

Martyn Grant
Environmental Manager
The Royal Mint
Llantrisant
Pontyclun
CF72 8YT

Dear Martyn

FACTUAL REPORT ON GROUNDWATER AND SURFACE WATER SAMPLING IN OCTOBER 2016

Date 11/11/2016

Ramboll Environ UK Limited ("Ramboll Environ") was instructed by The Royal Mint to carry out surface water sampling from selected locations in the Nant Mychydd River and groundwater sampling from selected boreholes in the area of Building 9A, the Coin Press Room ("CPR"), the COMAH area and the southern site boundary. This letter presents a factual report on the second of three scheduled rounds of monitoring to be undertaken from June 2016 to February 2017.

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Background

Ref LUK17-23222_R2_01

Surface water monitoring during 2015/16 identified elevated concentrations of copper and zinc in the culverted stream that enters the Nant Mychydd (sampling points R7 and R7A). While the source of contamination is being addressed by The Royal Mint, Ramboll Environ recommended that the surface water monitoring programme should be continued from selected sampling points at a frequency of once every four months, or until the contamination reduces to below the respective environmental quality standards (EQS).

Ramboll Environ also carried out groundwater sampling at the site which has previously identified elevated concentrations of metals in several areas. Elevated concentrations of nickel, copper and zinc have been identified in all boreholes monitored throughout 2015/16. The pH was also below [more acidic than] the acceptable EQS range in several locations across the site. It was recommended that monitoring should continue from selected boreholes at a frequency of once every four months, or until the contamination reduces to below the respective EQS.

Boreholes BH11 and BH12 were removed from the monitoring programme in 2015/16 and replaced with up gradient boreholes BH001, BH002 and COMAH

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area borehole BH801, which form part of the ongoing Site Protection and Monitoring Programme (SPMP).

During the last monitoring period (Report Ref: UK17-21704), statistical analysis of results indicated either 'no exceedances' or 'stable' trends for the main determinands of concern tested at BH001 and BH002; therefore, these boreholes have been omitted from the 2016/17 monitoring programme. SPMP boreholes are monitored on an annual basis by Ramboll Environ and were sampled in August 2016 under the annual SPMP monitoring round.

Surface Water

Surface water samples were collected on the 25th October 2016 from five sampling locations on the Nant Mychydd River and the culverted watercourse that passes through the site (sampling points R1, R6, R7, R7A and C1), as shown on Figure 2. Samples were analysed for a range of metals, pH, alkalinity cyanide and total petroleum hydrocarbons (TPH) at a UKAS accredited laboratory. The laboratory certificates of analysis are attached which provide the method of analysis for each determinand. The surface water analysis results from April 2011 to October 2016 are summarised in the attached table and are presented graphically on Figures 6, 7 and 8.

During the October 2016 monitoring, the highest concentration of copper (0.012mg/l) was recorded at sampling point R7A, where the culverted stream emerges from site prior to entering the Nant Mychydd. This concentration exceeds the EQS of 0.006mg/l (for hardness between 50mg/l and 100mg/l CaCO₃). The concentration of copper also exceeded the EQS of 0.006mg/l at sampling point R7 (0.007mg/l), where the culverted stream enters the Nant Mychydd, and C1 (upstream of the culvert) where the concentration of 0.003mg/l exceeds the EQS of 0.001mg/l (for hardness between 0mg/l and 50mg/l CaCO₃ at sampling point C1 (0.003). It should be noted that sampling location C1 is upstream of the site.

The concentration of zinc at R7A (0.051mg/l) exceeded the EQS value of 0.05mg/l (for hardness between 50mg/l and 100mg/l CaCO₃) during the October monitoring.

Concentrations of nickel were below the EQS value of 0.02mg/l at all surface water sampling locations.

Whereas nickel has shown an overall decrease in concentrations over time at points R7 and R7A since sampling commenced, zinc and copper continue to fluctuate slightly above the respective EQS values. Repair work to the culvert that passes beneath the site was commissioned by The Royal Mint in August 2016 (including decommissioning of an inlet pipe).

Cyanide was not recorded above the laboratory limit of detection (LOD) at any of the sampling points.

TPH concentrations in October were at or above the laboratory limit of detection in all sampling locations; therefore, slightly exceeding the UK DWS of 0.01mg/l. The maximum TPH concentration was recorded at sampling points R6 and R7 (0.02mg/l), located in the Nant Mychydd River. TPH concentrations have remained stable or slightly decreased at all five sampling locations when compared to the previous round of monitoring in June 2016.

Natural Resources Wales has requested that rainfall data is collected at the time of sampling since this may influence the levels of contaminants in the receiving watercourse. In order to provide data for the

October 2016 round of monitoring, weather station information for a location approximately 13km east of the site (weather station reference IMIDGLAM3) has been obtained (www.wunderground.com).

This data are presented in Table 1 below. Rainfall data has been provided for the five days preceding the monitoring visit and compared with the daily average rainfall for 26th September to 25th October 2016 and the daily average rainfall for October 2006 to 2015.

Table 1: Rainfall Data			
Date	Rainfall data (mm) *	September 26 th to October 25 th 2016 daily average (mm) *	2006 – 2015 October daily average (mm) *
20/10/15	0.0	2.54	3.20
21/10/16	0.0		
22/10/16	0.0		
23/10/16	0.0		
24/10/16	6.1		
25/10/16	0.5		
* Data gathered from 'IMIDGLAM3' weather station in Caerphilly located 13km East of site (www.wunderground.com) (accessed 02/11/16)			

The rainfall data indicates that rainfall in the period of 26th September to 25th October 2016 was slightly less than the average for recent years.

Groundwater Sampling

Groundwater samples were collected from the following boreholes: BH8, BH9, BH901R, BH10, BH13 BH32, and BH801 on 25th October 2016 (shown on Figure 1). Samples were analysed for a range of metals, pH and alkalinity at a UKAS accredited laboratory. The laboratory certificates of analysis are attached which provide the method of analysis for each determinand. The analysis results are summarised in the attached table and are represented graphically on Figures 3, 4 and 5.

The results have been benchmarked against previous analytical results from these monitoring wells and screened against EQS for freshwater. The results are summarised as follows:

- During the most recent round of monitoring, the concentrations of nickel (0.127mg/l), copper (0.139mg/l) and zinc (0.270mg/l) in borehole BH8 all exceeded the respective EQS values of 0.02mg/l for nickel, 0.006mg/l for copper and 0.050mg/l for zinc. Concentrations of these determinands have all slightly decreased since the previous round of monitoring in June 2016.
- Samples were collected from boreholes BH9 and the newly installed borehole (referred to as BH901R), that is acting as a replacement for borehole BH901. Concentrations of nickel, copper and zinc in boreholes BH9 and BH901R exceed the respective EQS values. The concentration of copper has slightly increased in BH901R since the previous round of monitoring (from 0.184mg/l to 0.402mg/l). All other concentrations of nickel, copper and zinc have decreased since June 2016.

- Concentrations of nickel, copper and zinc have all slightly increased in borehole BH10 since the previous round of monitoring; concentrations of nickel (0.097mg/l), copper (0.084mg/l) and zinc (0.194mg/l) were recorded slightly above the relevant EQS values in October 2016.
- In BH32, concentrations of nickel (0.391mg/l), copper (0.009mg/l) and zinc (0.850mg/l) have increased slightly since the previous round of monitoring in June 2016. Concentrations of nickel and zinc remain above the relevant EQS; however, the concentration of copper is below the EQS during the most recent monitoring round of October 2016.
- Concentrations of nickel (0.069mg/l) and zinc (0.148mg/l) have slightly decreased in borehole BH13 since the previous round of monitoring in June 2016; the concentration of copper (0.074mg/l) has slightly increased. Concentrations remain above the relevant EQS for these determinands.
- Borehole BH801, located in the north of the site (adjacent to the copper plating building) and included within ongoing SPMP groundwater sampling, was included in the most recent round of monitoring. Whilst concentrations of nickel (0.013mg/l), copper (0.029mg/l) and zinc (0.232mg/l) had all decreased since the previous round of monitoring, they were all recorded in exceedance of their respective EQS values.
- Total chromium was not detected above the EQS value of 0.0047mg/l within any of the monitoring wells in the most recent monitoring round.
- The concentration of cadmium was recorded above the laboratory reporting limit (0.0001mg/l) in all boreholes, with a maximum recorded value of 0.0008mg/l in BH8. All reported values are above the EQS value of 0.00008mg/l.
- The following determinands did not exceed the screening criteria in any of the boreholes: lead, arsenic, boron, mercury, selenium and vanadium.
- Low (acidic) pH values (<pH 6) were detected in samples from BH8 (pH 4.5), BH9 (pH 5.2), BH901R (pH 5.6), BH10 (pH 5.9), BH13 (pH 4.6), and BH32 (pH 5.7). Samples from these and several other locations have regularly recorded low pH values throughout the monitoring programme.

During the Site Protection Monitoring Programme (SPMP) groundwater monitoring round in August 2016, elevated concentrations of volatile organic compounds (VOCs) were detected in samples from an area of the site that has previously undergone groundwater remediation. As such, additional samples of groundwater were collected from two boreholes located within the remediated area in October 2016 (CBH6 and BHE5). Significantly reduced concentrations of VOCs were recorded in borehole CBH6, when compared to concentrations recorded in August 2016; and concentrations in borehole BHE5 have remained below the laboratory limits of detection. Samples of groundwater from the remediation area will be collected during the next planned round of monitoring to further characterise the fluctuating VOC concentrations in this area.

The next round of surface water and groundwater monitoring is due to be carried out in February 2017. Please do not hesitate to contact me if there is anything you wish to discuss.

Yours sincerely



Andy Goddard

Principal

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Encl. Laboratory Testing Certificates
 Summary of Surface Water Monitoring Results
 Summary of Groundwater Monitoring Results
 Figure 1: Groundwater Sampling Borehole Location Plan
 Figure 2: River Sampling Locations
 Figure 3: Copper Graphical Representations – Groundwater
 Figure 4: Nickel Graphical Representations – Groundwater
 Figure 5: Zinc Graphical Representations – Groundwater
 Figure 6: Copper Graphical Representations – Surface Water
 Figure 7: Nickel Graphical Representations – Surface Water
 Figure 8: Zinc Graphical Representations – Surface Water

Our Ref: EXR/229147 (Ver. 1)

Your Ref: UK17-23431

November 1, 2016



Environmental Chemistry

ESG

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Staffordshire

DE15 0YZ

Telephone: 01283 554400

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Rob Hodgson
Ramboll Environ
8 Village Way
Cardiff
CF15 7NE

For the attention of Rob Hodgson

Dear Rob Hodgson

Sample Analysis - Royal Mint Monitoring 2016/17

Samples from the above site have been analysed in accordance with the schedule supplied.

The sample details and the results of analyses for these samples are given in the appended report.

An invoice for this work will follow under a separate cover.

Please be aware that our policy for the retention of paper based laboratory records and analysis reports is 6 years.

The work was carried out in accordance with Environmental Scientifics Group Ltd (Multi-Sector Services) Standard Terms and Conditions of Contract.

If I can be of any further assistance please do not hesitate to contact me.

Yours sincerely

for ESG

J Colbourne
Project Co-ordinator
01283 554547

TEST REPORT



Report No. EXR/229147 (Ver. 1)

Ramboll Environ
8 Village Way
Cardiff
CF15 7NE

Site: Royal Mint Monitoring 2016/17

The 14 samples described in this report were registered for analysis by ESG on 26-Oct-2016. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 01-Nov-2016

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 3)
GC-FID Chromatograms (Pages 4 to 8)
Table of VOC (HSA) Results (Pages 9 to 10)
Analytical and Deviating Sample Overview (Pages 11 to 12)
Table of Method Descriptions (Page 13)
Table of Report Notes (Page 14)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
ESG :
Tim Barnes

A handwritten signature in blue ink, appearing to read 'Tim Barnes'.

