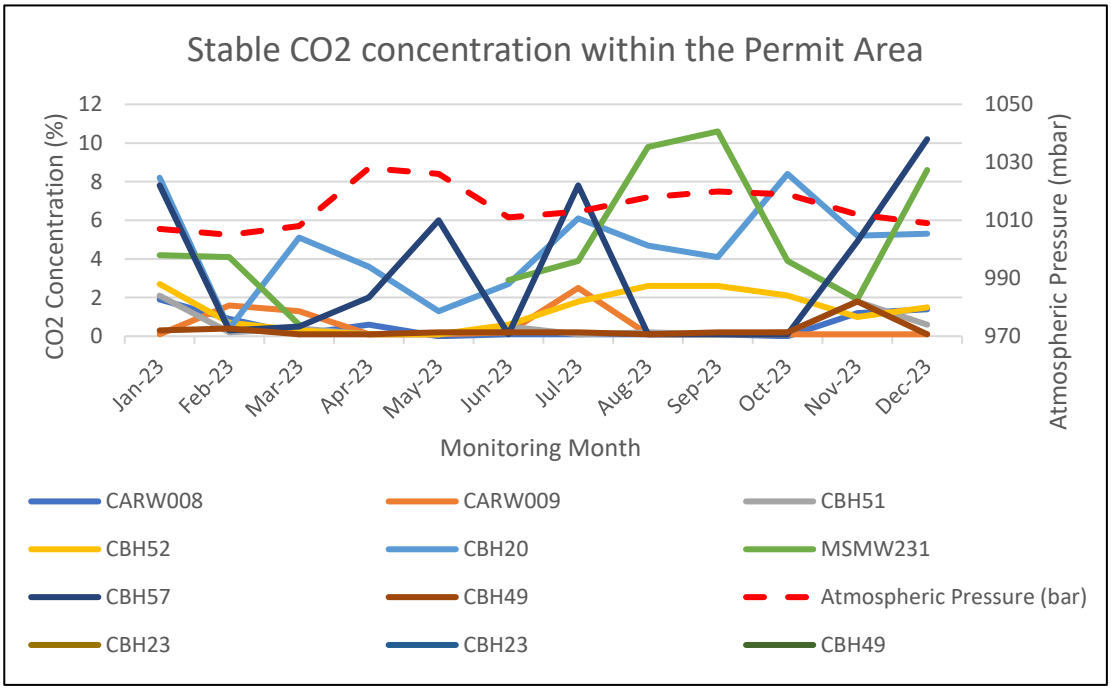


Figure 4: Carbon Dioxide Concentrations in Boreholes in Permit Area

Oxygen (O_2)

Oxygen concentrations recorded in the Tip shown on the graph presented as Figure 6 range from 0.10% to 23.20%, with the lowest concentration recorded in CBH20 in October and also in CBH57 in December. The maximum concentration of 23.20% was detected in CARW008 during June.

Outside of the Tip, oxygen concentrations shown in the graph presented as Figure 5 ranged from 6.30% to 22.90%. The minimum concentration of 6.30% was recorded in MSMW91 in December and the maximum concentration of 22.90% was recorded in MSMW155D in June.

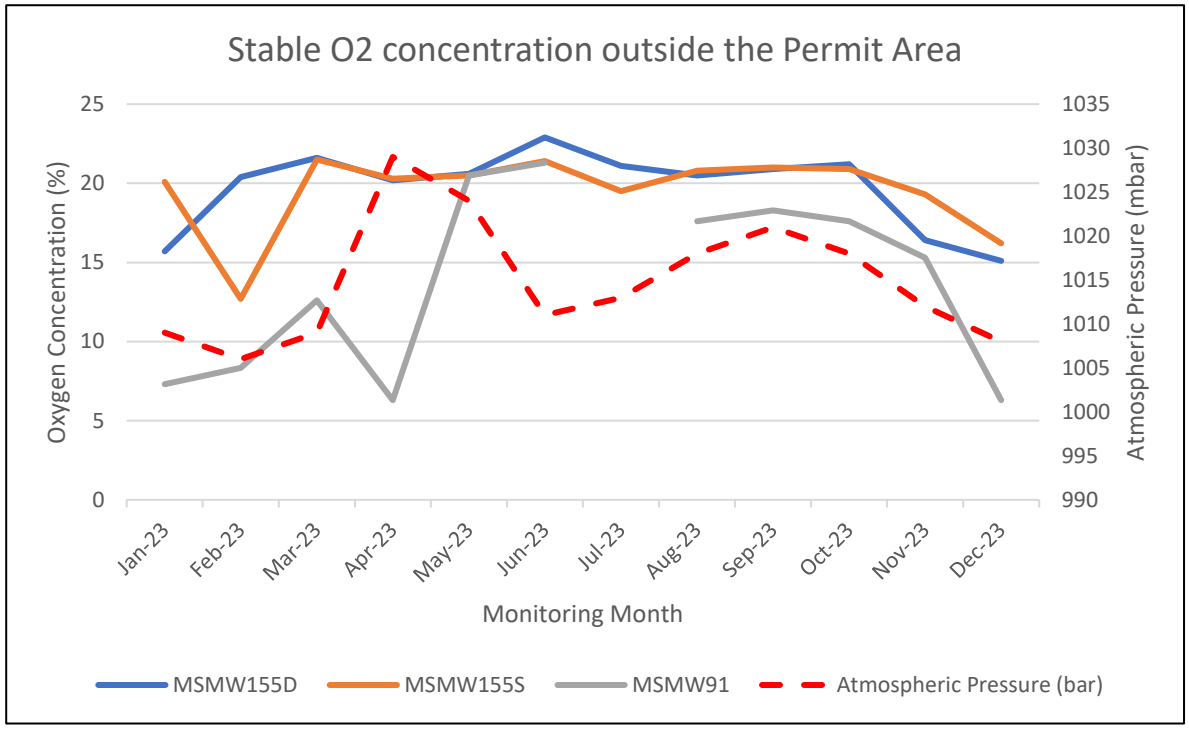


Figure 5: Oxygen Concentrations in Boreholes Outside Permit Area

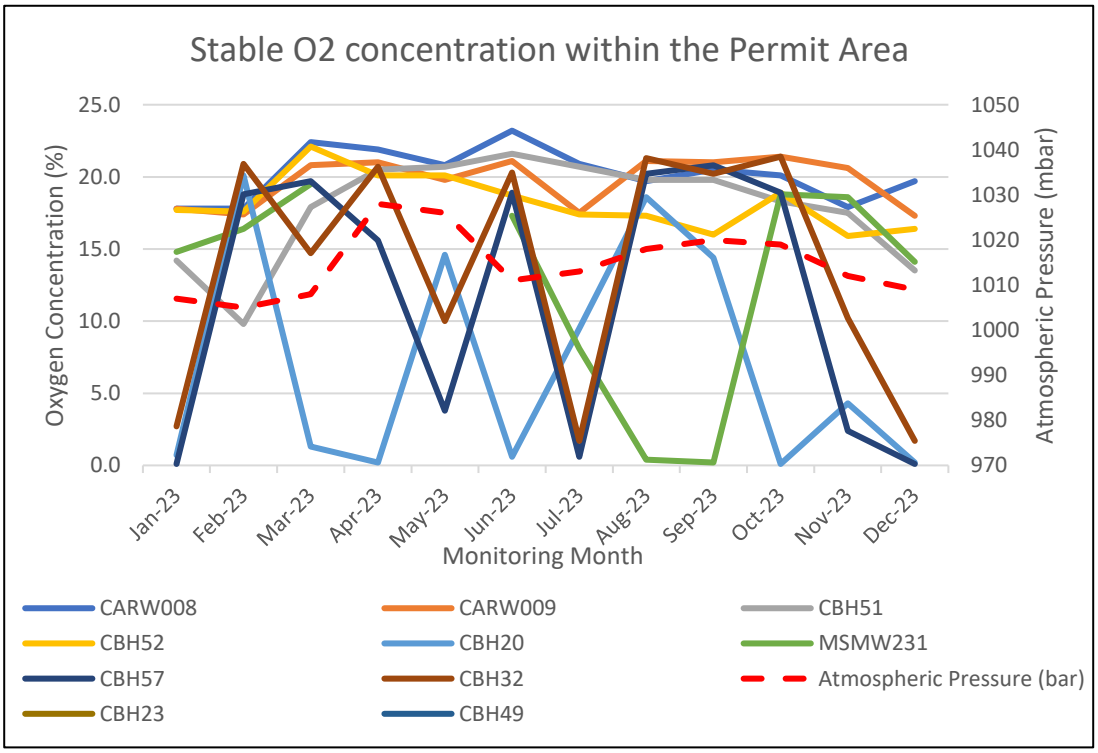


Figure 6: Oxygen Concentrations in Boreholes within Permit Area

Landfill gas monitoring results recorded during 2023 are summarised in Table 7 below.

Table 7: Landfill Gas Stable Concentration Summary

Monitoring location	Location	Methane (%)		Carbon dioxide (%)		Oxygen (%)	
		Min	Max	Min	Max	Min	Max
CARW008	In waste on SE boundary	<0.1	0.5	<0.1	1.9	17.8	23.2
CARW009	In waste on SE boundary	<0.1	1.4	<0.1	2.5	17.3	21.4
CBH20	In waste within central section	2.5	45.1	0.4	8.4	0.1	20.1
CBH32	In waste within central section	<0.1	6.8	<0.1	11.4	1.7	21.4
CBH49	In waste within central section	<0.1	1.5	<0.1	1.8	12.4	20.7
CBH51	In waste within central section	<0.1	12.1	<0.1	2.1	9.8	21.6
CBH52	In waste within central section	<0.1	10.2	<0.1	2.7	15.9	22.1
CBH57	In waste within central section	<0.1	12.9	<0.1	10.2	0.1	20.8
CBH23	In waste within central section	<0.1	1.9	<0.1	5	7.5	20.5
MSMW231	In waste within central section	0.4	56.8	0.6	10.6	0.2	19.5
MSMW155s	Beyond W boundary of landfill area	<0.1	0.8	<0.1	1.1	12.7	21.5
MSMW91	Beyond W boundary of landfill area	<0.1	3.5	0.2	5.6	6.3	21.3
MSMW155d	Beyond W boundary of landfill area	<0.1	0.2	<0.1	1.1	15.1	22.9

8 Commentary

Groundwater levels, NAPL, groundwater quality, surface water quality, and landfill gas have been monitored in and around the Tip during 2023.

Groundwater levels were generally most variable in boreholes located in the central area of the Tip during 2023, and lower levels of variability were noted beyond the extent of the landfilled area.

LNAPL levels were variable across the Tip during 2023, however the 'Lower Tip' to the west which has previously undergone removal of bulk sources of free phase hydrocarbons recorded more sporadic occurrences of LNAPL in sumps compared to previous years. No LNAPL was detected in MSMW034S, MSMW034D, MSMW035, MSMW91, MSMW155S, MSMW155D, MSMW232, CBH29, CBH30, CBH43, CBH64, and CBH65. The boreholes where no LNAPL was detected during 2023 are located within the eastern area of the Tip, with the exception of MSMW155S and MSMW155D which are located in the south western area outside of the permit boundary.

DNAPL was not detected during monitoring rounds undertaken in 2023.

Exceedances of the DWS were recorded in groundwater for arsenic, lead, and benzene. Local exceedances were recorded of the MAC-EQS for mercury, lead and anthracene. Marginal exceedances of the respective AA-EQS for cadmium, chromium, and benzene were recorded based on calculated mean groundwater concentrations. Regarding bioavailable metals, two exceedances of the calculated PNEC for zinc were recorded and 25 copper PNEC exceedances were recorded. The environmental permit emission limit for petroleum hydrocarbons was not exceeded in groundwater.

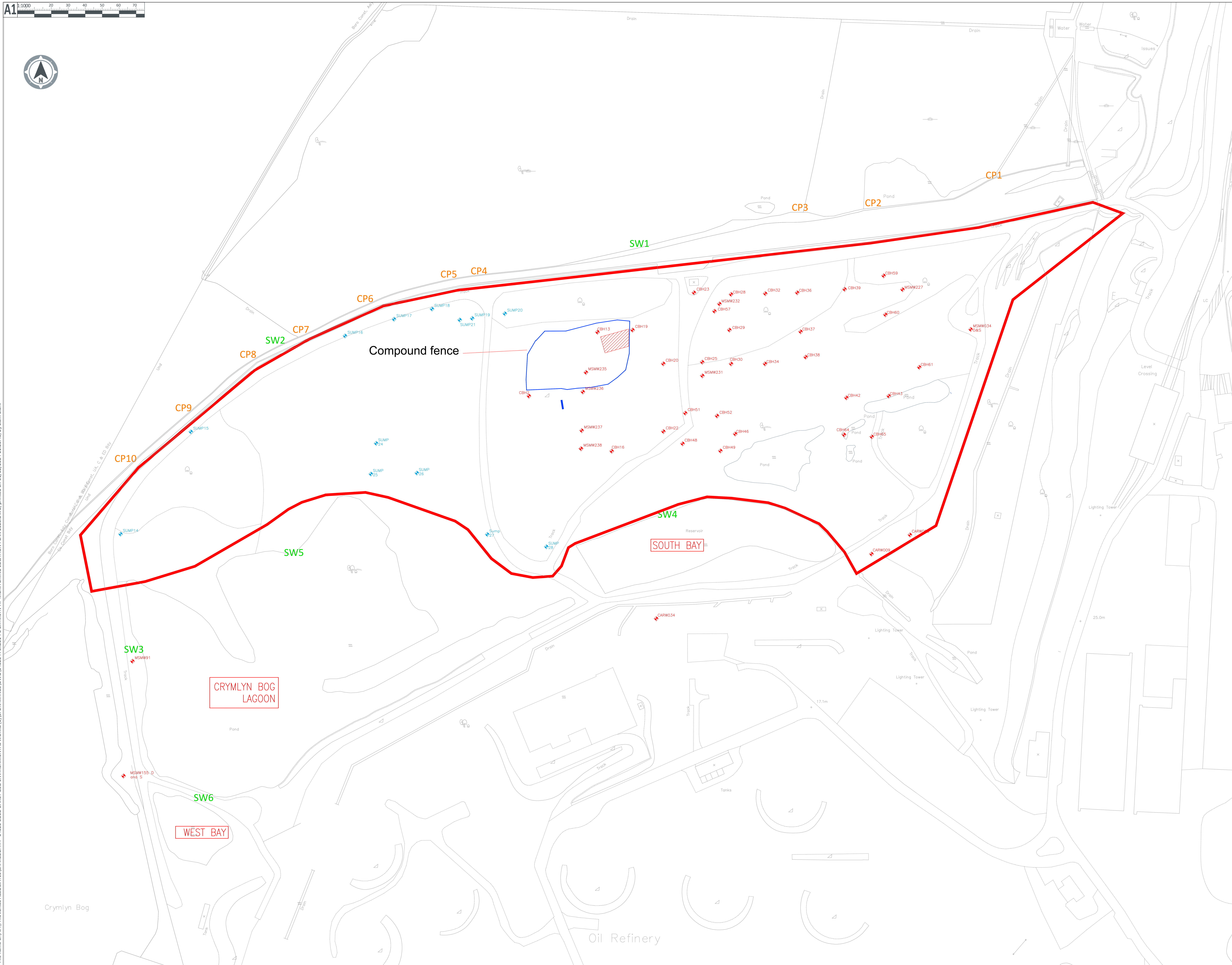
Surface water was largely compliant with the relevant standards during 2023. Single exceedances of the MAC-EQS were recorded for cadmium and lead in surface waters. Exceedances of the respective AA-EQS were recorded within surface waters for cadmium and chromium. Nine exceedances of the copper PNEC and three exceedances of the zinc PNEC were recorded in surface water in 2023. The TPH environmental permit emission limit was not exceeded with respect to surface waters during 2023.

Consistent with the various potential sources of gases including the heterogeneous waste material, presence of free phase hydrocarbons, and organic-rich superficial deposits, methane and carbon dioxide have been recorded at variable concentrations during 2023.

Oil recovery will continue from the peripheral trench, sumps, and wells in 2024, where LNAPL is consistently measured at recoverable thicknesses. Continued monitoring will show the impact this has on the NAPL distribution and thickness.

Discussions are ongoing regarding the Closure and Aftercare Management Plan and the overall restoration proposals, including the proposed monitoring strategies. Until agreement is reached with NRW regarding overall restoration proposals and proposed monitoring strategies, the current regime of groundwater level, NAPL, groundwater quality, surface water quality and landfill gas monitoring will continue throughout 2024.

Appendix A Site Plans



CDM Note

These drawings have been produced with reference to the CDM Regulations 2015.
Please note that these are pre-construction phase drawings and should be subject to further design risk management as required in accordance with Regulation 9.

KEY

- Permit area
- SW1 Surface water sampling locations
- Groundwater monitoring/sampling locations
- Sump locations
- CP7 Collection point

Rev	Date	Revision Note	Drw	Chk	App
03	30.01.24	Added more boreholes to location plan.	LC	CS	CS
02	21.06.23	Added more boreholes to location plan.	LC	CS	CS
01	13.02.20	Added more boreholes to location plan.	JP	BI	ML

PJA

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Client
St. Modwen Developments

Project
Coed Darcy

Title
Crymlyn Tip Monitoring Location Plan

Drawing Issue Status
Draft

PJA Ref: 04020
Scale @ A1: 1:1000
Date: 30.01.2024

Drawing No.: 04020-A-SK02-P3
Revision: 03

Primary Contact
liam.clark@pja.co.uk

File name C:\PJA\PHIL JONES ASSOCIATES\SHAREDDATA - 04020 COED DARCY GEO ENVIRONMENTAL WORKS (1)\5. DRAWINGS\DWG\04020-A-SK201-P3 CRYMLYN TIP MONITORING LOCATION PLAN 2023.DWG, printed on 01/02/2024 11:23:43, by Liam Clark

Appendix B Borehole Logs

Celtic
Design and Construct Remediation

Borehole Number: CBH2

Date: 27 Jan 2009 | Easting: 270302.000

Project No: C1296 | Engineer: MS | Northing: 195534.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.50 - 10.50m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
3.50m					MADE GROUND: Waste Tip Fill.			
					Continued next sheet			

Comments:

CBH2

Celtic
Design and Construct Remediation

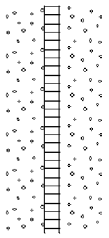
Borehole Number: CBH2

Date: 27 Jan 2009 | Easting: 270302.000

Project No: C1296 | Engineer: MS | Northing: 195534.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.50 - 10.50m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip Fill.			
					PEAT:	10.20		
					End of Borehole	10.50		

9 10 11 12 13 14 15 16 17 18

Comments:

Celtic
Design and Construct Remediation

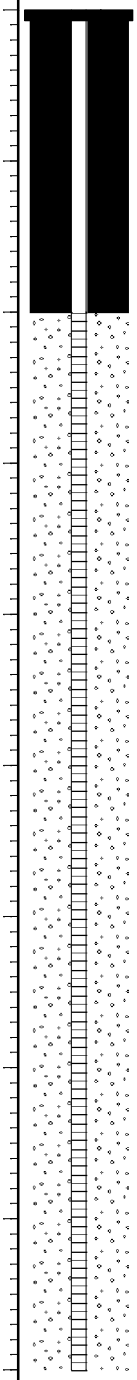
Borehole Number: CBH13

Date: 29 Jan 2009 | Easting: 270343.000

Project No: C1296 | Engineer: MS | Northing: 195572.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip Fill.			
					Continued next sheet			

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH13

Date: 29 Jan 2009 | Easting: 270343.000

Project No: C1296 | Engineer: MS | Northing: 195572.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
▽ 9.50m					MADE GROUND: Waste Tip Fill.			
					End of Borehole	12.00		

9 10 11 12 13 14 15 16 17 18

Comments:

CBH13

Celtic
Design and Construct Remediation

Borehole Number: CBH16

Date: 9 Feb 2009 | Easting: 270351.000

Project No: C1296 | Engineer: MS | Northing: 195502.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
▽ 6.00m					MADE GROUND: Waste Tip Fill. Black oil Continued next sheet			

0 1 2 3 4 5 6 7 8 9

Comments:

CBH16

Celtic
Design and Construct Remediation

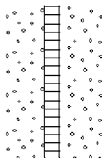
Borehole Number: CBH16

Date: 9 Feb 2009 | Easting: 270351.000

Project No: C1296 | Engineer: MS | Northing: 195502.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip Fill.			
					End of Borehole	10.00		

9 10 11 12 13 14 15 16 17 18

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH19

Date: 29 Jan 2009 | Easting: 270362.000

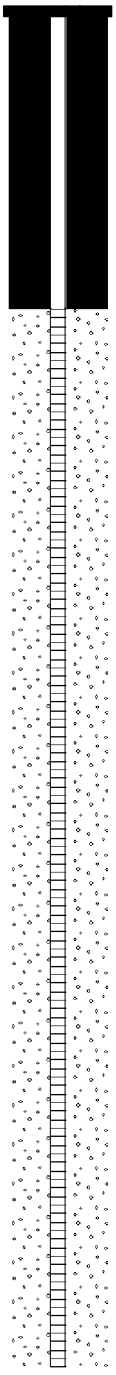
Project No: C1296 | Engineer: MS | Northing: 195572.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9



Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH19

Date: 29 Jan 2009 | Easting: 270362.000

Project No: C1296 | Engineer: MS | Northing: 195572.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
9.00m					MADE GROUND: Waste tip Fill.			
					End of Borehole	12.00		

9 10 11 12 13 14 15 16 17 18

Comments:

CBH19

Celtic
Design and Construct Remediation

Borehole Number: CBH20

Date: 27 Jan 2009 | Easting: 270832.000

Project No: C1296 | Engineer: MS | Northing: 195553.000

Site Location: BP Former Llandarcy | Method: CP | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 0.80 - 7.50m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: mixture of compacted grey to black clay, gravels and cobbles (up to 10 cm)			
					MADE GROUND: Mixture of black ash, brick fragments, gravel and brown clay.	2.50		
					End of Borehole	7.50		

0 1 2 3 4 5 6 7 8 9

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH23

Date: 4 Feb 0009 | Easting: 270401.000

Project No: C1296 | Engineer: MS | Northing: 195595.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9

