FIFE NGL, MOSSMORRAN
SHELL UK LTD

GROUNDWATER MONITORING REPORT

Carried out for:

Shell UK Limited
1 Altens Farm Road
Nigg
Aberdeen
AB12 3FY

December 2021

Report No R9166/8

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December 2021

Issue No Date	Status	Prepared by	Checked by	Approved by
December 2021	DRAFT	[redacted] BSc (Hons) MSc	[redacted] BSc (Hons) MSc	[redacted] BSc (Hons) MSc
		[redacted]	[redacted]	[redacted]

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1 INTRODUCTION

In September 2021, SOCOTEC UK Limited (SOCOTEC) was commissioned by Shell UK Limited (Shell), to undertake groundwater monitoring, sampling, laboratory analysis and data interpretation from a series of pre-existing boreholes at the Fife NGL, Mossmorran site. This work is understood to be a requirement of the Pollution Prevention and Control (Scotland) Regulations 2012 and the site's current PPC Permit. The site location is shown on Figure 1 in Appendix A.

The offer to carry out the work was presented in SOCOTEC proposal reference EN-194454/001/DH Rev00, dated 01 September 2021. This proposal was accepted by Shell via receipt of a purchase order PO number ref 4513852849 dated 30 September 2021.

2 BACKGROUND

It is understood that under Condition 2.7 of the PPC Permit for the site, annual groundwater monitoring results are required to be provided to the Scottish Environment Protection Agency (SEPA) to provide evidence that the site environment is being maintained in a 'satisfactory state'.

In 2019 Shell provided SOCOTEC with a copy of a previous Groundwater Monitoring Report for the site, which was issued in 2017. This report provides details of groundwater monitoring and sampling works that were undertaken in 2016 from fifteen boreholes located across the site. The boreholes were labelled as M5 to M11, M17, M18, BH101, BH102, BH104, BH107, BH108 and BH109. The report indicates that an analytical suite of organic and inorganic Potentially Polluting Substances (PPSs) for the site had been agreed with SEPA.

SOCOTEC subsequently used this information to undertake a round of groundwater sampling at the site between 21 - 23 October 2019. The results from these works were presented in a factual groundwater monitoring report (Ref: R9166/4, dated December 2019).

Shell have subsequently requested that SOCOTEC repeat the groundwater monitoring works that were undertaken previously in order to continue to monitor the condition of groundwater present beneath the site.

3 FIELDWORK

A SOCOTEC Environmental Scientist attended site on the 11 and 12 November 2021 to monitor and sample the groundwater within the existing 15 No. boreholes on site. A plan illustrating the borehole locations is provided as Figure 2a and 2b and these are included in Appendix A.

All monitoring wells were located during the course of the works and were found to be in good condition. Groundwater levels at the site were recorded to range between 0.340 m bgl (BH107) and 2.855 m bgl (BH109). Table 1 below summarises the recorded depths of groundwater and the base of the monitoring well at each sample location.

TABLE 1 SUMMARY OF RECORDED GROUNDWATER DEPTHS

Sample Location ID	Depth to Groundwater (m bgl)	Depth of Monitoring Well (m bgl)
BH101	1.649	3.725
BH102	1.500	3.135
BH104	0.720	1.490
BH107	0.340	2.370
BH108	1.220	2.810
BH109	2.855	2.937
M5	1.060	6.480
M6	0.870	3.040
M7	1.135	3.865
M8	1.270	4.450
M9	1.475	4.040
M10	0.735	1.820
M11	0.890	3.700
M17	1.755	2.700
M18	1.350	3.820

3.1 Methodology

For consistency, the sampling protocol followed during the recent monitoring works was undertaken in accordance with the methodology followed during the previous groundwater monitoring and sampling works and comprised the following:

- Initial groundwater measurements to be taken and recorded using an oil/water interface meter probe;
- Undertake sampling using a peristaltic pump, using a 'low flow' system following 'micro purging';
- Record field measurement parameters including electrical conductivity, dissolved oxygen, temperature, pH, oxidation/reduction potential, total dissolved solids and salinity;
- Collect groundwater samples into suitable containers once parameters have stabilised; and
- Dispose of purged water via site effluent drains with prior agreement with Shell.

On completion of the fieldwork the water samples were placed in cool boxes and transported to SOCOTEC's UKAS and MCERTS Environmental Chemistry laboratory in Bretby, Burton-on-Trent.

4 LABORATORY TESTING

The groundwater samples collected were scheduled for analysis by SOCOTEC for the agreed PPSs. These are summarised in Table 2 below. The laboratory certificate issued by the laboratory (Ref. 21111154_V01) is presented in Appendix B.

TABLE 2 SUMMARY OF GROUNDWATER LABORATORY ANALYSIS

Determinand	No. of Tests
Metals including; cadmium, lead, mercury and zinc	15
Total Petroleum Hydrocarbons by CWG speciated with aliphatic / aromatic split (TPHCWG)	15
Methyl tertiary butyl ether (MTBE)	15
Benzene, toluene, ethylbenzene and xylenes (BTEX)	15
Glycols – Mono Ethylene Glycol	15
Semi volatile organic compounds (SVOCs)	15
Tentatively identified compounds (TICs)	15

5 GROUNDWATER MONITORING RESULTS

The recent groundwater results indicate that concentrations of determinands tested for in all of the groundwater samples analysed have either been detected below the laboratory limit of detection (LOD) or at low concentrations. Only zinc, a range of individual SVOC TICs and some individual TPH bandings have been reported with concentrations in excess of their LOD.

A total of ten samples recorded concentrations of zinc above its LOD (sample locations M5 – M9, M11, M18, BH101, BH102 and BH108) with concentrations ranging from 0.002 mg/l (BH101, BH102 and M6) to 0.021 mg/l (M18).

