

GROUNDWATER MONITORING REPORT

**ENERSYS,
NEWPORT**

Prepared for:

ENERSYS NEWPORT

May 2017

Prepared by:



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GROUNDWATER MONITORING REPORT

ENERSYS, NEWPORT,

Report Reference Number:		P1736/R006	
Report Issue:		Final	
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Date:	May 2017	Date:	May 2017

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GROUNDWATER MONITORING REPORT

ENERSYS, NEWPORT

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GROUNDWATER MONITORING REPORT

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1. SUMMARY

- 1.1. EnerSys Newport is required by Natural Resources Wales ("NRW") to undertake routine groundwater sampling at its site. The results outlined in this report represent the current groundwater conditions within the installation boundary.
- 1.2. The site groundwater sampling was undertaken on the 10th April 2017. The sampling was undertaken by Environmental Compliance Ltd ("ECL"). The locations of the current groundwater installations/boreholes ("BH") are identified in the Borehole Location Diagram found in Appendix A of this report.
- 1.3. Three boreholes exceeded the Environmental Quality Standard ("EQS") guideline levels for lead. A full table of results may be found in Appendix C and a trend analysis of selected contaminants can be found in Chapter 5 of this report.
- 1.4. BH1 exceeds the lead EQS (a result of 44µg/l was obtained), the concentration has increased from May 2016 but is still lower than previous years.
- 1.5. BH03/12 no longer exceeds the lead EQS (a result of 9.6µg/l was obtained), indicating that the results from May 2016 could have been anomalies.
- 1.6. BH4 exceeds the lead EQS (a result of 30 µg/l was obtained), the concentration has increased from May 2016.
- 1.7. BH09 exceeds the EQS for lead (a result of 40µg/l was obtained), this is a decrease from the May 2016 data but still shows an increasing trend.

2. INTRODUCTION

2.1. Site Location

The site is located at:

EnerSys Newport.
Stephenson Street
Newport
Gwent
NP19 4XJ

2.2. Details of Installation

The installation is specifically designed for the manufacturing of specialised lead acid batteries.

2.3. Groundwater Monitoring Approach

2.3.1. Previous groundwater monitoring has been undertaken by Terrafirma in October 2007, July 2008, November 2010 and by Environmental Compliance ("ECL") in 2013, 2014, 2015, 2016 and 2017.

2.3.2. This report is updated following each round of groundwater monitoring and contains the following:

- results of on-going monitoring,
- graphs to identify any trends; and
- laboratory testing results.

3. INVESTIGATION AND SAMPLING STRATEGY

3.1. General

- 3.1.1. The groundwater monitoring of was undertaken on the 10th April 2017.
 - 3.1.2. The sampling was undertaken by ECL. The locations of the groundwater installations/boreholes (“BH”) are identified in the Borehole Location Diagram found in Appendix A of this report.
-

3.2. Sampling History

- 3.2.1. Results for aliphatic/aromatics may deviate for BH06 in April 2013 due to inappropriate sample containment. This was due to the limited availability of groundwater, only 1 litre was obtained without purging from BH06.
- 3.2.2. Sample data for BH01 and BH08 is unavailable for October 2007 due to insufficient samples retrieved at the time of the survey.
- 3.2.3. Sample data for BH06 and BH07 is unavailable for July 2008 due to insufficient samples retrieved at the time of the survey.
- 3.2.4. From November 2010 onwards, there is no sample data for BH02, BH05 and BH07 as they were accidentally destroyed. These were replaced by BH9, BH10 and BH11 which are located in the vicinity of the original.
- 3.2.5. Groundwater temperature is unavailable for the October 2007 survey.
- 3.2.6. Data for groundwater temperature and depth to groundwater is unavailable for the April 2008 and November 2010 surveys.
- 3.2.7. During the April 2015 survey, BH3 was being relocated due to safety issues. Groundwater samples were taken from the original BH3 before it was in filled and relocated 1.5m away from the path. This is now known as BH12, however, due to the close proximity to BH3 the results will be grouped with BH3 in order to continue trend analysis.

3.3. Groundwater Sampling Techniques and Protocols

3.3.1. Groundwater Sampling, Collection and Analysis Protocol

1. Depth to groundwater was recorded using a dip meter.
2. Boreholes were purged using a bailer prior to sample extraction.
3. Groundwater was extracted using a baler and stored in a one litre plastic bottle, a one litre glass bottle and one 40ml septum-capped vial.
4. Sample temperature, turbidity, colour, odour and any discernible sheens were recorded on a borehole record form.
5. Samples were immediately placed in cool boxes to minimised the potential for deterioration
6. Samples were labelled prior to dispatch to the accredited laboratory for analysis.
7. All samples were accompanied by a chain of custody form.

3.3.2. Determination of Groundwater Level Above Ordinance Datum

Determination of groundwater level Above Ordinance Datum (“AOD”) for each borehole was calculated using the nearest known AOD manhole height, minus the measured depth below ground level of the groundwater. The drainage plan for the site used to determine the nearest manhole can be found in Appendix G. Table 1 lists the borehole IDs, nearest manhole IDs and manhole heights AOD taken from the drainage plan.

Table 1: Borehole IDs, Nearest Manhole IDs and Manhole Heights.

Borehole ID	Manhole ID	Manhole Height (AOD)
BH01	S17	7.025m
BH03/BH12	S8	7.050m
BH04	F43	7.115m
BH06	F33	6.895m
BH08	S27	7.075m
BH09	F46	7.070m
BH10	S13	7.150m
BH11	F35	6.660m

3.3.3. Analytical Suites

The analytical suite used for the groundwater samples is as follows:

- lead, dissolved;
- sulphate;
- pH;
- total petroleum hydrocarbons (TPH);
- TPH aliphatic C₅-C₄₄ (total and split);
- TPH aromatic C₆-C₃₅ (total and split)

3.3.4. **Methodology for Data Analysis**

Results of the groundwater chemical analysis have been compared with Environmental Quality Standards ("EQSs"), or in their absence, other appropriate reference values detailed in Appendix J (Groundwater) of the EA's Horizontal Guidance Note H1 *Environmental risk assessment for permits Dec 2011 v2.1*.

4. RESULTS OF THE GROUNDWATER MONITORING

4.1. Summary of the Groundwater Monitoring Sample Conditions

A summary of the groundwater monitoring conditions can be found in Appendix B.

4.2. Laboratory results

4.2.1. The results for the groundwater samples extracted on 10th April 2017 are provided in Appendix C. Determinants that have exceeded their EQS are highlighted in bold.