Operations Director
Energy & Waste Services

Date of Issue: 01-Nov-2016

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

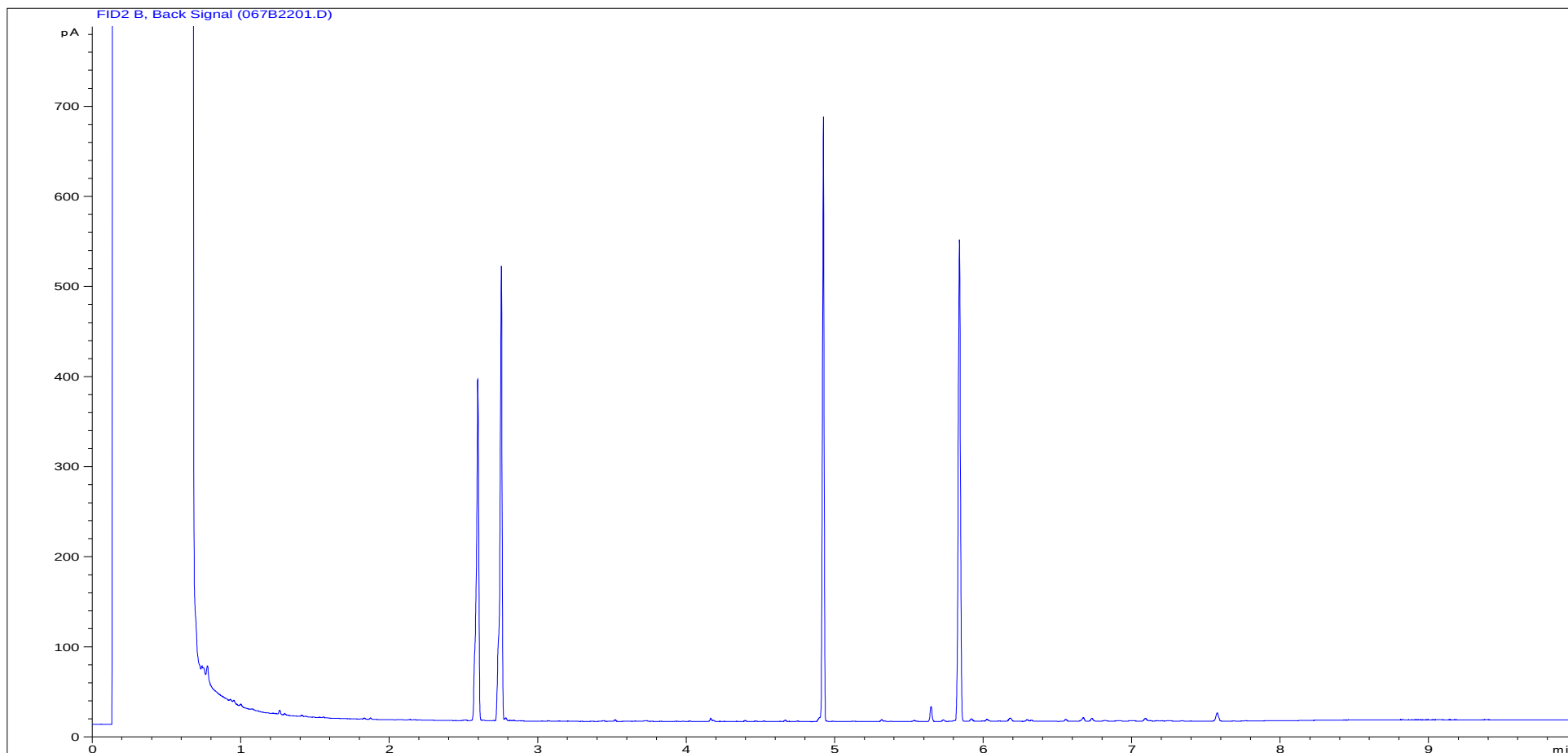
ESG accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units : Method Codes : Method Reporting Limits : UKAS Accredited :			pH units	mg/l	mg/l	mg/l	µg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
			WSLM3	WSLM12	Calc_CR3	Calc_HD	VOCHSAW	ICPWATVAR	ICPWATVAR	ICPWATVAR	ICPMSW	ICPMSWT	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	
					0.01	7	1	1	1	0.01	0.001	0.001	0.001	0.0001	0.001	0.001	0.001	0.002	0.001	
			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
LAB ID Number EX/	Client Sample Description	Sample Date	pH units w	Total Alkalinity as CaCO3 w	Chromium (III)	Total Hardness as CaCO3	VOC HSA-GCMS o	Calcium as Ca (Dissolved) a	Magnesium as Mg (Dissolved) a	Barium as Ba (Dissolved) a	Nickel as Ni (Dissolved)	Chromium as Cr (Total)	Chromium as Cr (Dissolved)	Cadmium as Cd (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Arsenic as As (Dissolved)		
1743435	BH901R	25-Oct-16 10:00	5.6	21	<0.01	49		14.2	3.2	0.02	0.167	0.008	<0.001	0.0003	0.402	<0.001	0.448	<0.001		
1743436	BH9	25-Oct-16 10:30	5.2	8	<0.01	49		12.2	4.4	0.03	0.224	0.009	<0.001	0.0005	0.564	<0.001	0.508	<0.001		
1743437	BHE5	25-Oct-16 10:45					Req													
1743438	CBH6	25-Oct-16 11:30					Req													
1743439	BH8	25-Oct-16 12:00	4.5	4	<0.01	67		18.9	4.8	0.02	0.127	<0.001	<0.001	0.0008	0.139	0.002	0.27	<0.001		
1743440	BH32	25-Oct-16 12:30	5.7	20	<0.01	145		42.0	9.7	0.06	0.391	0.002	<0.001	0.0007	0.009	<0.001	0.85	<0.001		
1743441	BH13	25-Oct-16 13:15	4.6	5	<0.01	75		22.1	4.9	0.04	0.069	0.008	<0.001	0.0004	0.074	<0.001	0.148	<0.001		
1743442	BH10	25-Oct-16 13:45	5.9	22	<0.01	67		19.4	4.4	0.05	0.097	0.003	<0.001	0.0002	0.084	<0.001	0.194	<0.001		
1743443	BH801	25-Oct-16 14:15	6.4	44	<0.01	43		9.1	4.8	0.03	0.013	0.005	<0.001	<0.0001	0.029	<0.001	0.232	<0.001		
1743444	C1	25-Oct-16 14:30	7	30	<0.01	38		10.2	3.0	<0.01	0.003	<0.001	<0.001	<0.0001	0.003	<0.001	0.005	<0.001		
1743445	R1	25-Oct-16 14:45	7.4	54	<0.01	66		18.5	4.7	0.02	0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	0.004	<0.001		
1743446	R6	25-Oct-16 15:00	7.2	64	<0.01	69		20.6	4.3	0.02	0.001	<0.001	<0.001	<0.0001	0.001	<0.001	0.005	<0.001		
1743447	R7	25-Oct-16 15:15	7.4	51	<0.01	62		17.5	4.4	0.01	0.004	<0.001	<0.001	<0.0001	0.007	<0.001	0.03	<0.001		
1743448	R7A	25-Oct-16 15:30	7.3	42	<0.01	55		15.4	4.0	0.01	0.006	0.002	<0.001	<0.0001	0.012	<0.001	0.051	<0.001		
 Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422			Client Name		Ramboll Environ						Sample Analysis									
			Contact		Rob Hodgson						Date Printed		01-Nov-2016							
			Royal Mint Monitoring 2016/17									Report Number		EXR/229147						
												Table Number		1						

Units : Method Codes : Method Reporting Limits : UKAS Accredited :			mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l							
			ICPWATVAR	ICPMSW	ICPMSW	ICPMSW	KONENS	SFAPI	TPHFID	ICPWATVAR								
			0.01	0.0001	0.001	0.001	0.01	0.02	0.01	0.01								
			Yes	Yes	Yes	Yes	Yes	Yes	Yes	No								
LAB ID Number EX/	Client Sample Description	Sample Date	Boron as B (Dissolved) a	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Vanadium as V (Dissolved)	Chromium VI as Cr	Cyanide (Total) as CN	TPH GC	Beryllium as Be (Dissolved) a								
1743435	BH901R	25-Oct-16 10:00	0.03	<0.0001	<0.001	<0.001	<0.01			<0.01								
1743436	BH9	25-Oct-16 10:30	0.03	<0.0001	<0.001	<0.001	<0.01			<0.01								
1743437	BHE5	25-Oct-16 10:45																
1743438	CBH6	25-Oct-16 11:30																
1743439	BH8	25-Oct-16 12:00	0.02	<0.0001	<0.001	<0.001	<0.01			<0.01								
1743440	BH32	25-Oct-16 12:30	0.06	<0.0001	<0.001	<0.001	<0.01			<0.01								
1743441	BH13	25-Oct-16 13:15	0.03	<0.0001	<0.001	<0.001	<0.01			<0.01								
1743442	BH10	25-Oct-16 13:45	0.03	<0.0001	<0.001	<0.001	<0.01			<0.01								
1743443	BH801	25-Oct-16 14:15	<0.01	<0.0001	<0.001	<0.001	<0.01			<0.01								
1743444	C1	25-Oct-16 14:30	<0.01	<0.0001	<0.001	<0.001	<0.01	<0.02	0.01	<0.01								
1743445	R1	25-Oct-16 14:45	<0.01	<0.0001	<0.001	<0.001	<0.01	<0.02	0.01	<0.01								
1743446	R6	25-Oct-16 15:00	<0.01	<0.0001	<0.001	<0.001	<0.01	<0.02	0.02	<0.01								
1743447	R7	25-Oct-16 15:15	<0.01	<0.0001	<0.001	<0.001	<0.01	<0.02	0.02	<0.01								
1743448	R7A	25-Oct-16 15:30	<0.01	<0.0001	<0.001	<0.001	<0.01	<0.02	0.01	<0.01								
 Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422			Client Name		Ramboll Environ						Sample Analysis							
			Contact		Rob Hodgson													
			Royal Mint Monitoring 2016/17						Date Printed		01-Nov-2016							
									Report Number		EXR/229147							
									Table Number		1							