A total of eight samples (BH102, M5, M6, M7, M10, M11, M17 and M18) recorded low concentrations of SVOC TICs above their LOD ranging from 0.01 mg/l to 0.18 mg/l.

A total of six samples (BH101, M7, M8, M10, M17 and M18) recorded concentrations of total TPH >C8-C40 above its LOD with concentrations ranging from 0.01 mg/l (BH101, M8, M10 and M18) to 0.02 mg/l (M7 and M17). The TPH contamination recorded in the samples collected from all samples was noted to comprise aliphatic compounds with the exception of M7, where some aromatic fractions have been recorded. The TPH contamination detected in all samples was noted to predominantly comprise C_{12} – C_{16} and C_{21} – C_{35} bandings.

6 COMPARISON WITH PREVIOUS GROUNDWATER RESULTS

6.1 Inorganic PPS

On the basis of information contained within the Groundwater Monitoring Report prepared by Shell in 2017 and the subsequent Groundwater Monitoring Report prepared by SOCOTEC in 2019, fluctuations of metal concentrations have historically been reported with maximum concentrations being recorded at different locations during individual monitoring events. This was considered likely to be indicative of sporadic localised increases rather than a result of persistent contamination associated with site operations. On the basis of the 2021 data, this pattern continues to be observed.

Comparison of metal concentrations recorded during the 2021 groundwater monitoring works with those recorded between 2006 and 2019 indicate that an overall decrease in metal concentrations continues to be observed.

The maximum and mean metal concentrations recorded between 2006 and 2021 are presented in Table 3 below:

TABLE 3 COMPARISON OF METAL CONCENTRATION IN GROUNDWATER 2006 - 2021

	2006-2015 Maximum (ug/l)	2006-2015 Mean (ug/l)	2016 Maximum (ug/l)	2016 Mean (ug/l)	2019 Maximum (ug/l)	2019 Mean (ug/l)	2021 Maximum (ug/l)	2021 Mean (ug/l)
Mercury	0.05	0.02	<LOD	0.01	<LOD	<LOD	<LOD	<LOD
Cadmium	0.056	0.02	<LOD	0.08	<LOD	<LOD	<LOD	<LOD
Lead	3.00	0.48	0.57	0.17	<LOD	<LOD	<LOD	<LOD
Zinc	58.1	7.41	18.6	9.24	83.0	9.1	21	5.8

On the basis of the above, it is considered that the concentrations of metals detected in groundwater during the recent monitoring works are not indicative of a notable deterioration of the environment.

6.2 Organic PPS

During the 2016 monitoring works, concentrations of TPH were recorded below the LOD in all samples.

In contrast to this, concentrations of TPH were recorded above the LOD in the majority of samples during the 2019 monitoring round. The TPH detected was found to primarily comprise heavy end aliphatic C_{21} – C_{35} bandings although aromatic C_{21} – C_{35} bandings were recorded in some of the samples. The highest TPH concentration was detected in M10 (0.136 mg/l).

During the 2021 monitoring works, TPH was recorded at concentrations marginally above the LOD in six locations (BH101, M7, M8, M10, M17 and M18). As indicated in Section 5, the recorded Total TPH concentrations ranged between 0.01 mg/l to 0.02 mg/l and primarily comprised aliphatic C_{12} – C_{16} and C_{21} – C_{35} bandings. It is noted that the concentrations of TPH recorded during the 2021 monitoring works are lower than those recorded during the 2019 monitoring round. Concentrations of other organic PPSs (i.e. main SVOCs, BTEX, MTBE, and Glycol) have also been reported below their LOD. In addition to this, evidence of hydrocarbon contamination such as free product or visual / olfactory evidence of contamination was not observed during the groundwater sampling. On this basis it is considered that the concentrations of TPH that have been detected are low and in the absence of any obvious signs of contamination unlikely to be a result of ongoing site operations.

During the 2019 monitoring works detectable concentrations of the SVOC Di-n-butylphthalate were recorded in the majority of groundwater samples analysed, which was in contrast with previous monitoring works. The concentrations recorded were considered to be low and in the absence of any

obvious signs of contamination during the sampling work were considered unlikely to be a result of ongoing site operation. Concentrations of Di-n-butylphthalate were not recorded above the LOD in the samples collected during the 2021 monitoring works.

In 2019 detectable concentrations of MTBE and GRO were detected in the sample collected from M17. On the basis of the available information, concentrations of MTBE and / or GRO had not been detected in groundwater beneath the site during previous groundwater monitoring rounds. At that time it was considered that the concentrations detected may potentially be associated with site operations. During the 2021 monitoring works, concentrations of MTBE / GRO were not recorded above the LOD in any of the samples collected.

During the 2021 monitoring works, low concentrations of individual SVOC TICs were recorded in eight of the groundwater samples collected (BH102, M5, M6, M7, M10, M11, M17 and M18), while concentrations of the main SVOC compounds were all recorded below their LOD. Concentrations of individual SVOC TICs have not been recorded in any of the groundwater samples analysed during previous monitoring rounds. As with TPH, the concentrations of SVOC TICs recorded during the 2021 monitoring works are considered to be low and in the absence of any obvious signs of contamination during the sampling work are considered unlikely to be a result of ongoing site operations.

7 CONCLUSIONS AND RECOMMENDATIONS

From the data obtained during the sampling work undertaken by SOCOTEC in 2021, concentrations of determinands tested for in all of the groundwater samples analysed have either been detected below the laboratory LOD or at low concentrations.

During the 2021 monitoring round, detectable concentrations of zinc, a range of individual SVOC TICs and some individual TPH bandings have been reported.

Comparison of maximum and mean metal concentrations indicates that an overall decrease in metal concentration continues to be reported over the course of the current monitoring period (2006 – 2021). On this basis, it is considered that the metal concentrations detected are not indicative of a notable deterioration of groundwater condition.