4.2.2. The laboratory certificate of analysis is in Appendix F.

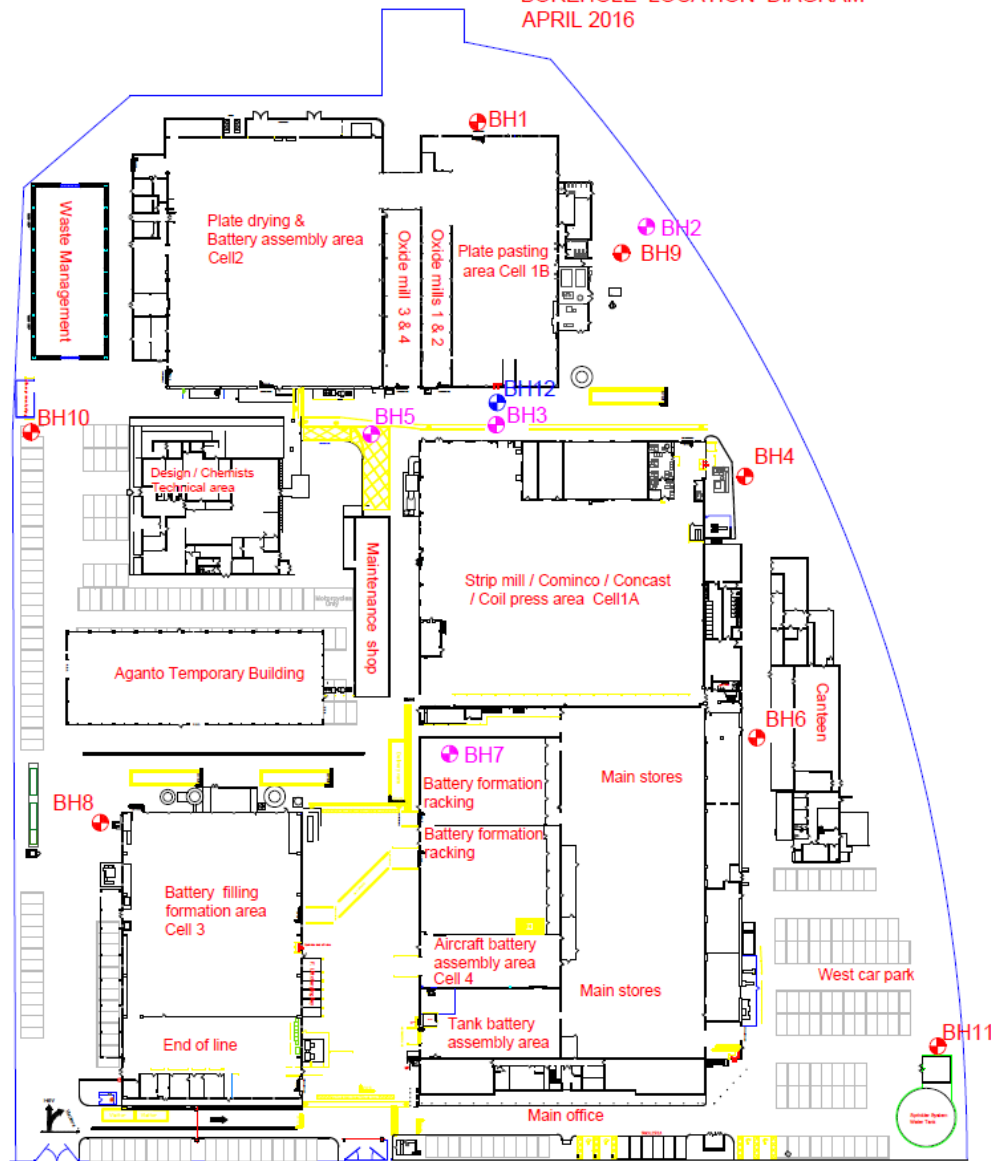
5. TREND ANALYSIS

- 5.1. Tables containing results for each determinant, and each individual borehole, from October 2007 to April 2017 (using results from ECL and Terrafirma's previous monitoring campaigns), can be found in Appendix D, Trend Tables.
- 5.2. Graphs for temperature, the depth to groundwater, lead, sulphate and TPH from October 2007 to April 2017 are shown in Appendix E, Trend Charts. Charts showing trends for groundwater temperature and depth to groundwater can also be found in Appendix E.
- 5.4. None of the boreholes exceeded the EQS for sulphate (250,000µg/l). Results obtained in April 2017 show a decreasing trend in boreholes 1, 3/12, 4 and 9. However, there still remains considerable variance in the results compared to earlier data.
- 5.5. A result of 44µg/l was obtained for BH01, this exceeds the 25µg/l EQS for lead. This result was an increase on the December 2016 result (37µg/l).
- 5.6. A result of 30µg/l was obtained for BH04, this exceeds the 25µg/l EQS for lead. This result was an increase on the May 2016 result (15µg/l).
- 5.7. A result of 40µg/l was obtained for BH09, this exceeds the 25µg/l EQS for lead. The result from BH09 was a decrease on the data obtained from December 2016 (44 µg/l), but an increase on the results from May 2016 and the retest (35µg/l and 29µg/l).
- 5.8. BH03/12 does not exceed the EQS for lead (a result of 21µg/l was obtained). This shows a decrease from data obtained during the May 2016 survey and the retest (280µg/l and 82µg/l). This decrease shows further indication that the high concentrations of lead seen in May 2016 could be anomalies; this will be made clear with further surveys.
- 5.9. There is no clear trend in either to depth of the groundwater or temperature.

APPENDIX A

***EnerSys Newport
Borehole Location Diagram***

BOREHOLE LOCATION DIAGRAM
APRIL 2016



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KEY	
	EXISTING BOREHOLE LOCATION (1,4,6,8,9,10 & 11)
	NEW BOREHOLE LOCATION BH 12
	DESTROYED BOREHOLE LOCATION (BH 2,3,5 & 7)



APPENDIX B

Summary of the Groundwater Monitoring Sample Conditions

Summary of the Groundwater Monitoring Sample Conditions 10th April 2017

Sample ID	BH01	BH03/12	BH04	BH06	BH08	BH09	BH10	BH11
Sampling Date	10/04/2017							
Depth (AOD) in Metres	5.93	5.19	5.94	6.25	6.20	5.61	5.95	4.91
Temperature (oC)	12	14	12	14	14	12	12	12
Sampling Time	10:58	10:30	11:40	11:30	09:55	10:40	10:10	11:20
Monitored by	Chris Pickford							
Sheens	None	None	None	None	None	None	None	None
Odours	None	None	None	None	None	None	None	None
Turbidity	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Colour	Dark Brown	Light Yellow	Dark Brown	Dark Brown	Brown	Dark Brown	Light Yellow	Dark Brown
Sampling Method	Bailer							
Sample Containers	1x1l Plastic 1x 1l Glass 1 x 40ml vial							

APPENDIX C

Analysis Results 10th April 2017

Summary of Chemical Analysis - Water Samples 10th April 2017

Test	Units	EQS*	BH01	BH03/12	BH04	BH06	BH08	BH09	BH10	BH11
Lead, Dissolved	µg/l	25	44	9.6	30	2.1	0.6	40	4	2.1
pH	-	n/a	7.1	7.7	7.3	7.4	7.5	8.1	7.5	7.7
Sulphate	µg/l	250,000	13000	12000	6400	49000	140000	11000	51000	34000
Aliphatic C5-C6	µg/l	n/a	10	10	10	10	10	10	10	10
Aliphatic C6-C8	µg/l	n/a	10	10	10	10	10	10	10	10
Aliphatic C8-C10	µg/l	n/a	10	10	10	10	10	10	10	10
Aliphatic C10-C12	µg/l	n/a	10	10	10	20	10	10	10	100
Aliphatic C12-C16	µg/l	n/a	10	10	10	20	10	10	10	150
Aliphatic C16-C21	µg/l	n/a	10	10	10	20	10	10	10	100
Aliphatic C21-C35	µg/l	n/a	10	10	10	40	10	10	10	560
Aliphatic C35-C44	µg/l	n/a	10	10	10	20	10	10	10	260
Aromatic C6-C7	µg/l	30	10	10	10	10	10	10	10	10
Aromatic C7-C8	µg/l	40	10	10	10	10	10	10	10	10
Aromatic C8-C10	µg/l	n/a	10	10	10	10	10	10	10	10
Aromatic C10-C12	µg/l	n/a	10	10	10	20	10	10	10	100
Aromatic C12-C16	µg/l	n/a	10	30	10	20	30	10	20	140
Aromatic C16-C21	µg/l	n/a	10	10	10	60	50	10	10	890
Aromatic C21-C35	µg/l	n/a	10	10	10	270	10	10	10	1800
Aromatic C35-C44	µg/l	n/a	10	10	10	20	10	10	10	100
Aliphatic C5-C44	µg/l	n/a	10	10	10	40	10	10	10	810
Aromatic C6-C44	µg/l	n/a	10	30	10	330	90	10	20	2900
TPH Ali/Aro	µg/l	n/a	10	30	10	370	90	10	20	3700

n/d = Not Detected

*References

APPENDIX D

Trend Tables

Summary of Chemical Analysis
Water Samples October 2007 to April 2017 - Borehole 1

Determinant	Units	EQS*	Oct-07	Jul-08	Nov-10	Apr-13	Apr-14	Apr-15	May-16	Dec-16	Apr-17
Temperature	°C	n/a	I/S	n/d	n/d	10.0	12.0	12.0	10.0	10.0	12.0
Depth (AOD)	m	n/a	I/S	n/d	n/d	6.095	6.39	6.03	5.925	6.33	5.845
Lead, Dissolved	µg/l	25	I/S	50	55	130	72	100	39	37	44
pH	pH units	n/a	I/S	7.4	7.2	7.5	7.2	6.9	6.9	7.7	7.1
Sulphate	µg/l	250000	I/S	46000	67200	35000	32000	19000	24000	17000	13000
Aliphatic C5-C6	µg/l	n/a	I/S	n/d	n/d	0.1	10	10	10	10	10
Aliphatic C6-C8	µg/l	n/a	I/S	5	10	19	10	10	10	10	10
Aliphatic C8-C10	µg/l	n/a	I/S	5	10	1.8	10	10	10	10	10
Aliphatic C10-C12	µg/l	n/a	I/S	5	10	1.3	10	10	100 ^(S)	10	10
Aliphatic C12-C16	µg/l	n/a	I/S	8.7	10	1	10	10	100 ^(S)	10	10
Aliphatic C16-C21	µg/l	n/a	I/S	33	10	2.6	10	10	100 ^(S)	10	10
Aliphatic C21-C35	µg/l	n/a	n/d	n/d	n/d	1	10	10	100 ^(S)	20	10
Aliphatic C35-C44	µg/l	n/a	n/d	n/d	n/d	n/d	10	10	100 ^(S)	10	10
Aromatic C6-C7	µg/l	30	n/d	n/d	n/d	n/d	10	10	100 ^(S)	10	10
Aromatic C7-C8	µg/l	40	I/S	2.5	10	0.1	10	10	10	10	10
Aromatic C8-C10	µg/l	n/a	I/S	5	10	0.1	10	10	10	10	10
Aromatic C10-C12	µg/l	n/a	I/S	5	10	7.2	10	10	10	10	10
Aromatic C12-C16	µg/l	n/a	I/S	5	10	12	10	10	100 ^(S)	10	10
Aromatic C16-C21	µg/l	n/a	I/S	14	10	67	10	20	100 ^(S)	20	10
Aromatic C21-C35	µg/l	n/a	n/d	n/d	n/d	78	10	10	100 ^(S)	10	10
Aromatic C35-C44	µg/l	n/a	n/d	n/d	n/d	n/d	10	10	100 ^(S)	10	10
Aliphatic C5-C44	µg/l	n/a	n/d	n/d	n/d	n/d	n/d	n/d	100 ^(S)	20	10
Aromatic C6-C44	µg/l	n/a	n/d	n/d	n/d	n/d	n/d	20	100 ^(S)	20	10
TPH Ali/Aro	µg/l	n/a	I/S	270	10	190	n/d	10	10	40	10
Aromatic C5-C7 ⁽¹⁾	µg/l	30	I/S	2.5	10	0.1	n/d	n/d	n/d	n/d	n/d
Aliphatic C5-C35 ⁽¹⁾	µg/l	n/a	n/d	n/d	n/d	25	n/d	n/d	n/d	n/d	n/d
Aromatic C5-C35 ⁽¹⁾	µg/l	n/a	n/d	n/d	n/d	160	n/d	n/d	n/d	n/d	n/d
Aliphatic C21-C40 ⁽¹⁾	µg/l	n/a	I/S	140	10	n/d	n/d	n/d	n/d	n/d	n/d
Aromatic C21-C40 ⁽¹⁾	µg/l	n/a	I/S	75	10	n/d	n/d	n/d	n/d	n/d	n/d
Aliphatic C6-C40 ⁽¹⁾	µg/l	n/a	I/S	180	10	n/d	n/d	n/d	n/d	n/d	n/d
Aromatic C6-C40 ⁽¹⁾	µg/l	n/a	I/S	89	10	n/d	n/d	n/d	n/d	n/d	n/d