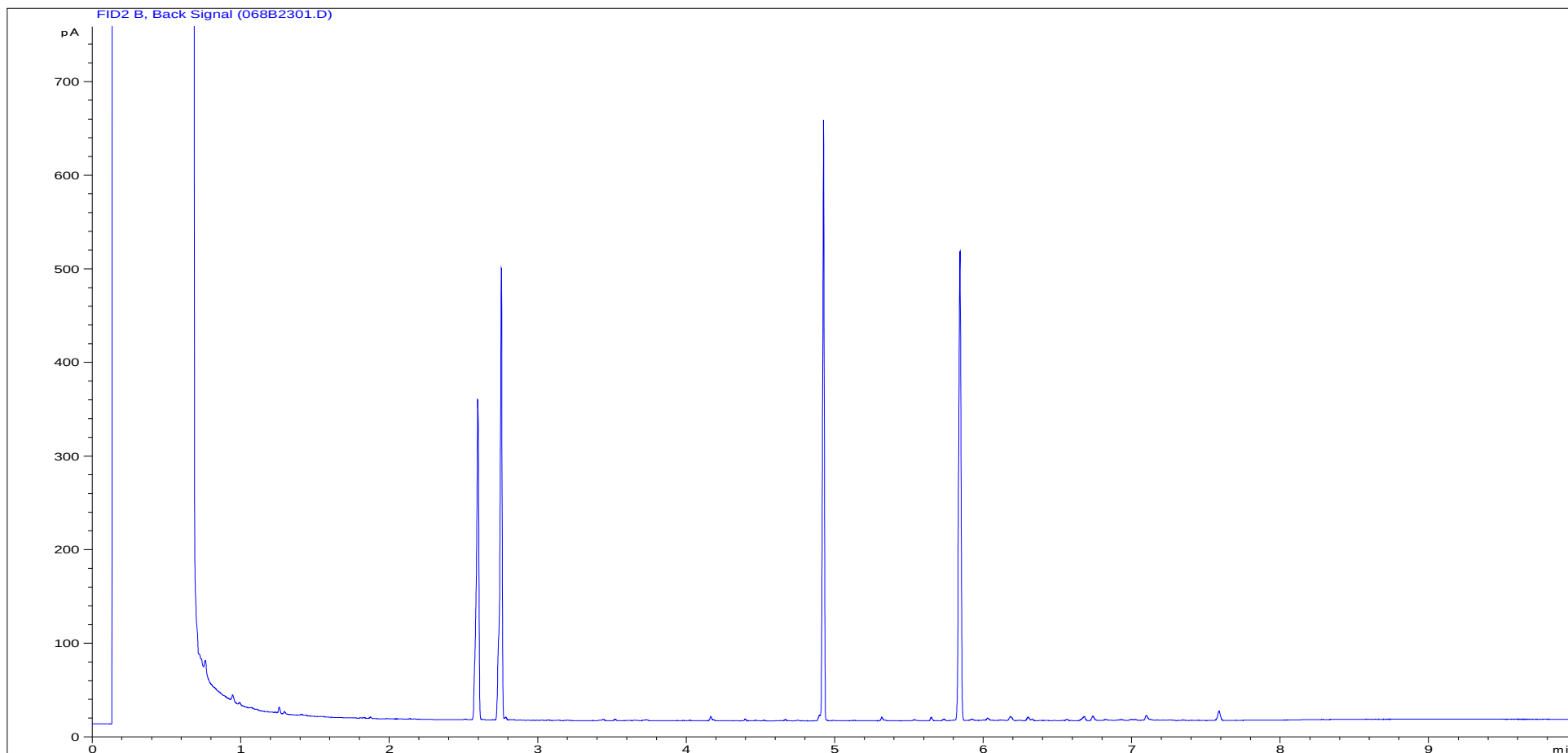
Petroleum Hydrocarbons (C8 to C40) by GC/FID



Sample ID:	EX1743444	Job Number:	W22_9147
Multiplier:	0.005	Client:	Ramboll Environ
Dilution:	1	Site:	Royal Mint Monitoring 2016/17
Acquisition Method:	TPH_RUNF.M	Client Sample Ref:	C1
Acquisition Date/Time:	28-Oct-16, 21:26:11		
Datafile:	D:\TES\DATA\Y2016\102816TPH_GC17\102816 2016-10-28 14-55-54\067B2201.D		

Where individual results are flagged see report notes for status.

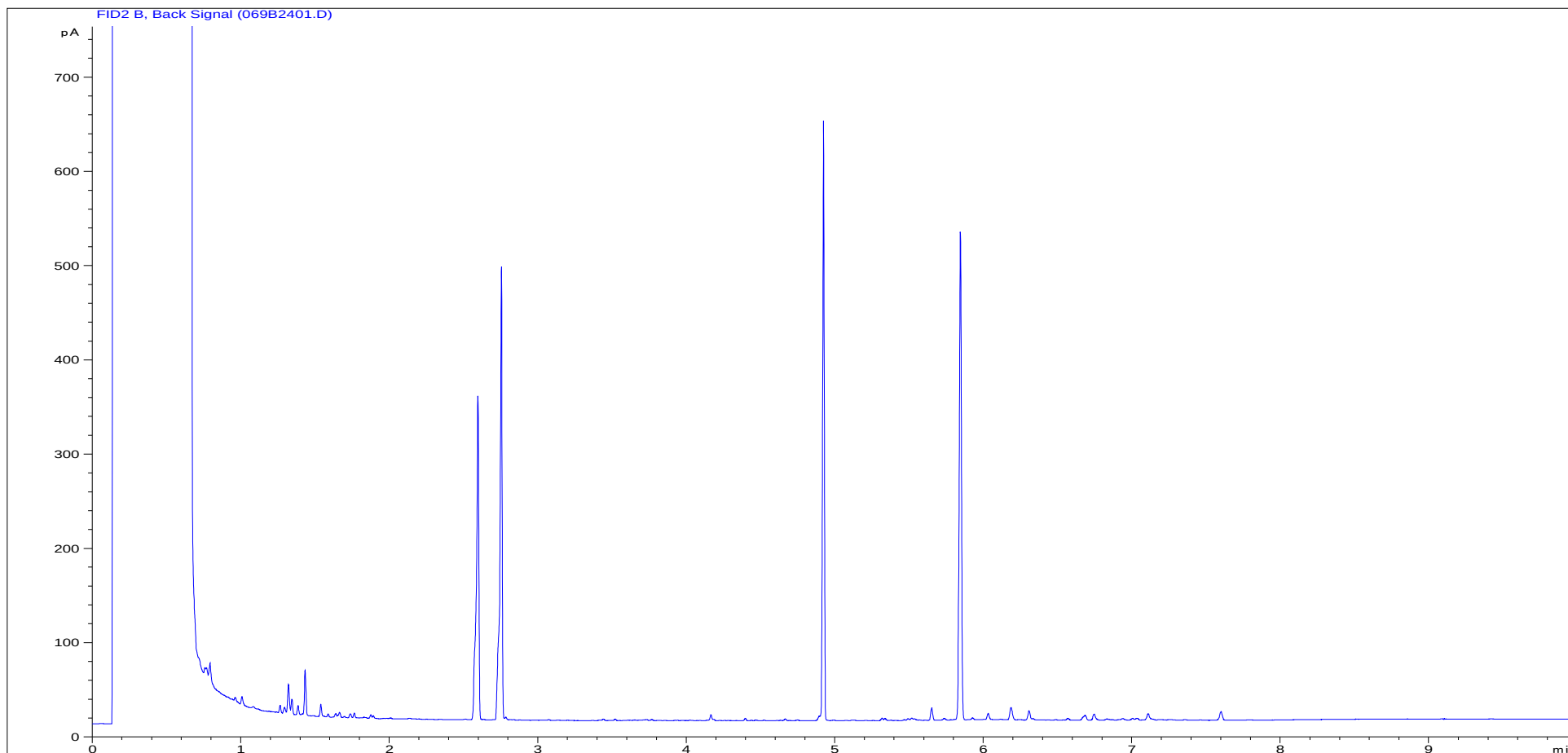
Petroleum Hydrocarbons (C8 to C40) by GC/FID



Sample ID:	EX1743445	Job Number:	W22_9147
Multiplier:	0.005	Client:	Ramboll Environ
Dilution:	1	Site:	Royal Mint Monitoring 2016/17
Acquisition Method:	TPH_RUNF.M	Client Sample Ref:	R1
Acquisition Date/Time:	28-Oct-16, 21:44:40		
Datafile:	D:\TES\DATA\Y2016\102816TPH_GC17\102816 2016-10-28 14-55-54\068B2301.D		

Where individual results are flagged see report notes for status.

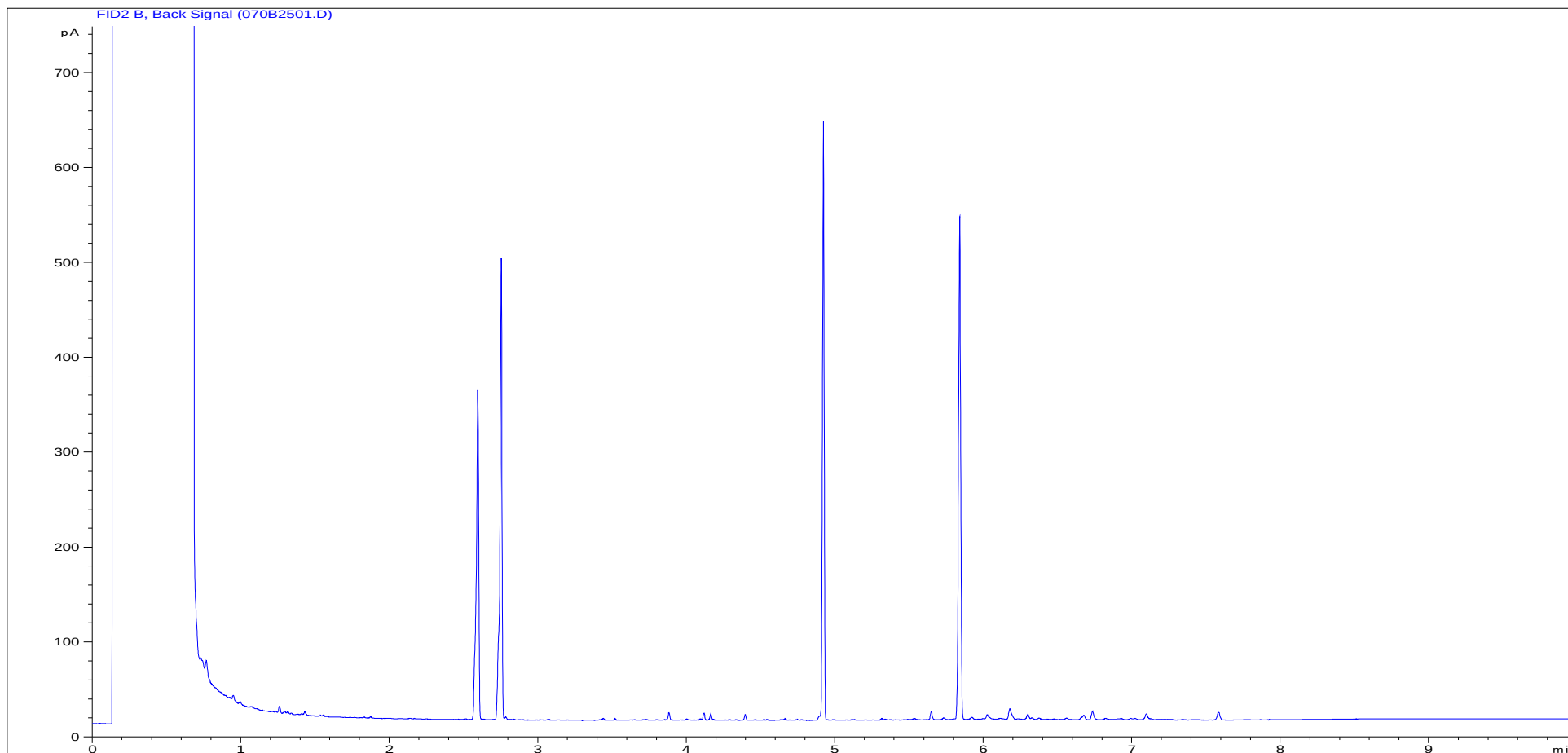
Petroleum Hydrocarbons (C8 to C40) by GC/FID



Sample ID:	EX1743446	Job Number:	W22_9147
Multiplier:	0.005	Client:	Ramboll Environ
Dilution:	1	Site:	Royal Mint Monitoring 2016/17
Acquisition Method:	TPH_RUNF.M	Client Sample Ref:	R6
Acquisition Date/Time:	28-Oct-16, 22:03:12		
Datafile:	D:\TES\DATA\Y2016\102816TPH_GC17\102816 2016-10-28 14-55-54\069B2401.D		

Where individual results are flagged see report notes for status.