With the exception of individual SVOC TICs and some individual TPH bands, concentrations of organic PPSs have been recorded below their LOD in samples collected from all monitoring locations. The

SVOC TIC and TPH concentrations recorded are considered to be low and in the absence of any obvious signs of contamination during sampling they are considered unlikely to be a result of ongoing site operation.

On the basis of the available data, it is considered that activities at the site are not resulting in a detrimental effect on the quality of groundwater beneath the site.

REFERENCES

BGS Geology of Britain Viewer: 2017. www.bgs.ac.uk. British Geological Survey.

BS 5930: 2015: Code of practice for ground investigations. British Standards Institution.

BS EN 1997-2: 2007: Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing. British Standards Institution.

EA: 2004: Model Procedures for the Management of Land Contamination, CLR 11, Environment Agency. Bristol. 2004

SEPA 2018: WAT-SG-53 Environmental Quality Standards and Standards for Discharges to Surface Waters. Version 6.1 February 2018

Shell 2017: FNGL Mossmorran Groundwater Monitoring Report (2016). April 2017

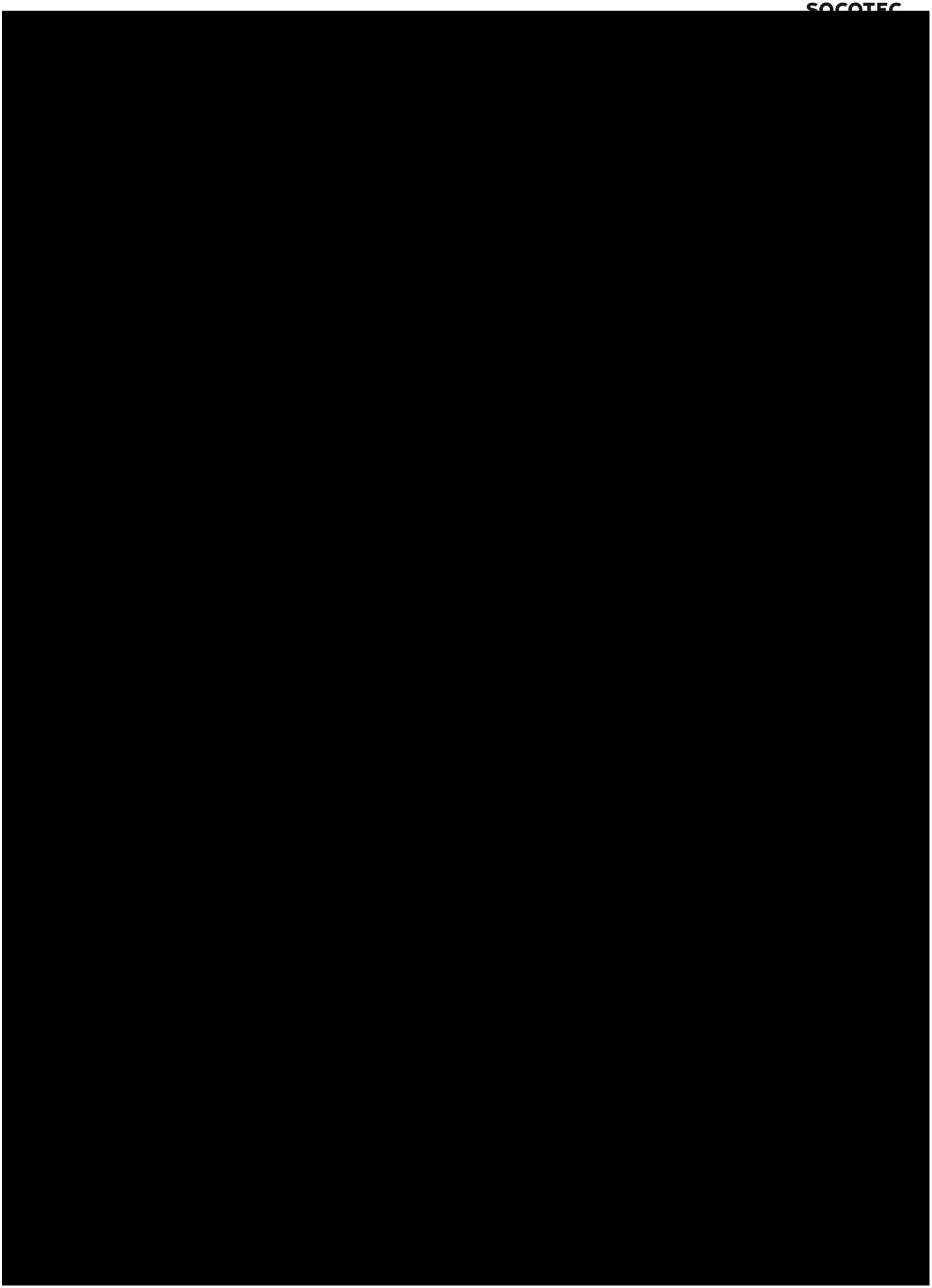
SOCOTEC: Factual Groundwater Monitoring Report, December 2019 (Ref: R9166/4)

APPENDIX A

Figure 1 – Site Location Plan

Figure 2 - Borehole Location Plan

Site Location Plan



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APPENDIX B

2021 Groundwater Laboratory Test Certificate

Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Consultancy North

Project: 21111154

Quote: BEC210821834

Project Ref: R9166

Site: Fife NGL Plant, Mossmorran

Contact: [redacted]

Address: SOCOTEC Central
Leofric Business Park
Progress Close
Coventry
CV3 2TF

E-Mail: [redacted]@socotec.com

Phone: [redacted]

No. Samples Received: 15

Date Received: 15/11/2021

Analysis Date: 01/12/2021

Date Issued: 01/12/2021

Job Status: Complete

Report Type: Final Version 01

This report supercedes any versions previously issued by the laboratory

[redacted]

[redacted]