7.50m

Comments:

CBH23

Celtic
Design and Construct Remediation

Borehole Number: CBH23

Date: 4 Feb 0009 | Easting: 270401.000

Project No: C1296 | Engineer: MS | Northing: 195595.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					PEAT:	11.90		
					End of Borehole	12.00		

9 10 11 12 13 14 15 16 17 18

Comments:

CBH23

Celtic
Design and Construct Remediation

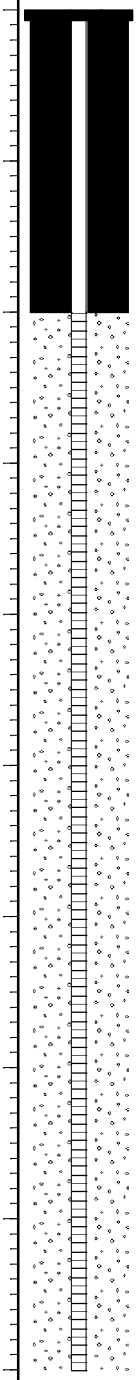
Borehole Number: CBH25

Date: 30 Jan 2009 | Easting: 270405.000

Project No: C1296 | Engineer: MS | Northing: 195554.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					Continued next sheet			

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH25

Date: 30 Jan 2009 | Easting: 270405.000

Project No: C1296 | Engineer: MS | Northing: 195554.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
9.00m					MADE GROUND: Waste tip Fill.			
					PEAT:	11.00		
					End of Borehole	12.00		

9 10 11 12 13 14 15 16 17 18

Comments:

CBH25

Celtic
Design and Construct Remediation

Borehole Number: CBH28

Date: 4 Feb 0009 | Easting: 270422.000

Project No: C1296 | Engineer: MS | Northing: 195594.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9

7.50m

Comments:

CBH28

Celtic
Design and Construct Remediation

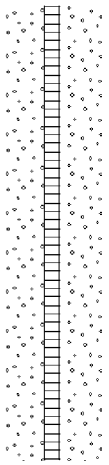
Borehole Number: CBH28

Date: 4 Feb 0009
Easting: 270422.000

Project No: C1296
Engineer: MS
Northing: 195594.000

Site Location: BP Former Llandarcy
Method: ODEX
Datum: -

Client: St. Modwen
Hole Diameter: 200mm
Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					End of Borehole	12.00		

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Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH29

Date: 6 Feb 2009 | Easting: 270421.000

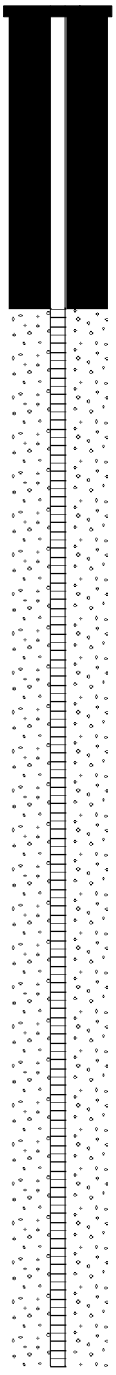
Project No: C1296 | Engineer: MS | Northing: 195573.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9



Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH29

Date: 6 Feb 2009 | Easting: 270421.000

Project No: C1296 | Engineer: MS | Northing: 195573.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
9.00m					MADE GROUND: Waste tip Fill.			
					End of Borehole	12.00		

9 10 11 12 13 14 15 16 17 18

Comments:

CBH29

Celtic
Design and Construct Remediation

Borehole Number: CBH32

Date: 4 Feb 0009 | Easting: 270442.000

Project No: C1296 | Engineer: MS | Northing: 195595.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
1.50m					MADE GROUND: Waste tip Fill.			
					Continued next sheet			

Comments:

CBH32

Celtic
Design and Construct Remediation

Borehole Number: CBH32

Date: 4 Feb 0009 | Easting: 270442.000

Project No: C1296 | Engineer: MS | Northing: 195595.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					End of Borehole	12.00		

9 10 11 12 13 14 15 16 17 18

Comments:

CBH32

Celtic
Design and Construct Remediation

Borehole Number: CBH33

Date: 6 Feb 2009 | Easting: 270441.000

Project No: C1296 | Engineer: MS | Northing: 195573.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
7.50m					MADE GROUND: Waste tip Fill.			
					Continued next sheet			

Comments:

CBH33

Celtic
Design and Construct Remediation

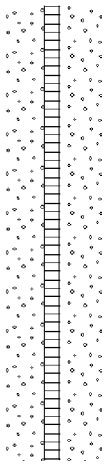
Borehole Number: CBH33

Date: 6 Feb 2009 | Easting: 270441.000

Project No: C1296 | Engineer: MS | Northing: 195573.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					End of Borehole	12.00		

9 10 11 12 13 14 15 16 17 18

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH34

Date: 2 Feb 2009 | Easting: 270442.000

Project No: C1296 | Engineer: MS | Northing: 195553.000

Site Location: BP Former Llandarcy | Method: CP | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 0.80 - 7.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Black ashy clay with cobbles			
					MADE GROUND: Brown gravely clay.	0.40		
					MADE GROUND: Black clay with bricks fragments and large timbers	3.50		
▽ 6.00m					MADE GROUND: Black clay with limestone cobbles.	6.00		
					End of Borehole	7.00		

0 1 2 3 4 5 6 7 8 9

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH36

Date: 5 Feb 2009 | Easting: 270461.000

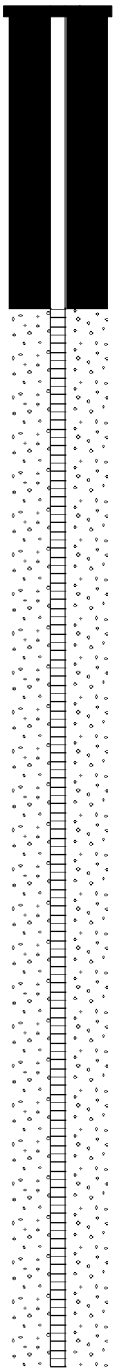
Project No: C1296 | Engineer: MS | Northing: 195595.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9



Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH36

Date: 5 Feb 2009 | Easting: 270461.000

Project No: C1296 | Engineer: MS | Northing: 195595.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
10.50m					MADE GROUND: Waste tip Fill.			
					End of Borehole	12.00		

9 10 11 12 13 14 15 16 17 18

Comments:

CBH36

Celtic
Design and Construct Remediation

Borehole Number: CBH37

Date: 6 Feb 2009 | Easting: 270463.000

Project No: C1296 | Engineer: MS | Northing: 195572.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9

7.50m

Comments:

CBH37

Celtic
Design and Construct Remediation

Borehole Number: CBH37

Date: 6 Feb 2009 | Easting: 270463.000

Project No: C1296 | Engineer: MS | Northing: 195572.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					Green oil			
					End of Borehole	12.00		

9 10 11 12 13 14 15 16 17 18

Comments:

CBH37

Celtic
Design and Construct Remediation

Borehole Number: CBH38

Date: 5 Feb 2009 | Easting: 270466.000

Project No: C1296 | Engineer: MS | Northing: 195557.000

Site Location: BP Former Llandarcy | Method: CP | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 0.51m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Black clay with cobbles and bricks and plastic fragments			
					MADE GROUND: Light brown clay	1.00		
					MADE GROUND: Brown to black clay	2.50		
					MADE GROUND:Black clay with cobbles. Gas bubbling	8.00		
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH38

Date: 5 Feb 2009 | Easting: 270466.000

Project No: C1296 | Engineer: MS | Northing: 195557.000

Site Location: BP Former Llandarcy | Method: CP | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 0.51m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND:Black clay with cobbles. Gas bubbling			
						9.50		
					End of Borehole			

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Comments:

CBH38

Celtic
Design and Construct Remediation

Borehole Number: CBH39

Date: 5 Feb 2009 | Easting: 270489.000

Project No: C1296 | Engineer: MS | Northing: 195598.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
4.50m					MADE GROUND: Waste tip Fill.			
					Continued next sheet			

Comments:

Celtic
Design and Construct Remediation

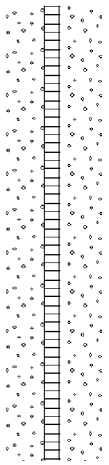
Borehole Number: CBH39

Date: 5 Feb 2009 | Easting: 270489.000

Project No: C1296 | Engineer: MS | Northing: 195598.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 2.00 - 12.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste tip Fill.			
					End of Borehole	12.00		

9 10 11 12 13 14 15 16 17 18

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH42

Date: 9 Feb 2009 | Easting: 270490.000

Project No: C1296 | Engineer: MS | Northing: 195533.000

Site Location: BP Former Llandarcy | Method: CP | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.80 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
5.00m					MADE GROUND: Compacted mixture of black clay and bricks fragments.			
					MADE GROUND:Cobbles and concrete fragments.	4.50		
					MADE GROUND: Gravel and bricks fragments	5.00		
					MADE GROUND:Large timbers	6.50		
					MADE GROUND: Black coal ash. Strong hydrocarbons odour.	6.80		
					Continued next sheet			

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH42

Date: 9 Feb 2009 | Easting: 270490.000

Project No: C1296 | Engineer: MS | Northing: 195533.000

Site Location: BP Former Llandarcy | Method: CP | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.80 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Black coal ash. Strong hydrocarbons odour.			
					PEAT	10.00		
					End of Borehole	10.30		

9 10 11 12 13 14 15 16 17 18

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH43

Date: 10 Feb 2009 | Easting: 270515.000

Project No: C1296 | Engineer: MS | Northing: 195534.000

Site Location: BP Former Llandarcy | Method: CP | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.80 - 6.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
▽ 4.00m					MADE GROUND: Black clay with bricks fragments and peat/clay mixture.			
					End of Borehole	6.00		

0 1 2 3 4 5 6 7 8 9

Comments:

CBH43

Celtic
Design and Construct Remediation

Borehole Number: CBH47

Date: 23 Jul 2009 | Easting: 270372.000

Project No: C1296 | Engineer: MS | Northing: 195500.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 9.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip Fill.			
						8.60		
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9

Comments:

CBH47

Celtic
Design and Construct Remediation

Borehole Number: CBH47

Date: 23 Jul 2009 | Easting: 270372.000

Project No: C1296 | Engineer: MS | Northing: 195500.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 9.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					PEAT:	9.00		
					End of Borehole			

9 10 11 12 13 14 15 16 17 18

Comments:

CBH47

Celtic
Design and Construct Remediation

Borehole Number: CBH48

Date: 23 Jul 2009 | Easting: 270394.000

Project No: C1296 | Engineer: MS | Northing: 195502.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 9.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
						8.80		
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH48

Date: 23 Jul 2009 | Easting: 270394.000

Project No: C1296 | Engineer: MS | Northing: 195502.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 9.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					PEAT:	9.00		
					End of Borehole			

9 10 11 12 13 14 15 16 17 18

Comments:

CBH48

Celtic
Design and Construct Remediation

Borehole Number: CBH51

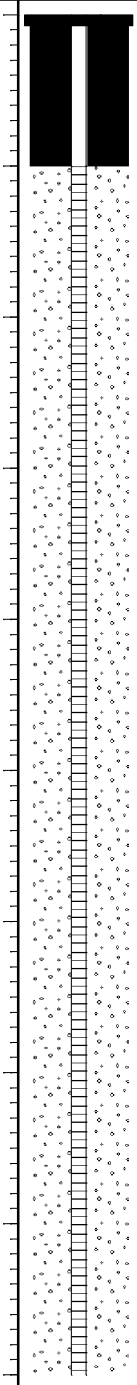
Date: 22 Jul 2009 | Easting: 270393.000

Project No: C1296 | Engineer: MS | Northing: 195523.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
					Continued next sheet			



Comments:

CBH51

Celtic
Design and Construct Remediation

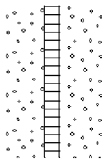
Borehole Number: CBH51

Date: 22 Jul 2009 | Easting: 270393.000

Project No: C1296 | Engineer: MS | Northing: 195523.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
					End of Borehole	10.00		

9 10 11 12 13 14 15 16 17 18

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH52

Date: 22 Jul 2009 | Easting: 270415.000

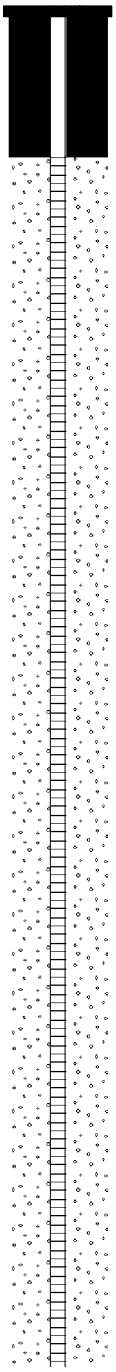
Project No: C1296 | Engineer: MS | Northing: 195525.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 9.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
						8.70		
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9



Comments:

CBH52

Celtic
Design and Construct Remediation

Borehole Number: CBH52

Date: 22 Jul 2009 | Easting: 270415.000

Project No: C1296 | Engineer: MS | Northing: 195525.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 9.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					PEAT:	9.00		
					End of Borehole			

9 10 11 12 13 14 15 16 17 18

Comments:

CBH52

Celtic
Design and Construct Remediation

Borehole Number: CBH57

Date: 24 Jul 2009 | Easting: 270410.000

Project No: C1296 | Engineer: MS | Northing: 195585.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH57

Date: 24 Jul 2009 | Easting: 270410.000

Project No: C1296 | Engineer: MS | Northing: 195585.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
					PEAT:	9.60		
					End of Borehole	10.00		

9 10 11 12 13 14 15 16 17 18

Comments:

CBH57

Celtic
Design and Construct Remediation

Borehole Number: CBH59

Date: 28 Jul 2009 | Easting: 270512.000

Project No: C1296 | Engineer: MS | Northing: 195605.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9

Comments:

Celtic
Design and Construct Remediation

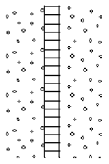
Borehole Number: CBH59

Date: 28 Jul 2009 | Easting: 270512.000

Project No: C1296 | Engineer: MS | Northing: 195605.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
					End of Borehole	10.00		

9 10 11 12 13 14 15 16 17 18

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH60

Date: 28 Jul 2009 | Easting: 270513.000

Project No: C1296 | Engineer: MS | Northing: 195582.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 10.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
					Continued next sheet			

0 1 2 3 4 5 6 7 8 9

Comments:

Celtic
Design and Construct Remediation

Borehole Number: CBH61

Date: 27 Jul 2009 | Easting: 270533.000

Project No: C1296 | Engineer: MS | Northing: 195551.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 9.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
					PEAT:	8.40		
					End of Borehole			

0 1 2 3 4 5 6 7 8 9

Comments:

CBH61

Celtic
Design and Construct Remediation

Borehole Number: CBH64

Date: 29 Jul 2009 | Easting: 270483.000

Project No: C1296 | Engineer: MS | Northing: 195513.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 9.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
					PEAT:	8.40		
					End of Borehole			

0 1 2 3 4 5 6 7 8 9

Comments:

CBH64

Celtic
Design and Construct Remediation

Borehole Number: CBH65

Date: 29 Jul 2009 | Easting: 270505.000

Project No: C1296 | Engineer: MS | Northing: 195510.000

Site Location: BP Former Llandarcy | Method: ODEX | Datum: -

Client: St. Modwen | Hole Diameter: 200mm | Screen Position: 1.00 - 9.00m

WATER	WELL	SAMPLING/TESTING			SUBSURFACE PROFILE			
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
					MADE GROUND: Waste Tip fill.			
					PEAT:	8.10		
					End of Borehole			

0 1 2 3 4 5 6 7 8 9

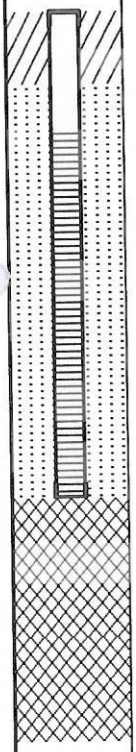
Comments:

CBH65

BOREHOLE NUMBER: CARW008

PAGE 1 of 1

DRILLING DATES: 17/01/01	DRILLING METHODS : Percussive
DRILLER : Geotechnical	BOREHOLE DIAMETER : ~100mm
LOGGED BY : URS	SCREEN TYPE & DIAM: UPVC 50mm
CHECKED BY :	SCREEN SLOT SIZE: 1mm



BOREHOLE CONSTRUCTION	SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	DESCRIPTION	COMMENTS
					0.0		Loose, black, sandy, fine GRAVEL comprising Ash. MADE GROUND	Dry, NVO
			*47.6		0.5		Sticky, black sandy GRAVEL, some grease. (MADE GROUND)	Sticky product. Mod odour
			*37.4		1.0		As above but fine-medium GRAVEL. (MADE GROUND)	Damp from 0.85m, wet from 1.0m. Mod odour
			*237		2.0			
			*3.5		2.5		Soft, brown, silty CLAY	Dry, NVC, slight odour
							Soft, very light brown CLAY. Drilled to 3.0m, collapsed to 2.0m	
					3.0		End of Borehole	Dry-moist. NVO
					3.5			
					4.0			
					4.5			
					5.0			

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

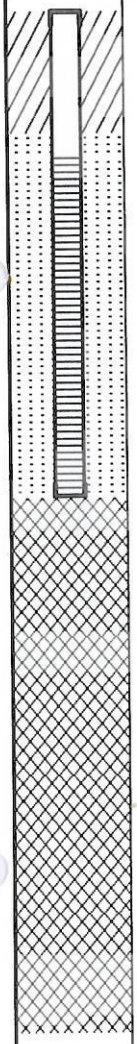
URS

App'd:	Date: 05/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE NUMBER: CARW009

PAGE 1 of 1

DRILLING DATES: 09/01/01 - 10/01/01	DRILLING METHODS :
DRILLER : Geotechnical	BOREHOLE DIAMETER :
LOGGED BY : SC	SCREEN TYPE & DIAM:
CHECKED BY :	SCREEN SLOT SIZE:



SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	DESCRIPTION	COMMENTS
				0.0		Soft-loose, black, fine-coarse GRAVEL with patches of sandy silt. Grades into gravelly, silty SAND from 0.6m. Lump of sticky grease at 0.65m MADE GROUND	Wet, slight odour
		*4.2		0.5			
		*3.4				Soft, med brown, slightly clayey, slightly sandy SILT with occasional gravels and cobbles. (MADE GROUND)	Wet. Manure-like odour
		*3.5		1.0		Med-soft grey/black clayey SILT.	Damp. Manure odour, some staining
		*14.5		1.5		Very soft, brown/grey/black, slightly gravelly, clayey, sandy SILT. More clayey at 2.0m, but remains soft. Becomes sandier and firmer (compressed) from 2.3m	Very damp, slight odour, some staining. Odour decreases with depth
		*2.2		2.0			
		*1.5		2.5			
		*1.3		3.0		Firm, grey (with some orange streaks), clayey, very sandy SILT. Becoming more clayey from 3.2m	Moist. NVO. Some chicken wire
		*0.5		3.5		Loose, med brown, gravelly SAND. Very gravelly from 3.5m	
				4.0		Med-dense, med brown, gravelly, very sandy SILT	
						End of Borehole	
				4.5			
				5.0			

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

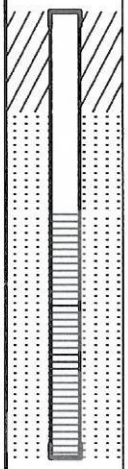
Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 05/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE NUMBER: CARW034		PAGE 1 of 1
DRILLING DATES: 20/06/01	DRILLING METHODS : Percussive	
DRILLER : Geotechnical	BOREHOLE DIAMETER : ~100mm	
LOGGED BY : NL	SCREEN TYPE & DIAM: UPVC 50mm	
CHECKED BY :	SCREEN SLOT SIZE: 1mm	



DEPTH (m)	DESCRIPTION	COMMENTS
0.0	Soft, brown, silty PEAT	Strong odour
0.5	SAMPLE LOST DUE TO HIGH WATER CONTENT	
1.5	Mottled orange/grey sandy SILT with some clay and occasional gravel. Gravel concentration increasing with depth, resulting in harder drilling.	Sheen and odour. Some free phase product. Heavy staining throughout.
2.5	End of Borehole	

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

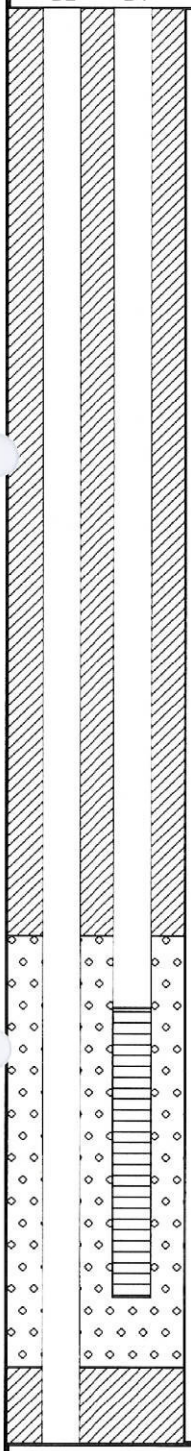
Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE NUMBER: **MSMW034D1/D2**		PAGE 1 of 2
START DATE: 21/4/99	DRILLING METHOD: ROTARY AIR FLUSH	
FINISH DATE: 21/4/99	BOREHOLE DIAMETER: 165 mm	
DRILLER: R1	SCREEN TYPE & DIAMETER: 50/19 mm ID UPVC	
LOGGED BY: MC APPR'D BY:	SCREEN SLOT SIZE: 0.5/1 mm	



DEPTH (m)	DESCRIPTION	COMMENTS
0	Grey-dark grey sandy gravelly CLAY with sandstone and brick fragments (MADE GROUND)	Strong hydrocarbon odour Moist
3.0	Dark brown-black peaty, gravelly CLAY with wood fragments (MADE GROUND)	Strong hydrocarbon odour
	Grey clayey GRAVEL	Damp - wet No odour
4.0	Dense brown gravelly, silty CLAY (BOULDER CLAY)	Dry No hydrocarbon odour
6.0	Dense brown clayey GRAVEL	Productive at 8.2 m but cased out at 9.6 m
		Moist
10		

LOCATION / NOTES:

1. All measurements in m below ground level

LEGEND

- Disturbed Sample
- Undisturbed Sample
- * Headspace Analysis
- † Down Borehole Analysis
- Groundwater Table
- Perched Water Table

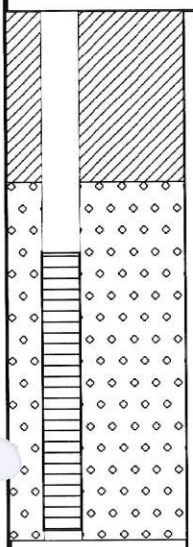
BOREHOLE LOG

Job Title	SOIL & GROUNDWATER INVESTIGATION
Location	LLANDARCY REFINERY
Client	BP LLANDARCY LTD
App'd	DRAFT
Ref.	CR/MC/BRS
Date	MAY 99
Job No.	39991-004-401

DCM GROUP DAMES & MOORE

BOREHOLE NUMBER: **MSMW034D1/D2**	PAGE 2 of 2
START DATE: 21/4/99	DRILLING METHOD: ROTARY AIR FLUSH
FINISH DATE: 21/4/99	BOREHOLE DIAMETER: 165 mm
DRILLER: R1	SCREEN TYPE & DIAMETER: 50/19 mm ID UPVC
LOGGED BY: MC APPR'D BY:	SCREEN SLOT SIZE: 0.5/1 mm

BOREHOLE CONSTRUCTION | SAMPLE NUMBER | SAMPLE TYPE | SOIL VAPOUR (ppm) | GROUNDWATER | DEPTH (m) | GEOLOGY



DESCRIPTION	COMMENTS
Gravelly CLAY (BOULDER CLAY)	Moist
Dense coarse grey silty, sandy GRAVEL becoming more clayey at 11 m	No water in hole
ROCKHEAD - Dark grey MUDSTONE with occasional silty and sandy layers.	