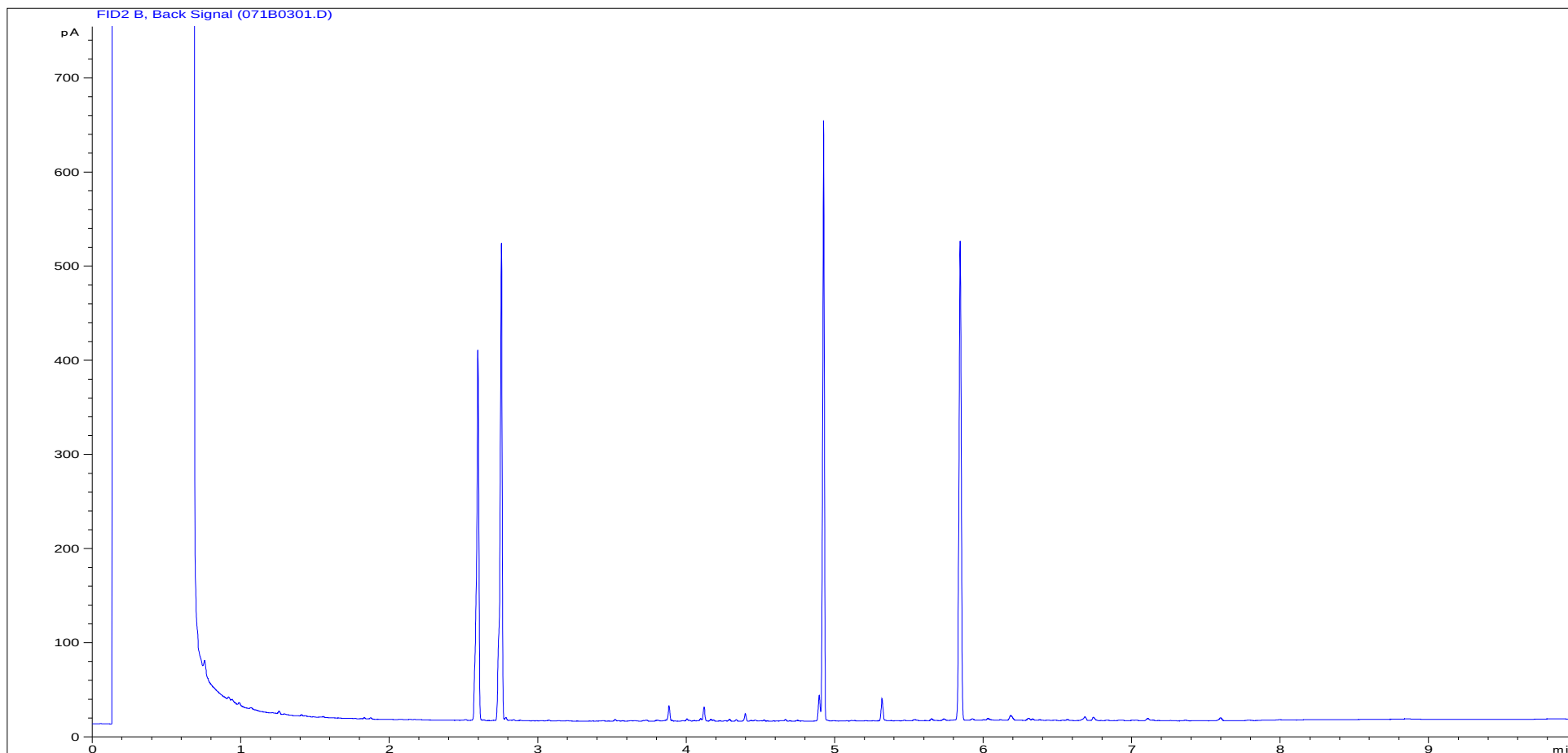
Petroleum Hydrocarbons (C8 to C40) by GC/FID



Sample ID:	EX1743447	Job Number:	W22_9147
Multiplier:	0.005	Client:	Ramboll Environ
Dilution:	1	Site:	Royal Mint Monitoring 2016/17
Acquisition Method:	TPH_RUNF.M	Client Sample Ref:	R7
Acquisition Date/Time:	28-Oct-16, 22:21:33		
Datafile:	D:\TES\DATA\Y2016\102816TPH_GC17\102816 2016-10-28 14-55-54\070B2501.D		

Where individual results are flagged see report notes for status.

Petroleum Hydrocarbons (C8 to C40) by GC/FID



Sample ID:	EX1743448	Job Number:	W22_9147
Multiplier:	0.005	Client:	Ramboll Environ
Dilution:	1	Site:	Royal Mint Monitoring 2016/17
Acquisition Method:	TPH_RUNF.M	Client Sample Ref:	R7A
Acquisition Date/Time:	30-Oct-16, 15:58:04		
Datafile:	D:\TES\DATA\Y2016\102816TPH_GC17\102816A 2016-10-30 15-23-07\071B0301.D		

Where individual results are flagged see report notes for status.

Volatile Organic Compounds by HSA-GCMS

UKAS accredited?: Yes

Customer and Site Details: Ramboll Environ: Royal Mint Monitoring 2016/17
Sample Details: BHE5
LIMS ID Number: EX1743437
Job Number: W22_9147

Directory/Quant file: 2016\102816\ Initial Calibration
Date Booked in: 26-Oct-16
Date Analysed: 28-Oct-16
Operator: PR
Matrix: Water
Method: Headspace
Multiplier: 1
Position: 2

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Dichlorodifluoromethane	75-71-8 *	-	< 1	-
Chloromethane	74-87-3	-	< 1	-
Vinyl Chloride	75-01-4	-	< 1	-
Bromomethane	74-83-9 *	-	< 5	-
Chloroethane	75-00-3	-	< 5	-
Trichlorofluoromethane	75-69-4	-	< 1	-
1,1-Dichloroethene	75-35-4	-	< 1	-
trans 1,2-Dichloroethene	156-60-5	-	< 1	-
1,1-Dichloroethane	75-34-3	-	< 1	-
2,2-Dichloropropane	594-20-7 *	-	< 1	-
cis 1,2-Dichloroethene	156-59-2	-	< 1	-
Bromochloromethane	74-97-5	-	< 1	-
Chloroform	67-66-3	-	< 1	-
1,1,1-Trichloroethane	71-55-6	-	< 1	-
Carbon Tetrachloride	56-23-5	-	< 1	-
1,1-Dichloropropene	563-58-6	-	< 1	-
Benzene	71-43-2	-	< 1	-
1,2-Dichloroethane	107-06-2	-	< 1	-
Trichloroethene	79-01-6	-	< 5	-
1,2-Dichloropropane	78-87-5	-	< 1	-
Dibromomethane	74-95-3	-	< 1	-
Bromodichloromethane	75-27-4	-	< 1	-
cis 1,3-Dichloropropene	10061-01-5 *	-	< 1	-
Toluene	108-88-3	-	< 1	-
trans 1,3-Dichloropropene	10061-02-6 *	-	< 1	-
1,1,2-Trichloroethane	79-00-5	-	< 1	-
Tetrachloroethene	127-18-4	-	< 5	-
1,3-Dichloropropane	142-28-9	-	< 1	-
Dibromochloromethane	124-48-1	-	< 1	-
1,2-Dibromoethane	106-93-4	-	< 1	-
Chlorobenzene	108-90-7	-	< 1	-
Ethylbenzene	100-41-4	-	< 1	-
1,1,1,2-Tetrachloroethane	630-20-6	-	< 1	-
m and p-Xylene	108-38-3/106-42-3	-	< 1	-
o-Xylene	95-47-6	-	< 1	-

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Styrene	100-42-5	-	< 1	-
Bromoform	75-25-2	-	< 1	-
iso-Propylbenzene	98-82-8	-	< 1	-
1,1,2,2-Tetrachloroethane	79-34-5 *	-	< 1	-
Propylbenzene	103-65-1	-	< 1	-
Bromobenzene	108-86-1	-	< 1	-
1,2,3-Trichloropropane	96-18-4	-	< 1	-
2-Chlorotoluene	95-49-8	-	< 1	-
1,3,5-Trimethylbenzene	108-67-8	-	< 1	-
4-Chlorotoluene	106-43-4	-	< 1	-
tert-Butylbenzene	98-06-6	-	< 1	-
1,2,4-Trimethylbenzene	95-63-6	-	< 1	-
sec-Butylbenzene	135-98-8	-	< 1	-
p-Isopropyltoluene	99-87-6	-	< 1	-
1,3-Dichlorobenzene	541-73-1	-	< 1	-
1,4-Dichlorobenzene	106-46-7	-	< 1	-
n-Butylbenzene	104-51-8	-	< 1	-
1,2-Dichlorobenzene	95-50-1	-	< 5	-
1,2-Dibromo-3-chloropropane	96-12-8 *	-	< 5	-
1,2,4-Trichlorobenzene	120-82-1	-	< 5	-
Hexachlorobutadiene	87-68-3	-	< 5	-
Naphthalene	91-20-3	-	< 5	-
1,2,3-Trichlorobenzene	87-61-6	-	< 5	-

Compounds marked * are not UKAS accredited
 "M" denotes that % fit has been manually interpreted

Internal standards	R.T.	Area %	Surrogates	% Rec
Pentafluorobenzene	3.60	93	Dibromofluoromethane	118
1,4-Difluorobenzene	3.95	96	Toluene-d8	97
Chlorobenzene-d5	5.09	95	Bromofluorobenzene	93
1,4-Dichlorobenzene-d4	5.89	88		

Volatile Organic Compounds by HSA-GCMS

UKAS accredited?: Yes

Customer and Site Details: Ramboll Environ: Royal Mint Monitoring 2016/17
Sample Details: CBH6
LIMS ID Number: EX1743438
Job Number: W22_9147

Directory/Quant file: 2016\102816\
Date Booked in: 26-Oct-16
Date Analysed: 28-Oct-16
Operator: PR
Initial Calibration
Matrix: Water
Method: Headspace
Multiplier: 1
Position: 3

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Dichlorodifluoromethane	75-71-8 *	-	< 1	-
Chloromethane	74-87-3	-	< 1	-
Vinyl Chloride	75-01-4	-	< 1	-
Bromomethane	74-83-9 *	-	< 5	-
Chloroethane	75-00-3	-	< 5	-
Trichlorofluoromethane	75-69-4	-	< 1	-
1,1-Dichloroethene	75-35-4	-	< 1	-
trans 1,2-Dichloroethene	156-60-5	-	< 1	-
1,1-Dichloroethane	75-34-3	-	< 1	-
2,2-Dichloropropane	594-20-7 *	-	< 1	-
cis 1,2-Dichloroethene	156-59-2	3.31	3	73
Bromochloromethane	74-97-5	-	< 1	-
Chloroform	67-66-3	-	< 1	-
1,1,1-Trichloroethane	71-55-6	3.57	6	62
Carbon Tetrachloride	56-23-5	-	< 1	-
1,1-Dichloropropene	563-58-6	-	< 1	-
Benzene	71-43-2	-	< 1	-
1,2-Dichloroethane	107-06-2	-	< 1	-
Trichloroethene	79-01-6	4.07	7	91
1,2-Dichloropropane	78-87-5	-	< 1	-
Dibromomethane	74-95-3	-	< 1	-
Bromodichloromethane	75-27-4	-	< 1	-
cis 1,3-Dichloropropene	10061-01-5 *	-	< 1	-
Toluene	108-88-3	-	< 1	-
trans 1,3-Dichloropropene	10061-02-6 *	-	< 1	-
1,1,2-Trichloroethane	79-00-5	-	< 1	-
Tetrachloroethene	127-18-4	-	< 5	-
1,3-Dichloropropane	142-28-9	-	< 1	-
Dibromochloromethane	124-48-1	-	< 1	-
1,2-Dibromoethane	106-93-4	-	< 1	-
Chlorobenzene	108-90-7	-	< 1	-
Ethylbenzene	100-41-4	-	< 1	-
1,1,1,2-Tetrachloroethane	630-20-6	-	< 1	-
m and p-Xylene	108-38-3/106-42-3	-	< 1	-
o-Xylene	95-47-6	-	< 1	-