[redacted]

[redacted]

Authorised by the [redacted]

Client: SOCOTEC Consultancy North
Project Name: R9166
Project No: 21111154
Date Issued: 01/12/2021

Samples Analysed

Sample Reference	Text ID	Sample Date	Sample Type	Sample Description
BH101-1-EW-0.00	21111154-001	11/11/2021 00:00:00	WATER	Unclassified Liquid
BH102-2-EW-0.00	21111154-002	11/11/2021 00:00:00	WATER	Unclassified Liquid
BH104-3-EW-0.00	21111154-003	11/11/2021 00:00:00	WATER	Unclassified Liquid
BH107-4-EW-0.00	21111154-004	11/11/2021 00:00:00	WATER	Unclassified Liquid
BH108-5-EW-0.00	21111154-005	11/11/2021 00:00:00	WATER	Unclassified Liquid
BH109-6-EW-0.00	21111154-006	11/11/2021 00:00:00	WATER	Unclassified Liquid
M5-7-EW-0.00	21111154-007	11/11/2021 00:00:00	WATER	Unclassified Liquid
M6-8-EW-0.00	21111154-008	12/11/2021 00:00:00	WATER	Unclassified Liquid
M7-9-EW-0.00	21111154-009	12/11/2021 00:00:00	WATER	Unclassified Liquid
M8-10-EW-0.00	21111154-010	12/11/2021 00:00:00	WATER	Unclassified Liquid
M9-11-EW-0.00	21111154-011	12/11/2021 00:00:00	WATER	Unclassified Liquid
M10-12-EW-0.00	21111154-012	12/11/2021 00:00:00	WATER	Unclassified Liquid
M11-13-EW-0.00	21111154-013	12/11/2021 00:00:00	WATER	Unclassified Liquid
M17-14-EW-0.00	21111154-014	11/11/2021 00:00:00	WATER	Unclassified Liquid
M18-15-EW-0.00	21111154-015	11/11/2021 00:00:00	WATER	Unclassified Liquid

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005	006	007
					Customer ID	BH101-1-EW-0.00	BH102-2-EW-0.00	BH104-3-EW-0.00	BH107-4-EW-0.00	BH108-5-EW-0.00	BH109-6-EW-0.00	M5-7-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021
>C6-C7 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
>C7-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	N		<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	N		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	N		<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	N		0.002	0.002	<0.002	<0.002	0.020	<0.002	0.013
MTBE	BTEXHSA	10	µg/l	N		<10	<10	<10	<10	<10	<10	<10
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N		<5	<5	<5	<5	<5	<5	<5
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N		<5	<5	<5	<5	<5	<5	<5
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N		<10	<10	<10	<10	<10	<10	<10
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N		<5	<5	<5	<5	<5	<5	<5
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N		<5	<5	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	008	009	010	011	012	013	014
					Customer ID	M6-8-EW-0.00	M7-9-EW-0.00	M8-10-EW-0.00	M9-11-EW-0.00	M10-12-EW-0.00	M11-13-EW-0.00	M17-14-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	11/11/2021
>C6-C7 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
>C7-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	N		<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	N		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	N		<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	N		0.002	0.006	0.004	0.004	<0.002	0.003	<0.002
MTBE	BTEXHSA	10	µg/l	N		<10	<10	<10	<10	<10	<10	<10
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N		<5	<5	<5	<5	<5	<5	<5
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N		<5	<5	<5	<5	<5	<5	<5
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N		<10	<10	<10	<10	<10	<10	<10
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N		<5	<5	<5	<5	<5	<5	<5
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N		<5	<5	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID: 015	Customer ID: M18-15-EW-0.00	Sample Type: WATER	Sampling Date: 11/11/2021
>C6-C7 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100			
>C7-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100			
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005			
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100			
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020			
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100			
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005			
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100			
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	N	<0.00020 D			
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	N	<0.010 D			
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	N	<0.00030 D			
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	N	0.021			
MTBE	BTEXHSA	10	µg/l	N	<10			
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5			
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5			
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10			
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5			
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5			
1,2,4-Trichlorobenzene	SVOCSW	0.005	mg/l	N	<0.050 D			

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

					Sample ID	001	002	003	004	005	006	007
					Customer ID	BH101-1-EW-0.00	BH102-2-EW-0.00	BH104-3-EW-0.00	BH107-4-EW-0.00	BH108-5-EW-0.00	BH109-6-EW-0.00	M5-7-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021
Analysis	Method Code	MDL	Units	Accred.								
1,2-Dichlorobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
1,3-Dichlorobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
1,4-Dichlorobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
1-Methylnaphthalene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
2,4,5-Trichlorophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040 D
2,4,6-Trichlorophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040 D
2,4-Dichlorophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040 D
2,4-Dimethylphenol	SVOCSW	0.02	mg/l	N		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040 D
2,4-Dinitrophenol	SVOCSW	0.01	mg/l	N		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020 D
2,4-Dinitrotoluene	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
2,6-Dinitrotoluene	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
2-Chloronaphthalene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
2-Chlorophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040 D
2-Methylnaphthalene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
2-Methylphenol	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
2-Nitroaniline	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
2-Nitrophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040 D
3- & 4-Methylphenol	SVOCSW	0.02	mg/l	N		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040 D
3-Nitroaniline	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	008	009	010	011	012	013	014
					Customer ID	M6-8-EW-0.00	M7-9-EW-0.00	M8-10-EW-0.00	M9-11-EW-0.00	M10-12-EW-0.00	M11-13-EW-0.00	M17-14-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	11/11/2021
1,2-Dichlorobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
1,3-Dichlorobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
1,4-Dichlorobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
1-Methylnaphthalene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
2,4,5-Trichlorophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.040 D	<0.020	<0.020	<0.040 D	<0.020	<0.020
2,4,6-Trichlorophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.040 D	<0.020	<0.020	<0.040 D	<0.020	<0.020
2,4-Dichlorophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.040 D	<0.020	<0.020	<0.040 D	<0.020	<0.020
2,4-Dimethylphenol	SVOCSW	0.02	mg/l	N		<0.020	<0.040 D	<0.020	<0.020	<0.040 D	<0.020	<0.020
2,4-Dinitrophenol	SVOCSW	0.01	mg/l	N		<0.010	<0.020 D	<0.010	<0.010	<0.020 D	<0.010	<0.010
2,4-Dinitrotoluene	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
2,6-Dinitrotoluene	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
2-Chloronaphthalene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
2-Chlorophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.040 D	<0.020	<0.020	<0.040 D	<0.020	<0.020
2-Methylnaphthalene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
2-Methylphenol	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
2-Nitroaniline	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
2-Nitrophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.040 D	<0.020	<0.020	<0.040 D	<0.020	<0.020
3- & 4-Methylphenol	SVOCSW	0.02	mg/l	N		<0.020	<0.040 D	<0.020	<0.020	<0.040 D	<0.020	<0.020
3-Nitroaniline	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