n/a = no guideline value available
I/S =insufficient sample
n/d = no data
Obs = obstructed
[Note to table](#)
(1) - Old banding
\$ - Limit of Detection (LOD) determined by sample aliquot used for analysis or raised due to dilution of sample.
*References
H1 Environmental Risk Assessment - Annex J v2.0 April 2010 (Saltwater)

Summary of Chemical Analysis

Water Samples October 2007 to April 2017 - Borehole 3/12

Determinant	Units	EQS*	Oct-07	Jul-08	Nov-10	Apr-13	May-13	Apr-15	May/June-16	Dec-16	Apr-17
Temperature	°C	n/a	n/d	n/d	n/d	11.0	13.0	13.0	14.0	8.0	14.0
Depth (AOD)	m	n/a	6.1	n/d	n/d	6.35	6.39	6.25	5.15	5.25	5.19
Lead, Dissolved	ug/l	25	50	50	5	25	1.2	2.1	280/89	21	9.6
pH	pH units	n/a	I/S	6.9	6.8	7.1	7.0	7.0	6.9	7.6	7.7
Sulphate	ug/l	250000	30000	20000	34600	33000	97000	19000	18000	11000	12000
Aliphatic C5-C6	ug/l	n/a	n/d	n/d	n/d	0.1	10	10	10	10	10
Aliphatic C6-C8	ug/l	n/a	5	5	10	0.1	10	10	10	10	10
Aliphatic C8-C10	ug/l	n/a	5	78	10	0.1	10	10	10	10	10
Aliphatic C10-C12	ug/l	n/a	5	450	10	1	10	10	10	10	10
Aliphatic C12-C16	ug/l	n/a	5	350	10	1	20	10	10	10	10
Aliphatic C16-C21	ug/l	n/a	8	68	10	1	10	10	10	10	10
Aliphatic C21-C35	ug/l	n/a	n/d	n/d	n/d	1	10	10	10	10	10
Aliphatic C35-C44	ug/l	n/a	n/d	n/d	n/d	n/d	10	10	10	10	10
Aromatic C6-C7	ug/l	n/a	n/d	n/d	n/d	n/d	10	10	10	10	10
Aromatic C7-C8	ug/l	30	n/d	n/d	n/d	n/d	10	10	10	10	10
Aromatic C8-C10	ug/l	40	2.5	2.5	5	0.1	10	10	10	10	10
Aromatic C10-C12	ug/l	n/a	5	5	10	0.1	10	10	10	10	10
Aromatic C12-C16	ug/l	n/a	5	44	10	1	10	40	30	20	30
Aromatic C16-C21	ug/l	n/a	5	47	10	1	10	40	30	40	10
Aromatic C21-C35	ug/l	n/a	8	13	10	1	10	10	10	10	10
Aromatic C35-C44	ug/l	n/a	n/d	n/d	n/d	1	10	10	10	10	10
Aliphatic C5-C44	ug/l	n/a	n/d	n/d	n/d	n/d	40	n/d	N.D.	10	10
Aromatic C6-C44	ug/l	n/a	n/d	n/d	n/d	n/d	n/d.	90	60	50	30
TPH Ali/Aro	ug/l	n/a	100	1300	10	10	40	90	10	50	10
Aromatic C5-C7 ⁽¹⁾	ug/l	30	2.5	2.5	5	0.1	n/d	n/d	n/d	n/d	n/d
Aliphatic C5-C35 ⁽¹⁾	ug/l	n/a	n/d	n/d	n/d	10	n/d	n/d	n/d	n/d	n/d
Aromatic C5-C35 ⁽¹⁾	ug/l	n/a	n/d	n/d	n/d	10	n/d	n/d	n/d	n/d	n/d
Aliphatic C21-C40 ⁽¹⁾	ug/l	n/a	22	190	10	n/d	n/d	n/d	n/d	n/d	n/d
Aromatic C21-C40 ⁽¹⁾	ug/l	n/a	22	42	10	n/d	n/d	n/d	n/d	n/d	n/d
Aliphatic C6-C40 ⁽¹⁾	ug/l	n/a	50	1100	10	n/d	n/d	n/d	n/d	n/d	n/d
Aromatic C6-C40 ⁽¹⁾	ug/l	n/a	50	150	10	n/d	n/d	n/d	n/d	n/d	n/d

n/a = no guideline value available

I/S =insufficient sample

n/d = no data

Obs = obstructed

[Note to table](#)

(1) - Old banding

*References

H1 Environmental Risk Assessment - Annex J v2.0 April 2010 (Saltwater)

Summary of Chemical Analysis

Water Samples October 2007 to April 2017 - Borehole 4

Determinant	Units	EQS*	Oct-07	Jul-08	Nov-10	Apr-13	May-13	Apr-15	May-16	Apr-17
Temperature	°C	n/a	n/d	n/d	n/d	10.0	12.0	12.0	14.0	12.0
Depth (AOD)	m	n/a	6.6	n/d	n/d	6.715	6.52	5.71	6.115	5.935
Lead, Dissolved	ug/l	25	50.0	240	5	16	11	24	15	30
pH	pH units	n/a	11.2	7.6	7.3	7.2	7.7	7.5	7.1	7.3
Sulphate	ug/l	250000	51000.0	20000	6800	11000	12000	8700	7800	6400
Aliphatic C5-C6	ug/l	n/a	n/d	n/d	n/d	0.1	10	10	10	10
Aliphatic C6-C8	ug/l	n/a	5.0	5	10	0.1	10	10	10	10
Aliphatic C8-C10	ug/l	n/a	5.0	5	10	0.1	10	10	10	10
Aliphatic C10-C12	ug/l	n/a	5.0	5	10	1	10	10	10	10
Aliphatic C12-C16	ug/l	n/a	5.0	5	10	1	10	10	10	10
Aliphatic C16-C21	ug/l	n/a	8.0	8	10	1	10	10	10	10
Aliphatic C21-C35	ug/l	n/a	n/d	n/d	n/d	1	10	10	10	10
Aliphatic C35-C44	ug/l	n/a	n/d	n/d	n/d	n/d	10	10	10	10
Aromatic C6-C7	ug/l	30	n/d	n/d	n/d	n/d	10	10	10	10
Aromatic C7-C8	ug/l	40	2.5	2.5	10	0.1	10	10	10	10
Aromatic C8-C10	ug/l	n/a	5.0	5	10	0.1	10	10	10	10
Aromatic C10-C12	ug/l	n/a	5.0	5	10	1	10	10	10	10
Aromatic C12-C16	ug/l	n/a	5.0	5	10	1	10	10	10	10
Aromatic C16-C21	ug/l	n/a	8.0	8	10	1	10	20	10	10
Aromatic C21-C35	ug/l	n/a	n/d	n/d	n/d	1	10	10	10	10
Aromatic C35-C44	ug/l	n/a	n/d	n/d	n/d	n/d	10	10	10	10
Aliphatic C5-C44	ug/l	n/a	n/d	n/d	n/d	n/d	N.D.	N.D.	N.D.	n/a
Aromatic C6-C44	ug/l	n/a	n/d	n/d	n/d	n/d	N.D.	20	N.D.	n/a
TPH Ali/Aro	ug/l	n/a	100.0	100	10	10	N.D.	20	10	10
Aromatic C5-C7 ⁽¹⁾	ug/l	30	2.5	2.5	10	0.1	n/d	n/d	n/d	n/d
Aliphatic C5-C35 ⁽¹⁾	ug/l	n/a	n/d	n/d	n/d	10	n/d	n/d	n/d	n/d
Aromatic C5-C35 ⁽¹⁾	ug/l	n/a	n/d	n/d	n/d	10	n/d	n/d	n/d	n/d
Aliphatic C21-C40 ⁽¹⁾	ug/l	n/a	98.0	98	10	n/d	n/d	n/d	n/d	n/d
Aromatic C21-C40 ⁽¹⁾	ug/l	n/a	22.0	22	10	n/d	n/d	n/d	n/d	n/d
Aliphatic C6-C40 ⁽¹⁾	ug/l	n/a	98.0	98	10	n/d	n/d	n/d	n/d	n/d
Aromatic C6-C40 ⁽¹⁾	ug/l	n/a	50.0	50	10	n/d	n/d	n/d	n/d	n/d

n/a = no guideline value available

I/S= insufficient sample

n/d = no data

Obs= obstructed

N.D. = Not Detected

Note to table

(1) - Old banding

\$ - Limit of Detection (LOD) determined by sample aliquot used for analysis or raised due to dilution of sample.