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Styrene	100-42-5	-	< 1	-
Bromoform	75-25-2	-	< 1	-
iso-Propylbenzene	98-82-8	-	< 1	-
1,1,2,2-Tetrachloroethane	79-34-5 *	-	< 1	-
Propylbenzene	103-65-1	-	< 1	-
Bromobenzene	108-86-1	-	< 1	-
1,2,3-Trichloropropane	96-18-4	-	< 1	-
2-Chlorotoluene	95-49-8	-	< 1	-
1,3,5-Trimethylbenzene	108-67-8	-	< 1	-
4-Chlorotoluene	106-43-4	-	< 1	-
tert-Butylbenzene	98-06-6	-	< 1	-
1,2,4-Trimethylbenzene	95-63-6	-	< 1	-
sec-Butylbenzene	135-98-8	-	< 1	-
p-Isopropyltoluene	99-87-6	-	< 1	-
1,3-Dichlorobenzene	541-73-1	-	< 1	-
1,4-Dichlorobenzene	106-46-7	-	< 1	-
n-Butylbenzene	104-51-8	-	< 1	-
1,2-Dichlorobenzene	95-50-1	-	< 5	-
1,2-Dibromo-3-chloropropane	96-12-8 *	-	< 5	-
1,2,4-Trichlorobenzene	120-82-1	-	< 5	-
Hexachlorobutadiene	87-68-3	-	< 5	-
Naphthalene	91-20-3	-	< 5	-
1,2,3-Trichlorobenzene	87-61-6	-	< 5	-

Compounds marked * are not UKAS accredited
"M" denotes that % fit has been manually interpreted

Internal standards	R.T.	Area %	Surrogates	% Rec
Pentafluorobenzene	3.60	91	Dibromofluoromethane	112
1,4-Difluorobenzene	3.95	95	Toluene-d8	97
Chlorobenzene-d5	5.09	95	Bromofluorobenzene	94
1,4-Dichlorobenzene-d4	5.89	89		

Sample Analysis

ESG Environmental Chemistry
Analytical and Deviating Sample Overview

W229147

Customer Ramboll Environ
Site Royal Mint Monitoring 2016/17
Report No W229147

Consignment No W1111100
Date Logged 26-Oct-2016

Report Due 02-Nov-2016

ID Number	Description	Matrix Type	MethodID	Sampled	CALC_CK3	CALC_HD	CUSTSERV	ICPMSW	Nickel as Ni MS (Dissolved)	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Vanadium as V MS (Dissolved)	ICPMSVT	ICPMA1VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Barium as Ba (Dissolved) VAR	Boron as B (Dissolved) VAR
					✓	✓		Report A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/1743435	BH901R	Groundwater	25/10/16																					
EX/1743436	BH9	Groundwater	25/10/16																					
EX/1743437	BHE5	Groundwater	25/10/16																					
EX/1743438	CBH6	Groundwater	25/10/16																					
EX/1743439	BH8	Groundwater	25/10/16																					
EX/1743440	BH32	Groundwater	25/10/16																					
EX/1743441	BH13	Groundwater	25/10/16																					
EX/1743442	BH10	Groundwater	25/10/16																					
EX/1743443	BH801	Groundwater	25/10/16																					
EX/1743444	C1	Surface Water	25/10/16																					
EX/1743445	R1	Surface Water	25/10/16																					
EX/1743446	R6	Surface Water	25/10/16																					
EX/1743447	R7	Surface Water	25/10/16																					
EX/1743448	R7A	Surface Water	25/10/16																					

Note: For analysis where the scheduled turnaround is greater than the holding time we will do our utmost to prioritise these samples. However, it is possible that samples could become deviant whilst being processed in the laboratory.

In this instance please contact the laboratory immediately should you wish to discuss how you would like us to proceed. If you do not respond within 24 hours, we will proceed as originally requested.

Deviating Sample Key

- A The sample was received in an inappropriate container for this analysis
- B The sample was received without the correct preservation for this analysis
- C Headspace present in the sample container
- D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
- E Sample processing did not commence within the appropriate holding time
- F Sample processing did not commence within the appropriate handling time

Requested Analysis Key

- Analysis Required
- Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
- No analysis scheduled
- Analysis Subcontracted - **Note: due date may vary**

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.
Where individual results are flagged see report notes for status.

Sample Analysis

ESG Environmental Chemistry
Analytical and Deviating Sample Overview

W229147

Customer Ramboll Environ
Site Royal Mint Monitoring 2016/17
Report No W229147

Consignment No W111100
Date Logged 26-Oct-2016

Report Due 02-Nov-2016

ID Number	Description	MethodID		ICPMS VAR	KONE	SFAP	TPH	VOC	WSLM2	WSLM3
		Matrix Type	Sampled	Beryllium as Be (Dissolved) VAR	Chromium VI as Cr (Kone)	Cyanide (Total) as CN SFA	TPH GC	VOC HSA-GCMS	Total Alkalinity as CaCO3	pH units
					✓	✓	✓	✓	✓	✓
EX/1743435	BH901R	Groundwater	25/10/16							
EX/1743436	BH9	Groundwater	25/10/16							
EX/1743437	BHE5	Groundwater	25/10/16							
EX/1743438	CBH6	Groundwater	25/10/16							
EX/1743439	BH8	Groundwater	25/10/16							
EX/1743440	BH32	Groundwater	25/10/16							
EX/1743441	BH13	Groundwater	25/10/16							
EX/1743442	BH10	Groundwater	25/10/16							
EX/1743443	BH801	Groundwater	25/10/16							
EX/1743444	C1	Surface Water	25/10/16							
EX/1743445	R1	Surface Water	25/10/16							
EX/1743446	R6	Surface Water	25/10/16							
EX/1743447	R7	Surface Water	25/10/16							
EX/1743448	R7A	Surface Water	25/10/16							

Note: For analysis where the scheduled turnaround is greater than the holding time we will do our utmost to prioritise these samples. However, it is possible that samples could become deviant whilst being processed in the laboratory.

In this instance please contact the laboratory immediately should you wish to discuss how you would like us to proceed. If you do not respond within 24 hours, we will proceed as originally requested.

Deviating Sample Key

- A The sample was received in an inappropriate container for this analysis
- B The sample was received without the correct preservation for this analysis
- C Headspace present in the sample container
- D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
- E Sample processing did not commence within the appropriate holding time
- F Sample processing did not commence within the appropriate handling time

Requested Analysis Key

- Analysis Required
- Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
- No analysis scheduled
- Analysis Subcontracted - **Note: due date may vary**

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.
Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	Calc_CR3	As Received	Calculation of Chromium III from Total Chromium and Chromium VI
Water	Calc_HD	As Received	Calculation based on Dissolved metals analysis by ICPOES
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPMSWT	As Received	Determination of Total Metals in water samples using nitric acid digestion and ICPMS quantitation
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	TPHFID	As Received	Determination of pentane extractable hydrocarbons in water by GCFID
Water	VOCHSAW	As Received	Determination of Volatile Organics Compounds by Headspace GCMS
Water	WSLM12	As Received	Titration with Sulphuric Acid to required pH
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▮ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : Ramboll Environ
Site : Royal Mint Monitoring 2016/17
Report Number : W22_9147

[illegible]

Table 2: Surface Water Monitoring 2016-2017 (UK17-23222) - Summary of Results

Sample Point	Date	pH	CaCO3 mg/l	Analysis													TPH (mg/l)
				Sulphate (dissolved) mg/l	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (dissolved) mg/l	Cyanide (total) (mg/l)	
R1	Jan-10	7.5	NT	9	<0.001	0.001	<0.0001	<0.001	<0.001	0.005	<0.001	<0.01	<0.0001	<0.001	<0.002	<0.02	0.06
	May-10	7.9	NT	9	0.001	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	0.02	<0.0001	<0.001	<0.002	0.03	<0.01
	Jun-10	7.5	NT	13	0.001	0.002	<0.0001	<0.001	<0.001	<0.002	<0.001	0.01	<0.0001	<0.001	<0.002	<0.02	<0.01
	Aug-10	7.5	NT	21	0.001	0.002	<0.0001	<0.001	<0.001	<0.002	<0.001	0.02	<0.0001	<0.001	0.001	<0.02	0.01
	Oct-10	7.7	NT	10	<0.001	0.001	<0.0001	0.001	<0.001	<0.002	<0.001	0.02	<0.0001	0.002	<0.001	<0.02	0.01
	Dec-10	7.6	NT	12	<0.001	0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Apr-11	7.4	56	NT	0.001	0.001	<0.0001	0.002	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.03
	May-11	7.6	21	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	0.41	<0.0001	<0.001	<0.001	<0.02	0.02
	Jul-11	8	61	NT	<0.001	0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	0.0001	<0.02	0.02
	Sep-11	7.5	64	NT	0.001	0.003	<0.0001	<0.001	<0.001	0.009	<0.001	0.06	<0.0001	0.001	<0.001	<0.02	0.02
	Nov-11	8.6	61	NT	0.001	0.002	<0.0001	0.001	<0.001	0.003	<0.001	0.03	<0.0001	<0.001	0.001	<0.02	0.01
	Jan-12	8.1	52	NT	0.001	0.005	<0.0001	0.001	<0.001	0.005	<0.001	0.02	<0.0001	<0.001	0.002	<0.02	0.01
	Mar-12	8.2	51	NT	0.001	0.002	<0.0001	0.002	<0.001	0.006	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	<0.01
	May-12	8	39	NT	0.001	0.001	<0.0001	0.002	<0.001	0.009	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.016
	Jul-12	7.7	45	NT	0.002	<0.001	<0.0001	0.002	<0.001	0.009	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Sep-12	7.8	47	NT	0.001	0.001	<0.0001	0.002	<0.001	0.006	<0.001	0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Nov-12	7.8	53	NT	0.001	<0.001	<0.0001	<0.001	<0.001	0.006	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Jan-13	7.5	58	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	0.005	<0.001	0.03	<0.0001	<0.001	0.001	<0.02	0.02
	Apr-13	7.7	46	NT	<0.001	0.001	<0.0001	<0.001	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	May-13	8	62	NT	<0.001	0.001	<0.0001	<0.001	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Jul-13	7.6	68	NT	0.001	0.001	<0.0001	0.003	<0.001	0.005	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	0.105
	Oct-13	7.2	55	NT	0.001	0.001	<0.0001	0.001	<0.001	0.006	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	<0.01
	Nov-13	7.7	62	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Jan-14	7.2	36	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jun-14	6.9	60	NT	0.001	<0.001	<0.0001	0.001	<0.001	0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.03
	Oct-14	8.1	50	NT	0.001	<0.001	<0.0001	0.002	<0.001	0.008	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Feb-15	7.4	53	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Jun-15	7.4	38	NT	0.005	<0.001	<0.0001	0.001	<0.001	0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Oct-15	7.4	68	NT	0.003	<0.001	<0.0001	<0.001	<0.001	0.006	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Feb-16	6.8	45	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	0.02	0.06
	Jun-16	7.1	60	NT	0.001	<0.001	<0.0001	0.001	<0.001	0.003	<0.001	0.01	<0.0001	<0.001	<0.001	0.04	0.01
	Oct-16	7.4	66	NT	0.001	<0.001	<0.0001	<0.001	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
R6	Jan-10	7.5	NT	9	0.001	0.001	<0.0001	<0.001	<0.001	0.002	<0.001	<0.01	0.0001	<0.001	<0.002	<0.02	0.64
	May-10	7.6	NT	10	0.002	<0.001	<0.0001	<0.001	<0.001	0.003	<0.001	0.02	<0.0001	<0.001	<0.002	0.24	<0.01
	Jun-10	7.5	NT	14	0.002	0.002	<0.0001	<0.001	<0.001	0.002	<0.001	0.01	<0.0001	<0.001	<0.002	<0.02	<0.01
	Aug-10	7.7	NT	22	0.001	0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	0.02	<0.0001	<0.001	<0.001	<0.02	0.01
	Oct-10	7.7	NT	11	0.001	0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Dec-10	7.4	NT	11	0.001	0.001	<0.0001	<0.001	<0.001	0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Apr-11	7.4	52	NT	0.002	0.001	<0.0001	0.002	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.04
	May-11	7.4	23	NT	0.001	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	0.39	<0.0001	<0.001	<0.001	<0.02	0.04
	Jul-11	7.2	71	NT	<0.001	0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	0.02
	Sep-11	7.7	64	NT	0.001	0.001	<0.0001	<0.001	<0.001	0.003	<0.001	0.04	<0.0001	<0.001	<0.001	<0.02	0.01
	Nov-11	7.7	61	NT	0.002	0.002	<0.0001	0.002	<0.001	0.003	<0.001	0.03	<0.0001	<0.001	0.002	<0.02	0.02
	Jan-12	8	57	NT	0.002	0.003	<0.0001	0.002	<0.001	0.008	<0.001	0.02	<0.0001	<0.001	0.002	<0.02	0.02
	Mar-12	8.2	57	NT	0.001	0.002	<0.0001	<0.001	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	0.02
	May-12	7.9	50	NT	0.001	0.002	<0.0001	0.002	<0.001	0.014	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.016
	Jul-12	7.7	56	NT	0.002	<0.001	<0.0001	0.001	<0.001	0.005	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Sep-12	7.9	53	NT	0.001	0.001	<0.0001	0.001	<0.001	<0.002	<0.001	0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Nov-12	7.9	64	NT	0.001	<0.001	<0.0001	<0.001	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Jan-13	7.6	65	NT	0.001	<0.001	<0.0001	0.001	<0.001	0.025	<0.001	0.03	<0.0001	<0.001	0.001	<0.02	0.02
	Apr-13	7.8	51	NT	<0.001	0.007	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	May-13	8	74	NT	<0.001	0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01