					Sample ID	015
					Customer ID	M18-15-EW-0.00
					Sample Type	WATER
					Sampling Date	11/11/2021
Analysis	Method Code	MDL	Units	Accred.		
1,2-Dichlorobenzene	SVOCSW	0.005	mg/l	N	<0.050 D	
1,3-Dichlorobenzene	SVOCSW	0.005	mg/l	N	<0.050 D	
1,4-Dichlorobenzene	SVOCSW	0.005	mg/l	N	<0.050 D	
1-Methylnaphthalene	SVOCSW	0.002	mg/l	N	<0.020 D	
2,4,5-Trichlorophenol	SVOCSW	0.02	mg/l	N	<0.200 D	
2,4,6-Trichlorophenol	SVOCSW	0.02	mg/l	N	<0.200 D	
2,4-Dichlorophenol	SVOCSW	0.02	mg/l	N	<0.200 D	
2,4-Dimethylphenol	SVOCSW	0.02	mg/l	N	<0.200 D	
2,4-Dinitrophenol	SVOCSW	0.01	mg/l	N	<0.100 D	
2,4-Dinitrotoluene	SVOCSW	0.005	mg/l	N	<0.050 D	
2,6-Dinitrotoluene	SVOCSW	0.005	mg/l	N	<0.050 D	
2-Chloronaphthalene	SVOCSW	0.002	mg/l	N	<0.020 D	
2-Chlorophenol	SVOCSW	0.02	mg/l	N	<0.200 D	
2-Methylnaphthalene	SVOCSW	0.002	mg/l	N	<0.020 D	
2-Methylphenol	SVOCSW	0.005	mg/l	N	<0.050 D	
2-Nitroaniline	SVOCSW	0.005	mg/l	N	<0.050 D	
2-Nitrophenol	SVOCSW	0.02	mg/l	N	<0.200 D	
3- & 4-Methylphenol	SVOCSW	0.02	mg/l	N	<0.200 D	
3-Nitroaniline	SVOCSW	0.005	mg/l	N	<0.050 D	

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005	006	007
					Customer ID	BH101-1-EW-0.00	BH102-2-EW-0.00	BH104-3-EW-0.00	BH107-4-EW-0.00	BH108-5-EW-0.00	BH109-6-EW-0.00	M5-7-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021
4,6-Dinitro-2-methylphenol	SVOCSW	0.05	mg/l	N		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100 D
4-Bromophenyl-phenylether	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
4-Chloro-3-methylphenol	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
4-Chloroaniline	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
4-Chlorophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040 D
4-Chlorophenyl-phenylether	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
4-Nitroaniline	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
4-Nitrophenol	SVOCSW	0.05	mg/l	N		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100 D
Acenaphthene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Acenaphthylene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Anthracene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Azobenzene	SVOCSW	0.01	mg/l	N		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020 D
Benzo[a]anthracene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Benzo[a]pyrene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Benzo[b]fluoranthene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Benzo[g,h,i]perylene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Benzo[k]fluoranthene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Benzoic Acid	SVOCSW	0.1	mg/l	N		<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.200 D
Benzyl alcohol	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	008	009	010	011	012	013	014
					Customer ID	M6-8-EW-0.00	M7-9-EW-0.00	M8-10-EW-0.00	M9-11-EW-0.00	M10-12-EW-0.00	M11-13-EW-0.00	M17-14-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	11/11/2021
4,6-Dinitro-2-methylphenol	SVOCSW	0.05	mg/l	N		<0.050	<0.100 D	<0.050	<0.050	<0.100 D	<0.050	<0.050
4-Bromophenyl-phenylether	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
4-Chloro-3-methylphenol	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
4-Chloroaniline	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
4-Chlorophenol	SVOCSW	0.02	mg/l	N		<0.020	<0.040 D	<0.020	<0.020	<0.040 D	<0.020	<0.020
4-Chlorophenyl-phenylether	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
4-Nitroaniline	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
4-Nitrophenol	SVOCSW	0.05	mg/l	N		<0.050	<0.100 D	<0.050	<0.050	<0.100 D	<0.050	<0.050
Acenaphthene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Acenaphthylene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Anthracene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Azobenzene	SVOCSW	0.01	mg/l	N		<0.010	<0.020 D	<0.010	<0.010	<0.020 D	<0.010	<0.010
Benzo[a]anthracene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Benzo[a]pyrene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Benzo[b]fluoranthene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Benzo[g,h,i]perylene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Benzo[k]fluoranthene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Benzoic Acid	SVOCSW	0.1	mg/l	N		<0.100	<0.200 D	<0.100	<0.100	<0.200 D	<0.100	<0.100
Benzyl alcohol	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