10 11 12 13 14 15 16 17 18 19 20

LOCATION / NOTES:

1. All measurements in m below ground level

LEGEND

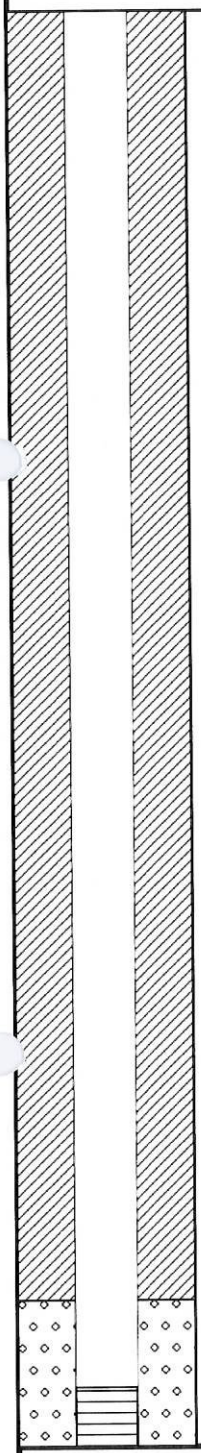
- Disturbed Sample
- Undisturbed Sample
- * Headspace Analysis
- † Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title	SOIL & GROUNDWATER INVESTIGATION
Location	LLANDARCY REFINERY
Client	BP LLANDARCY LTD
App'd	DRAFT
Ref.	CR/MC/BRS
Date	MAY 99
Job No.	39991-004-401

DCM GROUP DAMES & MOORE

BOREHOLE NUMBER: **MSMW035D2**	PAGE 1 of 2
START DATE: 21/4/99	DRILLING METHOD: ROTARY AIR FLUSH
FINISH DATE: 21/4/99	BOREHOLE DIAMETER: 165 mm
DRILLER: R1	SCREEN TYPE & DIAMETER: 50 mm ID UPVC
LOGGED BY: MC APPRD BY:	SCREEN SLOT SIZE: 0.5 mm



DEPTH (m)	DESCRIPTION	COMMENTS
0	ASH with gravel and brick fragments (MADE GROUND)	
1.0	Silty and sandy GRAVEL with some black ash (MADE GROUND)	Strong "tarry" hydrocarbon odour Wet
2.0	Grey plastic CLAY with silt and sand	Moist Moderate hydrocarbon odour
3.0		
4.0	Very soft grey-brown very sandy CLAY becoming gravelly and brown-grey	Easy drilling Faint hydrocarbon odour
5.0		Wet at 5.0m After pipe connection; faint hydrocarbon odour
6.0		Cased out at 6.0m
7.0	Soft grey silty, sandy and gravelly CLAY	Dry Very easy drilling - "powdery" returns
8.0	gravel content increasing at 7.7m	Wet at 7.7m
	becoming firmer and more stiff at 8.7m	Dry at 8.7m
9.0	Dense grey coarse mudstone GRAVEL	Wet
	ROCKHEAD - Dark grey MUDSTONE (BEDROCK)	Productive
10	Hard grey crystalline SANDSTONE (BEDROCK)	

LOCATION / NOTES:

1. All measurements in m below ground level (mbgl)
2. Bedrock addition to 2 existing shallow

LEGEND

- Disturbed Sample
- Undisturbed Sample
- * Headspace Analysis
- † Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title	SOIL & GROUNDWATER INVESTIGATION
Location	LLANDARCY REFINERY
Client	BP LLANDARCY LTD
Appd	DRAFT
Ref.	CR/MC/BRS
Date	MAY 99
Job No.	39991-004-401

DCM GROUP DAMES & MOORE

BOREHOLE NUMBER: **MSMW035D2**	PAGE 2 of 2
START DATE: 21/4/99	DRILLING METHOD: ROTARY AIR FLUSH
FINISH DATE: 21/4/99	BOREHOLE DIAMETER: 165 mm
DRILLER: R1	SCREEN TYPE & DIAMETER: 50 mm ID UPVC
LOGGED BY: MC APPRD BY:	SCREEN SLOT SIZE: 0.5 mm

BOREHOLE CONSTRUCTION | SAMPLE NUMBER | SAMPLE TYPE | SOIL VAPOUR (ppm) | GROUNDWATER | DEPTH (m) | GEOLOGY

DESCRIPTION	COMMENTS
Hard grey SANDSTONE (BEDROCK)	

LOCATION / NOTES:

1. All measurements in m below ground level (mbgl)
2. Bedrock addition to 2 existing shallow

LEGEND

- Disturbed Sample
- Undisturbed Sample
- * Headspace Analysis
- † Down Borehole Analysis
- Groundwater Table
- Perched Water Table

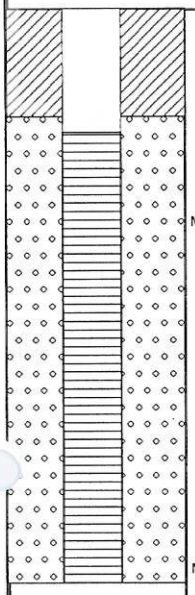
BOREHOLE LOG

Job Title	SOIL & GROUNDWATER INVESTIGATION
Location	LLANDARCY REFINERY
Client	BP LLANDARCY LTD
Appd	DRAFT
Ref.	CR/MC/BRS
Date	MAY 99
Job No.	39991-004-401

DCM GROUP DAMES & MOORE

BOREHOLE NUMBER: **MSMW091** PAGE 1 of 1

START DATE: 5/3/99	DRILLING METHOD: Hydraulic Percussive
FINISH DATE: 5/3/99	BOREHOLE DIAMETER: 100 mm
DRILLER: GEOTECHNICAL	SCREEN TYPE & DIAMETER: 50 mm UPVC
LOGGED BY: SG APPR'D BY:	SCREEN SLOT SIZE: 1 mm



SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	DEPTH (m)	DESCRIPTION	COMMENTS
			0	Soft, brown sandy SILT with some clay.	Slight hydrocarbon odour.
		*123		Soft to very soft, orange-brown sandy SILT with occasional gravel.	
		*228	1.0		
MSMW091 1.5m		*1010		Soft, grey slightly gravelly sandy SILT with frequent cobbles.	Strong hydrocarbon odour.
		*366	2.0	Gravel at 1.9m	Heavy black staining at 1.9m
		*892			Very strong hydrocarbon odour.
		*475	3.0		
		*503		Gravel at 3.5m	
MSMW091 4.0m		*508	4.0		
			5.0		
			6.0		
			7.0		
			8.0	Borehole terminated at 4m.	
			9.0		
			10		

LOCATION / NOTES:

1. All measurements in m below ground level (mbgl)
2. DUP GG = MSMW091-1.5m.

LEGEND

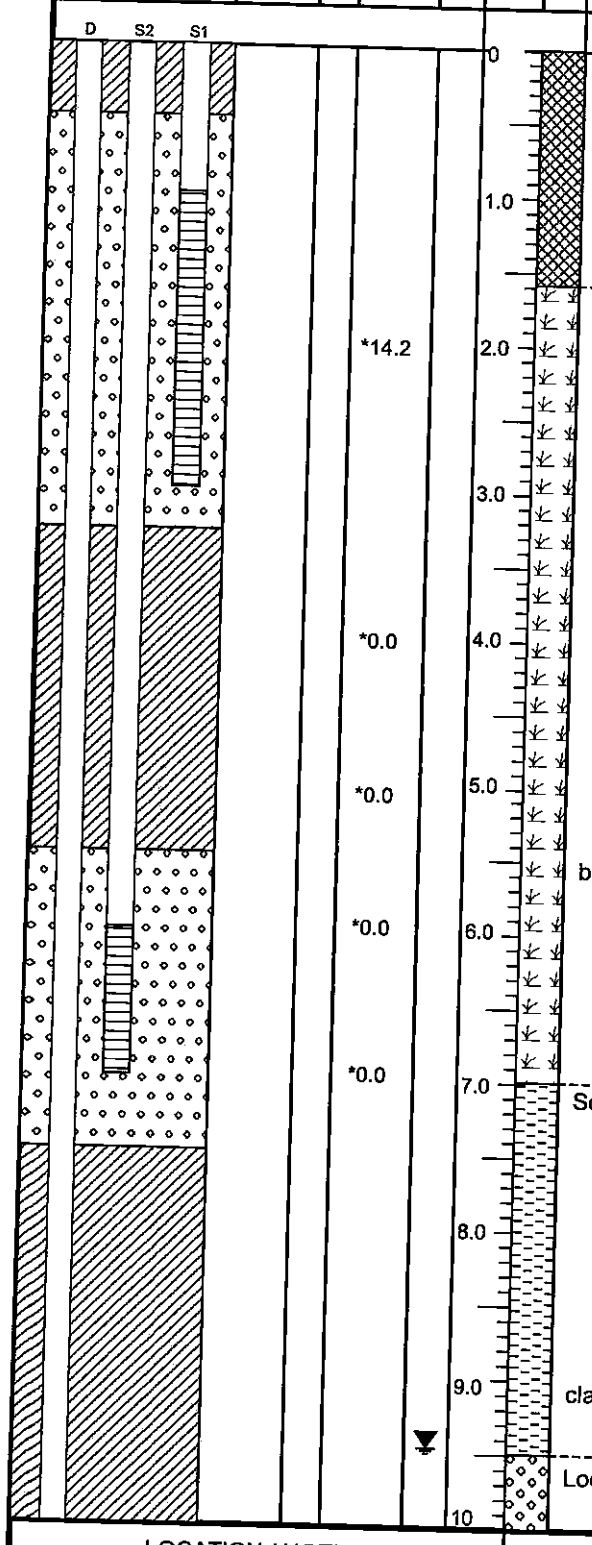
- Disturbed Sample
- Undisturbed Sample
- * Headspace Analysis
- † Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title	SOIL & GROUNDWATER INVESTIGATION
Location	LLANDARCY REFINERY
Client	BP LLANDARCY LTD
App'd	DRAFT
Ref.	CR/MC/BRS
Date	MAY 99
Job No.	39991-004-401

DAMES & MOORE

BOREHOLE NUMBER: **MSMW156D, S1, S2**	PAGE 1 of 2
START DATE: 9/4/99	DRILLING METHOD: Cable Percussion/Rotary
FINISH DATE: 9/4/99	BOREHOLE DIAMETER: 200/165 mm
DRILLER: CP2/R1	SCREEN TYPE & DIAMETER: 50 mm ID UPVC
LOGGED BY: JC/DB APPR'D BY:	SCREEN SLOT SIZE: 0.5 mm



BOREHOLE CONSTRUCTION	SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	DESCRIPTION	COMMENTS
					0		Loose mottled brown and grey sandy clayey SILT with frequent medium to coarse slag gravel, sandstone and brick fragments (MADE GROUND)	Dry Slight hydrocarbon odour
					1.0			
			*14.2		2.0		Soft dark brown and yellow PEAT	Very strong hydrocarbon odour and staining from 1.6-3.0m
					3.0			Damp No odour in peat from 3.0m
			*0.0		4.0			
			*0.0		5.0		becoming lighter in colour and red-brown at 5.5m	
			*0.0		6.0			
			*0.0		7.0		Soft grey-brown CLAY	No hydrocarbon odour Dry beneath bentonite seal No odour
					8.0			
					9.0		clay becoming gravelly at 9.0m	
							Loose grey-brown gravel	No odour Water strike at 10m - productive
					10			

LOCATION / NOTES:

1. All measurements in m below ground level (mbgl)
2. Cable Percussion to 7.5 m, Rotary with ODEX from 7.5m to 14.0 m
3. Temporary 200 mm casing installed to 7.5 m during Rotary drilling and well installation

LEGEND

- Disturbed Sample
- Undisturbed Sample
- * Headspace Analysis
- † Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title	SOIL & GROUNDWATER INVESTIGATION
Location	LLANDARCY REFINERY
Client	BP LLANDARCY LTD
App'd	DRAFT
Ref.	CR/MC/BRS
Date	MAY 99
Job No.	39991-004-401

DCM GROUP DAMES & MOORE

BOREHOLE NUMBER: **MSMW156D, S1, S2**	PAGE 2 of 2
START DATE: 9/4/99	DRILLING METHOD: Cable Percussion/Rotary
FINISH DATE: 9/4/99	BOREHOLE DIAMETER: 200 mm
DRILLER: RD1	SCREEN TYPE & DIAMETER: 50 mm ID UPVC
LOGGED BY: JC/DB APPR'D BY:	SCREEN SLOT SIZE: 1 mm

BOREHOLE CONSTRUCTION	SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	DESCRIPTION	COMMENTS
D S1 S2					10		Loose grey-brown gravel	
					11			
					12		gravel becoming more dense	No odour
					13			
					14		ROCKHEAD - Soft grey MUDSTONE (BEDROCK)	No odour
							Borehole terminated at 14.0 mbgl	
					15			
					16			
					17			
					18			
					19			
					20			

LOCATION / NOTES:

1. All measurements in m below ground level (mbgl)
2. Cable Percussion to 7.5 m, Rotary with

LEGEND

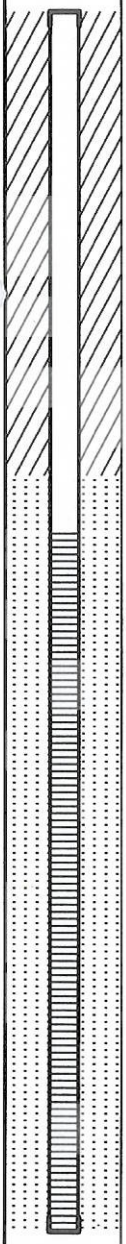
- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title	SOIL & GROUNDWATER INVESTIGATION
Location	LLANDARCY REFINERY
Client	BP LLANDARCY LTD
App'd	DRAFT
Ref.	CR/MC/BRS
Date	MAY 99
Job No.	39991-004-401

DCM GROUP DAMES & MOORE

BOREHOLE NUMBER: MSMW226	PAGE 1 of 1
DRILLING DATES: 11/04/01	DRILLING METHODS : Air Rotary
DRILLER : Tectonics	BOREHOLE DIAMETER : 150mm
LOGGED BY : PEW	SCREEN TYPE & DIAM: HDPE 50mm
CHECKED BY :	SCREEN SLOT SIZE: 1mm



SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	DESCRIPTION	COMMENTS
				0.0		Brown, sandy, silty, angular fine-coarse GRAVEL. MADE GROUND	
				2.0		Black, fine-medium ash and GRAVEL with sand, and minor silt.	H/C staining
				7.5			H/C strike
				10.5			

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

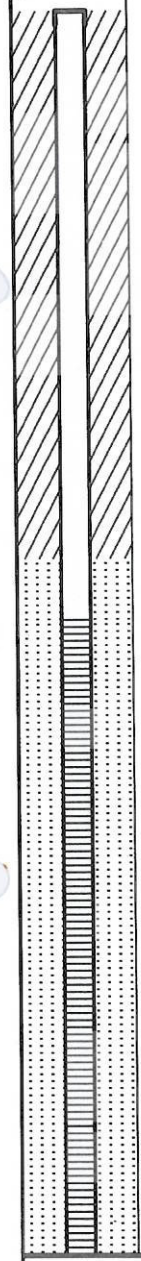
Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE NUMBER: MSMW227	PAGE 1 of 2
DRILLING DATES: 10/04/01	DRILLING METHODS : Rotary Air Flush
DRILLER : Tectonics	BOREHOLE DIAMETER : 250mm
LOGGED BY : PEW	SCREEN TYPE & DIAM: HDPE 100mm
CHECKED BY :	SCREEN SLOT SIZE: 1mm



DEPTH (m)	GEOLOGY	DESCRIPTION	COMMENTS
0.0		Black, organic silty, clayey GRAVEL of ash and clinker. MADE GROUND.	
0.5		Black, sandy, silty, fine-medium, angular GRAVEL with clinker. MADE GROUND.	H/C staining
1.0			
1.5		Poor returns	
2.0			
2.5			
3.0			
3.5			
4.0		As above with small amounts of plant material.	
4.5		As above without plant material and without silt.	
5.0			
5.5			
6.0			
6.5			H/C contaminati on
7.0			
7.5			
8.0			
8.5		As above with decreasing clinker/ash fraction	
9.0			
9.5			
10.0			

SAMPLE — NUMBER / TYPE; SOIL VAPOUR (ppm); GROUNDWATER; BOREHOLE CONSTRUCTION

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW227	PAGE 2 of 2
							DRILLING DATES: 10/04/01	DRILLING METHODS : Rotary Air Flush
							DRILLER : Tectonics	BOREHOLE DIAMETER : 250mm
							LOGGED BY : PEW	SCREEN TYPE & DIAM: HDPE 100mm
							CHECKED BY :	SCREEN SLOT SIZE: 1mm

	COMMENTS
As above with increasing silt/clay from 10.0m.	
MADE GROUND fill materials containing sub-rounded, medium-coarse GRAVELS.	
Fine-coarse GRAVEL of ash, clinker and brick. MADE GROUND	Major water/HC returns
End of Borehole	

10.5 11.0 11.5 12.0 12.5 13.0 13.5 14.0 14.5 15.0 15.5 16.0 16.5 17.0 17.5 18.0 18.5 19.0 19.5 20.0

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

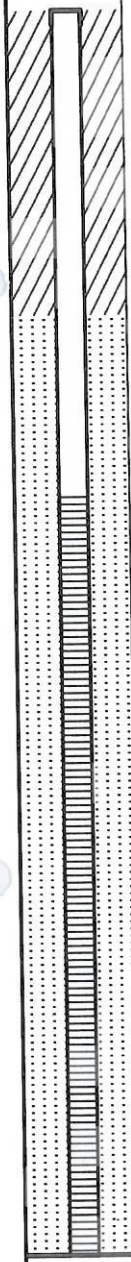
URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE NUMBER: MSMW231

PAGE 1 of 2

DRILLING DATES: 03/04/01 - 05/04/01	DRILLING METHODS : Rotary Air Flush
DRILLER : Tectonics	BOREHOLE DIAMETER : 250mm
LOGGED BY : PW	SCREEN TYPE & DIAM: HDPE 100mm
CHECKED BY :	SCREEN SLOT SIZE: 1mm



SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	DESCRIPTION	COMMENTS
				0.0		Dark brown sandy/clayey fine-coarse GRAVEL. MADE GROUND Intermittent hard bands of concrete/rubble.	
				5.0		Fine-medium GRAVEL with silt and clay. MADE GROUND.	Oil/Free Product from 4.0m Wet/Oily
				7.0		Medium, subangular GRAVEL fill with peat/fibrous plant remains. MADE GROUND Decreasing fibrous material from 8.0m Increasing amounts of ash and clinker.	Wet/Oily Saturated with H/C Very poor returns
				10.0			

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE NUMBER: MSMW231

PAGE 2 of 2

DRILLING DATES: 03/04/01 - 05/04/01	DRILLING METHODS : Rotary Air Flush
DRILLER : Tectonics	BOREHOLE DIAMETER : 250mm
LOGGED BY : PW	SCREEN TYPE & DIAM: HDPE 100mm
CHECKED BY :	SCREEN SLOT SIZE: 1mm

BOREHOLE CONSTRUCTION	SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY		COMMENTS
					10.5		Small amounts of fibrous material, abundant ash and clinker. MADE GROUND	
					11.0			
					11.5		Gravelly CLAY. Borehole terminated and backfilled to 11m	
					12.0		End of Borehole	
					12.5			
					13.0			
					13.5			
					14.0			
					14.5			
					15.0			
					15.5			
					16.0			
					16.5			
					17.0			
					17.5			
					18.0			
					18.5			
					19.0			
					19.5			
					20.0			

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

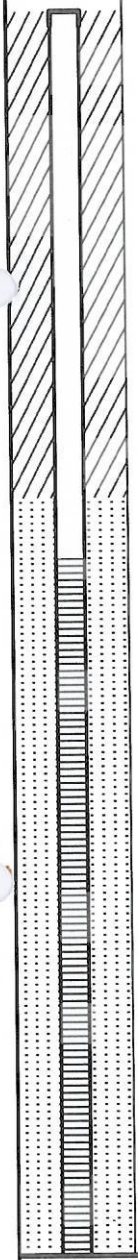
Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE NUMBER: MSMW232	PAGE 1 of 2
DRILLING DATES: 05/04/01	DRILLING METHODS : Rotary Air Flush
DRILLER : Tectonics	BOREHOLE DIAMETER : 250mm
LOGGED BY : PW	SCREEN TYPE & DIAM: HDPE 100mm
CHECKED BY :	SCREEN SLOT SIZE: 1mm



SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	DESCRIPTION	COMMENTS
				0.0		Grey/brown silty/sandy GRAVEL fill with brick and wood ash fragments. MADE GROUND.	H/C staining 0.5-1.0m. PID 0.0
				1.0		Increasing clay below 1.0m Very poor returns from 1.5m Without Ash or Brick from 2.0m	W/out H/C
				3.0			W/out H/C stains
				3.5		As above with plastic liner/geotextile from 3.5m Becoming brown. MADE GROUND	
				4.0		Light brown, subangular GRAVEL. Possibly reworked natural material.MADE GROUND	Small water return when flushed. No H/C stain
				6.0			H/C sheen from 6.0m
				10.0			

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE NUMBER: MSMW232

PAGE 2 of 2

DRILLING DATES: 05/04/01	DRILLING METHODS : Rotary Air Flush
DRILLER : Tectonics	BOREHOLE DIAMETER : 250mm
LOGGED BY : PW	SCREEN TYPE & DIAM: HDPE 100mm
CHECKED BY :	SCREEN SLOT SIZE: 1mm

BOREHOLE CONSTRUCTION	SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY		COMMENTS
					10.5			
					11.0		GRAVEL, less clayey than above. MADE GROUND	
					11.5			
					12.0			
					12.5			
					13.0		MADE GROUND. Fine to coarse grained, gravel-sized clinker and brick fill.	Very high H/C content
					13.5		End of Borehole	
					14.0			
					14.5			
					15.0			
					15.5			
					16.0			
					16.5			
					17.0			
					17.5			
					18.0			
					18.5			
					19.0			
					19.5			
					20.0			

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

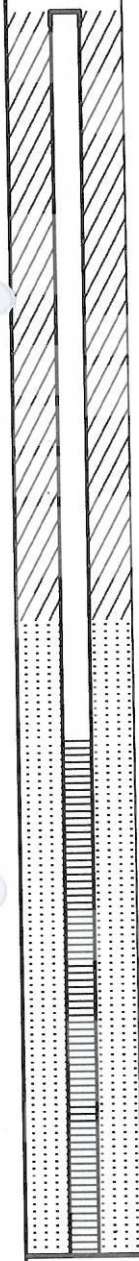
Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE NUMBER: MSMW238	PAGE 1 of 3
DRILLING DATES: 05/04/01	DRILLING METHODS : Rotary Air Flush
DRILLER : Tectonics	BOREHOLE DIAMETER : 250mm
LOGGED BY : PW	SCREEN TYPE & DIAM: HDPE 100mm
CHECKED BY :	SCREEN SLOT SIZE: 1mm



SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	DESCRIPTION	COMMENTS
				0.0		Light-dark brown, silty/clayey/sandy med-coarse GRAVEL fill with brick fragments, wood, plastic liner and clinker. MADE GROUND	
				0.5		Dark grey, gravelly/sandy CLAY with brick fragments and pipe lagging. MADE GROUND	
				4.0		As above plus abundant lagging foam between 4.0 and 5.0m. MADE GROUND	Saturated with dark, black H/C Abundant free product from 4.5m
				5.0			

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE NUMBER: MSMW238

PAGE 2 of 3

DRILLING DATES: 05/04/01	DRILLING METHODS : Rotary Air Flush
DRILLER : Tectonics	BOREHOLE DIAMETER : 250mm
LOGGED BY : PW	SCREEN TYPE & DIAM: HDPE 100mm
CHECKED BY :	SCREEN SLOT SIZE: 1mm

BOREHOLE CONSTRUCTION	SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY		COMMENTS
					5.5			
					6.0			
					6.5		Gravelly CLAY with abundant fibrous plant material (possibly peat). MADE GROUND	
					7.0		As above with decreasing gravel to fine-medium/coarse SAND with increasing clay. MADE GROUND	
					7.5		Decreasing clay and increasing fine-coarse, subrounded, reworked GRAVEL with clinker/rubble. MADE GROUND	
					8.0			
					8.5			
					9.0			
					9.5			
					10.0			

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

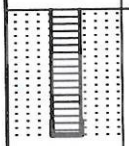
Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE NUMBER	SAMPLE TYPE	SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW238	PAGE 3 of 3
							DRILLING DATES: 05/04/01	DRILLING METHODS : Rotary Air Flush
							DRILLER : Tectonics	BOREHOLE DIAMETER : 250mm
							LOGGED BY : PW	SCREEN TYPE & DIAM: HDPE 100mm
							CHECKED BY :	SCREEN SLOT SIZE: 1mm



COMMENTS

10.5 — End of Borehole

11.0 11.5 12.0 12.5 13.0 13.5 14.0 14.5 15.0

LOCATION / NOTES:

NVO = No visual or olfactory evidence

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: Containment Area Investigation

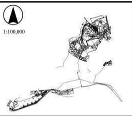
Location: Llandarcy Refinery

Client: BP Llandarcy Refinery

URS

App'd:	Date: 04/09/2002
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-016
Drg. Size: A4	BOREHOLE LOG

Appendix C URS groundwater drawings



LEGEND

- Shallow Wells (Typically Glacial/Alluvial sequences)
- Deep Wells (Typically Bedrock Unit)

Interpolated Groundwater Contours
- 1m Contour Interval
- 5m Contour Interval
- Text

Contours based on groundwater elevation data collected in September 2003

0 50 100 Meters

ISSUE	DATE	Chk	App'd
1 - INITIAL DRAFT	MAY 04		SG

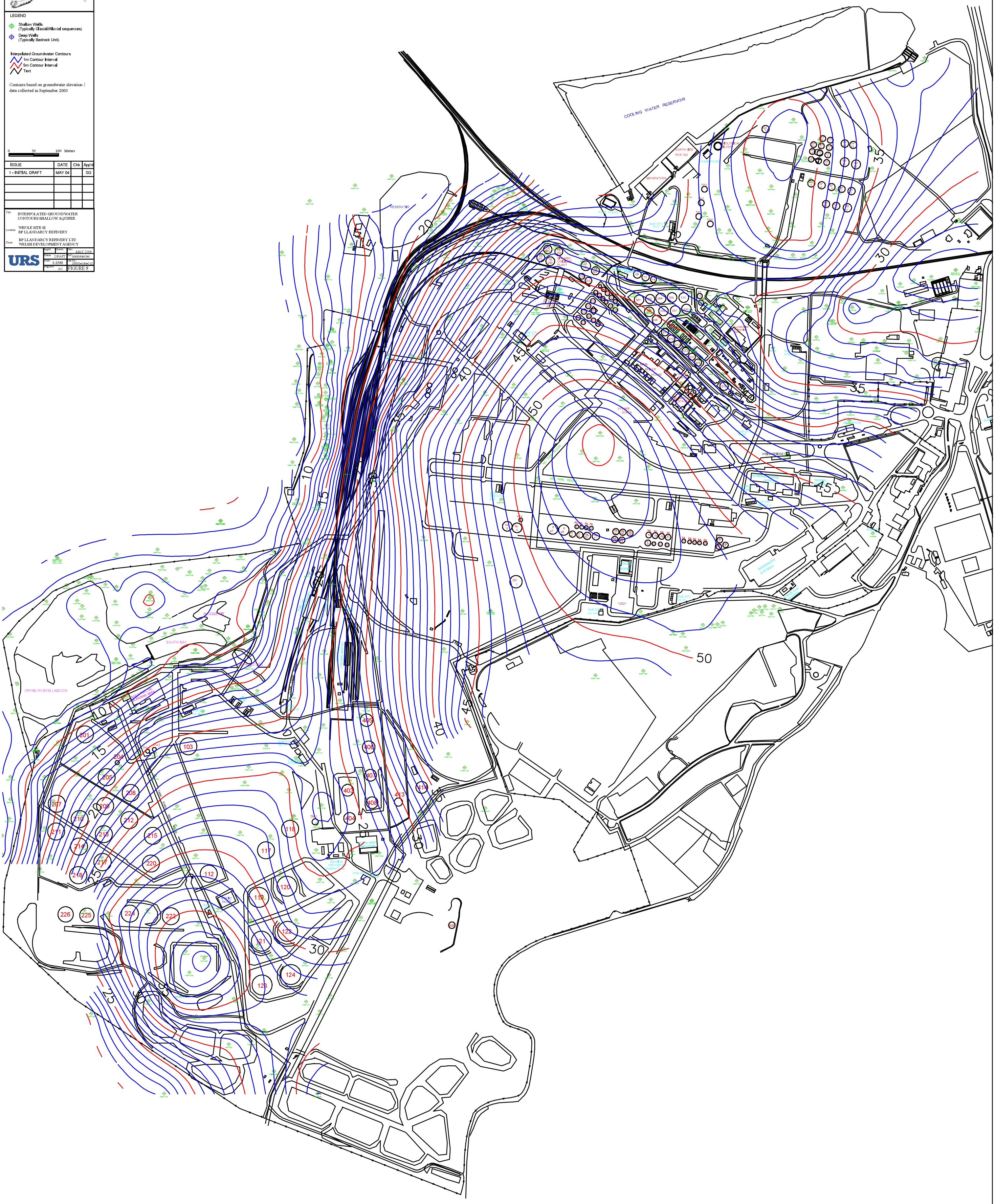
Title: INTERPOLATED GROUNDWATER CONTOURS SHALLOW AQUIFER

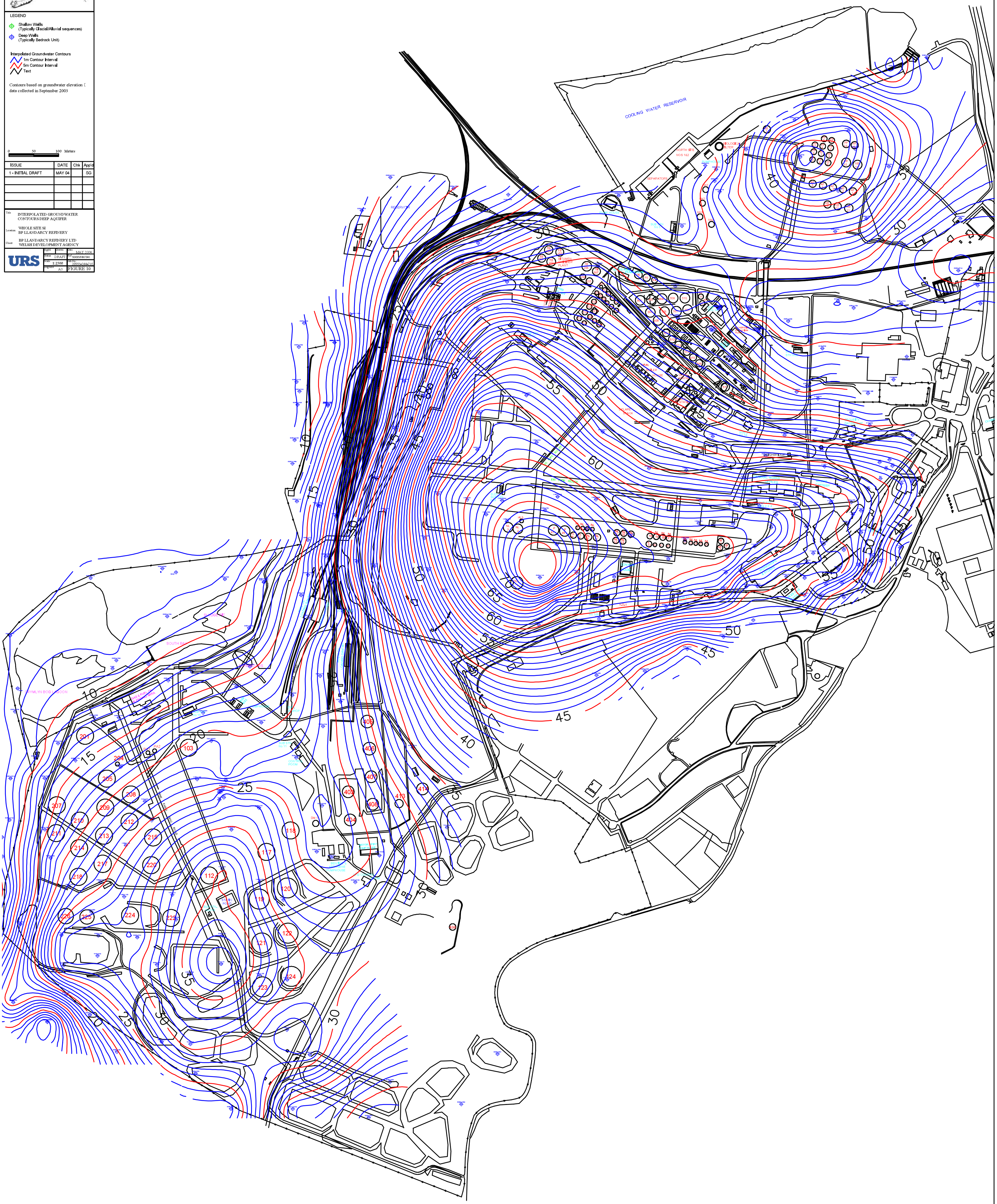
Location: WHOLE SITE SI, BP LLANDARCY REFINERY

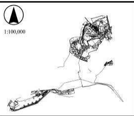
Client: BP LLANDARCY REFINERY LTD, WELSH DEVELOPMENT AGENCY

URS

App'd:	Drawn:	Date:	MAY 2004
Status:	DRAFT	Ref:	SG/GIS/MAY04/1
Scale:	1:2500	Job No.:	39991-044-785
DrgSize:	A0	FIGURE 9	







LEGEND

- Shallow Wells (Typically Glacial/Alluvial sequences)
- Deep Wells (Typically Bedrock Unit)

Interpolated Groundwater Contours
- 1m Contour Interval
- 5m Contour Interval
- Text

Contours based on groundwater elevation data collected in September 2003

0 50 100 Meters

ISSUE	DATE	Chk	App'd
1 - INITIAL DRAFT	MAY 04		SG

Title: INTERPOLATED GROUNDWATER CONTOURS DEEP AQUIFER

Location: WHOLE SITE SI BP LLANDARCY REFINERY

Client: BP LLANDARCY REFINERY LTD WELSH DEVELOPMENT AGENCY

URS

App'd:	Drawn:	Date: MAY 2004
Status: DRAFT		Ref: SG/GIS/MAY04/1
Scale: 1:2500		Job No.: 39991-044-785
DrgSize: A0		FIGURE 10

Appendix D Groundwater and Surface Water Laboratory Results

Coed Darcy Tip

Surface Water Laboratory Data 2023

Chemtest Job No.:											23-03893	23-07177	23-12799	23-14884	23-19393	23-23887	23-26483	23-28763	23-31202	23-39412	23-42099	23-03893	23-07177	23-12799	23-14884	23-19393	23-23887	23-26483	23-28763	23-31202	23-39412	23-42099	23-03893	23-07177	23-12795	23-15616	23-19393	23-23887	23-26483	23-31202	23-36589
Chemtest Sample ID.:											1585839	1600267	1625708	1634511	1653198	1674379	1684624	1694083	1703790	1737196	1748254	1585840	1600268	1625709	1634512	1653199	1674380	1684625	1694084	1703791	1737197	1748255	1585841	1600269	1625678	1637605	1653200	1674378	1684626	1703792	1725538
Client Sample ID.:											CARW008	CARW008	CARW008	CARW008	CARW008	CARW008	CARW008	CARW008	CARW008	CARW008	CARW008	CARW009	CARW009	CARW009	CARW009	CARW009	CARW009	CARW009	CARW009	CARW009	CARW009	CARW009	CARW034	CARW034	CARW034	CARW034	CARW034	CARW034	CARW034	CARW034	CARW034
Sample Type:											WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:											01-Feb-2023	28-Feb-2023	04-Apr-2023	02-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023	14-Sep-2023	23-Nov-2023	14-Dec-2023	01-Feb-2023	28-Feb-2023	04-Apr-2023	02-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023	14-Sep-2023	23-Nov-2023	14-Dec-2023	01-Feb-2023	28-Feb-2023	04-Apr-2023	09-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	14-Sep-2023	30-Oct-2023
					Screening Criteria																																				
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	**UK DWS**	**EQS Freshwater (AA)**	**EQS Freshwater (MAC)**	**EQS 90 percentile**	**Permit Emission Limit**	**MBAT PNEC**																															
pH	U	1010		N/A							7.5	7.7	[B] 7.7	7.4	7.9	8.2	8.0	7.8	7.8	8.1	8.5	7.6	7.7	[B] 7.5	7.6	7.9	8.2	8.4	7.9	8.2	7.9	8.4	7.4	7.6	7.2	8.2	7.6	8.2	8.2	7.8	7.2
Chloride	U	1220	mg/l	1.0	250		300				29	30	[B] 30	25	21	31		22	26	22	21	29	30	[B] 34	25	18	27		28	42	27	21	15	15	9.9	11	14	28		9.1	8.5
Ammoniacal Nitrogen	U	1220	mg/l	0.050				0.3			0.093	0.086	[B] 0.13	0.38	0.16	0.12		0.16	0.13	< 0.050	< 0.050	0.44	0.51	[B] 0.35	0.51	< 0.050	0.72		0.46	0.57	0.33	0.40	0.24	0.37	0.15	0.19	2.2	0.59		0.78	0.41
Calcium (Dissolved)	U	1455	mg/l	2.00							120	150	[B] 68	110	120	100		130	140	73	63	100	110	[B] 120	93	100	98		120	120	98	92	110	120	100	130	110	73		160	150
Calcium (Total)	N	1455	mg/l	5.0							120	140	[B] 69	110	120	100		130	140	74	60	100	98	[B] < 5.0	97	100	98		130	78	100	93	130	130	< 5.0	140	110	100		140	160
Total Hardness as CaCO3	U	1270	mg/l	15							370	500	[B] 210	350	390	340		430	470	220	200	350	380	[B] 400	310	350	330		410	390	330	310	320	360	290	360	310	290		440	430
Arsenic (Dissolved)	U	1455	µg/l	0.20	10	50					4.5	1.1	[B] 0.66	0.51	0.55	0.48		0.29	0.32	0.68	0.85	5.0	0.64	[B] 0.54	0.46	0.82	0.39		0.63	1.0	0.33	0.31	15	1.4	1.1	1.5	1.1	0.47		1.7	2.3
Boron (Dissolved)	U	1455	µg/l	10.0	1000						51	58	[B] 47	56	64	68		99	79	39	35	76	67	[B] 64	71	63	89		85	73	73	68	20	21	14	20	22	44		34	21
Cadmium (Dissolved)	U	1455	µg/l	0.11	5	0.08	0.45				< 0.11	< 0.11	[B] < 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	[B] < 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	50						7.1	1.9	[B] < 0.50	< 0.50	0.51	0.81		< 0.50	< 0.50	< 0.50	< 0.50	11	2.1	[B] < 0.50	< 0.50	1.4	1.0		< 0.50	< 0.50	< 0.50	< 0.50	4.9	2.1	< 0.50	< 0.50	< 0.50	0.92		< 0.50	0.56
Copper (Dissolved)	U	1455	µg/l	0.50	2000	1				3.23	2.3	1.1	[B] < 0.50	< 0.50	1.0	0.55		< 0.50	< 0.50	< 0.50	< 0.50	3.2	1.0	[B] < 0.50	< 0.50	< 0.50	0.55		< 0.50	< 0.50	< 0.50	< 0.50	5.3	1.7	2.1	1.1	1.1	0.72		5.5	0.80
Mercury (Dissolved)	U	1455	µg/l	0.05	1		0.07				< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05
Nickel (Dissolved)	U	1455	µg/l	0.50	20	4	34			26.05	3.3	21	[B] 10	1.2	1.9	0.92		18	1.5	3.1	7.8	1.1	1.2	[B] < 0.50	< 0.50	< 0.50	0.65		< 0.50	< 0.50	< 0.50	< 0.50	2.6	3.3	3.6	2.7	1.2	1.1		3.5	3.2
Lead (Dissolved)	U	1455	µg/l	0.50	10	1.2	14				< 0.50	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	2.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50
Selenium (Dissolved)	U	1455	µg/l	0.50	10						< 0.50	2.0	[B] < 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.77	[B] < 0.50	< 0.50	1.3	< 0.50		< 0.50	1.9	0.54	< 0.50	< 0.50	0.94	< 0.50	< 0.50	< 0.50	< 0.50		0.92	< 0.50
Vanadium (Dissolved)	U	1455	µg/l	0.50		20					6.0	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	7.9	0.55	[B] < 0.50	0.96	0.93	0.60		0.56	0.68	< 0.50	0.82	5.7	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50
Zinc (Dissolved)	U	1455	µg/l	2.5		10.9				89.22	6.3	3.6	[B] 6.1	6.0	< 2.5	3.5		< 2.5	7.6	4.4	4.7	11	< 2.5	[B] 20	< 2.5	< 2.5	2.6		< 2.5	< 2.5	4.4	4.0	10	< 2.5	25	6.4	< 2.5	< 2.5		3.1	7.1
Arsenic (Total)	N	1455	µg/l	0.20							5.2	1.1	[B] 1.0	0.54	1.3	0.60		4.8	0.28	1.8	2.0	5.4	0.56	[B] < 0.20	0.45	1.2	0.47		1.3	0.95	0.63	46	16	120	36	14	27	16		3.5	33
Boron (Total)	N	1455	µg/l	10.0							50	56	[B] 46	63	77	71		83	87	47	48	75	68	[B] 61	72	80	76		82	68	91	76	19	25	16	22	41	36		44	21
Chromium (Total)	N	1455	µg/l	0.50		4.7					7.6	2.5	[B] < 0.50	6.6	5.1	1.4		0.68	< 0.50	1.3	3.7	10	2.9	[B] < 0.50	8.1	5.7	1.8		0.73	< 0.50	1.6	4.2	5.9	4.3	0.85	2.5	7.4	3.2		< 0.50	1.0
Copper (Total)	N	1455	µg/l	0.50							2.3	0.74	[B] 0.72	1.2	2.0	1.5		2.1	< 0.50	0.50	1.5	3.1	0.53	[B] < 0.50	2.3	4.2	1.9		2.6	< 0.50	0.54	1.9	6.1	15	13	4.4	11	86		6.8	15
Mercury (Total)	N	1455	µg/l	0.05							< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	0.11	< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05
Nickel (Total)	N	1455	µg/l	0.50							3.6	23	[B] 12	1.4	8.2	2.8		30	1.2	5.1	12	0.99	2.2	[B] < 0.50	< 0.50	3.5	1.3		< 0.50	< 0.50	0.77	2.3	3.1	7.3	5.2	3.2	5.1	8.5		7.1	6.0
Lead (Total)	N	1455	µg/l	0.50							< 0.50	< 0.50	[B] < 0.50	0.73	0.76	0.53		0.95	< 0.50	0.92	3.5	< 0.50	0.67	[B] < 0.50	1.0	0.76	1.9		1.1	< 0.50	0.57	< 0.50	2.4	11	< 0.50	4.6	5.1	11		0.83	5.7
Selenium (Total)	N	1455	µg/l	0.50							< 0.50	0.63	[B] < 0.50	< 0.50	< 0.50	< 0.50		2.0	< 0.50	0.75	0.96	< 0.50	0.56	[B] < 0.50	< 0.50	1.5	< 0.50		1.5	1.7	0.60	2.6	0.63	0.72	< 0.50	0.91	0.99	0.59		0.98	0.51
Vanadium (Total)	N	1455	µg/l	0.50							7.3	< 0.50	[B] < 0.50	0.53	0.72	< 0.50		0.86	< 0.50	< 0.50	1.2	8.7	0.94	[B] < 0.50	1.1	1.2	0.83		1.1	0.65	1.1	0.98	7.2	4.7	< 0.50	0.65	2.9	2.5		< 0.50	1.1
Zinc (Total)	N	1455	µg/l	2.5							6.4	8.6	[B] 20	28	13	7.4		15	7.6	5.6	6.7	10	3.3	[B] 29	25	12	15		21	< 2.5	5.7	8.5	12	32	55	22	25	210		9.0	13
Cadmium (Total)	N	1455	µg/l	0.08							< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08		< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08		< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.22	< 0.08	0.22	0.12	1.5		< 0.08	0.14
Dissolved Organic Carbon	U	1610	mg/l	2.0							18	35	7.4	11	29	29		31	35	10	26	19	25	26	2.3	25	28		31	29	21	59	50	53	32	40	49	47		53	51
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	23	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1100	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	600	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1200	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	300	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	2300	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	930	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	1	10	50				< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10		74					< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	97	< 0.10	< 0.10	< 0.10	< 0.10	170	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	140	< 0.10	[B] 180	< 0.10	< 0.10	380	< 0.10	< 0.10	< 0.10	< 0.10	680	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	180	< 0.10	< 0.10	< 0.10	< 0.10	240	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	370	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	350	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	450	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	150	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	290	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	140	< 0.10	[B] < 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	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	280	< 5.0	[B] 180	< 5.0	< 5.0	660	< 5.0	< 5.0	< 5.0	< 5.0	1600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	1100	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10					5000		< 10	< 10	[B] < 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	280	< 10	[B] 180	< 10	< 10	660	< 10	< 10	< 10	< 10	3900	< 10	< 10	< 10	< 10	< 10	2000	< 10	< 10	< 10
Benzene	U	1760	µg/l	1.0							< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0
Toluene	U	1760	µg/l	1.0							< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0
Ethylbenzene	U	1760	µg/l	1.0							< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0
Naphthalene	U	1800	µg/l	0.10		2	130				< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	1.8	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Fluorene	U	1800	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	2.3	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Anthracene	U	1800	µg/l	0.10		0.1	0.1				< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10		0.0063	0.12				< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Pyrene	U	1800	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Chrysene	U	1800	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	0.01	0.00017	0.27				< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	0.1						< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10							< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	0.1		0.0082				< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0							< 2.0	< 2.0	[B] < 2.0	< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	[B] < 2.0	< 2.0	< 2.0	4.1		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0	< 2.0