Analysis																	
Sample Point	Date	pH	CaCO3 mg/l	Sulphate (dissolved) mg/l	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (dissolved) mg/l	Cyanide (total) (mg/l)	TPH (mg/l)
R6 Cont.	Jul-13	7.6	74	NT	0.002	0.001	<0.0001	0.001	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	0.019
	Oct-13	7.3	52	NT	0.001	<0.001	<0.0001	0.001	<0.001	0.008	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Nov-13	7.7	77	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Jan-14	7.5	42	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jun-14	6.9	50	NT	0.002	<0.001	0.0001	0.003	<0.001	0.018	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.04
	Oct-14	8.1	34	NT	0.001	<0.001	<0.0001	0.004	<0.001	0.087	<0.001	0.01	<0.0001	<0.001	0.001	<0.02	0.15
	Feb-15	7.3	53	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Jun-15	7.4	40	NT	0.005	<0.001	<0.0001	0.001	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Oct-15	7.5	76	NT	0.002	<0.001	<0.0001	<0.001	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.13
	Feb-16	6.5	42	NT	0.001	<0.001	<0.0001	<0.001	<0.001	0.006	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.03
	Jun-16	7.2	64	NT	0.002	<0.001	<0.0001	0.002	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Oct-16	7.2	69	NT	0.001	<0.001	<0.0001	0.001	<0.001	0.005	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
R7	Jan-10	7.7	NT	7	0.005	0.003	<0.0001	0.01	<0.001	0.009	<0.001	0.01	0.0001	<0.001	<0.002	<0.02	<0.01
	May-10	8	NT	14	0.019	<0.001	<0.0001	0.039	<0.001	0.097	<0.001	0.01	<0.0001	<0.001	<0.002	0.05	<0.01
	Jun-10	7.5	NT	18	0.013	0.002	<0.0001	0.028	<0.001	0.071	<0.001	0.01	<0.0001	<0.001	<0.002	<0.02	<0.01
	Aug-10	7.8	NT	29	0.008	0.001	<0.0001	0.011	<0.001	0.017	<0.001	0.03	<0.0001	<0.001	0.001	<0.02	<0.01
	Oct-10	7.7	NT	20	0.004	0.001	<0.0001	0.007	<0.001	0.009	<0.001	0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Dec-10	7.4	NT	12	0.004	0.001	<0.0001	0.008	<0.001	0.012	<0.001	0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Apr-11	7.5	47	NT	0.017	0.001	<0.0001	0.039	<0.001	0.037	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.03
	May-11	7.7	29	NT	0.011	<0.001	<0.0001	0.023	<0.001	0.038	<0.001	0.39	<0.0001	<0.001	<0.001	<0.02	0.03
	Jul-11	7.4	61	NT	0.003	0.001	<0.0001	0.007	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	0.02
	Sep-11	7.7	50	NT	0.019	0.001	<0.0001	0.017	<0.001	0.012	<0.001	0.03	<0.0001	<0.001	<0.001	<0.02	<0.01
	Nov-11	7.7	59	NT	0.009	0.002	<0.0001	0.009	<0.001	0.008	<0.001	0.03	<0.0001	<0.001	0.001	<0.02	0.02
	Jan-12	8	52	NT	0.001	0.003	<0.0001	<0.001	<0.001	0.005	<0.001	0.01	<0.0001	<0.001	0.002	<0.02	0.01
	Mar-12	8.1	37	NT	0.006	0.001	<0.0001	0.009	<0.001	0.009	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	<0.01
	May-12	7.9	46	NT	0.002	0.001	<0.0001	0.003	<0.001	0.006	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.022
	Jul-12	7.7	38	NT	0.008	<0.001	<0.0001	0.013	<0.001	0.016	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Sep-12	7.9	54	NT	0.002	0.001	<0.0001	0.001	<0.001	0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Nov-12	7.8	51	NT	0.002	<0.001	<0.0001	0.003	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Jan-13	7.6	49	NT	0.005	<0.001	<0.0001	0.01	<0.001	0.023	<0.001	0.03	<0.0001	<0.001	0.001	<0.02	0.02
	Apr-13	7.8	48	NT	0.002	0.001	<0.0001	0.004	<0.001	0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	May-13	8.1	54	NT	0.003	<0.001	<0.0001	0.007	<0.001	0.007	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jul-13	7.6	72	NT	0.002	0.002	<0.0001	0.003	<0.001	0.005	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	0.031
	Oct-13	7.3	57	NT	0.001	<0.001	<0.0001	0.002	<0.001	0.005	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Nov-13	7.7	69	NT	0.002	<0.001	<0.0001	0.004	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jan-14	7.4	36	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jun-14	7	55	NT	0.002	<0.001	<0.0001	0.003	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.03
	Oct-14	8.1	33	NT	0.012	0.001	<0.0001	0.043	0.002	0.093	<0.001	0.01	<0.0001	<0.001	0.001	<0.02	1.04
	Feb-15	7.3	49	NT	0.002	<0.001	<0.0001	0.004	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jun-15	7.4	44	NT	0.005	<0.001	<0.0001	0.001	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Oct-15	7.7	68	NT	0.01	<0.001	<0.0001	0.004	<0.001	0.027	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Feb-16	6.5	42	NT	0.002	<0.001	<0.0001	0.003	<0.001	0.008	<0.001	<0.01	<0.0001	<0.001	<0.001	0.02	0.06
	Jun-16	7.2	59	NT	0.002	<0.001	<0.0001	0.003	<0.001	0.004	<0.001	0.01	<0.0001	<0.001	<0.001	<0.02	0.04
	Oct-16	7.4	62	NT	0.004	<0.001	<0.0001	0.007	<0.001	0.03	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
R7A	Jan-10	7.8	NT	7	0.004	0.001	<0.0001	0.009	<0.001	0.009	<0.001	<0.01	0.0001	<0.001	<0.002	<0.02	0.25
	May-10	8.1	NT	14	0.021	<0.001	<0.0001	0.041	<0.001	0.113	<0.001	<0.01	<0.0001	<0.001	<0.002	0.03	0.02
	Jun-10	7.5	NT	16	0.013	0.002	<0.0001	0.027	<0.001	0.085	<0.001	0.01	<0.0001	<0.001	<0.002	<0.02	<0.01
	Aug-10	7.8	NT	32	0.013	0.001	<0.0001	0.017	<0.001	0.04	<0.001	0.03	<0.0001	<0.001	<0.001	<0.02	<0.01
	Oct-10	7.7	NT	19	0.004	0.001	<0.0001	0.007	<0.001	0.009	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Dec-10	7.5	NT	15	0.008	0.001	<0.0001	0.015	<0.001	0.033	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Apr-11	7.5	47	NT	0.017	0.001	<0.0001	0.038	<0.001	0.037	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.03
	May-11	7.7	29	NT	0.011	<0.001	<0.0001	0.022	<0.001	0.036	<0.001	0.38	<0.0001	<0.001	<0.001	<0.02	0.02
	Jul-11	7.5	56	NT	0.008	0.001	<0.0001	0.018	<0.001	0.014	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	0.01