				Sample ID	015
				Customer ID	M18-15-EW-0.00
				Sample Type	WATER
				Sampling Date	11/11/2021
Analysis	Method Code	MDL	Units	Accred.	
4,6-Dinitro-2-methylphenol	SVOCSW	0.05	mg/l	N	<0.500 D
4-Bromophenyl-phenylether	SVOCSW	0.005	mg/l	N	<0.050 D
4-Chloro-3-methylphenol	SVOCSW	0.005	mg/l	N	<0.050 D
4-Chloroaniline	SVOCSW	0.005	mg/l	N	<0.050 D
4-Chlorophenol	SVOCSW	0.02	mg/l	N	<0.200 D
4-Chlorophenyl-phenylether	SVOCSW	0.005	mg/l	N	<0.050 D
4-Nitroaniline	SVOCSW	0.005	mg/l	N	<0.050 D
4-Nitrophenol	SVOCSW	0.05	mg/l	N	<0.500 D
Acenaphthene	SVOCSW	0.002	mg/l	N	<0.020 D
Acenaphthylene	SVOCSW	0.002	mg/l	N	<0.020 D
Anthracene	SVOCSW	0.002	mg/l	N	<0.020 D
Azobenzene	SVOCSW	0.01	mg/l	N	<0.100 D
Benzo[a]anthracene	SVOCSW	0.002	mg/l	N	<0.020 D
Benzo[a]pyrene	SVOCSW	0.002	mg/l	N	<0.020 D
Benzo[b]fluoranthene	SVOCSW	0.002	mg/l	N	<0.020 D
Benzo[g,h,i]perylene	SVOCSW	0.002	mg/l	N	<0.020 D
Benzo[k]fluoranthene	SVOCSW	0.002	mg/l	N	<0.020 D
Benzoic Acid	SVOCSW	0.1	mg/l	N	<1.00 D
Benzyl alcohol	SVOCSW	0.005	mg/l	N	<0.050 D

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005	006	007
					Customer ID	BH101-1-EW-0.00	BH102-2-EW-0.00	BH104-3-EW-0.00	BH107-4-EW-0.00	BH108-5-EW-0.00	BH109-6-EW-0.00	M5-7-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021
Biphenyl	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
bis(2-Chloroethoxy)methane	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
bis(2-Chloroethyl)ether	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
bis(2-Chloroisopropyl)ether	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
bis(2-Ethylhexyl)phthalate	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Butylbenzylphthalate	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Carbazole	SVOCSW	0.01	mg/l	N		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020 D
Chrysene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Coronene	SVOCSW	0.05	mg/l	N		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100 D
Dibenzo[a,h]anthracene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Dibenzofuran	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Diethylphthalate	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Dimethylphthalate	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Di-n-butylphthalate	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Di-n-octylphthalate	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Diphenyl ether	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Fluoranthene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Fluorene	SVOCSW	0.002	mg/l	N		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Hexachlorobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	008	009	010	011	012	013	014
					Customer ID	M6-8-EW-0.00	M7-9-EW-0.00	M8-10-EW-0.00	M9-11-EW-0.00	M10-12-EW-0.00	M11-13-EW-0.00	M17-14-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	11/11/2021
Biphenyl	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
bis(2-Chloroethoxy)methane	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
bis(2-Chloroethyl)ether	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
bis(2-Chloroisopropyl)ether	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
bis(2-Ethylhexyl)phthalate	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Butylbenzylphthalate	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Carbazole	SVOCSW	0.01	mg/l	N		<0.010	<0.020 D	<0.010	<0.010	<0.020 D	<0.010	<0.010
Chrysene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Coronene	SVOCSW	0.05	mg/l	N		<0.050	<0.100 D	<0.050	<0.050	<0.100 D	<0.050	<0.050
Dibenzo[a,h]anthracene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Dibenzofuran	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Diethylphthalate	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Dimethylphthalate	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Di-n-butylphthalate	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Di-n-octylphthalate	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Diphenyl ether	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Fluoranthene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Fluorene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Hexachlorobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID: 015	Customer ID: M18-15-EW-0.00	Sample Type: WATER	Sampling Date: 11/11/2021
Biphenyl	SVOCSW	0.002	mg/l	N	<0.020 D			
bis(2-Chloroethoxy)methane	SVOCSW	0.005	mg/l	N	<0.050 D			
bis(2-Chloroethyl)ether	SVOCSW	0.005	mg/l	N	<0.050 D			
bis(2-Chloroisopropyl)ether	SVOCSW	0.005	mg/l	N	<0.050 D			
bis(2-Ethylhexyl)phthalate	SVOCSW	0.005	mg/l	N	<0.050 D			
Butylbenzylphthalate	SVOCSW	0.005	mg/l	N	<0.050 D			
Carbazole	SVOCSW	0.01	mg/l	N	<0.100 D			
Chrysene	SVOCSW	0.002	mg/l	N	<0.020 D			
Coronene	SVOCSW	0.05	mg/l	N	<0.500 D			
Dibenzo[a,h]anthracene	SVOCSW	0.002	mg/l	N	<0.020 D			
Dibenzofuran	SVOCSW	0.005	mg/l	N	<0.050 D			
Diethylphthalate	SVOCSW	0.005	mg/l	N	<0.050 D			
Dimethylphthalate	SVOCSW	0.005	mg/l	N	<0.050 D			
Di-n-butylphthalate	SVOCSW	0.005	mg/l	N	<0.050 D			
Di-n-octylphthalate	SVOCSW	0.002	mg/l	N	<0.020 D			
Diphenyl ether	SVOCSW	0.002	mg/l	N	<0.020 D			
Fluoranthene	SVOCSW	0.002	mg/l	N	<0.020 D			
Fluorene	SVOCSW	0.002	mg/l	N	<0.020 D			
Hexachlorobenzene	SVOCSW	0.005	mg/l	N	<0.050 D			