Coed Darcy Tip
Surface Water Laboratory Data 2023

Chemtest Job No.:											23-39412	23-42099	23-03893	23-07177	23-12799	23-15616	23-19393	23-23887	23-26483	23-28763
Chemtest Sample ID.:											1737198	1748265	1585837	1600271	1625704	1637603	1653201	1674381	1684627	1694085
Client Sample ID.:											CARW034	CARW034	MSMW155S	MSMW155S	MSMW155S	MSMW155S	MSMW155S	MSMW155S	MSMW155S	MSMW155S
Sample Type:											WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:											23-Nov-2023	14-Dec-2023	01-Feb-2023	28-Feb-2023	04-Apr-2023	09-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023
					Screening Criteria															
Determinand	Accred.	SOP	Units	LOD	UK DWS	EQS Freshwater (AA)	EQS Freshwater (MAC)	EQS 90 percentile	Permit Emission Limit	MBAT PNEC										
pH	U	1010		N/A							7.8	7.1	7.9	8.2	[B] 7.6	8.6	8.4	8.3	8.2	8.2
Chloride	U	1220	mg/l	1.0	250		300				9.8	11	28	29	[B] 28	25	23	20		24
Ammoniacal Nitrogen	U	1220	mg/l	0.050				0.3			0.26	0.38	0.86	0.65	[B] 0.47	0.72	0.47	0.86		0.45
Calcium (Dissolved)	U	1455	mg/l	2.00							140	140	94	85	[B] 87	80	81	83		84
Calcium (Total)	N	1455	mg/l	5.0							150	140	100	90	[B] 87	84	83	81		96
Total Hardness as CaCO3	U	1270	mg/l	15							400	400	280	250	[B] 260	240	240	250		250
Arsenic (Dissolved)	U	1455	µg/l	0.20	10	50					1.5	1.3	6.6	1.6	[B] 1.1	1.6	2.3	1.2		1.4
Boron (Dissolved)	U	1455	µg/l	10.0	1000						17	14	78	78	[B] 67	59	62	77		91
Cadmium (Dissolved)	U	1455	µg/l	0.11	5	0.08	0.45				< 0.11	< 0.11	< 0.11	< 0.11	[B] < 0.11	< 0.11	< 0.11	< 0.11		< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	50						< 0.50	0.80	2.6	< 0.50	[B] < 0.50	< 0.50	< 0.50	0.91		< 0.50
Copper (Dissolved)	U	1455	µg/l	0.50	2000	1				3.23	< 0.50	1.6	1.5	< 0.50	[B] < 0.50	< 0.50	< 0.50	0.58		< 0.50
Mercury (Dissolved)	U	1455	µg/l	0.05	1		0.07				< 0.05	< 0.05	< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Nickel (Dissolved)	U	1455	µg/l	0.50	20	4	34			26.05	2.0	1.6	0.98	0.53	[B] < 0.50	< 0.50	< 0.50	0.85		< 0.50
Lead (Dissolved)	U	1455	µg/l	0.50	10	1.2	14				< 0.50	< 0.50	< 0.50	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50		< 0.50
Selenium (Dissolved)	U	1455	µg/l	0.50	10						1.1	1.4	< 0.50	0.69	[B] < 0.50	< 0.50	< 0.50	< 0.50		< 0.50
Vanadium (Dissolved)	U	1455	µg/l	0.50		20					< 0.50	< 0.50	7.7	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50		< 0.50
Zinc (Dissolved)	U	1455	µg/l	2.5		10.9				89.22	6.3	15	12	< 2.5	[B] 9.7	4.5	< 2.5	6.7		< 2.5
Arsenic (Total)	N	1455	µg/l	0.20							62	82	7.1	2.6	[B] 1.4	2.7	4.4	2.9		2.7
Boron (Total)	N	1455	µg/l	10.0							26	26	78	72	[B] 64	69	73	75		79
Chromium (Total)	N	1455	µg/l	0.50		4.7					52	4.6	3.0	2.9	[B] < 0.50	1.3	4.4	1.8		1.1
Copper (Total)	N	1455	µg/l	0.50							11	9.1	1.6	1.1	[B] 0.51	0.71	1.4	1.9		2.9
Mercury (Total)	N	1455	µg/l	0.05							< 0.05	0.12	< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Nickel (Total)	N	1455	µg/l	0.50							52	4.1	1.3	2.3	[B] < 0.50	0.60	3.0	1.5		< 0.50
Lead (Total)	N	1455	µg/l	0.50							8.6	7.6	< 0.50	1.5	[B] < 0.50	3.2	0.92	1.4		2.5
Selenium (Total)	N	1455	µg/l	0.50							1.5	1.2	< 0.50	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50		1.1
Vanadium (Total)	N	1455	µg/l	0.50							1.8	1.7	8.7	1.1	[B] < 0.50	0.82	1.2	1.0		1.6
Zinc (Total)	N	1455	µg/l	2.5							10	14	12	6.9	[B] 43	13	7.1	13		33
Cadmium (Total)	N	1455	µg/l	0.08							0.16	0.10	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08		< 0.08
Dissolved Organic Carbon	U	1610	mg/l	2.0							52	49	9.7	11	8.4	6.2	9.5	10		10
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	1	10	50				< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10		74					< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10					5000		< 10	< 10	< 10	< 10	[B] < 10	< 10	< 10	< 10	< 10	< 10
Benzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
Toluene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
Ethylbenzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
Naphthalene	U	1800	µg/l	0.10		2	130				< 0.10	< 0.10	< 0.10	< 0.10	[B] 0.72	< 0.10	< 0.10	2.9	<0.5	< 0.10
Acenaphthylene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Acenaphthene	U	1800	µg/l	0.10							< 0.10	< 0.10	6.9	< 0.10	[B] < 0.10	< 0.10	< 0.10	8.3	<0.5	< 0.10
Fluorene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Phenanthrene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Anthracene	U	1800	µg/l	0.10		0.1	0.1				< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Fluoranthene	U	1800	µg/l	0.10		0.0063	0.12				< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Pyrene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Chrysene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	0.01	0.00017	0.27				< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	0.1						< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	0.1		0.0082				< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0							< 2.0	< 2.0	6.9	< 2.0	[B] < 2.0	< 2.0	< 2.0	11		< 2.0

Chemtest Job No.:	23-31202	23-36589	23-39412	23-42099	23-03893	23-07177	23-12799	23-15616	23-19393	23-23887	23-26483
Chemtest Sample ID.:	1703788	1725533	1737199	1748258	1585838	1600270	1625705	1637604	1653202	1674382	1684628
Client Sample ID.:	MSMW155S	MSMW155S	MSMW155S	MSMW155S	MSMW155D	MSMW155D	MSMW155D	MSMW155D	MSMW155D	MSMW155D	MSMW155D
Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:	14-Sep-2023	30-Oct-2023	23-Nov-2023	14-Dec-2023	01-Feb-2023	28-Feb-2023	04-Apr-2023	09-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023
Determinand											
pH	8.3	8.3	8.1	8.1	7.8	8.5	[B] 7.8	8.3	8.2	8.4	8.2
Chloride	23	24	23	23	24	25	[B] 27	26	24	22	
Ammoniacal Nitrogen	0.86	1.6	1.6	1.6	0.11	0.078	[B] 0.19	0.093	0.060	0.086	
Calcium (Dissolved)	80	80	80	81	37	37	[B] 37	36	35	37	
Calcium (Total)	65	83	83	81	37	36	[B] 36	40	38	35	
Total Hardness as CaCO3	240	260	270	280	180	180	[B] 170	170	170	170	
Arsenic (Dissolved)	2.2	2.0	1.4	0.99	6.1	< 0.20	[B] < 0.20	< 0.20	0.24	0.35	
Boron (Dissolved)	72	57	56	46	17	15	[B] 16	16	13	< 10	
Cadmium (Dissolved)	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	[B] < 0.11	< 0.11	< 0.11	< 0.11	
Chromium (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	11	2.0	[B] < 0.50	< 0.50	< 0.50	0.80	
Copper (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	2.6	1.2	[B] < 0.50	< 0.50	< 0.50	0.54	
Mercury (Dissolved)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05	
Nickel (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	1.2	1.8	[B] < 0.50	0.58	0.54	1.3	
Lead (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	0.71	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50	
Selenium (Dissolved)	< 0.50	< 0.50	0.61	< 0.50	< 0.50	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50	
Vanadium (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	5.7	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50	
Zinc (Dissolved)	< 2.5	3.6	3.3	3.6	21	4.5	[B] 7.8	10	< 2.5	2.6	
Arsenic (Total)	1.9	5.4	6.9	31	6.7	1.3	[B] 0.27	0.80	0.66	0.30	
Boron (Total)	81	59	64	61	15	18	[B] 13	33	30	14	
Chromium (Total)	< 0.50	< 0.50	53	3.7	11	3.3	[B] < 0.50	0.56	5.1	1.4	
Copper (Total)	< 0.50	0.89	12	3.6	2.6	1.0	[B] < 0.50	4.4	1.3	1.1	
Mercury (Total)	< 0.05	< 0.05	< 0.05	0.13	< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05	
Nickel (Total)	2.1	< 0.50	39	1.8	1.6	2.6	[B] < 0.50	1.8	2.2	1.7	
Lead (Total)	< 0.50	1.4	2.8	1.6	0.75	0.66	[B] < 0.50	2.3	< 0.50	< 0.50	
Selenium (Total)	< 0.50	< 0.50	0.66	0.77	< 0.50	< 0.50	[B] < 0.50	0.94	< 0.50	< 0.50	
Vanadium (Total)	< 0.50	0.94	1.1	0.88	6.6	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50	
Zinc (Total)	12	7.3	9.8	7.0	21	18	[B] 19	26	6.5	6.7	
Cadmium (Total)	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.09	< 0.08	< 0.08	
Dissolved Organic Carbon	8.7	8.0	8.6	58	< 2.0	4.6	< 2.0	< 2.0	2.6	3.0	
Aliphatic TPH >C5-C6	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	< 5.0	[C] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	< 5.0	[C] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	< 10	[C] < 10	< 10	< 10	< 10	< 10	[B] < 10	< 10	< 10	< 10	< 10
Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0
m & p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0
Naphthalene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Acenaphthylene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Acenaphthene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Fluorene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Phenanthrene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Anthracene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Fluoranthene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Pyrene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Benzo[a]anthracene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Chrysene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Benzo[b]fluoranthene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Benzo[k]fluoranthene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Benzo[a]pyrene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Indeno(1,2,3-c,d)Pyrene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Dibenz(a,h)Anthracene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Benzo[g,h,i]perylene	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Total Of 16 PAH's	< 2.0	[C] < 2.0	< 2.0	< 2.0	< 2.0	< 2.0	[B] < 2.0	< 2.0	< 2.0	< 2.0	

Chemtest Job No.:	23-28763	23-31202	23-39412	23-42099	23-03893	23-07177	23-12799	23-14884	23-26483	23-28763
Chemtest Sample ID.:	1694086	1703789	1737200	1748259	1585842	1600272	1625706	1634509	1684629	1694087
Client Sample ID.:	MSMW155D	MSMW155D	MSMW155D	MSMW155D	MSMW034S	MSMW034S	MSMW034S	MSMW34S	MSMW34S	MSMW34S
Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:	24-Aug-2023	14-Sep-2023	23-Nov-2023	14-Dec-2023	01-Feb-2023	28-Feb-2023	04-Apr-2023	02-May-2023	03-Aug-2023	24-Aug-2023
Determinand										
pH	8.0	8.2	7.9	8.4	6.9	7.6	[B] 7.5	7.7	8.2	7.6
Chloride	24	23	23	23	26	16	[B] 19	30		14
Ammoniacal Nitrogen	0.052	0.070	< 0.050	< 0.050	0.46	0.28	[B] 0.54	0.72		0.15
Calcium (Dissolved)	31	29	37	39	270	170	[B] 120	77		290
Calcium (Total)	38	29	40	38	270	190	[B] 130	79		320
Total Hardness as CaCO3	160	150	180	190	980	550	[B] 410	300		870
Arsenic (Dissolved)	0.56	0.48	0.57	0.24	9.5	0.66	[B] 0.61	1.4		1.0
Boron (Dissolved)	19	11	14	13	69	99	[B] 62	24		160
Cadmium (Dissolved)	< 0.11	< 0.11	< 0.11	< 0.11	0.12	< 0.11	[B] < 0.11	< 0.11		< 0.11
Chromium (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	7.0	< 0.50	[B] < 0.50	< 0.50		< 0.50
Copper (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	15	2.2	[B] 1.1	< 0.50		6.2
Mercury (Dissolved)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[B] < 0.05	< 0.05		< 0.05
Nickel (Dissolved)	< 0.50	< 0.50	0.77	0.91	6.7	2.4	[B] 2.0	1.8		3.3
Lead (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	16	< 0.50	[B] < 0.50	< 0.50		< 0.50
Selenium (Dissolved)	2.6	< 0.50	< 0.50	< 0.50	< 0.50	1.1	[B] < 0.50	0.60		2.8
Vanadium (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	12	< 0.50	[B] < 0.50	< 0.50		< 0.50
Zinc (Dissolved)	< 2.5	6.8	4.4	5.7	35	< 2.5	[B] 7.6	6.8		< 2.5
Arsenic (Total)	1.6	0.46	44	21	9.0	27	[B] 15	1.8		6.0
Boron (Total)	25	< 10	19	21	70	110	[B] 68	28		160
Chromium (Total)	0.66	< 0.50	48	3.4	6.5	17	[B] 11	3.6		3.7
Copper (Total)	1.4	< 0.50	6.6	1.4	14	110	[B] 64	1.3		28
Mercury (Total)	< 0.05	< 0.05	< 0.05	0.10	< 0.05	0.23	[B] 0.14	< 0.05		0.08
Nickel (Total)	0.74	< 0.50	31	2.8	6.4	18	[B] 12	2.2		6.7
Lead (Total)	0.73	< 0.50	0.97	1.2	17	160	[B] 120	0.96		31
Selenium (Total)	2.4	< 0.50	1.9	0.84	< 0.50	5.1	[B] 2.9	< 0.50		2.1
Vanadium (Total)	< 0.50	< 0.50	< 0.50	< 0.50	10	41	[B] 20	< 0.50		6.9
Zinc (Total)	12	9.9	5.9	7.0	35	180	[B] 140	27		69
Cadmium (Total)	< 0.08	< 0.08	< 0.08	< 0.08	0.13	0.92	0.59	< 0.08		0.22
Dissolved Organic Carbon	2.4	< 2.0	3.6	36	150	99	460	9.9		95
Aliphatic TPH >C5-C6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	< 0.10	< 0.10	< 0.10	< 0.10	270	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	56	< 0.10	[B] 190	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] 44	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	320	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	650	< 5.0	[B] 230	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	< 10	< 10	< 10	< 10	650	< 10	[B] 230	< 10	< 10	< 10
Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	<1.0	< 1.0
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	<1.0	< 1.0
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	<1.0	< 1.0
m & p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	<1.0	< 1.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	<1.0	< 1.0
Naphthalene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Acenaphthylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Acenaphthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Fluorene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Phenanthrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Benzo[a]anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Chrysene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Benzo[b]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Benzo[k]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Benzo[a]pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Indeno(1,2,3-c,d)Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Dibenz(a,h)Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Benzo[g,h,i]perylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	<0.5	< 0.10
Total Of 16 PAH's	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	[B] < 2.0	< 2.0		< 2.0

Coed Darcy Tip
Surface Water Laboratory Data 2023

Chemtest Job No.:											23-39412	23-42099	23-03893	23-07177	23-12799	23-14884	23-19393	23-23887	23-26483
Chemtest Sample ID.:											1737206	1748256	1585843	1600273	1625707	1634510	1653208	1674383	1684630
Client Sample ID.:											MSMW034S	MSMW034S	MSMW034D	MSMW034D	MSMW034D	MSMW34D	MSMW34D	MSMW34D	MSMW34D
Sample Type:											WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:											23-Nov-2023	14-Dec-2023	01-Feb-2023	28-Feb-2023	04-Apr-2023	02-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023
					Screening Criteria														
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	**UK DWS**	**EQS Freshwater (AA)**	**EQS Freshwater (MAC)**	**EQS 90 percentile**	**Permit Emission Limit**	**MBAT PNEC**									
pH	U	1010		N/A							5.7	6.0	7.2	8.0	[B] 7.5	7.5	8.1	8.3	8.3
Chloride	U	1220	mg/l	1.0	250		300				41	30	30	30	[B] 33	15	31	19	
Ammoniacal Nitrogen	U	1220	mg/l	0.050				0.3			0.78	0.65	0.12	0.086	[B] 0.12	1.5	< 0.050	5.9	
Calcium (Dissolved)	U	1455	mg/l	2.00							230	220	81	70	[B] 79	150	80	86	
Calcium (Total)	N	1455	mg/l	5.0							250	220	86	75	[B] 76	170	84	74	
Total Hardness as CaCO3	U	1270	mg/l	15							1300	1200	310	270	[B] 300	450	310	260	
Arsenic (Dissolved)	U	1455	µg/l	0.20	10	50					0.76	0.46	4.7	0.27	[B] 1.2	0.95	0.85	0.73	
Boron (Dissolved)	U	1455	µg/l	10.0	1000						71	60	26	27	[B] 24	140	29	20	
Cadmium (Dissolved)	U	1455	µg/l	0.11	5	0.08	0.45				< 0.11	< 0.11	< 0.11	< 0.11	[B] < 0.11	< 0.11	< 0.11	< 0.11	
Chromium (Dissolved)	U	1455	µg/l	0.50	50						< 0.50	< 0.50	5.2	< 0.50	[B] < 0.50	< 0.50	< 0.50	1.2	
Copper (Dissolved)	U	1455	µg/l	0.50	2000	1				3.23	< 0.50	< 0.50	3.1	0.52	[B] 0.50	0.97	0.54	0.79	
Mercury (Dissolved)	U	1455	µg/l	0.05	1		0.07				< 0.05	< 0.05	< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05	
Nickel (Dissolved)	U	1455	µg/l	0.50	20	4	34			26.05	1.9	1.4	2.4	1.4	[B] 1.8	2.1	2.4	< 0.50	
Lead (Dissolved)	U	1455	µg/l	0.50	10	1.2	14				< 0.50	< 0.50	1.8	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50	
Selenium (Dissolved)	U	1455	µg/l	0.50	10						1.3	1.3	< 0.50	< 0.50	[B] < 0.50	0.86	< 0.50	0.65	
Vanadium (Dissolved)	U	1455	µg/l	0.50		20					< 0.50	< 0.50	4.0	< 0.50	[B] < 0.50	0.51	< 0.50	< 0.50	
Zinc (Dissolved)	U	1455	µg/l	2.5		10.9				89.22	8.6	9.0	12	5.6	[B] 6.7	2.8	4.2	< 2.5	
Arsenic (Total)	N	1455	µg/l	0.20							29	56	5.0	0.70	[B] 1.6	9.7	8.9	0.90	
Boron (Total)	N	1455	µg/l	10.0							86	79	26	28	[B] 22	150	48	28	
Chromium (Total)	N	1455	µg/l	0.50		4.7					46	7.9	5.6	2.8	[B] < 0.50	9.1	10	1.4	
Copper (Total)	N	1455	µg/l	0.50							29	21	3.4	2.0	[B] 12	25	27	1.6	
Mercury (Total)	N	1455	µg/l	0.05							0.07	0.16	< 0.05	< 0.05	[B] < 0.05	< 0.05	0.09	< 0.05	
Nickel (Total)	N	1455	µg/l	0.50							28	6.1	2.6	4.6	[B] 8.2	5.5	27	1.5	
Lead (Total)	N	1455	µg/l	0.50							31	33	1.8	1.1	[B] 7.2	48	23	< 0.50	
Selenium (Total)	N	1455	µg/l	0.50							4.7	11	1.2	< 0.50	[B] < 0.50	1.2	10	0.71	
Vanadium (Total)	N	1455	µg/l	0.50							9.6	14	4.2	< 0.50	[B] < 0.50	10	5.9	< 0.50	
Zinc (Total)	N	1455	µg/l	2.5							42	37	12	16	[B] 22	57	160	4.7	
Cadmium (Total)	N	1455	µg/l	0.08							0.34	0.16	< 0.08	< 0.08	< 0.08	0.24	0.35	< 0.08	
Dissolved Organic Carbon	U	1610	mg/l	2.0							320	290	15	24	16	11	13	15	
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	[C] 20	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	[C] 21	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	1	10	50				< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10		74					< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10							91	[C] 990	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	[C] 580	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	[C] 300	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0							91	[C] 1900	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10					5000		91	[C] 1900	< 10	< 10	[B] < 10	< 10	< 10	< 10	< 10
Benzene	U	1760	µg/l	1.0							4.6	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0
Toluene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0
Ethylbenzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0
m & p-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0
o-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0
Naphthalene	U	1800	µg/l	0.10		2	130				< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Acenaphthylene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Acenaphthene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Fluorene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Phenanthrene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Anthracene	U	1800	µg/l	0.10		0.1	0.1				< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Fluoranthene	U	1800	µg/l	0.10		0.0063	0.12				< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Pyrene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Benzo[a]anthracene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Chrysene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Benzo[b]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Benzo[k]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Benzo[a]pyrene	U	1800	µg/l	0.10	0.01	0.00017	0.27				< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	0.1						< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	0.1		0.0082				< 0.10	[C] < 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5
Total Of 16 PAH's	U	1800	µg/l	2.0							< 2.0	[C] < 2.0	< 2.0	< 2.0	[B] < 2.0	< 2.0	< 2.0	< 2.0	