Analysis																	
Sample Point	Date	pH	CaCO3 mg/l	Sulphate (dissolved) mg/l	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (dissolved) mg/l	Cyanide (total) (mg/l)	TPH (mg/l)
R7A Cont.	Sep-11	7.4	50	NT	0.021	0.001	<0.0001	0.018	<0.001	0.012	<0.001	0.02	<0.0001	<0.001	<0.001	<0.02	<0.01
	Nov-11	7.7	47	NT	0.041	0.002	<0.0001	0.029	<0.001	0.03	<0.001	0.02	<0.0001	<0.001	0.001	<0.02	0.01
	Jan-12	7.9	45	NT	0.011	0.002	<0.0001	0.011	<0.001	0.016	<0.001	0.01	<0.0001	<0.001	0.002	<0.02	<0.01
	Mar-12	8.1	38	NT	0.006	0.001	<0.0001	0.009	<0.001	0.008	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	<0.01
	May-12	7.9	20	NT	0.017	0.001	<0.0001	0.052	0.001	0.07	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.057
	Jul-12	7.8	41	NT	0.008	<0.001	<0.0001	0.013	<0.001	0.016	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Sep-12	7.9	44	NT	0.017	0.001	<0.0001	0.031	<0.001	0.042	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Nov-12	7.8	47	NT	0.004	<0.001	<0.0001	0.007	<0.001	0.008	<0.001	0.02	<0.0001	<0.001	<0.001	<0.02	0.02
	Jan-13	7.6	32	NT	0.02	<0.001	0.0002	0.044	0.002	0.089	<0.001	0.03	<0.0001	<0.001	0.001	<0.02	0.04
	Apr-13	7.8	37	NT	0.003	0.001	<0.0001	0.008	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	May-13	8.3	53	NT	0.006	<0.001	<0.0001	0.017	<0.001	0.018	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jul-13	7.5	53	NT	0.018	0.001	<0.0001	0.026	<0.001	0.064	<0.001	<0.01	<0.0001	<0.001	0.001	<0.02	0.012
	Oct-13	7.3	62	NT	0.005	<0.001	<0.0001	0.010	<0.001	0.011	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Nov-13	7.8	61	NT	0.005	<0.001	<0.0001	0.009	<0.001	0.014	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jan-14	7.4	26	NT	0.004	<0.001	<0.0001	0.005	<0.001	0.062	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Jun-14	7.1	44	NT	0.013	<0.001	0.0001	0.039	0.001	0.067	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.06
	Oct-14	8.2	20	NT	0.015	0.001	<0.0001	0.057	0.003	0.141	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.6
	Feb-15	7.2	38	NT	0.005	<0.001	<0.0001	0.013	<0.001	0.013	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Jun-15	7.5	35	NT	0.007	<0.001	<0.0001	0.006	<0.001	0.01	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Oct-15	7.5	56	NT	0.006	<0.001	<0.0001	0.012	<0.001	0.018	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Feb-16	6.4	35	NT	0.008	<0.001	<0.0001	0.011	<0.001	0.035	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.05
	Jun-16	7.2	49	NT	0.006	<0.001	<0.0001	0.016	<0.001	0.018	<0.001	0.01	<0.0001	<0.001	<0.001	<0.02	0.03
	Oct-16	7.3	55	NT	0.006	<0.001	<0.0001	0.012	<0.001	0.051	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
C1	Mar-12	8.1	40	NT	0.004	0.001	<0.0001	0.009	0.002	0.01	0.001	<0.01	<0.0001	<0.001	0.002	<0.02	<0.01
	May-12	7.9	43	NT	0.011	0.001	<0.0001	0.026	<0.001	0.01	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.014
	Jul-12	7.8	45	NT	0.002	<0.001	<0.0001	0.004	<0.001	0.007	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Sep-12	7.7	43	NT	0.003	0.001	<0.0001	0.004	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Nov-12	7.7	45	NT	0.002	<0.001	<0.0001	0.002	<0.001	0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jan-13	7.7	30	NT	0.006	<0.001	<0.0001	0.009	<0.001	0.016	<0.001	0.03	<0.0001	<0.001	0.001	<0.02	<0.01
	Apr-13	7.8	41	NT	0.001	0.002	<0.0001	0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.04
	May-13	7.9	69	NT	0.002	<0.001	<0.0001	0.002	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Jul-13	7.4	50	NT	0.002	<0.001	<0.0001	0.003	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.058
	Oct-13	7.7	88	NT	0.002	<0.001	<0.0001	0.004	<0.001	0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Nov-13	7.6	37	NT	0.002	<0.001	<0.0001	0.002	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jan-14	7.6	39	NT	0.002	<0.001	<0.0001	0.002	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Jun-14	7	34	NT	0.005	<0.001	<0.0001	0.01	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Oct-14	8.1	14	NT	0.008	<0.001	<0.0001	0.014	<0.001	0.012	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.3
	Feb-15	7	38	NT	<0.001	<0.001	<0.0001	0.001	<0.001	0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	<0.01
	Jun-15	7.4	33	NT	0.005	<0.001	<0.0001	0.002	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Oct-15	7.6	42	NT	0.003	<0.001	<0.0001	0.002	<0.001	0.007	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Feb-16	6.4	30	NT	0.007	<0.001	<0.0001	0.005	<0.001	0.012	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Jun-16	7	41	NT	0.003	<0.001	<0.0001	0.006	<0.001	0.004	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Oct-16	7	38	NT	0.003	<0.001	<0.0001	0.003	<0.001	0.005	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
Assessment Criteria (mg/l)		6 to 9 (2)		400	0.02 (1)	0.0047 (3)	0.00009 (1)	0 - 50 = 0.001 (3) 50-100 = 0.006	0.0072 (1)	0-50 = 0.008 (3) 50-100 = 0.05	0.05 (2)	2 (2)	0.001 (1)	0.01 (4)	0.02 (3)	0.001 (1)	0.01(4)

		Analysis															
Sample Point	Date	pH	CaCO3 mg/l	Sulphate (dissolved) mg/l	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (dissolved) mg/l	Cyanide (total) (mg/l)	TPH (mg/l)

Notes:

2016-2017 Sampling Points

EQS Adjusted for Hardness

Yellow cells indicate elevated concentrations compared with Assessment Criteria (e.g. EQS).

NG = No Guideline

NT = Not Tested

1 = Annex I of Directive 2008/105/EC of the European Parliament & of the Council of 16 December 2008 on environmental quality standards in the field of water

policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending

2 = Table 2a: Environmental Quality Standards (EQS) for List 2 dangerous substances, EC Dangerous Substances Directive (76/464/EEC)

3 = Table 2b: Environmental Quality Standards (EQS) for hardness related List 2 dangerous substances, EC dangerous substances Directive (76/464/EEC)

NB - in the absence of hardness data, a conservative approach has been adopted and the lowest EQS values used

4 = Water Supply (Water Quality) (England and Wales) Regulations 2000 (SI 2000/3184) (as amended); Water Supply (Water Quality) (Wales) Regulations 2001 (SI 3911 W.323) (as amended)

Table 1: Groundwater Monitoring 2016 - 2017 (UK17-23222) - Summary of Results

		Analysis												
Borehole	Date	pH	CaCO3 (mg/l)	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (dissolved) mg/l
Guideline Value		6-9 (1)	NG	0.02 (1)	0.0047(1)	0.00008(1)	0.001-0.028* (1)	0.0072 (1)	0.008 - 0.125* (1)	0.05(1)	2 (1)	0.00005(1)	0.01(2)	0.02 - 0.06* (1)
BH001	01-Mar-06	6.5	50	0.012	<0.005	<0.001	<0.005	<0.005	0.031	<0.005	<0.005	<0.00005	<0.005	NT
	01-May-06	5.5	<20	0.01	<0.005	<0.001	<0.005	<0.005	0.018	<0.005	0.012	<0.00005	<0.005	NT
	01-Oct-07	6.5	140	0.021	<0.005	<0.001	0.008	<0.005	0.045	<0.005	<0.005	<0.00005	<0.005	NT
	01-Aug-08	6.2	65	0.035	<0.005	<0.001	0.018	<0.005	0.19	<0.005	0.04	<0.00005	<0.005	NT
	01-Dec-08	6.7	88	0.015	<0.005	<0.001	0.018	<0.005	0.11	<0.005	0.031	<0.00005	<0.005	NT
	01-Sep-09	7.04	90	0.024	<0.005	<0.001	0.015	<0.005	0.312	<0.005	<0.018	<0.00005	<0.005	NT
	01-Aug-10	6.8	75	0.083	0.002	<0.001	0.041	<0.001	0.301	0.001	0.02	<0.00005	<0.001	NT
	01-Aug-11	7.1	98	0.004	0.002	<0.001	0.001	<0.001	0.016	0.004	0.03	<0.0001	<0.001	NT
	20-Aug-12	7.1	85	0.059	<0.001	<0.0001	0.042	<0.001	0.165	0.003	0.01	0.0001	<0.001	NT
	30-Aug-13	7	88	0.13	0.001	0.0002	0.054	<0.001	0.358	<0.001	<0.01	<0.0001	<0.001	NT
	05-Sep-14	6.8	72	0.083	<0.001	0.0002	0.055	<0.001	0.302	<0.001	0.01	<0.0001	<0.001	NT
	04-Jun-15	7.1	99	0.018	<0.001	<0.0001	0.017	<0.001	0.101	0.005	<0.01	<0.0001	<0.001	<0.001
	12-Oct-15	6.9	91	0.086	<0.001	<0.0001	0.024	<0.001	0.16	<0.001	<0.01	<0.0001	<0.001	<0.001
	17-Feb-16	6.7	99	0.004	<0.001	<0.0001	0.005	<0.001	0.037	0.006	<0.01	<0.0001	<0.001	<0.001
	BH002	01-Mar-06	7.8	250	0.005	0.005	<0.001	0.012	<0.005	<0.005	<0.005	0.008	<0.00005	0.013
01-May-06		8.2	320	0.021	<0.005	<0.001	0.008	<0.005	0.01	<0.005	0.034	<0.00005	<0.005	NT
01-Aug-07		6.5	92	<0.005	<0.005	<0.001	<0.005	0.015	<0.005	<0.005	0.015	<0.00005	<0.005	NT
01-Aug-08		6.1	63	<0.005	<0.005	<0.001	<0.005	<0.005	0.025	<0.005	0.03	<0.00005	<0.005	NT
01-Dec-08		5.5	<20	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.005	0.008	<0.00005	<0.005	NT
01-Sep-09		6.15	18	0.007	<0.005	<0.001	<0.005	<0.005	0.028	<0.005	<0.018	<0.00005	<0.005	NT
01-Aug-10		6.3	18	0.006	0.001	<0.001	<0.001	<0.001	0.017	<0.001	0.03	<0.00005	<0.001	NT
01-Aug-11		5.9	19	0.005	0.002	<0.001	0.003	<0.001	0.016	<0.001	0.07	<0.0001	<0.001	NT
21-Aug-12		7.7	36	0.006	0.002	<0.0001	0.003	0.001	0.022	<0.001	0.02	<0.0001	<0.001	NT
13-Sep-13		7.1	53	0.006	<0.001	0.0001	0.002	<0.001	0.024	<0.001	<0.01	<0.0001	<0.001	NT
05-Sep-14		6.3	32	0.007	<0.001	<0.0001	0.003	<0.001	0.018	<0.001	0.01	<0.0001	<0.001	NT
04-Jun-15		6.9	24	0.011	0.001	<0.0001	<0.001	<0.001	0.007	<0.001	<0.01	<0.0001	<0.001	<0.001
12-Oct-15		6.2	45	0.005	0.001	<0.0001	<0.001	<0.001	0.006	<0.001	<0.01	<0.0001	<0.001	<0.001
17-Feb-16		5.7	49	0.004	<0.001	<0.0001	<0.001	<0.001	0.007	<0.001	<0.01	<0.0001	<0.001	<0.001
BH801		01-Mar-06	6.5	120	0.23	<0.005	<0.001	<0.005	<0.005	0.042	<0.005	<0.005	<0.00005	<0.005
	01-May-06	6.7	85	0.077	<0.005	<0.001	0.017	<0.005	0.18	<0.005	0.05	<0.00005	<0.005	NT
	01-Dec-06	6.6	76	0.014	<0.005	<0.001	0.14	<0.005	0.13	<0.005	0.006	<0.00005	<0.005	NT
	01-Aug-07	6.8	59	0.017	<0.005	<0.001	<0.005	<0.005	0.047	<0.005	0.006	<0.00005	<0.005	NT
	01-Aug-08	6.9	120	0.37	<0.005	<0.001	1.8	<0.005	0.66	<0.005	0.021	<0.00005	<0.005	NT
	01-Sep-09	7.63	235	0.01	0.005	<0.001	15.9	<0.005	0.467	<0.005	<0.018	<0.00005	<0.005	NT
	01-Oct-09	6.3	88	0.06	0.002	<0.001	0.362	<0.001	0.464	<0.001	0.03	0.0002	<0.001	NT
	01-Aug-10	6.5	68	0.048	0.001	<0.001	0.369	<0.001	0.819	<0.001	0.03	<0.00005	<0.001	NT
	01-Aug-11	6.7	80	0.058	0.002	0.0002	0.482	<0.001	1.312	<0.001	0.02	<0.0001	<0.001	NT
	20-Aug-12	7	72	0.017	<0.001	<0.0001	0.066	<0.001	0.347	<0.001	0.01	<0.0001	<0.001	NT
	30-Aug-13	6.9	100	0.043	0.002	0.0002	0.767	<0.001	3.119	<0.001	<0.01	<0.0001	<0.001	NT
	04-Sep-14	7.2	79	0.057	<0.001	0.0002	0.302	<0.001	1.37	<0.001	0.04	<0.0001	<0.001	NT
	04-Jun-15	7	113	0.079	<0.001	0.0007	2.627	<0.001	4.669	<0.001	<0.01	<0.0001	<0.001	<0.001
	12-Oct-15	6.6	52	0.031	<0.001	<0.0001	0.101	<0.001	0.776	<0.001	<0.01	<0.0001	<0.001	<0.001
	17-Feb-16	6.3	47	0.018	<0.001	<0.0001	0.098	<0.001	0.629	<0.001	<0.01	<0.0001	<0.001	<0.001
BH8	01-Mar-06	6.5	66	0.075	<0.001	0.0003	0.422	<0.001	2.253	<0.001	0.01	<0.0001	<0.001	<0.001
	25-Oct-16	6.4	43	0.013	<0.001	<0.0001	0.029	<0.001	0.232	<0.001	<0.01	<0.0001	<0.001	<0.001
	01-Oct-09	4.5	NT	0.571	0.001	0.0021	0.22	0.002	0.45	<0.001	0.05	<0.0001	0.002	<0.002
	01-Feb-10	4.3	NT	0.315	0.002	0.0027	0.239	0.002	0.68	<0.001	0.06	<0.0001	0.003	<0.002
	01-Apr-10	4.4	NT	0.141	<0.001	<0.0001	0.17	<0.001	0.952	<0.001	0.03	<0.0001	0.001	<0.002
	01-Jun-10	4.6	NT	0.57	0.001	0.0019	0.195	0.002	1.368	<0.001	0.04	<0.0001	0.001	<0.002
	25-Jan-13	5.2	14	0.162	<0.001	0.0013	0.283	0.002	0.379	<0.001	0.05	<0.0001	<0.001	0.001
	03-Apr-13	5.4	5	0.19	<0.001	0.0014	0.293	0.002	0.482	<0.001	<0.01	<0.0001	0.001	<0.001
	31-May-13	5.9	<30	0.307	0.001	0.0009	0.452	<0.001	1.325	<0.001	<0.01	<0.0001	<0.001	<0.001
	26-Jul-13	4.9	<2	0.176	<0.001	0.0017	0.262	0.004	0.703	<0.001	0.02	<0.0001	<0.001	<0.001
	07-Oct-13	5.4	0	0.111	<0.001	0.001	0.225	0.003	0.323	<0.001	0.02	<0.0001	<0.001	<0.001
	25-Nov-13	6.6	7	0.103	0.001	0.0007	0.152	<0.001	0.232	<0.001	0.03	<0.0001	<0.001	<0.001
	30-Jan-14	5.9	8	0.08	<0.001	0.0007	0.099	<0.001	0.205	<0.001	0.03	<0.0001	<0.001	<0.001
	04-Jun-14	4.8	6	0.085	<0.001	0.0007	0.132	0.001	0.23	<0.001	<0.01	<0.0001	<0.001	<0.001
	08-Oct-14	6.5	<2	0.235	<0.001	0.0014	0.285	0.003	0.564	<0.001	0.03	<0.0001	<0.001	<0.001
BH9	10-Feb-15	5.3	5	0.104	<0.001	0.0006	0.112	<0.001	0.21	<0.001	0.03	<0.0001	0.001	<0.001
	04-Jun-15	6.2	0	0.243	<0.001	0.0012	0.258	0.002	0.487	<0.001	0.04	<0.0001	0.003	<0.001
	12-Oct-15	5.6	59	0.135	0.001	0.0008	0.168	<0.001	0.28	<0.001	<0.01	<0.0001	<0.001	<0.001
	17-Feb-16	4.7	71	0.101	<0.001	0.0007	0.122	0.001	0.195	<0.001	<0.01	<0.0001	0.001	<0.001
	30-Jun-16	4.4	82	0.154	<0.001	0.0009	0.179	0.002	0.316	<0.001	0.03	<0.0001	<0.001	<0.001
	25-Oct-16	4.5	67	0.127	<0.001	0.0008	0.139	0.002	0.27	<0.001	0.02	<0.0001	<0.001	<0.001
	15-Oct-09	7.5	NA	0.002	0.001	<0.0001	0.001	<0.001	0.005	<0.001	0.05	<0.0001	<0.001	<0.002
	06-Sep-11	4.5	NA	1.011	0.006	0.0012	1.11	<0.001	5.872	0.001	0.07	<0.0001	<0.001	<0.001
	27-Sep-11	4.5	NA	3.96	0.004	0.0049	2.081	<0.001	19.61	<0.001	0.07	<0.0001	0.002	0.001
	31-Oct-11	4.4	0	7.402	0.02	0.0022	9.91	0.002	31.02	0.001	NA	<0.0001	<0.001	NA
	14-Dec-11	4.7	0	10.4	0.013	0.0059	9.567	<0.001	40.3	<0.001	0.3	<0.0001	0.003	<0.001
	13-Mar-12	6.1	3	2.57	0.027	0.001								