* References

H1 Environmental Risk Assessment - Annex Jv2.0 April 2010 (Saltwater)

Summary of Chemical Analysis

Water Samples October 2007 to April 2017 - Borehole 6

Determinant	Units	EQS*	Oct-07	Jul-08	Nov-10	Apr-13	Apr-14	Apr-15	May-16	Apr-17
Temperature	°C	n/a	n/d	n/d	n/d	10.0	12.0	12.0	16.0	14.0
Depth (AOD)	m	n/a	6.4	n/d	n/d	6.225	6.25	5.9	6.195	6.245
Lead, Dissolved	ug/l	25	50.0	I/S	5	1.8	1.5	4.7	0.9	2.1
pH	pH units	n/a	10.1	I/S	8.2	8	8.1	8.7	7.9	7.4
Sulphate	ug/l	250000	76000.0	I/S	41700	37000	41000	31000	60000	49000
Aliphatic C5-C6	ug/l	n/a	n/d	n/d	n/d	0.1	10	10	10	10
Aliphatic C6-C8	ug/l	n/a	5.0	I/S	10	0.1	10	10	10	10
Aliphatic C8-C10	ug/l	n/a	5.0	I/S	10	0.1	10	10	10	10
Aliphatic C10-C12	ug/l	n/a	5.0	I/S	10	10	200 ^{\$}	10	100 ^(\$)	20
Aliphatic C12-C16	ug/l	n/a	32.0	I/S	10	10	200 ^{\$}	10	100 ^(\$)	20
Aliphatic C16-C21	ug/l	n/a	80.0	I/S	10	10	300	10	100 ^(\$)	20
Aliphatic C21-C35	ug/l	n/a	n/d	n/d	n/d	10	350	10	100 ^(\$)	40
Aliphatic C35-C44	ug/l	n/a	n/d	n/d	n/d	n/d	200 ^{\$}	10	100 ^(\$)	20
Aromatic C6-C7	ug/l	30	n/d	n/d	n/d	n/d	10	10	10	10
Aromatic C7-C8	ug/l	40	2.5	I/S	5	0.1	10	10	10	10
Aromatic C8-C10	ug/l	n/a	5.0	I/S	10	0.1	10	10	10	10
Aromatic C10-C12	ug/l	n/a	5.0	I/S	10	10	200 ^{\$}	10	100 ^(\$)	20
Aromatic C12-C16	ug/l	n/a	8.5	I/S	10	10	200 ^{\$}	10	100 ^(\$)	20
Aromatic C16-C21	ug/l	n/a	25.0	I/S	10	10	200 ^{\$}	10	100 ^(\$)	60
Aromatic C21-C35	ug/l	n/a	n/d	n/d	n/d	10	200 ^{\$}	10	100 ^(\$)	270
Aromatic C35-C44	ug/l	n/a	n/d	n/d	n/d	n/d	200 ^{\$}	10	100 ^(\$)	20
Aliphatic C5-C44	ug/l	n/a	n/d	n/d	n/d	n/d	650	n/d	100 ^(\$)	40
Aromatic C6-C44	ug/l	n/a	n/d	n/d	n/d	n/d	N.D.	n/d	100 ^(\$)	330
TPH Ali/Aro	ug/l	n/a	240.0	I/S	10	80	650	n/d	10	370
Aromatic C5-C7 ⁽¹⁾	ug/l	30	2.5	I/S	5	0.1	n/d	n/d	n/d	n/d
Aliphatic C5-C35 ⁽¹⁾	ug/l	n/a	n/d	n/d	n/d	40	n/d	n/d	n/d	n/d
Aromatic C5-C35 ⁽¹⁾	ug/l	n/a	n/d	n/d	n/d	40	n/d	n/d	n/d	n/d
Aliphatic C21-C40 ⁽¹⁾	ug/l	n/a	91.0	I/S	10	n/d	n/d	n/d	n/d	n/d
Aromatic C21-C40 ⁽¹⁾	ug/l	n/a	22.0	I/S	10	n/d	n/d	n/d	n/d	n/d
Aliphatic C6-C40 ⁽¹⁾	ug/l	n/a	200.0	I/S	10	n/d	n/d	n/d	n/d	n/d
Aromatic C6-C40 ⁽¹⁾	ug/l	n/a	50.0	I/S	10	n/d	n/d	n/d	n/d	n/d

n/a = no guideline value available

I/S= insufficient sample

n/d = no data

Obs = obstructed

N.D. = Not Detected

Note to table

(1) - Old banding

\$ - Limit of Detection (LOD) determined by sample aliquot used for analysis or raised due to dilution of sample.

* References

H1 Environmental Risk Assessment - Annex Jv2.0 April 2010 (Saltwater)

Summary of Chemical Analysis

Water Samples October 2007 to April 2017 - Borehole 8

Determinant	Units	EQS*	Oct-07	Jul-08	Nov-10	Apr-13	Apr-14	Apr-15	May-16	Apr-17
Temperature	°C	n/a	n/d	n/d	n/d	11.0	12.0	12.0	12.0	14.0
Depth (AOD)	m	n/a	I/S	n/d	n/d	6.355	6.33	6.08	6.275	6.195
Lead, Dissolved	ug/l	25	I/S	50	5	0.52	0.5	9.6	0.3	0.6
pH	pH units	n/a	I/S	7.3	7.1	7.2	7.6	7.2	7	7.5
Sulphate	ug/l	250000	I/S	20000	5000	69000	110000	89000	99000	140000
Aliphatic C5-C6	ug/l	n/a	n/d	n/d	n/d	0.1	10	10	10	10
Aliphatic C6-C8	ug/l	n/a	I/S	5	10	0.1	10	10	10	10
Aliphatic C8-C10	ug/l	n/a	I/S	5	10	0.1	10	10	10	10
Aliphatic C10-C12	ug/l	n/a	I/S	5	10	1	100 ^{\$}	20	10	10
Aliphatic C12-C16	ug/l	n/a	I/S	5	10	1	100 ^{\$}	20	10	10
Aliphatic C16-C21	ug/l	n/a	I/S	8	10	1	100 ^{\$}	30	10	10
Aliphatic C21-C35	ug/l	n/a	n/d	n/d	n/d	1	100 ^{\$}	50	10	10
Aliphatic C35-C44	ug/l	n/a	n/d	n/d	n/d	n/d	100 ^{\$}	10	10	10
Aromatic C6-C7	ug/l	30	n/d	n/d	n/d	n/d	10	10	10	10
Aromatic C7-C8	ug/l	40	I/S	2.5	10	0.1	10	10	10	10
Aromatic C8-C10	ug/l	n/a	I/S	5	10	0.1	10	10	10	10
Aromatic C10-C12	ug/l	n/a	I/S	5	10	1	100 ^{\$}	40	10	10
Aromatic C12-C16	ug/l	n/a	I/S	5	10	1	100 ^{\$}	80	50	30
Aromatic C16-C21	ug/l	n/a	I/S	8	10	1	100 ^{\$}	30	50	50
Aromatic C21-C35	ug/l	n/a	n/d	n/d	n/d	1	100 ^{\$}	10	40	10
Aromatic C35-C44	ug/l	n/a	n/d	n/d	n/d	n/d	100 ^{\$}	10	10	10
Aliphatic C5-C44	ug/l	n/a	n/d	n/d	n/d	n/d	N.D.	120	N.D	10
Aromatic C6-C44	ug/l	n/a	n/d	n/d	n/d	n/d	N.D.	150	150	90
TPH Ali/Aro	ug/l	n/a	I/S	100	10	10	N.D.	270	10	90
Aromatic C5-C7 ⁽¹⁾	ug/l	30	I/S	2.5	10	0.1	n/d	n/d	n/d	n/d
Aliphatic C5-C35 ⁽¹⁾	ug/l	n/a	n/d	n/d	n/d	10	n/d	n/d	n/d	n/d
Aromatic C5-C35 ⁽¹⁾	ug/l	n/a	n/d	n/d	n/d	10	n/d	n/d	n/d	n/d
Aliphatic C21-C40 ⁽¹⁾	ug/l	n/a	I/S	60	1	n/d	n/d	n/d	n/d	n/d
Aromatic C21-C40 ⁽¹⁾	ug/l	n/a	I/S	22	10	n/d	n/d	n/d	n/d	n/d
Aliphatic C6-C40 ⁽¹⁾	ug/l	n/a	I/S	60	10	n/d	n/d	n/d	n/d	n/d
Aromatic C6-C40 ⁽¹⁾	ug/l	n/a	I/S	50	10	n/d	n/d	n/d	n/d	n/d

n/a = no guideline value available

I/S= insufficient sample

n/d = no data

Obs = obstructed

N.D. = Not Detected

Note to table

(1) - Old banding

\$ - Limit of Detection (LOD) determined by sample aliquot used for analysis or raised due to dilution of sample.