Chemtest Job No.:	23-28763	23-31202	23-39412	23-42099	23-03893	23-07177	23-12795	23-14884	23-36589	23-39412	23-42099
Chemtest Sample ID.:	1694088	1703787	1737207	1748257	1585849	1600274	1625675	1634503	1725535	1737201	1748261
Client Sample ID.:	MSMW34D	MSMW34D	MSMW034D	MSMW034D	CH20	CBH20	CBH20	CBH20	CBH20	CBH20	CBH20
Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:	24-Aug-2023	14-Sep-2023	23-Nov-2023	14-Dec-2023	01-Feb-2023	28-Feb-2023	11-Apr-2023	02-May-2023	30-Oct-2023	23-Nov-2023	14-Dec-2023
Determinand											
pH	8.0	8.1	7.6	6.8	7.4	7.5	7.5	7.5	7.6	8.0	8.4
Chloride	30	29	30	29	27	32	30	70	12	20	18
Ammoniacal Nitrogen	0.16	0.21	0.093	< 0.050	1.6	1.4	0.58	1.1	1.1	0.93	0.86
Calcium (Dissolved)	70	67	76	81	63	58	67	82	62	61	66
Calcium (Total)	85	64	82	83	66	64	< 5.0	79	63	65	65
Total Hardness as CaCO3	280	270	300	320	190	180	210	270	190	180	200
Arsenic (Dissolved)	0.97	0.48	1.5	1.1	4.5	0.52	0.56	0.89	0.38	0.69	0.22
Boron (Dissolved)	26	22	24	19	71	100	110	350	43	56	43
Cadmium (Dissolved)	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	2.4	< 0.50	< 0.50	0.62	< 0.50	< 0.50	< 0.50
Copper (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	3.1	< 0.50	1.2	< 0.50	< 0.50	0.56	< 0.50
Mercury (Dissolved)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	0.97	0.81	0.58	1.2	6.5	4.5	1.7	1.2	1.4	5.1	2.1
Lead (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	0.66	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	1.1	< 0.50	< 0.50	< 0.50	< 0.50	0.56	< 0.50	< 0.50	< 0.50	0.60	< 0.50
Vanadium (Dissolved)	< 0.50	< 0.50	< 0.50	< 0.50	5.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Zinc (Dissolved)	2.8	2.9	4.8	5.5	38	7.5	28	9.2	4.1	9.9	8.1
Arsenic (Total)	2.1	0.65	14	37	5.8	1.4	4.5	6.5	5.6	70	31
Boron (Total)	31	31	27	30	73	110	130	330	46	65	54
Chromium (Total)	0.93	< 0.50	40	4.8	2.7	2.8	< 0.50	9.3	0.74	60	5.4
Copper (Total)	3.4	< 0.50	13	9.8	3.3	5.1	8.5	36	20	190	100
Mercury (Total)	< 0.05	< 0.05	< 0.05	0.12	< 0.05	< 0.05	< 0.05	0.07	< 0.05	1.2	0.35
Nickel (Total)	< 0.50	1.7	19	10	6.9	6.7	2.6	4.3	2.2	72	11
Lead (Total)	4.1	< 0.50	3.3	13	0.67	1.5	< 0.50	14	5.5	160	42
Selenium (Total)	0.75	< 0.50	0.82	1.7	< 0.50	< 0.50	< 0.50	0.87	< 0.50	2.4	1.3
Vanadium (Total)	0.75	< 0.50	< 0.50	1.9	9.7	0.53	< 0.50	4.0	1.4	19	4.8
Zinc (Total)	23	8.6	19	77	39	31	54	81	32	430	370
Cadmium (Total)	< 0.08	< 0.08	< 0.08	0.11	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.80	0.14
Dissolved Organic Carbon	12	7.9	19	50	8.9	16	13	10	8.3	9.2	48
Aliphatic TPH >C5-C6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

Chemtest Job No.:	23-03893	23-07177	23-12799	23-14884	23-19393	23-23887	23-26483	23-28763	23-31202	23-39412	23-42099
Chemtest Sample ID.:	1585844	1600275	1625710	1634504	1653203	1674384	1684631	1694091	1703784	1737202	1748262
Client Sample ID.:	CBH23	CBH23	CBH23	CBH23	CBH23	CBH23	CBH23	CBH23	CBH23	CBH23	CBH23
Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:	01-Feb-2023	28-Feb-2023	04-Apr-2023	02-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023	14-Sep-2023	23-Nov-2023	14-Dec-2023
Determinand											
pH	7.2	7.6	[B] 7.5	7.2	7.9	8.2	8.3	7.8	7.7	8.1	8.4
Chloride	27	27	[B] 30	19	19	25		27	23	24	23
Ammoniacal Nitrogen	4.4	1.9	[B] 0.26	3.4	4.8	6.8		1.6	4.8	0.16	< 0.050
Calcium (Dissolved)	100	110	[B] 95	100	110	120		120	110	93	95
Calcium (Total)	110	110	[B] 91	110	120	130		140	93	99	94
Total Hardness as CaCO3	300	330	[B] 270	300	340	370		370	340	270	270
Arsenic (Dissolved)	6.6	1.0	[B] 0.42	1.5	1.1	7.0		0.82	1.0	0.73	0.40
Boron (Dissolved)	54	63	[B] 53	60	50	77		82	56	65	41
Cadmium (Dissolved)	< 0.11	< 0.11	[B] < 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)	3.0	< 0.50	[B] < 0.50	< 0.50	< 0.50	0.94		< 0.50	< 0.50	< 0.50	< 0.50
Copper (Dissolved)	6.8	1.9	[B] 7.9	< 0.50	< 0.50	0.50		2.2	1.5	9.4	11
Mercury (Dissolved)	< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	1.8	1.7	[B] 1.7	0.69	1.4	0.97		1.5	< 0.50	2.0	1.3
Lead (Dissolved)	4.8	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	< 0.50	0.68	[B] < 0.50	< 0.50	< 0.50	1.2		0.76	0.65	1.8	< 0.50
Vanadium (Dissolved)	4.8	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	1.1	< 0.50
Zinc (Dissolved)	18	7.7	[B] 23	7.5	< 2.5	5.8		2.9	< 2.5	12	11
Arsenic (Total)	6.8	6.0	[B] 7.9	9.6	47	43		9.6	1.9	33	17
Boron (Total)	56	54	[B] 58	62	72	70		91	65	75	49
Chromium (Total)	3.7	2.8	[B] 3.6	2.6	13	13		1.1	< 0.50	57	5.2
Copper (Total)	7.4	7.9	[B] 53	1.2	180	290		15	2.3	60	20
Mercury (Total)	< 0.05	< 0.05	[B] 0.22	< 0.05	0.57	0.91		< 0.05	< 0.05	0.18	0.14
Nickel (Total)	2.3	4.1	[B] 7.8	1.4	16	22		3.4	0.63	44	4.0
Lead (Total)	4.8	6.7	[B] 53	2.5	150	210		8.2	< 0.50	14	12
Selenium (Total)	0.72	1.4	[B] 0.58	0.67	1.8	2.0		0.72	1.2	1.8	0.79
Vanadium (Total)	4.7	1.2	[B] 8.1	1.4	18	24		3.1	< 0.50	3.3	1.5
Zinc (Total)	19	32	[B] 120	31	350	490		34	< 2.5	41	30
Cadmium (Total)	< 0.08	0.10	0.23	< 0.08	2.4	3.9		0.15	< 0.08	0.20	< 0.08
Dissolved Organic Carbon	16	21	13	2.3	22	29		30	20	13	53
Aliphatic TPH >C5-C6	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	590	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	590	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	1300	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	1300	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	< 10	< 10	[B] < 10	< 10	< 10	1900	< 10	< 10	< 10	< 10	< 10
Benzene	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	< 1.0	< 1.0	[B] < 1.0	< 1.0	4.3	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	< 2.0	< 2.0	[B] < 2.0	< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	< 2.0	< 2.0

Coed Darcy Tip
Surface Water Laboratory Data 2023

	Chemtest Job No.:										23-03893	23-07177	23-12795	23-14884	23-03893	23-07177	23-12799	23-14884	23-19393	23-23887	23-26483	23-28763	23-39412	23-42099	23-03893	23-07177	23-12795	23-14884	23-19393	23-23887	23-26483	23-28763	23-31202	23-36589	23-39412	23-42099	23-03893	23-07177	23-12799	23-14884	23-19393	23-23887
	Chemtest Sample ID.:										1585846	1600276	1625676	1634505	1585848	1600277	1625711	1634506	1653205	1674387	1684633	1694090	1737203	1748260	1585845	1600278	1625677	1634507	1653204	1674385	1684632	1694092	1703785	1725536	1737204	1748263	1585847	1600279	1625712	1634508	1653206	1674386
	Client Sample ID.:										CBH29	CBH29	CBH29	CBH29	CBH46	CBH46	CBH46	CBH46	CBH46	CBH46	CBH46	CBH46	CBH46	CBH46	CBH57	CBH57	CBH57	CBH57	CBH57	CBH57	CBH57	CBH57	CBH57	CBH57	CBH57	CBH57	CBH64	CBH64	CBH64	CBH64	CBH64	CBH64
	Sample Type:										WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
	Date Sampled:										01-Feb-2023	28-Feb-2023	11-Apr-2023	02-May-2023	01-Feb-2023	28-Feb-2023	04-Apr-2023	02-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023	23-Nov-2023	14-Dec-2023	01-Feb-2023	28-Feb-2023	11-Apr-2023	02-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023	14-Sep-2023	30-Oct-2023	23-Nov-2023	14-Dec-2023	01-Feb-2023	28-Feb-2023	04-Apr-2023	02-May-2023	06-Jun-2023	11-Jul-2023
					Screening Criteria																																					
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	**UK DWS**	**EQS Freshwater (AA)**	**EQS Freshwater (MAC)**	**EQS 90 percentile**	**Permit Emission Limit**	**MBAT PNEC**																																
pH	U	1010		N/A							7.2	7.3	7.2	7.2	7.6	7.7	[B] 7.5	7.8	7.9	8.0	8.2	7.7	8.0	8.2	7.3	7.5	7.5	7.2	7.9	8.4	8.2	7.7	7.8	8.1	8.1	8.5	7.5	8.2	[B] 7.6	7.6	8.0	8.1
Chloride	U	1220	mg/l	1.0	250		300				18	20	17	17	56	48	[B] 61	42	110	160		81	60	34	17	20	9.2	13	15	20		8.1	9.1	6.6	12	12	33	33	[B] 27	22	23	26
Ammoniacal Nitrogen	U	1220	mg/l	0.050				0.3			5.3	2.8	1.8	2.8	4.2	3.6	[B] 1.9	3.3	10	19		8.6	3.1	1.1	1.2	1.2	0.39	1.0	2.2	4.7		0.86	2.4	0.078	0.13	< 0.050	0.24	0.30	[B] 0.16	0.36	1.0	3.0
Calcium (Dissolved)	U	1455	mg/l	2.00							160	140	150	160	260	200	[B] 170	200	160	< 2.0		160	200	180	65	68	59	76	79	74		67	77	54	59	50	510	430	[B] 440	380	340	290
Calcium (Total)	N	1455	mg/l	5.0							160	220	< 5.0	180	290	200	[B] 160	210	180	160		170	230	190	66	74	58	79	87	74		81	75	56	64	49	520	440	[B] 440	410	370	290
Total Hardness as CaCO3	U	1270	mg/l	15							480	420	440	480	810	620	[B] 540	640	560	< 15		530	620	550	200	190	160	210	220	210		190	220	150	160	140	1500	1300	[B] 1300	1100	1000	860
Arsenic (Dissolved)	U	1455	µg/l	0.20	10	50					41	1.5	0.62	1.8	20	11	[B] 3.2	15	5.0	< 0.20		4.9	6.8	2.3	4.4	0.66	0.55	1.8	0.83	3.7		1.2	0.95	1.0	1.1	0.47	14	3.5	[B] 3.0	6.0	3.5	3.3
Boron (Dissolved)	U	1455	µg/l	10.0	1000						66	71	55	69	180	290	[B] 210	270	600	< 10		430	220	120	72	31	24	31	23	24		37	29	18	23	17	230	250	[B] 200	220	190	180
Cadmium (Dissolved)	U	1455	µg/l	0.11	5	0.08	0.45				< 0.11	< 0.11	< 0.11	< 0.11	0.13	< 0.11	[B] < 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	0.24	0.15	[B] 0.20	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	50						4.3	< 0.50	< 0.50	< 0.50	14	4.9	[B] 0.79	1.3	1.8	1.3		0.88	1.2	0.76	3.9	< 0.50	< 0.50	0.60	< 0.50	0.98		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	7.8	0.67	[B] 0.67	0.75	0.69	1.3
Copper (Dissolved)	U	1455	µg/l	0.50	2000	1				3.23	6.6	< 0.50	< 0.50	< 0.50	25	1.5	[B] 2.8	< 0.50	< 0.50	0.88		1.1	1.3	9.8	6.2	2.7	14	2.8	1.4	0.66		4.4	< 0.50	9.9	11	13	31	30	[B] 28	10	8.0	1.5
Mercury (Dissolved)	U	1455	µg/l	0.05	1		0.07				0.09	< 0.05	< 0.05	< 0.05	0.08	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	µg/l	0.50	20	4	34			26.05	2.8	1.8	2.2	1.9	8.0	4.7	[B] 7.8	4.3	10	0.77		7.1	9.0	6.6	7.3	1.4	2.0	2.9	1.4	1.1		1.7	0.69	1.4	1.4	1.4	16	16	[B] 12	13	10	5.8
Lead (Dissolved)	U	1455	µg/l	0.50	10	1.2	14				4.3	< 0.50	< 0.50	< 0.50	11	< 0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	0.94	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	25	< 0.50	[B] 0.70	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	U	1455	µg/l	0.50	10						< 0.50	0.82	< 0.50	< 0.50	< 0.50	1.4	[B] < 0.50	< 0.50	1.3	< 0.50		1.5	2.1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		0.51	0.62	< 0.50	0.61	< 0.50	1.3	0.97	[B] 0.60	< 0.50	0.85	1.4
Vanadium (Dissolved)	U	1455	µg/l	0.50		20					5.6	< 0.50	< 0.50	< 0.50	26	16	[B] 8.4	14	22	< 0.50		17	13	4.7	4.7	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		0.64	< 0.50	< 0.50	0.83	< 0.50	7.4	0.56	[B] 0.87	< 0.50	0.58	0.56
Zinc (Dissolved)	U	1455	µg/l	2.5		10.9				89.22	25	< 2.5	20	7.6	39	3.9	[B] 14	5.2	< 2.5	< 2.5		< 2.5	5.3	9.8	110	3.2	12	8.8	< 2.5	2.5		4.1	< 2.5	7.3	12	11	170	53	[B] 68	79	13	16
Arsenic (Total)	N	1455	µg/l	0.20							42	1600	85	10	21	14	[B] 3.4	15	10	4.9		7.7	35	28	4.5	2.5	6.3	9.3	25	3.6		8.9	1.3	3.2	33	17	14	15	[B] 4.2	20	92	20
Boron (Total)	N	1455	µg/l	10.0							67	220	62	73	180	290	[B] 200	270	600	680		450	250	150	74	35	28	33	56	27		48	34	27	58	24	240	250	[B] 200	230	220	170
Chromium (Total)	N	1455	µg/l	0.50		4.7					4.1	79	< 0.50	2.2	16	13	[B] 1.6	8.9	13	6.0		7.3	86	4.6	4.3	5.0	6.0	8.0	20	1.6		6.0	< 0.50	2.4	58	4.9	7.7	3.9	[B] 1.1	5.0	8.4	2.1
Copper (Total)	N	1455	µg/l	0.50							6.5	700	< 0.50	12	28	22	[B] 6.7	9.1	45	4.6		45	40	15	6.6	9.5	110	39	320	3.6		95	0.66	54	240	34	30	55	[B] 33	29	57	3.8
Mercury (Total)	N	1455	µg/l	0.05							0.09	11	< 0.05	0.15	0.08	0.14	[B] < 0.05	< 0.05	0.13	< 0.05		0.14	0.15	0.11	< 0.05	0.08	0.55	0.13	1.3	< 0.05		0.37	< 0.05	0.14	1.1	0.21	< 0.05	0.06	[B] < 0.05	< 0.05	0.09	< 0.05
Nickel (Total)	N	1455	µg/l	0.50							3.1	180	8.1	4.7	8.0	8.2	[B] 7.6	5.0	17	13		6.5	39	9.1	7.9	4.3	12	5.0	28	2.1		4.0	0.76	4.6	38	4.9	16	19	[B] 13	15	19	6.0
Lead (Total)	N	1455	µg/l	0.50							4.3	470	< 0.50	8.9	11	6.1	[B] 1.8	3.4	21	3.9		20	19	1.7	0.97	42	35	13	97	1.8		31	< 0.50	12	76	7.3	25	52	[B] 10	39	150	2.9
Selenium (Total)	N	1455	µg/l	0.50							< 0.50	11	< 0.50	< 0.50	1.5	0.93	[B] < 0.50	0.58	1.3	0.67		1.1	1.9	1.5	< 0.50	0.77	0.80	< 0.50	2.4	< 0.50		0.78	0.76	< 0.50	3.2	0.78	1.9	1.0	[B] < 0.50	0.72	0.86	1.3
Vanadium (Total)	N	1455	µg/l	0.50							4.5	200	< 0.50	2.8	35	24	[B] 11	16	39	27		29	28	6.8	4.3	2.4	9.2	4.4	23	0.56		9.0	< 0.50	4.0	17	2.5	6.8	2.7	[B] 1.1	2.2	9.4	2.1
Zinc (Total)	N	1455	µg/l	2.5							25	1800	91	52	42	29	[B] 24	32	77	14		74	66	14	110	23	110	54	230	6.8		100	7.6	43	170	24	170	340	[B] 130	150	240	16
Cadmium (Total)	N	1455	µg/l	0.08							< 0.08	10	< 0.08	0.18	0.13	0.10	< 0.08	< 0.08	0.23	< 0.08		0.26	0.16	< 0.08	< 0.08	< 0.08	0.49	0.13	1.3	< 0.08		0.48	< 0.08	0.18	1.4	0.11	0.23	0.85	0.42	0.20	0.52	< 0.08
Dissolved Organic Carbon	U	1610	mg/l	2.0							25	31	17	2.2	66	78	53	9.7	120	200		100	73	99	7.5	11	6.2	9.9	11	12		11	10	9.2	8.8	30	55	85	67	10	68	51
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	190	< 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	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	190	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[C] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	1	10	50				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10		74					< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	80	< 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	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	690	< 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	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	460	< 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	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 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	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	1200	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[C] < 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[B] < 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10					5000		< 10	< 10	< 10	< 10	< 10	< 10	[B] < 10	< 10	< 10	1400	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	[C] < 10	< 10	< 10	< 10	< 10	[B] < 10	< 10	< 10	< 10
Benzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	380	260	[B] < 1.0	240	49	410	<1.0	160	260	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	2.0	< 1.0	[B] < 1.0	< 1.0	1.6	4.4	<1.0	1.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	1.9	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	1.6	1.8	<1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	U	1800	µg/l	0.10		2	130				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	5.0	[B] < 0.10	< 0.10	< 0.10	6.2	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	1.2	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	43	[B] < 0.10	< 0.10	< 0.10	30	<0.5	< 0.10	< 0.10	4.2	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	16	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	29	[B] < 0.10	< 0.10	< 0.10	20	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	12	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	11	[B] < 0.10	< 0.10	< 0.10	6.2	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	1800	µg/l	0.10		0.1	0.1				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	1.9	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10		0.0063	0.12				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	0.01	0.00017	0.27				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	0.1						< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	0.1		0.0082				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0							< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	88	[B] < 2.0	< 2.0	< 2.0	66		< 2.0	< 2.0	4.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	[C] < 2.0	< 2.0	< 2.0	28	< 2.0	[B] < 2.0	< 2.0	< 2.0	< 2.0