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	001	002	003	004	005	006	007
Sample ID					001	002	003	004	005	006	007
Customer ID					BH101-1-EW-0.00	BH102-2-EW-0.00	BH104-3-EW-0.00	BH107-4-EW-0.00	BH108-5-EW-0.00	BH109-6-EW-0.00	M5-7-EW-0.00
Sample Type					WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date					11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021
Hexachlorobutadiene	SVOCSW	0.005	mg/l	N	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Hexachlorocyclopentadiene	SVOCSW	0.005	mg/l	N	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Hexachloroethane	SVOCSW	0.005	mg/l	N	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Indeno[1,2,3-cd]pyrene	SVOCSW	0.002	mg/l	N	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Isophorone	SVOCSW	0.005	mg/l	N	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Naphthalene	SVOCSW	0.002	mg/l	N	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Nitrobenzene	SVOCSW	0.005	mg/l	N	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
N-Nitroso-di-n-propylamine	SVOCSW	0.005	mg/l	N	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
N-Nitrosodiphenylamine	SVOCSW	0.005	mg/l	N	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010 D
Pentachlorophenol	SVOCSW	0.05	mg/l	N	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100 D
Phenanthrene	SVOCSW	0.002	mg/l	N	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
Phenol	SVOCSW	0.02	mg/l	N	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040 D
Pyrene	SVOCSW	0.002	mg/l	N	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 D
TIC List	SVOCSW	0.01	mg/l	N	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	0.01 B	<0.01 B	<0.01 B	<0.01 B	<0.01 B	<0.01 B	<0.01 B
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01 B	<0.01 B	<0.01 B	<0.01 B	<0.01 B	<0.01 B	<0.01 B
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	008	009	010	011	012	013	014
					Customer ID	M6-8-EW-0.00	M7-9-EW-0.00	M8-10-EW-0.00	M9-11-EW-0.00	M10-12-EW-0.00	M11-13-EW-0.00	M17-14-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	11/11/2021
Hexachlorobutadiene	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Hexachlorocyclopentadiene	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Hexachloroethane	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Indeno[1,2,3-cd]pyrene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Isophorone	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Naphthalene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Nitrobenzene	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
N-Nitroso-di-n-propylamine	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
N-Nitrosodiphenylamine	SVOCSW	0.005	mg/l	N		<0.005	<0.010 D	<0.005	<0.005	<0.010 D	<0.005	<0.005
Pentachlorophenol	SVOCSW	0.05	mg/l	N		<0.050	<0.100 D	<0.050	<0.050	<0.100 D	<0.050	<0.050
Phenanthrene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
Phenol	SVOCSW	0.02	mg/l	N		<0.020	<0.040 D	<0.020	<0.020	<0.040 D	<0.020	<0.020
Pyrene	SVOCSW	0.002	mg/l	N		<0.002	<0.004 D	<0.002	<0.002	<0.004 D	<0.002	<0.002
TIC List	SVOCSW	0.01	mg/l	N		See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.01 B	<0.01 B	0.01 B	<0.01 B	<0.01 B	<0.01 B	0.01 B
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.01 B	<0.01 B	<0.01 B	<0.01 B	<0.01 B	<0.01 B	<0.01 B
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.01	0.01	<0.01	<0.01	0.01	<0.01	<0.01
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.01	0.01	0.01	<0.01	0.01	<0.01	0.02

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

					Sample ID	015
					Customer ID	M18-15-EW-0.00
					Sample Type	WATER
					Sampling Date	11/11/2021
Analysis	**Method Code**	**MDL**	**Units**	**Accred.**		
Hexachlorobutadiene	SVOCSW	0.005	mg/l	N	<0.050 D
Hexachlorocyclopentadiene	SVOCSW	0.005	mg/l	N	<0.050 D
Hexachloroethane	SVOCSW	0.005	mg/l	N	<0.050 D
Indeno[1,2,3-cd]pyrene	SVOCSW	0.002	mg/l	N	<0.020 D
Isophorone	SVOCSW	0.005	mg/l	N	<0.050 D
Naphthalene	SVOCSW	0.002	mg/l	N	<0.020 D
Nitrobenzene	SVOCSW	0.005	mg/l	N	<0.050 D
N-Nitroso-di-n-propylamine	SVOCSW	0.005	mg/l	N	<0.050 D
N-Nitrosodiphenylamine	SVOCSW	0.005	mg/l	N	<0.050 D
Pentachlorophenol	SVOCSW	0.05	mg/l	N	<0.500 D
Phenanthrene	SVOCSW	0.002	mg/l	N	<0.020 D
Phenol	SVOCSW	0.02	mg/l	N	<0.200 D
Pyrene	SVOCSW	0.002	mg/l	N	<0.020 D
TIC List	SVOCSW	0.01	mg/l	N	See Attached
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01 B
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01 B
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	0.01

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

					Sample ID	001	002	003	004	005	006	007
					Customer ID	BH101-1-EW-0.00	BH102-2-EW-0.00	BH104-3-EW-0.00	BH107-4-EW-0.00	BH108-5-EW-0.00	BH109-6-EW-0.00	M5-7-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021
Analysis	**Method Code**	**MDL**	**Units**	**Accred.**								
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ethylene Glycol	SUB024	0	mg/l	N		<200	<200	<200	<200	<200	IS	<200
Propylene Glycol	SUB024	0	mg/l	N		<100	<100	<100	<100	<100	IS	<100

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	008	009	010	011	012	013	014
					Customer ID	M6-8-EW-0.00	M7-9-EW-0.00	M8-10-EW-0.00	M9-11-EW-0.00	M10-12-EW-0.00	M11-13-EW-0.00	M17-14-EW-0.00
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	12/11/2021	11/11/2021
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ethylene Glycol	SUB024	0	mg/l	N		<200	<200	<200	<200	<200	<200	<200
Propylene Glycol	SUB024	0	mg/l	N		<100	<100	<100	<100	<100	<100	<100