* References

H1 Environmental Risk Assessment - Annex Jv2.0 April 2010 (Saltwater)

Summary of Chemical Analysis
Water Samples October 2007 to April 2017- Borehole 9

Determinant	Units	EQS*	Oct-07	Jul-08	Nov-10	Apr-13	Apr-14	Apr-15	May/June-16	Dec-16	Apr-17
Temperature	°C	n/a	Borehole installed March 2013 - No data available before this date			10.0	12.0	12.0	14.0	10.0	12.0
Depth (AOD)	m	n/a				5.82	5.65	5.57	5.57	5.97	5.61
Lead, Dissolved	ug/l	25				4.3	12	14	35/29	44	40
pH	pH units	n/a				7.2	7.3	7.5	7.5	7.9	8.1
Sulphate	ug/l	250000				30000	28000	33000	17000	11000	11000
Aliphatic C5-C6	ug/l	n/a				0.1	10	10	10	10	10
Aliphatic C6-C8	ug/l	n/a				0.1	10	10	10	10	10
Aliphatic C8-C10	ug/l	n/a				0.1	10	10	10	10	10
Aliphatic C10-C12	ug/l	n/a				1	10	10	100 ^(S)	10	10
Aliphatic C12-C16	ug/l	n/a				1	10	10	100 ^(S)	10	10
Aliphatic C16-C21	ug/l	n/a				1	10	10	100 ^(S)	10	10
Aliphatic C21-C35	ug/l	n/a				1	30	20	100 ^(S)	10	10
Aliphatic C35-C44	ug/l	n/a				n/d	10	10	100 ^(S)	10	10
Aromatic C6-C7	ug/l	30				n/d	10	10	10	10	10
Aromatic C7-C8	ug/l	40				0.1	10	10	10	10	10
Aromatic C8-C10	ug/l	n/a				0.1	10	10	10	10	10
Aromatic C10-C12	ug/l	n/a				1	10	10	100 ^(S)	10	10
Aromatic C12-C16	ug/l	n/a				1	10	50	100 ^(S)	10	10
Aromatic C16-C21	ug/l	n/a				1.8	10	20	100 ^(S)	10	10
Aromatic C21-C35	ug/l	n/a				3.1	10	10	100 ^(S)	10	10
Aromatic C35-C44	ug/l	n/a				n/d	10	10	100 ^(S)	10	10
Aliphatic C5-C44	ug/l	n/a				n/d	40	20	100 ^(S)	20	10
Aromatic C6-C44	ug/l	n/a				n/d	n/d	70	100 ^(S)	10	10
TPH Ali/Aro	ug/l	n/a				10	40	90	10	40	10
Aromatic C5-C7 ⁽¹⁾	ug/l	30				0.1	n/d	n/d	n/d	n/d	n/d
Aliphatic C5-C35 ⁽¹⁾	ug/l	n/a				10	n/d	n/d	n/d	n/d	n/d
Aromatic C5-C35 ⁽¹⁾	ug/l	n/a				10	n/d	n/d	n/d	n/d	n/d
Aliphatic C21-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d	n/d
Aromatic C21-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d	n/d
Aliphatic C6-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d	n/d
Aromatic C6-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d	n/d

n/a = no guideline value available

I/S =insufficient sample

n/d = no data

Obs = obstructed

[Note to table](#)

(1) - Old banding

*References

H1 Environmental Risk Assessment - Annex J v2.0 April 2010 (Saltwater)

Summary of Chemical Analysis

Water Samples October 2007 to April 2017 - Borehole 10

Determinant	Units	EQS*	Oct-07	Jul-08	Nov-10	Apr-13	Apr-14	Apr-15	May-16	Apr-17
Temperature	°C	n/a	Borehole installed March 2013 - No data available before this date			10.0	12.0	12.0	12.0	12.0
Depth (AOD)	m	n/a				6.13	6.07	5.32	6.05	5.95
Lead, Dissolved	ug/l	25				1.3	4.3	2.8	0.8	4
pH	pH units	n/a				7.3	6.8	7.4	6.9	7.5
Sulphate	ug/l	250000				16000	59000	54000	58000	51000
Aliphatic C5-C6	ug/l	n/a				0.1	10	10	10	10
Aliphatic C6-C8	ug/l	n/a				0.1	10	10	10	10
Aliphatic C8-C10	ug/l	n/a				0.1	10	10	10	10
Aliphatic C10-C12	ug/l	n/a				2.4	10	10	10	10
Aliphatic C12-C16	ug/l	n/a				370	130	10	20	10
Aliphatic C16-C21	ug/l	n/a				3500	1600	30	390	10
Aliphatic C21-C35	ug/l	n/a				3200	1200	150	280	10
Aliphatic C35-C44	ug/l	n/a				n/d	10	10	10	10
Aromatic C6-C7	ug/l	30				n/d	10	10	10	10
Aromatic C7-C8	ug/l	40				0.1	10	10	10	10
Aromatic C8-C10	ug/l	n/a				0.1	10	10	10	10
Aromatic C10-C12	ug/l	n/a				1	10	10	10	10
Aromatic C12-C16	ug/l	n/a				34	10	30	20	20
Aromatic C16-C21	ug/l	n/a				340	10	120	50	10
Aromatic C21-C35	ug/l	n/a				350	10	10	10	10
Aromatic C35-C44	ug/l	n/a				n/d	10	10	10	10
Aliphatic C5-C44	ug/l	n/a				n/d	2900	180	700	10
Aromatic C6-C44	ug/l	n/a				n/d	N.D.	150	90	20
TPH Ali/Aro	ug/l	n/a				7700	2900	330	10	20
Aromatic C5-C7 ⁽¹⁾	ug/l	30				0.1	n/d	n/d	n/d	n/d
Aliphatic C5-C35 ⁽¹⁾	ug/l	n/a				7000	n/d	n/d	n/d	n/d
Aromatic C5-C35 ⁽¹⁾	ug/l	n/a				720	n/d	n/d	n/d	n/d
Aliphatic C21-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d
Aromatic C21-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d
Aliphatic C6-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d
Aromatic C6-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d

n/a = no guideline value available

I/S= insufficient sample

n/d = no data

Obs= obstructed

N.D. = Not Detected

Note to table

(1) - Old banding

\$ - Limit of Detection (LOD) determined by sample aliquot used for analysis or raised due to dilution of sample.

* References

H1 Environmental Risk Assessment - Annex Jv2.0 April 2010 (Saltwater)

Summary of Chemical Analysis

Water Samples October 2007 to April 2017 - Borehole 11

Determinant	Units	EQS*	Oct-07	Jul-08	Nov-10	Apr-13	Apr-14	Apr-15	May-16	Apr-17
Temperature	°C	n/a	Borehole installed March 2013 - No data available before this date			10.0	12.0	12.0	16.0	12.0
Depth (AOD)	m	n/a				5.47	4.99	4.82	4.96	4.91
Lead, Dissolved	ug/l	25				0.81	1.5	3.9	5.4	2.1
pH	pH units	n/a				8.2	7.8	7.6	7.9	7.7
Sulphate	ug/l	250000				12000	43000	39000	30000	34000
Aliphatic C5-C6	ug/l	n/a				0.1	10	10	10	10
Aliphatic C6-C8	ug/l	n/a				0.1	10	10	10	10
Aliphatic C8-C10	ug/l	n/a				0.1	10	10	10	10
Aliphatic C10-C12	ug/l	n/a				1	200 ^{\$}	10	100 ^(\$)	10
Aliphatic C12-C16	ug/l	n/a				11	200 ^{\$}	10	100 ^(\$)	150
Aliphatic C16-C21	ug/l	n/a				110	360	10	100 ^(\$)	100
Aliphatic C21-C35	ug/l	n/a				590	1100	50	100 ^(\$)	560
Aliphatic C35-C44	ug/l	n/a				n/d	300	10	100 ^(\$)	260
Aromatic C6-C7	ug/l	30				n/d	10	10	10	10
Aromatic C7-C8	ug/l	40				0.1	10	10	10	10
Aromatic C8-C10	ug/l	n/a				0.1	10	10	10	10
Aromatic C10-C12	ug/l	n/a				1	200 ^{\$}	10	100 ^(\$)	100
Aromatic C12-C16	ug/l	n/a				21	320	10	100 ^(\$)	140
Aromatic C16-C21	ug/l	n/a				420	1900	30	100 ^(\$)	890
Aromatic C21-C35	ug/l	n/a				1300	5800	50	110	1800
Aromatic C35-C44	ug/l	n/a				n/d	200 ^{\$}	10	100 ^(\$)	100
Aliphatic C5-C44	ug/l	n/a				n/d	1500	70	100 ^(\$)	810
Aromatic C6-C44	ug/l	n/a				n/d	8300	90	100 ^(\$)	2900
TPH Ali/Aro	ug/l	n/a				2500	9800	160	10	3700
Aromatic C5-C7 ⁽¹⁾	ug/l	30				0.1	n/d	n/d	n/d	n/d
Aliphatic C5-C35 ⁽¹⁾	ug/l	n/a				710	n/d	n/d	n/d	n/d
Aromatic C5-C35 ⁽¹⁾	ug/l	n/a				1800	n/d	n/d	n/d	n/d
Aliphatic C21-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d
Aromatic C21-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d
Aliphatic C6-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d
Aromatic C6-C40 ⁽¹⁾	ug/l	n/a				n/d	n/d	n/d	n/d	n/d

n/a = no guideline value available

I/S= insufficient sample

n/d = no data

Obs = obstructed

N.D. = Not Detected

Note to table

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\$ - Limit of Detection (LOD) determined by sample aliquot used for analysis or raised due to dilution of sample.