Coed Darcy Tip
Surface Water Laboratory Data 2023

	Chemtest Job No.:									23-26483	23-28763	23-31202	23-36589	23-39412	23-42099				
	Chemtest Sample ID.:									1684634	1694089	1703786	1725537	1737205	1748264				
	Client Sample ID.:									CBH64	CBH64	CBH64	CBH64	CBH64	CBH64				
	Sample Type:									WATER	WATER	WATER	WATER	WATER	WATER				
	Date Sampled:									03-Aug-2023	24-Aug-2023	14-Sep-2023	30-Oct-2023	23-Nov-2023	14-Dec-2023				
					Screening Criteria														
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	**UK DWS**	**EQS Freshwater (AA)**	**EQS Freshwater (MAC)**	**EQS 90 percentile**	**Permit Emission Limit**	**MBAT PNEC**									
pH	U	1010		N/A							8.0	7.7	7.7	7.9	8.0	7.7	5.7	8.6
Chloride	U	1220	mg/l	1.0	250		300					17	19	30	31	29	6.6	160.0
Ammoniacal Nitrogen	U	1220	mg/l	0.050				0.3				1.9	1.5	0.19	0.24	0.16	0.1	19.0
Calcium (Dissolved)	U	1455	mg/l	2.00								220	260	360	530	470	29.0	530.0
Calcium (Total)	N	1455	mg/l	5.0								240	200	370	540	470	29.0	540.0
Total Hardness as CaCO3	U	1270	mg/l	15								650	750	1000	1500	1300	110.0	1500.0
Arsenic (Dissolved)	U	1455	µg/l	0.20	10	50						3.1	5.5	1.7	4.3	2.9	0.2	41.0
Boron (Dissolved)	U	1455	µg/l	10.0	1000							200	180	130	230	200	11.0	600.0
Cadmium (Dissolved)	U	1455	µg/l	0.11	5	0.08	0.45					< 0.11	< 0.11	< 0.11	0.22	0.14	0.12	0.51
Chromium (Dissolved)	U	1455	µg/l	0.50	50							< 0.50	2.9	0.53	0.84	1.1	0.51	14.0
Copper (Dissolved)	U	1455	µg/l	0.50	2000	1				3.23		2.9	1.2	15	27	27	0.50	31.0
Mercury (Dissolved)	U	1455	µg/l	0.05	1		0.07					< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.09
Nickel (Dissolved)	U	1455	µg/l	0.50	20	4	34			26.05		8.2	6.9	7.8	14	9.6	0.51	21.0
Lead (Dissolved)	U	1455	µg/l	0.50	10	1.2	14					1.2	< 0.50	< 0.50	0.80	1.2	0.56	25.0
Selenium (Dissolved)	U	1455	µg/l	0.50	10							1.4	0.72	< 0.50	1.4	0.62	0.51	2.80
Vanadium (Dissolved)	U	1455	µg/l	0.50		20						0.74	< 0.50	< 0.50	1.4	0.98	0.51	26.0
Zinc (Dissolved)	U	1455	µg/l	2.5		10.9				89.22		7.2	15	34	75	60	2.50	220.0
Arsenic (Total)	N	1455	µg/l	0.20								22	5.4	3.6	40	18	0.28	1600.0
Boron (Total)	N	1455	µg/l	10.0								220	170	130	250	260	14.0	680.0
Chromium (Total)	N	1455	µg/l	0.50		4.7						3.3	4.3	1.2	50	5.3	0.5	86.0
Copper (Total)	N	1455	µg/l	0.50								76	8.2	18	75	36	0.5	700.0
Mercury (Total)	N	1455	µg/l	0.05								0.16	< 0.05	< 0.05	0.09	0.12	0.1	11.0
Nickel (Total)	N	1455	µg/l	0.50								10	6.9	7.4	48	13	0.6	180.0
Lead (Total)	N	1455	µg/l	0.50								200	6.4	3.6	92	6.7	0.5	470.0
Selenium (Total)	N	1455	µg/l	0.50								0.99	0.71	< 0.50	1.9	1.6	0.5	11.0
Vanadium (Total)	N	1455	µg/l	0.50								6.6	1.3	1.1	5.2	1.5	0.5	200.0
Zinc (Total)	N	1455	µg/l	2.5								390	13	45	200	70	3.3	17000.0
Cadmium (Total)	N	1455	µg/l	0.08								1.1	0.08	< 0.08	0.97	0.23	0.1	10.0
Dissolved Organic Carbon	U	1610	mg/l	2.0								49	45	65	96	75	2.2	460.0
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	190.0	190.0
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	23.0	23.0
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	600.0	1100.0
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	300.0	1200.0
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	< 5.0	[C] < 5.0	< 5.0	< 5.0	190.0	2300.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	1	10	50				< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Aromatic TPH >C7-C8	N	1675	µg/l	0.10		74					< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	270.0	270.0
Aromatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	56.0	170.0
Aromatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	140.0	690.0
Aromatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	180.0	460.0
Aromatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	350.0	450.0
Aromatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	150.0	1300.0
Aromatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	140.0	320.0
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	< 5.0	[C] < 5.0	< 5.0	< 5.0	91.0	1600.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10					5000		< 10	< 10	< 10	[C] < 10	< 10	< 10	91.0	3900.0
Benzene	U	1760	µg/l	1.0							<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.6	410.0
Toluene	U	1760	µg/l	1.0							<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	12.0
Ethylbenzene	U	1760	µg/l	1.0							<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.9	13.0
m & p-Xylene	U	1760	µg/l	1.0							<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	29.0	29.0
o-Xylene	U	1760	µg/l	1.0							<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	36.0
Naphthalene	U	1800	µg/l	0.10		2	130				<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	2.9	6.2
Acenaphthylene	U	1800	µg/l	0.10							<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	1.2	1.2
Acenaphthene	U	1800	µg/l	0.10							<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	1.8	43.0
Fluorene	U	1800	µg/l	0.10							<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	2.3	29.0
Phenanthrene	U	1800	µg/l	0.10							<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	6.2	11.0
Anthracene	U	1800	µg/l	0.10		0.1	0.1				<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	1.9	1.9
Fluoranthene	U	1800	µg/l	0.10		0.0063	0.12				<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Pyrene	U	1800	µg/l	0.10							<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Benzo[a]anthracene	U	1800	µg/l	0.10							<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Chrysene	U	1800	µg/l	0.10							<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Benzo[b]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Benzo[k]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Benzo[a]pyrene	U	1800	µg/l	0.10	0.01	0.00017	0.27				<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	0.1						<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10							<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	0.1		0.0082				<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10	0.0	0.0
Total Of 16 PAH's	U	1800	µg/l	2.0								< 2.0	< 2.0	[C] < 2.0	< 2.0	< 2.0	4.1	88.0

Coed Darcy Tip

Surface Water Laboratory Data 2023

Determinand	Accred.	SOP	Units	LOD	UK DWS	EQS Freshwater (AA)	EQS Freshwater (MAC)	EQS 90 percentile	Permit Emission Limit	MBAT PNEC											
	Chemtest Job No.:										23-03893	23-07177	23-12795	23-15616	23-19393	23-26483	23-28763	23-31202	23-36589	23-39412	23-41435
	Chemtest Sample ID.:										1585831	1600261	1625669	1637597	1653192	1684618	1694077	1703778	1725528	1737190	1745754
	Client Sample ID.:										SW1	SW1	SW1	SW1	SW1	SW1	SW1	SW1	SW1	SW1	SW1
	Sample Type:										WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
	Date Sampled:										01-Feb-2023	28-Feb-2023	11-Apr-2023	09-May-2023	06-Jun-2023	03-Aug-2023	24-Aug-2023	14-Sep-2023	30-Oct-2023	23-Nov-2023	12-Dec-2023
					Screening Criteria																
pH	U	1010		N/A							7.4	7.9	7.5	8.4	7.8	7.9	7.6	8.1	7.7	8.0	8.1
Chloride	U	1220	mg/l	1.0	250		300				31	29	40	15	28		30	28	24	29	22
Ammoniacal Nitrogen	U	1220	mg/l	0.050				0.3			3.8	3.9	2.1	0.56	1.8		0.86	0.21	2.3	4.1	0.54
Calcium (Dissolved)	U	1455	mg/l	2.00							230	100	200	89	200		160	140	110	220	75
Calcium (Total)	N	1455	mg/l	5.0							230	160	200	100	460		170	96	120	260	77
Total Hardness as CaCO3	U	1270	mg/l	15							710	410	640	300	650		520	480	370	700	240
Arsenic (Dissolved)	U	1455	µg/l	0.20	10	50					14	0.76	0.67	0.52	0.92		0.89	0.95	0.74	0.76	< 0.20
Boron (Dissolved)	U	1455	µg/l	10.0	1000						170	150	160	140	160		170	160	92	180	71
Cadmium (Dissolved)	U	1455	µg/l	0.11	5	0.08	0.45				0.17	< 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	50						13	2.1	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Copper (Dissolved)	U	1455	µg/l	0.50	2000	1				3.23	10	1.0	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	0.60
Mercury (Dissolved)	U	1455	µg/l	0.05	1		0.07				0.07	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	µg/l	0.50	20	4	34			26.05	3.7	1.8	< 0.50	< 0.50	0.95		< 0.50	< 0.50	0.63	0.60	< 0.50
Lead (Dissolved)	U	1455	µg/l	0.50	10	1.2	14				19	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	U	1455	µg/l	0.50	10						< 0.50	1.6	< 0.50	< 0.50	< 0.50		< 0.50	1.0	< 0.50	0.63	< 0.50
Vanadium (Dissolved)	U	1455	µg/l	0.50		20					23	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Zinc (Dissolved)	U	1455	µg/l	2.5		10.9				89.22	220	4.3	31	8.8	< 2.5		12	< 2.5	31	5.8	19
Arsenic (Total)	N	1455	µg/l	0.20							14	2.8	0.95	0.72	87		12	1.9	1.4	1.9	1.9
Boron (Total)	N	1455	µg/l	10.0							170	140	170	140	230		150	160	92	200	72
Chromium (Total)	N	1455	µg/l	0.50		4.7					13	3.2	0.51	1.3	18		4.9	< 0.50	0.67	43	2.5
Copper (Total)	N	1455	µg/l	0.50							10	3.4	1.5	1.6	83		20	< 0.50	1.8	< 0.50	5.5
Mercury (Total)	N	1455	µg/l	0.05							0.07	< 0.05	< 0.05	< 0.05	< 0.05		0.08	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Total)	N	1455	µg/l	0.50							3.8	3.6	0.60	0.84	29		< 0.50	< 0.50	0.69	31	7.8
Lead (Total)	N	1455	µg/l	0.50							20	7.3	1.8	2.4	270		31	< 0.50	1.1	1.1	9.2
Selenium (Total)	N	1455	µg/l	0.50							< 0.50	< 0.50	< 0.50	0.86	6.7		0.77	5.9	< 0.50	0.93	0.60
Vanadium (Total)	N	1455	µg/l	0.50							24	2.9	0.77	0.65	67		7.3	0.50	1.0	2.9	2.4
Zinc (Total)	N	1455	µg/l	2.5							220	220	60	23	17000		970	14	52	19	120
Cadmium (Total)	N	1455	µg/l	0.08							0.17	< 0.08	< 0.08	< 0.08	4.0		0.59	< 0.08	< 0.08	< 0.08	< 0.08
Dissolved Organic Carbon	U	1610	mg/l	2.0							78	91	58	32	71		67	87	39	67	23
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[C] < 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	1	10	50				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10		74					< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[C] < 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10					5000		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	[C] < 10	< 10	< 10
Benzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	1.2	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	U	1800	µg/l	0.10		2	130				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Fluorene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Anthracene	U	1800	µg/l	0.10		0.1	0.1				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10		0.0063	0.12				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Pyrene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Chrysene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	0.01	0.00017	0.27				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	0.1						< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	0.1		0.0082				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0							< 2.0	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	[C] < 2.0	< 2.0	< 2.0

Determinand											
Chemtest Job No.:	23-03893	23-07177	23-12795	23-15616	23-19393	23-23887	23-26483	23-28763	23-31202	23-39412	23-41435
Chemtest Sample ID.:	1585832	1600262	1625670	1637598	1653193	1674373	1684619	1694078	1703779	1737191	1745755
Client Sample ID.:	SW2	SW2	SW2	SW2	SW2	SW2	SW2	SW2	SW2	SW2	SW2
Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:	01-Feb-2023	28-Feb-2023	11-Apr-2023	09-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023	14-Sep-2023	23-Nov-2023	12-Dec-2023
pH	7.9	8.1	7.8	8.6	8.0	8.2	8.2	7.9	8.2	8.3	8.3
Chloride	24	24	24	20	18	19		21	25	23	22
Ammoniacal Nitrogen	0.22	0.10	0.15	< 0.050	0.29	0.20		< 0.050	0.053	0.60	0.31
Calcium (Dissolved)	86	71	90	68	76	57		110	120	110	75
Calcium (Total)	91	66	90	70	80	57		130	91	120	75
Total Hardness as CaCO3	280	240	290	220	260	190		360	380	370	250
Arsenic (Dissolved)	4.6	0.50	0.29	0.41	0.58	0.58		0.65	0.96	0.48	< 0.20
Boron (Dissolved)	59	47	67	71	71	56		150	150	91	78
Cadmium (Dissolved)	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)	9.4	2.0	< 0.50	< 0.50	< 0.50	0.86		< 0.50	< 0.50	< 0.50	< 0.50
Copper (Dissolved)	3.1	1.4	< 0.50	< 0.50	1.7	0.69		< 0.50	< 0.50	< 0.50	< 0.50
Mercury (Dissolved)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	1.0	1.5	< 0.50	0.53	0.64	0.73		< 0.50	0.51	< 0.50	< 0.50
Lead (Dissolved)	1.1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	< 0.50	1.3	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	0.96	< 0.50	< 0.50
Vanadium (Dissolved)	5.7	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50
Zinc (Dissolved)	21	38	9.0	8.7	3.1	8.2		< 2.5	8.7	5.5	8.5
Arsenic (Total)	4.9	0.47	0.67	0.62	2.1	1.7		3.9	1.5	2.4	1.3
Boron (Total)	56	40	73	80	80	62		120	140	110	70
Chromium (Total)	11	2.6	< 0.50	1.7	2.9	1.9		0.86	< 0.50	53	3.3
Copper (Total)	3.5	0.94	1.2	1.7	5.3	1.9		1.9	< 0.50	< 0.50	26
Mercury (Total)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Total)	1.2	2.2	0.64	0.71	2.1	3.9		< 0.50	< 0.50	31	2.8
Lead (Total)	1.2	1.4	1.7	3.6	2.4	1.1		2.0	< 0.50	9.1	3.5
Selenium (Total)	< 0.50	< 0.50	< 0.50	< 0.50	0.79	0.66		0.61	2.4	0.76	< 0.50
Vanadium (Total)	6.3	< 0.50	< 0.50	< 0.50	1.2	0.88		1.2	< 0.50	0.87	1.8
Zinc (Total)	22	30	51	12	41	14		37	< 2.5	20	55
Cadmium (Total)	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08		< 0.08	< 0.08	< 0.08	< 0.08
Dissolved Organic Carbon	26	89	28	25	30	33		34	35	35	24
Aliphatic TPH >C5-C6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	< 2.0	< 2.0

Determinand											
Chemtest Job No.:	23-03893	23-07177	23-12795	23-15616	23-19393	23-23887	23-26483	23-28763	23-31202	23-36589	23-39412
Chemtest Sample ID.:	1585833	1600263	1625671	1637599	1653194	1674374	1684620	1694079	1703780	1725529	1737192
Client Sample ID.:	SW3	SW3	SW3	SW3	SW3	SW3	SW3	SW3	SW3	SW3	SW3
Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:	01-Feb-2023	28-Feb-2023	11-Apr-2023	09-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023	14-Sep-2023	30-Oct-2023	23-Nov-2023
pH	8.1	8.1	7.9	8.5	8.3	8.2	8.2	8.1	8.3	8.2	8.3
Chloride	18	25	21	22	21	19		17	20	16	16
Ammoniacal Nitrogen	0.15	0.072	0.086	0.070	< 0.050	0.093		< 0.050	0.11	0.10	< 0.050
Calcium (Dissolved)	44	63	48	55	76	77		55	59	49	48
Calcium (Total)	48	62	48	57	79	78		63	56	49	52
Total Hardness as CaCO3	130	190	150	170	230	230		170	190	150	140
Arsenic (Dissolved)	5.6	0.70	0.49	0.72	1.1	1.1		0.86	0.89	0.84	0.67
Boron (Dissolved)	40	48	39	42	61	77		71	57	36	43
Cadmium (Dissolved)	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)	11	2.1	< 0.50	< 0.50	1.6	0.83		< 0.50	< 0.50	< 0.50	< 0.50
Copper (Dissolved)	6.6	2.5	2.2	1.5	1.2	0.74		1.6	0.89	3.3	2.5
Mercury (Dissolved)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	1.6	2.1	0.94	0.99	1.1	0.93		< 0.50	0.78	1.4	0.85
Lead (Dissolved)	1.8	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	< 0.50	1.0	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	0.77	< 0.50	< 0.50
Vanadium (Dissolved)	7.9	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50
Zinc (Dissolved)	29	13	7.8	11	2.7	5.8		< 2.5	3.5	10	9.2
Arsenic (Total)	6.5	0.91	0.78	1.1	2.0	1.4		1.7	1.2	2.4	1.5
Boron (Total)	37	45	41	50	87	80		59	75	46	53
Chromium (Total)	13	2.6	< 0.50	2.3	2.4	1.6		0.80	< 0.50	0.82	3.0
Copper (Total)	7.3	2.0	3.0	3.1	2.8	1.7		4.0	0.96	5.4	4.2
Mercury (Total)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Total)	2.1	2.8	1.2	1.4	1.3	1.5		< 0.50	0.90	0.92	3.6
Lead (Total)	2.0	0.55	0.70	2.4	1.4	0.72		1.5	< 0.50	12	4.7
Selenium (Total)	0.95	< 0.50	< 0.50	0.92	0.87	< 0.50		< 0.50	1.6	3.7	0.74
Vanadium (Total)	9.8	< 0.50	< 0.50	< 0.50	0.61	< 0.50		< 0.50	< 0.50	0.84	0.57
Zinc (Total)	32	15	20	16	25	12		21	12	20	21
Cadmium (Total)	0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08		< 0.08	< 0.08	0.12	< 0.08
Dissolved Organic Carbon	6.8	9.5	5.8	8.6	12	13		9.8	9.7	8.4	8.7
Aliphatic TPH >C5-C6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aliphatic TPH >C6-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aliphatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aliphatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aliphatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aliphatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aliphatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aliphatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Total Aliphatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[C] < 5.0	< 5.0
Aromatic TPH >C5-C7	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aromatic TPH >C7-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aromatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aromatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aromatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aromatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aromatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Aromatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10
Total Aromatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[C] < 5.0	< 5.0
Total Petroleum Hydrocarbons	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	[C] < 10	< 10
Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Acenaphthylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Acenaphthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Fluorene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Phenanthrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Benzo[a]anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Chrysene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Benzo[b]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Benzo[k]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Benzo[a]pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Dibenz(a,h)Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Benzo[g,h,i]perylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10
Total Of 16 PAH's	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	[C] < 2.0	< 2.0