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID: 015	Customer ID: M18-15-EW-0.00	Sample Type: WATER	Sampling Date: 11/11/2021
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01			
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01			
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01			
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01			
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01			
Ethylene Glycol	SUB024	0	mg/l	N	<200			
Propylene Glycol	SUB024	0	mg/l	N	<100			

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-001

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
	None Detected			

SOCOTEC - Unknowns Analysis Report

SOCOTEC

Sample Name: 21111154-002

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
2.7940	Carbamic acid, (cyanomethyl)-, 1,1-dimethylethyl ester	85.7	85363-04-8	0.02 mg/l

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-003

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
	None Detected			

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-004

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
	None Detected			

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-005

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
	None Detected			

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-006

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
	None Detected			

SOCOTEC - Unknowns Analysis Report

SOCOTEC

Sample Name: 21111154-007

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
3.2259	Ethyl 4-(ethyloxy)-2-oxobut-3-enoate	81.6	1000305-38-2	0.02 mg/l

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-008

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
3.2166	Ethyl 4-(ethyloxy)-2-oxobut-3-enoate	83.5	1000305-38-2	0.01 mg/l

SOCOTEC - Unknowns Analysis Report

SOCOTEC

Sample Name: 21111154-009

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
2.8206	Carbamic acid, (cyanomethyl)-, 1,1-dimethylethyl ester	86.1	85363-04-8	0.02 mg/l

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-010

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
	None Detected			

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-011

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
	None Detected			

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-012

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
2.5086	Heptane, 3-methyl-	87.9	589-81-1	0.04 mg/l
2.5011	1-Butanol, 3-methyl-, carbonate (2:1)	67.4	2050-95-5	0.02 mg/l

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-013

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
2.7530	Carbamic acid, (cyanomethyl)-, 1,1-dimethylethyl ester	84.2	85363-04-8	0.02 mg/l

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-014

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration
2.7415	2-Propanol, 2-methyl-	84.7	75-65-0	0.02 mg/l

SOCOTEC - Unknowns Analysis Report

Sample Name: 21111154-015

Component RT	Compound Name	Match Score	CAS#	Estimated Concentration	
2.7391	Carbamic acid, (cyanomethyl)-, 1,1-dimethylethyl ester	84.4	85363-04-8	0.18	mg/l

TEST REPORT ASC/51598

Customer:	Environmental Chemistry SOCOTEC Etwall Building Bretby Business Park Ashby Road Burton Upon Trent DE15 0YZ
Testing Facility:	Specialist Chemistry SOCOTEC Etwall Building Bretby Business Park Ashby Road Burton Upon Trent DE15 0YZ
Purchase Order Number:	21111154
Date Samples Received:	16 November 2021
Condition of Samples:	Ambient and Satisfactory
Approved by:	[redacted]
Approver's name:	[redacted]
Job Title:	[redacted]
Test Report Date:	29 November 2021

Sample and Method Descriptions

Number of Samples Received	Matrix / Sample Description	Method ID	Description
14	Ground Water	IHM	**IHM** – Samples were analysed by Gas Chromatography Mass Spectrometry (GC/MS) to determine the Glycol content.

Results

Table 1: Glycol content

	Units	µg/mL	µg/mL
	Method ID (ASC/SOP/xxx)	IHM	IHM
	Instrument Limit of Detection	200	100
	UKAS	NO	NO
Customer Sample Reference	**Laboratory Sample Reference**	**Ethylene Glycol**	**Propylene Glycol**
21111154-001-1	ASC/51598.001	<200	<100
21111154-002-1	ASC/51598.002	<200	<100
21111154-003-1	ASC/51598.003	<200	<100
21111154-004-1	ASC/51598.004	<200	<100
21111154-005-1	ASC/51598.005	<200	<100
21111154-007-1	ASC/51598.007	<200	<100
21111154-008-1	ASC/51598.008	<200	<100
21111154-009-1	ASC/51598.009	<200	<100
21111154-010-1	ASC/51598.010	<200	<100
21111154-011-1	ASC/51598.011	<200	<100
21111154-012-1	ASC/51598.012	<200	<100
21111154-013-1	ASC/51598.013	<200	<100
21111154-014-1	ASC/51598.014	<200	<100
21111154-015-1	ASC/51598.015	<200	<100

END OF TEST REPORT

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

Deviating Sample Report

Sample Reference	Text ID	Reported Name	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time

Analysis Method

Analysis	Analysis Type	Analysis Method
BTEXHSA	ORGANIC	Unfiltered
GROHSA	ORGANIC	Unfiltered
GROHSA/BTEXHSA	ORGANIC	
ICPMSW (Dissolved)	METALS	Filtered
SUB024	SUBCON	
SVOCSW	ORGANIC	Unfiltered
TPHFID (Aliphatic)	ORGANIC	Unfiltered
TPHFID (Aromatic)	ORGANIC	Unfiltered

Result Report Notes

Letters alongside results signify that the result has associated report notes.
The report notes are a follows:

Letter	Note
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to recoveries beyond our calibration range and following the maximum size of dilution allowed, the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

Client: SOCOTEC Consultancy North
Project Name: Fife NGL Plant, Mossmorran
Project No: 21111154
Date Issued: 01/12/2021

HWOL Acronym Key

Acronym	Description
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total

Additional Information

This report refers to samples as received, and SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

In the accreditation column of analysis report the codes are as follows:

U = UKAS accredited analysis
M = MCERT accredited analysis
N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 105° C.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° C.

This report shall not be reproduced except in full and with approval from the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

IS = Insufficient Sample to complete analysis
NA = Sample is not amenable for the required analysis
ND = Results cannot be determined

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the Subcontracted lab for information regarding any deviancies for this analysis.

End of Certificate of Analysis