* References

H1 Environmental Risk Assessment - Annex Jv2.0 April 2010 (Saltwater)

APPENDIX E

Trend Charts

Figure 1

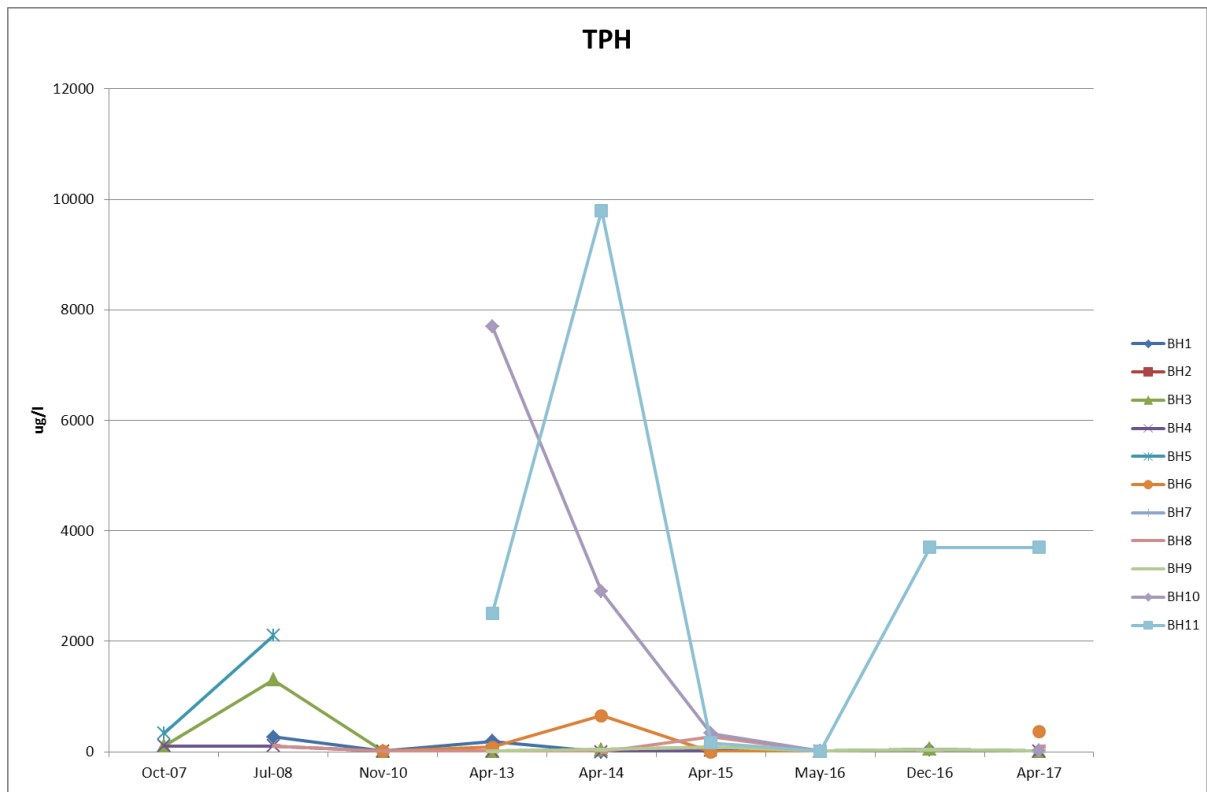


Figure 2

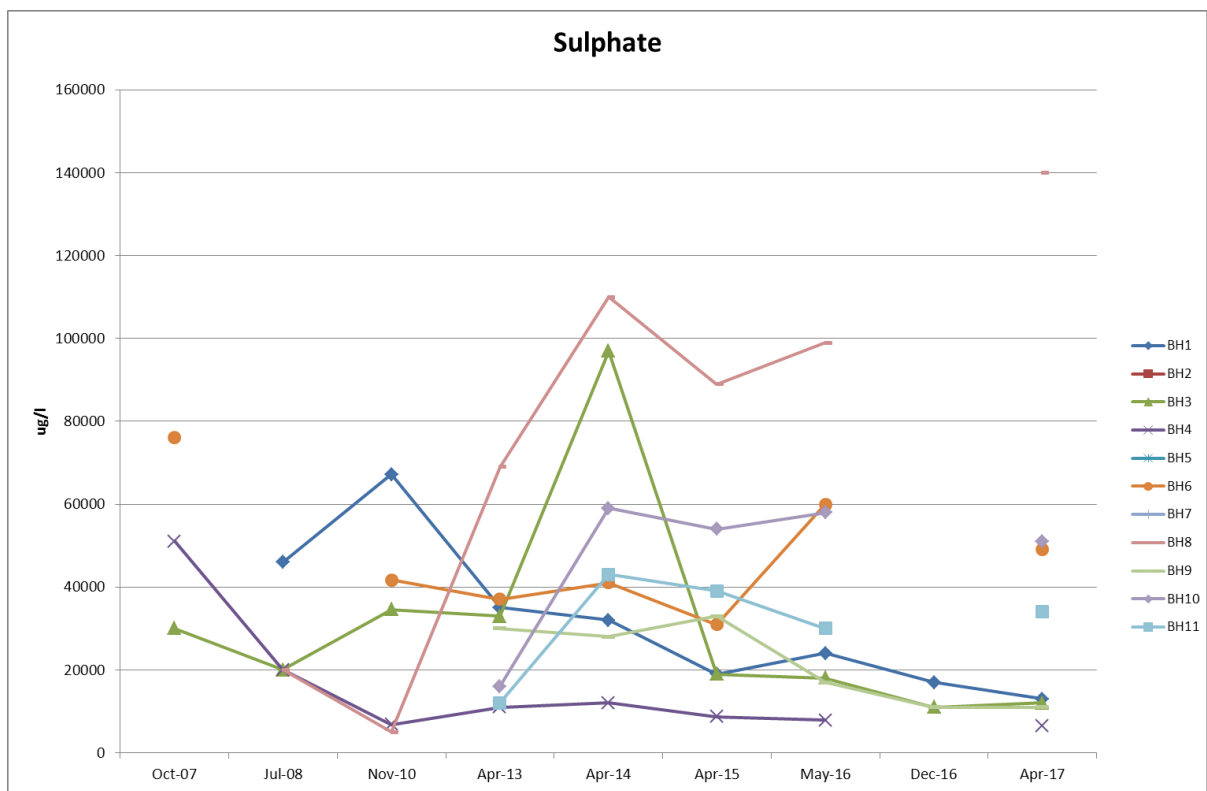


Figure 3

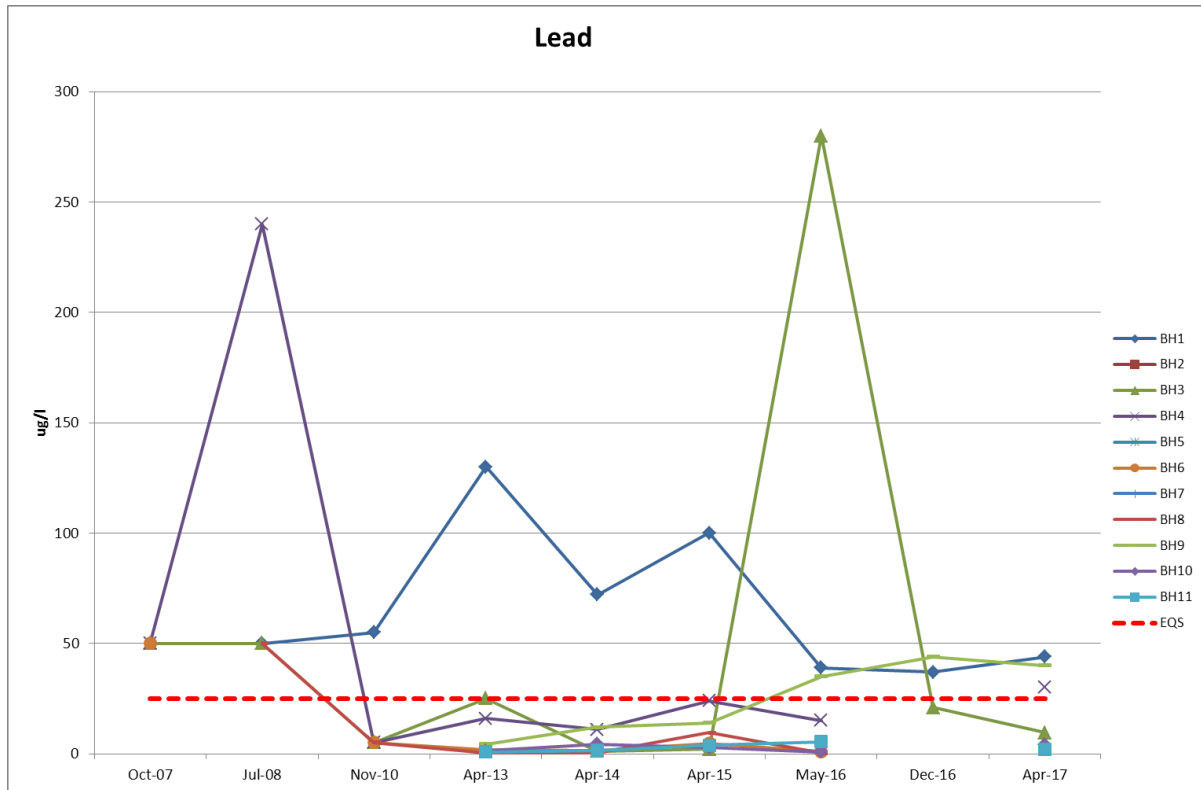


Figure 4

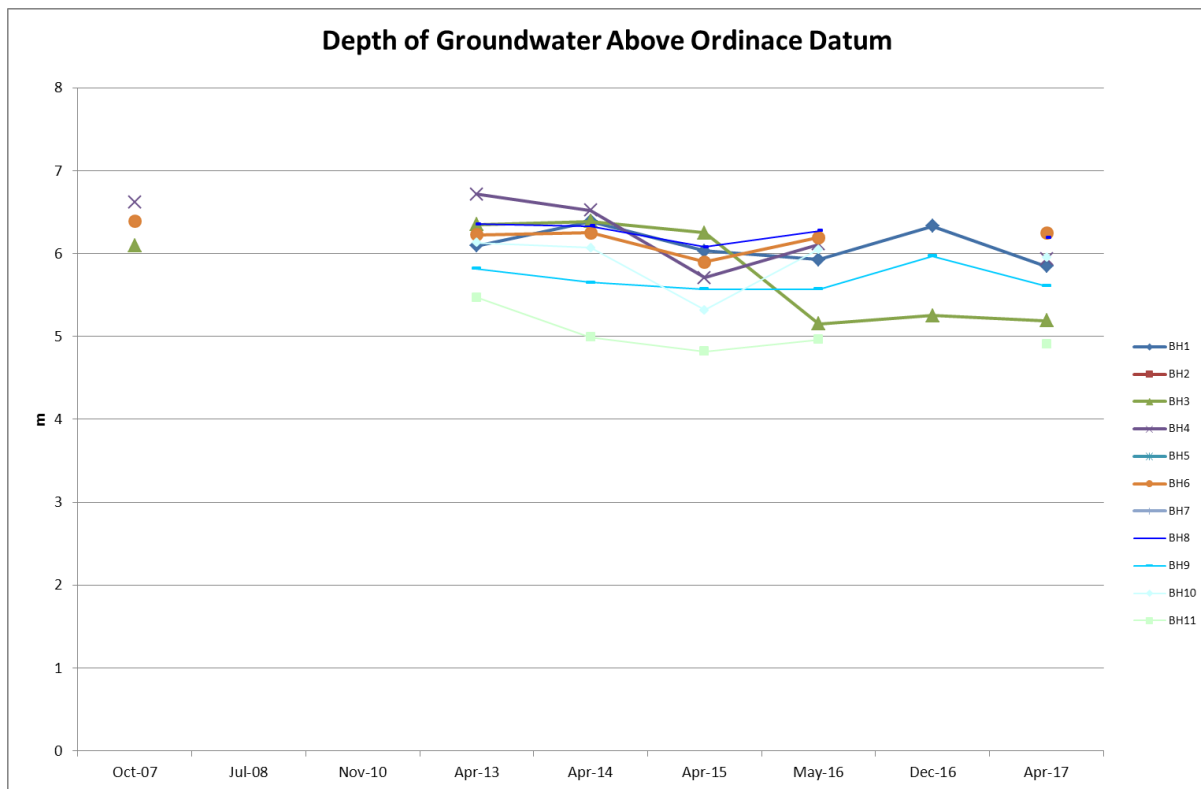
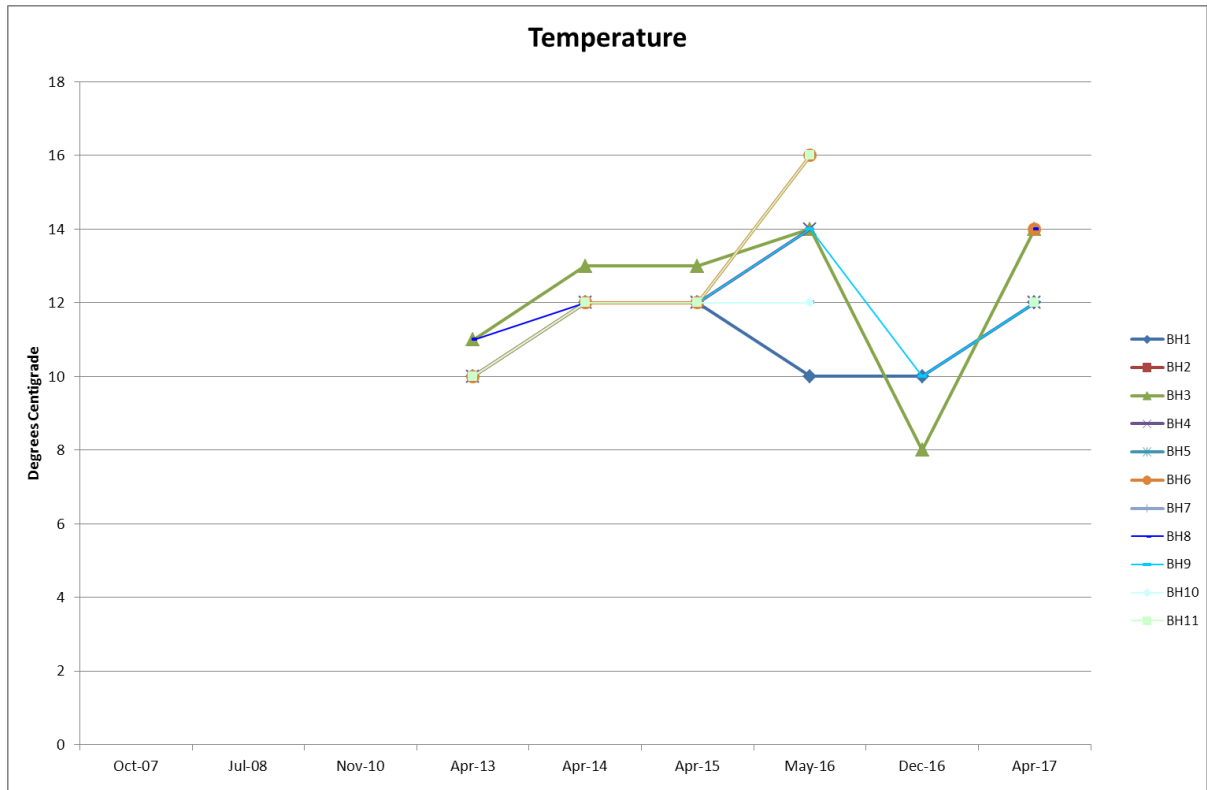


Figure 5



APPENDIX F

Laboratory Certificate of Analysis

Concept Life Sciences

Certificate of Analysis

Hadfield House
Hadfield Street
Combrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 647095-1

Date of Report: 21-Apr-2017

Customer: Environmental Compliance Ltd
Unit G1
Main Avenue
Treforest Industrial Estate
Pontypridd
CF37 5BF

Customer Contact: M/S Sarah Burley

Customer Job Reference: P1736

Customer Purchase Order: E6478

Customer Site Reference: ENERSYS NEWPORT

Date Job Received at Concept: 13-Apr-2017

Date Analysis Started: 13-Apr-2017

Date Analysis Completed: 21-Apr-2017

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

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

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with Concept SOPs



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Report checked
and authorised by :
Muhammad Waqas
Project Manager