Coed Darcy Tip

Surface Water Laboratory Data 2023

Chemtest Job No.:											23-41435	23-03893	23-07177	23-12795	23-15616	23-19393	23-23887	23-26483	23-28763	23-31202	23-36589	23-39412	23-41435
Chemtest Sample ID.:											1745756	1585834	1600264	1625672	1637600	1653195	1674375	1684621	1694080	1703781	1725530	1737193	1745757
Client Sample ID.:											SW3	SW4	SW4	SW4	SW4	SW4	SW4	SW4	SW4	SW4	SW4	SW4	SW4
Sample Type:											WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:											12-Dec-2023	01-Feb-2023	28-Feb-2023	11-Apr-2023	09-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023	14-Sep-2023	30-Oct-2023	23-Nov-2023	12-Dec-2023
					Screening Criteria																		
Determinand	Accred.	SOP	Units	LOD	UK DWS	EQS Freshwater (AA)	EQS Freshwater (MAC)	EQS 90 percentile	Permit Emission Limit	MBAT PNEC													
pH	U	1010		N/A							8.4	7.9	8.2	7.8	8.5	8.4	8.3	8.2	8.2	8.4	8.3	8.3	8.3
Chloride	U	1220	mg/l	1.0	250		300				16	21	22	19	20	21	19		18	18	15	15	17
Ammoniacal Nitrogen	U	1220	mg/l	0.050				0.3			0.071	0.20	0.071	< 0.050	0.056	< 0.050	0.093		0.061	0.15	0.086	0.072	0.11
Calcium (Dissolved)	U	1455	mg/l	2.00							38	79	82	67	71	69	64		64	64	67	67	61
Calcium (Total)	N	1455	mg/l	5.0							56	84	76	59	72	73	64		73	61	69	70	61
Total Hardness as CaCO3	U	1270	mg/l	15							120	240	250	200	210	210	200		200	200	200	200	190
Arsenic (Dissolved)	U	1455	µg/l	0.20	10	50					0.39	8.5	1.3	0.61	0.99	1.4	1.6		1.4	2.2	1.5	0.84	0.55
Boron (Dissolved)	U	1455	µg/l	10.0	1000						39	67	64	47	52	58	80		82	64	49	56	55
Cadmium (Dissolved)	U	1455	µg/l	0.11	5	0.08	0.45				< 0.11	0.51	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	50						< 0.50	13	2.0	< 0.50	< 0.50	1.4	0.89		< 0.50	2.3	< 0.50	< 0.50	< 0.50
Copper (Dissolved)	U	1455	µg/l	0.50	2000	1				3.23	2.6	25	3.1	2.2	1.7	2.3	1.4		1.1	1.3	2.1	1.9	1.9
Mercury (Dissolved)	U	1455	µg/l	0.05	1		0.07				< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	µg/l	0.50	20	4	34			26.05	< 0.50	13	2.5	1.2	1.2	1.1	1.2		< 0.50	0.63	1.2	1.3	< 0.50
Lead (Dissolved)	U	1455	µg/l	0.50	10	1.2	14				< 0.50	7.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	U	1455	µg/l	0.50	10						< 0.50	< 0.50	0.82	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	0.82	< 0.50	< 0.50	< 0.50
Vanadium (Dissolved)	U	1455	µg/l	0.50		20					< 0.50	9.8	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Zinc (Dissolved)	U	1455	µg/l	2.5		10.9				89.22	17	220	22	18	9.8	< 2.5	4.0		2.8	9.6	6.8	6.5	14
Arsenic (Total)	N	1455	µg/l	0.20							3.7	9.4	1.4	11	1.3	1.8	1.7		1.9	2.5	2.4	1.7	1.4
Boron (Total)	N	1455	µg/l	10.0							39	64	55	49	61	73	71		69	61	55	67	51
Chromium (Total)	N	1455	µg/l	0.50		4.7					6.3	14	3.1	12	2.2	2.4	1.8		0.90	3.9	< 0.50	4.6	0.75
Copper (Total)	N	1455	µg/l	0.50							31	26	3.3	230	3.6	3.7	2.3		2.9	1.2	3.3	3.9	4.7
Mercury (Total)	N	1455	µg/l	0.05							0.07	< 0.05	< 0.05	1.1	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Total)	N	1455	µg/l	0.50							8.4	14	3.5	23	1.5	2.3	1.8		< 0.50	2.0	1.2	4.1	1.8
Lead (Total)	N	1455	µg/l	0.50							18	7.6	1.6	74	3.1	2.4	0.68		2.6	< 0.50	5.9	6.0	8.7
Selenium (Total)	N	1455	µg/l	0.50							0.72	0.64	0.53	1.5	0.71	0.80	< 0.50		< 0.50	0.93	1.1	0.64	< 0.50
Vanadium (Total)	N	1455	µg/l	0.50							6.8	11	< 0.50	19	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	0.61	0.58	0.54
Zinc (Total)	N	1455	µg/l	2.5							150	220	44	190	20	33	11		21	11	15	11	20
Cadmium (Total)	N	1455	µg/l	0.08							0.20	0.53	< 0.08	0.94	< 0.08	< 0.08	< 0.08		< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Dissolved Organic Carbon	U	1610	mg/l	2.0							2.9	11	15	9.7	11	14	14		13	13	12	13	10
Aliphatic TPH >C5-C6	N	1675	µg/l	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
Aliphatic TPH >C6-C8	N	1675	µg/l	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
Aliphatic TPH >C8-C10	N	1675	µg/l	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
Aliphatic TPH >C10-C12	N	1675	µg/l	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
Aliphatic TPH >C12-C16	N	1675	µg/l	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
Aliphatic TPH >C16-C21	N	1675	µg/l	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
Aliphatic TPH >C21-C35	N	1675	µg/l	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
Aliphatic TPH >C35-C44	N	1675	µg/l	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
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	1	10	50				< 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
Aromatic TPH >C7-C8	N	1675	µg/l	0.10		74					< 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
Aromatic TPH >C8-C10	N	1675	µg/l	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
Aromatic TPH >C10-C12	N	1675	µg/l	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
Aromatic TPH >C12-C16	N	1675	µg/l	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
Aromatic TPH >C16-C21	N	1675	µg/l	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
Aromatic TPH >C21-C35	N	1675	µg/l	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
Aromatic TPH >C35-C44	N	1675	µg/l	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
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10					5000		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	U	1800	µg/l	0.10		2	130				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	1800	µg/l	0.10		0.1	0.1				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10		0.0063	0.12				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	0.01	0.00017	0.27				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	0.1						< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10							< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	0.1		0.0082				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0							< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

Chemtest Job No.:	23-03893	23-07177	23-12795	23-15616	23-19393	23-23887	23-26483	23-28763	23-31202	23-36589	23-39412	23-41435
Chemtest Sample ID.:	1585835	1600265	1625673	1637601	1653196	1674376	1684622	1694081	1703782	1725531	1737194	1745758
Client Sample ID.:	SW5	SW5	SW5	SW5	SW5	SW5	SW5	SW5	SW5	SW5	SW5	SW5
Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:	01-Feb-2023	28-Feb-2023	11-Apr-2023	09-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023	14-Sep-2023	30-Oct-2023	23-Nov-2023	12-Dec-2023
Determinand												
pH	7.8	7.9	7.8	8.5	8.1	8.3	8.2	8.3	8.3	8.2	8.1	8.3
Chloride	18	22	12	20	19	21		16	18	8.3	11	10
Ammoniacal Nitrogen	1.2	0.93	0.067	0.12	< 0.050	0.53		0.59	0.55	0.34	0.10	0.056
Calcium (Dissolved)	62	66	54	52	65	60		60	64	51	52	40
Calcium (Total)	63	66	53	54	66	61		71	60	53	56	38
Total Hardness as CaCO3	180	200	160	160	200	190		180	190	150	150	120
Arsenic (Dissolved)	9.1	0.82	0.65	0.66	1.3	1.3		1.1	1.1	3.1	0.90	0.27
Boron (Dissolved)	45	45	45	41	54	75		77	68	33	49	33
Cadmium (Dissolved)	0.31	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11		< 0.11	< 0.11	0.23	< 0.11	< 0.11
Chromium (Dissolved)	12	2.2	< 0.50	< 0.50	1.6	0.97		< 0.50	0.63	1.6	< 0.50	< 0.50
Copper (Dissolved)	17	2.3	3.5	1.3	3.8	1.0		1.7	1.0	26	3.2	2.2
Mercury (Dissolved)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	13	2.5	1.4	1.1	2.4	1.4		0.66	1.1	3.8	2.3	< 0.50
Lead (Dissolved)	9.2	< 0.50	< 0.50	< 0.50	0.56	< 0.50		< 0.50	< 0.50	4.7	< 0.50	< 0.50
Selenium (Dissolved)	< 0.50	0.73	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	0.56	< 0.50	0.54	< 0.50
Vanadium (Dissolved)	12	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	0.62	< 0.50	< 0.50
Zinc (Dissolved)	180	11	8.2	7.0	24	6.8		4.1	4.2	56	8.0	15
Arsenic (Total)	10	1.5	1.4	1.0	1.9	1.6		2.7	1.6	4.5	1.8	1.1
Boron (Total)	42	42	46	49	65	66		66	75	33	63	30
Chromium (Total)	12	3.5	0.78	2.0	2.6	1.6		1.5	4.0	1.9	51	1.1
Copper (Total)	17	3.5	7.3	3.1	5.8	2.7		5.6	1.3	35	4.7	4.4
Mercury (Total)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Total)	13	3.5	1.8	1.3	2.4	2.1		< 0.50	1.8	4.3	36	0.98
Lead (Total)	9.4	6.0	5.6	2.6	3.4	1.2		8.5	1.2	20	4.7	4.0
Selenium (Total)	< 0.50	< 0.50	< 0.50	0.78	0.64	< 0.50		3.4	0.75	0.60	0.69	< 0.50
Vanadium (Total)	13	0.77	0.92	< 0.50	0.52	< 0.50		0.88	0.57	1.3	1.0	0.76
Zinc (Total)	180	30	40	13	71	16		25	11	97	15	12
Cadmium (Total)	0.33	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08		< 0.08	< 0.08	0.55	< 0.08	< 0.08
Dissolved Organic Carbon	11	13	9.5	9.0	15	17		13	13	17	13	6.7
Aliphatic TPH >C5-C6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[C] < 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	[C] < 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	[C] < 10	< 10	< 10
Benzene	< 1.0	< 1.0	10	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	< 1.0	< 1.0	12	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	< 1.0	< 1.0	13	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	< 1.0	< 1.0	29	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	< 1.0	< 1.0	36	< 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Acenaphthylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Acenaphthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Fluorene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Phenanthrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[a]anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Chrysene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[a]pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Total Of 16 PAH's	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	[C] < 2.0	< 2.0	< 2.0

Chemtest Job No.:	23-03893	23-07177	23-12795	23-15616	23-19393	23-23887	23-26483	23-28763
Chemtest Sample ID.:	1585836	1600266	1625674	1637602	1653197	1674377	1684623	1694082
Client Sample ID.:	SW6	SW6	SW6	SW6	SW6	SW6	SW6	SW6
Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Date Sampled:	01-Feb-2023	28-Feb-2023	11-Apr-2023	09-May-2023	06-Jun-2023	11-Jul-2023	03-Aug-2023	24-Aug-2023
Determinand								
pH	7.7	8.0	7.8	8.5	8.2	8.4	8.2	8.3
Chloride	19	20	18	17	19	17		13
Ammoniacal Nitrogen	0.086	0.051	0.13	0.063	< 0.050	0.093		< 0.050
Calcium (Dissolved)	58	58	53	50	53	42		41
Calcium (Total)	60	54	51	54	55	41		50
Total Hardness as CaCO3	180	180	160	150	170	140		130
Arsenic (Dissolved)	4.5	0.47	0.47	0.52	0.64	0.66		0.42
Boron (Dissolved)	32	33	29	28	24	28		44
Cadmium (Dissolved)	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11		< 0.11
Chromium (Dissolved)	10	1.9	< 0.50	< 0.50	1.4	0.83		< 0.50
Copper (Dissolved)	4.7	1.8	1.1	0.60	1.5	0.84		0.65
Mercury (Dissolved)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Nickel (Dissolved)	1.2	1.6	< 0.50	0.51	0.63	0.82		< 0.50
Lead (Dissolved)	0.76	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50
Selenium (Dissolved)	< 0.50	0.96	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50
Vanadium (Dissolved)	6.9	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50
Zinc (Dissolved)	27	8.3	7.5	5.3	4.0	9.7		< 2.5
Arsenic (Total)	5.2	0.56	0.78	0.85	1.5	0.67		1.8
Boron (Total)	30	31	30	31	45	33		36
Chromium (Total)	11	2.7	< 0.50	2.1	2.6	1.4		0.54
Copper (Total)	4.9	1.1	2.0	2.3	3.7	1.3		2.0
Mercury (Total)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Nickel (Total)	1.9	2.3	0.70	0.66	1.5	1.2		< 0.50
Lead (Total)	0.80	< 0.50	1.8	3.4	2.5	0.51		1.5
Selenium (Total)	0.75	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		1.7
Vanadium (Total)	7.9	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50
Zinc (Total)	27	15	31	28	32	28		12
Cadmium (Total)	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08		< 0.08
Dissolved Organic Carbon	6.2	9.8	5.5	5.7	8.1	8.6		7.4
Aliphatic TPH >C5-C6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
m & p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
Naphthalene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Acenaphthylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Acenaphthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Fluorene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Phenanthrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Benzo[a]anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Chrysene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Benzo[b]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Benzo[k]fluoranthene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Benzo[a]pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Indeno(1,2,3-c,d)Pyrene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Dibenz(a,h)Anthracene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Benzo[g,h,i]perylene	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.5	< 0.10
Total Of 16 PAH's	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0

Coed Darcy Tip
Surface Water Laboratory Data 2023

	Chemtest Job No.:									23-31202	23-36589	23-39412	23-41435
	Chemtest Sample ID.:									1703783	1725532	1737195	1745759
	Client Sample ID.:									SW6	SW6	SW6	SW6
	Sample Type:									WATER	WATER	WATER	WATER
	Date Sampled:									14-Sep-2023	30-Oct-2023	23-Nov-2023	12-Dec-2023
					Screening Criteria								
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	**UK DWS**	**EQS Freshwater (AA)**	**EQS Freshwater (MAC)**	**EQS 90 percentile**	**Permit Emission Limit**	**MBAT PNEC**				
pH	U	1010		N/A							8.3	8.2	8.2	8.4
Chloride	U	1220	mg/l	1.0	250		300				13	11	12	12
Ammoniacal Nitrogen	U	1220	mg/l	0.050				0.3			0.070	< 0.050	< 0.050	0.086
Calcium (Dissolved)	U	1455	mg/l	2.00							39	51	53	36
Calcium (Total)	N	1455	mg/l	5.0							40	50	55	36
Total Hardness as CaCO3	U	1270	mg/l	15							130	160	170	110
Arsenic (Dissolved)	U	1455	µg/l	0.20	10	50					0.55	0.50	0.27	< 0.20
Boron (Dissolved)	U	1455	µg/l	10.0	1000						28	23	28	26
Cadmium (Dissolved)	U	1455	µg/l	0.11	5	0.08	0.45				< 0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	50						2.2	< 0.50	< 0.50	< 0.50
Copper (Dissolved)	U	1455	µg/l	0.50	2000	1				3.23	< 0.50	1.1	0.91	1.2
Mercury (Dissolved)	U	1455	µg/l	0.05	1		0.07				< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	µg/l	0.50	20	4	34			26.05	< 0.50	0.51	< 0.50	< 0.50
Lead (Dissolved)	U	1455	µg/l	0.50	10	1.2	14				< 0.50	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	U	1455	µg/l	0.50	10						0.74	< 0.50	< 0.50	< 0.50
Vanadium (Dissolved)	U	1455	µg/l	0.50		20					< 0.50	< 0.50	< 0.50	< 0.50
Zinc (Dissolved)	U	1455	µg/l	2.5		10.9				89.22	< 2.5	7.2	6.5	14
Arsenic (Total)	N	1455	µg/l	0.20							0.71	0.91	0.84	0.74
Boron (Total)	N	1455	µg/l	10.0							43	28	38	21
Chromium (Total)	N	1455	µg/l	0.50		4.7					2.9	< 0.50	2.6	0.55
Copper (Total)	N	1455	µg/l	0.50							2.2	3.1	1.6	2.0
Mercury (Total)	N	1455	µg/l	0.05							< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Total)	N	1455	µg/l	0.50							< 0.50	< 0.50	1.0	0.78
Lead (Total)	N	1455	µg/l	0.50							< 0.50	4.3	2.1	2.2
Selenium (Total)	N	1455	µg/l	0.50							0.71	< 0.50	0.75	1.3
Vanadium (Total)	N	1455	µg/l	0.50							< 0.50	< 0.50	< 0.50	< 0.50
Zinc (Total)	N	1455	µg/l	2.5							41	11	7.5	12
Cadmium (Total)	N	1455	µg/l	0.08							< 0.08	< 0.08	< 0.08	< 0.08
Dissolved Organic Carbon	U	1610	mg/l	2.0							6.6	7.0	7.9	4.9
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	[C] < 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	1	10	50				< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10		74					< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0							< 5.0	[C] < 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10					5000		< 10	[C] < 10	< 10	< 10
Benzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0							< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	U	1800	µg/l	0.10		2	130				< 0.10	[C] < 0.10	< 0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Fluorene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Anthracene	U	1800	µg/l	0.10		0.1	0.1				< 0.10	[C] < 0.10	< 0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10		0.0063	0.12				< 0.10	[C] < 0.10	< 0.10	< 0.10
Pyrene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Chrysene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	0.1		0.017				< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	0.01	0.00017	0.27				< 0.10	[C] < 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	0.1						< 0.10	[C] < 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10							< 0.10	[C] < 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	0.1		0.0082				< 0.10	[C] < 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0							< 2.0	[C] < 2.0	< 2.0	< 2.0

Appendix E Landfill Gas Monitoring Data

Stable CH4 outside Tip

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Min	Max
MSMW155D	0.1	0.1	0.1	0	0	0.2	0	0.1	0	0.1	0.2	0	0	0.2
MSMW155S	0.2	0.8	0.1	0	0	0	0	0	0	0	0.1	0.1	0	0.8
MSMW91	0.2	0	0.2	3.5	0	0.1		0.8	0.5	0.4	0.4	0.3	0	3.5
Atmospheric Pressure (bar)	1009	1006	1009	1029	1024	1011	1013	1018	1021	1018	1012	1008	1006	1029

Stable CH4 within Tip

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Min	Max
CARW008	0.2	0.2	0.1	0	0.2	0.5	0	0.2	0.2	0.1	0.1	0.3	0	0.5
CARW009	0.4	0.8	0.1	0	0.2	0.5	1.4	0.2	0.1	0.2	0.3	0.5	0	1.4
CBH51	3.5	12.1	0.1	0.6	0.1	0.4	0	0.1	0.1	0.1	2.1	5.1	0	12.1
CBH52	10.2	0.2	0.1	0	0.3	0.2	0	4.8	4.8	4.2	5.9	7.6	0	10.2
CBH20	19.6	9.75	19.5	18.2	2.5	12.5	12.4	11.7	10.3	45.1	15.3	18.5	2.5	45.1
MSMW231	6.1	0.8	3.2			5.2	16.4	56.8	52.4	9.4	0.4	5.1	0.4	56.8
CBH57	12.9	0.7	0.1	0.3	5.8	0.4	7.4	0.1	0.1	0.1	8.2	6.3	0.1	12.9
CBH32	6.8	0.4	1.7	0	2	0.5	4.2	0.1	0.1	0.1	3.8	5.2	0	6.8
CBH23	0.5	0.1	0.6	0	1.6	0.3	1.9	0	0	0	0.3	0.7	0	1.9
CBH49	1.5	0.5	0.1	0.1	0.3	0.4	0.1	0.1	0.1	0.1	0.1	1.5	0.1	1.5
Atmospheric Pressure (bar)	1007	1005	1008	1028	1026	1011	1013	1018	1020	1019	1012	1009	1005	1028

Stable CO2 outside Tip

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Min	Max
MSMW155D	1.1	0.8	0.1	0.4	0.1	0.1	0.1	0.2	0.2	0.1	1.1	0.9	0.1	1.1
MSMW155S	0.1	0.5	0.2	0.2	0.1	0.2	1.1	0.1	0.1	0.3	0.2	0.2	0.1	1.1
MSMW91	3.6	4.6	3.2	5.6	0.2	0.3		3.1	2.4	2.7	3.3	2.9	0.2	5.6
Atmospheric Pressure (bar)	1009	1006	1009	1029	1024	1011	1013	1018	1021	1018	1012	1008	1006	1029

Stable CO2 within Tip

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Min	Max
CARW008	1.9	0.9	0.1	0.6	0	0.1	0.1	0.1	0.1	0	1.2	1.4	0	1.9
CARW009	0.1	1.6	1.3	0.1	0.1	0.2	2.5	0.1	0.1	0.1	0.1	0.1	0.1	2.5
CBH51	2.1	0.2	0.4	0.1	0.1	0.5	0.1	0.2	0.1	0.2	1.8	0.6	0.1	2.1
CBH52	2.7	0.7	0.3	0.1	0.1	0.6	1.8	2.6	2.6	2.1	1	1.5	0.1	2.7
CBH20	8.2	0.4	5.1	3.6	1.3	2.7	6.1	4.7	4.1	8.4	5.2	5.3	0.4	8.4
MSMW231	4.2	4.1	0.6			2.9	3.9	9.8	10.6	3.9	1.9	8.6	0.6	10.6
CBH57	7.8	0.3	0.5	2	6	0.1	7.8	0.1	0.1	0.1	4.9	10.2	0.1	10.2
CBH32	9.4	2.1	3.7	0	5.8	0.1	11.4	0.4	0.6	0.5	10.2	8.6	0	11.4
CBH23	3.7	0.6	0.7	0	3.6	0	4.2	0.6	0.5	0.3	2.4	5	0	5
CBH49	0.3	0.4	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	1.8	0.1	0.1	1.8
Atmospheric Pressure (bar)	1007	1005	1008	1028	1026	1011	1013	1018	1020	1019	1012	1009	1005	1028

Stable O2 Outside Tip

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Min	Max
MSMW155D	15.7	20.4	21.6	20.2	20.6	22.9	21.1	20.5	20.9	21.2	16.4	15.1	15.1	22.9
MSMW155S	20.1	12.7	21.5	20.3	20.5	21.4	19.5	20.8	21	20.9	19.3	16.2	12.7	21.5
MSMW91	7.3	8.33	12.6	6.3	20.5	21.3		17.6	18.3	17.6	15.3	6.3	6.3	21.3
Atmospheric Pressure (bar)	1009	1006	1009	1029	1024	1011	1013	1018	1021	1018	1012	1008	1006	1029

Stable O2 Within Tip

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Min	Max
CARW008	17.8	17.8	22.4	21.9	20.8	23.2	20.9	19.7	20.5	20.1	17.9	19.7	17.8	23.2
CARW009	17.8	17.4	20.8	21	19.8	21.1	17.5	21.1	21	21.4	20.6	17.3	17.3	21.4
CBH51	14.2	9.8	17.9	20.5	20.7	21.6	20.7	19.8	19.8	18.3	17.5	13.5	9.8	21.6
CBH52	17.7	17.6	22.1	20.1	20.1	18.7	17.4	17.3	16	18.9	15.9	16.4	15.9	22.1
CBH20	0.7	20.1	1.3	0.2	14.6	0.6	9.5	18.6	14.4	0.1	4.3	0.2	0.1	20.1
MSMW231	14.8	16.4	19.5			17.3	8.1	0.4	0.2	18.8	18.6	14.1	0.2	19.5
CBH57	0.1	18.8	19.7	15.6	3.8	18.9	0.6	20.2	20.8	18.9	2.4	0.1	0.1	20.8
CBH32	2.7	20.9	14.7	20.7	10	20.3	1.7	21.3	20.2	21.4	10.2	1.7	1.7	21.4
CBH23	16.5	16.2	17.2	20.1	12.4	20.1	7.5	20.5	20.2	20.4	14.7	17.4	7.5	20.5
CBH49	15.7	19.2	20.1	20.1	15.4	19.8	20.3	19.4	20.1	19.1	20.7	12.4	12.4	20.7
Atmospheric Pressure (bar)	1007	1005	1008	1028	1026	1011	1013	1018	1020	1019	1012	1009	1005	1028