Issued by :
Muhammad Waqas
Project Manager



Page 1 of 4
647095-1

Concept Reference: 647095 Project Site: ENERSYS NEWPORT Customer Reference: P1736 Water Analysed as Water Miscellaneous									
Concept Reference				647095 001	647095 002	647095 003	647095 004	647095 005	
Customer Sample Reference				BW1	BW4	BW6	BW8	BW9	
Date Sampled				10-APR-2017	10-APR-2017	10-APR-2017	10-APR-2017	10-APR-2017	
Determinand	Method	Test Sample	LOD	Units					
Pb (Dissolved)	T281	AR	0.3	µg/l	44	30	2.1	0.6	40
Sulphate	T686	F	0.5	mg/l	13	6.4	49	140	11
pH	T7	AR			7.1	7.3	7.4	7.5	8.1

Concept Reference: 647095 Project Site: ENERSYS NEWPORT Customer Reference: P1736 Water Analysed as Water Miscellaneous									
Concept Reference				647095 006	647095 007	647095 008			
Customer Sample Reference				BW10	BW11	BW12			
Date Sampled				10-APR-2017	10-APR-2017	10-APR-2017			
Determinand	Method	Test Sample	LOD	Units					
Pb (Dissolved)	T281	AR	0.3	µg/l	4.0	2.1	9.6		
Sulphate	T686	F	0.5	mg/l	51	34	12		
pH	T7	AR			7.5	7.7	7.7		

Concept Reference: 647095 Project Site: ENERSYS NEWPORT Customer Reference: P1736 Water Analysed as Water TPH UKCWG									
Concept Reference				647095 001	647095 002	647095 003	647095 004	647095 005	
Customer Sample Reference				BW1	BW4	BW6	BW8	BW9	
Date Sampled				10-APR-2017	10-APR-2017	10-APR-2017	10-APR-2017	10-APR-2017	
Determinand	Method	Test Sample	LOD	Units					
Benzene	T54	AR	1	µg/l	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
EthylBenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
M/P Xylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/l	<1	<1	<1	<1	<1
O Xylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Toluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
TPH (C5-C6 aliphatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C8 aliphatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aliphatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH DW(C10-C12 aliphatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13,100) <0.02	(13) <0.01	(13) <0.01
TPH DW(C12-C16 aliphatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13,100) <0.02	(13) <0.01	(13) <0.01
TPH DW(C16-C21 aliphatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13,100) <0.02	(13) <0.01	(13) <0.01
TPH DW(C21-C35 aliphatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13) 0.04	(13) <0.01	(13) <0.01
TPH (C35-C44 aliphatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13,100) <0.02	(13) <0.01	(13) <0.01
TPH (Aliphatic) total	T85	AR		mg/l	(13) <0.01	(13) <0.01	(13) 0.04	(13) <0.01	(13) <0.01
TPH (C6-C7 aromatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C7-C8 aromatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aromatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH DW(C10-C12 aromatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13,100) <0.02	(13) <0.01	(13) <0.01
TPH DW(C12-C16 aromatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13,100) <0.02	(13) 0.03	(13) <0.01
TPH DW(C16-C21 aromatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13) 0.06	(13) 0.05	(13) <0.01
TPH DW(C21-C35 aromatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13) 0.27	(13) <0.01	(13) <0.01
TPH (C35-C44 aromatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(100,13) <0.02	(13) <0.01	(13) <0.01
TPH (Aromatic) total	T85	AR		mg/l	(13) <0.01	(13) <0.01	(13) 0.33	(13) 0.09	(13) <0.01
TPH (Aliphatic+Aromatic) (sum)	T85	AR		mg/l	(13) <0.01	(13) <0.01	(13) 0.37	(13) 0.09	(13) <0.01
Total Petroleum Hydrocarbons (C5 - C10 aliphatic/aromatic)	T85	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010

Concept Reference: 647095 Project Site: ENERSYS NEWPORT Customer Reference: P1736 Water Analysed as Water TPH UKCWG							
Concept Reference				647095 006	647095 007	647095 008	
Customer Sample Reference				BW10	BW11	BW12	
Date Sampled				10-APR-2017	10-APR-2017	10-APR-2017	
Determinand	Method	Test Sample	LOD	Units			
Benzene	T54	AR	1	µg/l	(13) <1	(13) <1	(13) <1
Ethylbenzene	T54	AR	1	µg/l	<1	<1	<1
m/p Xylene	T54	AR	1	µg/l	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/l	<1	<1	<1
O Xylene	T54	AR	1	µg/l	<1	<1	<1
Toluene	T54	AR	1	µg/l	<1	<1	<1
TPH (C5-C8 aliphatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010
TPH (C6-C8 aliphatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010
TPH (C8-C10 aliphatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010
TPH DW(C10-C12 aliphatic)	T81	AR	0.01	mg/l	(13) <0.01	(13,100) <0.10	(13) <0.01
TPH DW(C12-C16 aliphatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) 0.15	(13) <0.01
TPH DW(C16-C21 aliphatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) 0.10	(13) <0.01
TPH DW(C21-C35 aliphatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) 0.56	(13) <0.01
TPH (C35-C44 aliphatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) 0.26	(13) <0.01
TPH (Aliphatic) total	T85	AR		mg/l	(13) <0.01	(13) 0.81	(13) <0.01
TPH (C6-C7 aromatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010
TPH (C7-C8 aromatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010
TPH (C8-C10 aromatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010
TPH DW(C10-C12 aromatic)	T81	AR	0.01	mg/l	(13) <0.01	(13,100) <0.10	(13) <0.01
TPH DW(C12-C16 aromatic)	T81	AR	0.01	mg/l	(13) 0.02	(13) 0.14	(13) 0.03
TPH DW(C16-C21 aromatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) 0.89	(13) <0.01
TPH DW(C21-C35 aromatic)	T81	AR	0.01	mg/l	(13) <0.01	(13) 1.8	(13) <0.01
TPH (C35-C44 aromatic)	T81	AR	0.01	mg/l	(13) <0.01	(100,13) <0.10	(13) <0.01
TPH (Aromatic) total	T85	AR		mg/l	(13) 0.02	(13) 2.9	(13) 0.03
TPH (Aliphatic+Aromatic) (sum)	T85	AR		mg/l	(13) 0.02	(13) 3.7	(13) 0.03
Total Petroleum Hydrocarbons (C5 - C10 aliphatic/aromatic)	T85	AR	0.010	mg/l	<0.010	<0.010	<0.010

Index to symbols used in 647095-1

Value	Description
AR	As Received
F	Filtered
100	LOD determined by sample aliquot used for analysis
13	Results have been blank corrected.
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

These samples have been analysed exceeding recommended holding times for TPH. It is possible therefore that the results provided may be compromised.

Method Index

Value	Description
T54	GC/MS (Headspace)
T81	GC/FID (LV)
T215	GC/MS (Headspace)(LV)
T886	Discrete Analyser
T7	Probe
T281	ICP/MS (Filtered)
T85	Calc

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Benzene	T54	AR	1	µg/l	U	001-008
EthylBenzene	T54	AR	1	µg/l	U	001-008
M/P Xylene	T54	AR	1	µg/l	U	001-008
Methyl tert-Butyl Ether	T54	AR	1	µg/l	U	001-008
O Xylene	T54	AR	1	µg/l	U	001-008
Toluene	T54	AR	1	µg/l	U	001-008
TPH (C5-C8 aliphatic)	T215	AR	0.010	mg/l	N	001-008
TPH (C6-C8 aliphatic)	T215	AR	0.010	mg/l	N	001-008
TPH (C8-C10 aliphatic)	T215	AR	0.010	mg/l	N	001-008
TPH DW(C10-C12 aliphatic)	T81	AR	0.01	mg/l	N	001-008
TPH DW(C12-C16 aliphatic)	T81	AR	0.01	mg/l	N	001-008
TPH DW(C16-C21 aliphatic)	T81	AR	0.01	mg/l	N	001-008
TPH DW(C21-C35 aliphatic)	T81	AR	0.01	mg/l	N	001-008
TPH (C35-C44 aliphatic)	T81	AR	0.01	mg/l	N	001-008
TPH (Aliphatic) total	T85	AR		mg/l	N	001-008
TPH (C6-C7 aromatic)	T215	AR	0.010	mg/l	N	001-008
TPH (C7-C8 aromatic)	T215	AR	0.010	mg/l	N	001-008
TPH (C8-C10 aromatic)	T215	AR	0.010	mg/l	N	001-008
TPH DW(C10-C12 aromatic)	T81	AR	0.01	mg/l	N	001-008
TPH DW(C12-C16 aromatic)	T81	AR	0.01	mg/l	N	001-008
TPH DW(C16-C21 aromatic)	T81	AR	0.01	mg/l	N	001-008
TPH DW(C21-C35 aromatic)	T81	AR	0.01	mg/l	N	001-008
TPH (C35-C44 aromatic)	T81	AR	0.01	mg/l	N	001-008
TPH (Aromatic) total	T85	AR		mg/l	N	001-008
TPH (Aliphatic+Aromatic) (sum)	T85	AR		mg/l	N	001-008
Total Petroleum Hydrocarbons (C5 - C10 aliphatic/aromatic)	T85	AR	0.010	mg/l	N	001-008
Pb (Dissolved)	T281	AR	0.3	µg/l	U	001-008
Sulphate	T688	F	0.5	mg/l	U	001-008
pH	T7	AR			U	001-008



APPENDIX G

EnerSys Newport Drainage Plan