		Analysis													
Borehole	Date	pH	CaCO3 (mg/l)	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (dissolved) mg/l	
Guideline Value		6-9 (1)	NG	0.02 (1)	0.0047(1)	0.00008(1)	0.001-0.028* (1)	0.0072 (1)	0.008 - 0.125* (1)	0.05(1)	2 (1)	0.00005(1)	0.01(2)	0.02 - 0.06* (1)	
BH10	01-Jun-10	4.6	NA	0.176	<0.001	0.0003	0.184	<0.001	0.314	<0.001	0.02	<0.0001	<0.001	<0.002	
	06-Sep-11	5.6	NA	0.097	<0.001	0.0001	0.044	<0.001	0.428	<0.001		<0.0001	<0.001	<0.001	
	27-Sep-11	5.8	NA	0.052	<0.001	<0.0001	0.012	<0.001	0.154	<0.001	0.02	<0.0001	<0.001	<0.001	
	31-Oct-11	6.8	13	0.073	0.001	<0.0001	0.032	<0.001	0.291	<0.001	NA	<0.0001	<0.001	NA	
	14-Dec-11	7.2	50	0.009	0.001	<0.0001	0.009	<0.001	0.027	<0.001	0.07	<0.0001	0.001	<0.001	
	13-Mar-12	5	0	4.727	0.001	0.0034	0.686	0.003	20.9	<0.001	0.01	<0.0001	0.002	0.001	
	14-May-12	5.2	0	1.558	<0.001	0.0017	0.709	0.002	5.341	<0.001	0.04	<0.0001	<0.001	<0.001	
	10-Jul-12	4.7	0	0.998	0.001	0.002	1.117	0.003	6.488	<0.001	0.05	<0.0001	0.001	<0.001	
	18-Sep-12	5.1	0	0.755	0.001	0.0013	1.806	0.002	3.781	<0.001	0.04	<0.0001	<0.001	<0.001	
	27-Nov-12	4.8	<2	0.752	<0.001	0.0013	0.728	0.002	3.319	<0.001	0.07	<0.0001	<0.001	<0.001	
	25-Jan-13	5.4	16	0.617	<0.001	0.0011	0.984	0.002	2.05	<0.001	0.1	<0.0001	<0.001	<0.001	
	03-Apr-13	5.6	4	0.596	<0.001	0.0011	1.537	0.002	1.898	<0.001	0.02	<0.0001	<0.001	<0.001	
	31-May-13	5.7	49	0.464	<0.001	0.0009	1.244	0.002	1.704	<0.001	0.02	<0.0001	<0.001	<0.001	
	26-Jul-13	5.4	<2	0.203	<0.001	0.0005	0.491	0.001	0.726	<0.001	<0.01	0.0002	<0.001	<0.001	
	07-Oct-13	5.9	0	0.221	<0.001	0.0006	0.435	0.001	0.801	<0.001	0.03	<0.0001	<0.001	<0.001	
	25-Nov-13	6.3	0	0.34	<0.001	0.0006	0.531	0.001	1.003	<0.001	0.05	<0.0001	<0.001	<0.001	
	30-Jan-14	5.3	3	0.277	<0.001	0.0006	0.434	<0.001	0.945	<0.001	0.06	<0.0001	<0.001	<0.001	
	04-Jun-14	4.8	4	0.138	<0.001	0.0004	0.352	0.001	0.38	<0.001	0.01	<0.0001	<0.001	<0.001	
	08-Oct-14	8.1	38	0.003	<0.001	<0.0001	0.006	<0.001	0.007	<0.001	0.01	<0.0001	<0.001	<0.001	
	10-Feb-15	6.8	53	0.002	<0.001	<0.0001	0.009	<0.001	0.011	<0.001	<0.01	<0.0001	<0.001	<0.001	
	04-Jun-15	7.3	36	0.013	0.001	<0.0001	0.008	<0.001	0.015	<0.001	<0.01	<0.0001	<0.001	<0.001	
	12-Oct-15	6.7	85	0.02	0.001	<0.0001	0.015	<0.001	0.048	<0.001	<0.01	<0.0001	<0.001	<0.001	
	17-Feb-16	6.1	83	0.046	<0.001	0.0001	0.026	<0.001	0.076	<0.001	<0.01	<0.0001	<0.001	<0.001	
	30-Jun-16	6.1	71	0.029	<0.001	<0.0001	0.021	<0.001	0.059	<0.001	0.03	<0.0001	<0.001	<0.001	
	25-Oct-16	5.9	67	0.097	<0.001	0.0002	0.084	<0.001	0.194	<0.001	0.03	<0.0001	<0.001	<0.001	
	BH32	01-Jun-10	6.6	NA	0.004	0.001	<0.0001	0.002	<0.001	<0.002	<0.001	0.02	<0.0001	<0.001	<0.002
		06-Sep-11	5.6	NA	2.18	0.003	0.0023	0.029	<0.001	4.856	<0.001	0.06	<0.0001	<0.001	<0.001
		27-Sep-11	6.3	NA	1.992	0.004	0.0014	0.006	<0.001	2.702	<0.001	0.06	<0.0001	0.001	0.001
		31-Oct-11	5.8	18	6.396	0.003	0.0042	0.04	<0.001	16.36	<0.001	NA	<0.0001	0.002	NA
		14-Dec-11	6.9	177	0.247	0.004	0.0002	0.003	<0.001	0.265	<0.001	0.07	<0.0001	0.002	0.002
		13-Mar-12	7.2	80	0.688	0.003	0.0006	0.003	<0.001	0.963	<0.001	<0.01	<0.0001	0.001	0.002
		14-May-12	7.2	166	0.465	0.004	0.0003	0.004	<0.001	0.871	<0.001	0.03	<0.0001	0.002	0.002
10-Jul-12		6.8	13	1.96	0.001	0.0031	0.03	<0.001	4.906	<0.001	0.07	0.0001	<0.001	<0.001	
18-Sep-12		6.6	9	2.488	0.002	0.004	0.038	<0.001	6.379	<0.001	0.11	<0.0001	<0.001	<0.001	
27-Nov-12		7.2	67	0.834	0.001	0.001	0.009	<0.001	1.657	<0.001	0.06	<0.0001	<0.001	<0.001	
25-Jan-13		7	20	0.862	<0.001	0.0013	0.012	<0.001	1.903	<0.001	0.08	<0.0001	<0.001	0.001	
03-Apr-13		7.2	26	0.952	<0.001	0.001	0.006	<0.001	1.767	<0.001	0.04	<0.0001	<0.001	<0.001	
31-May-13		6.9	52	1.87	0.001	0.0028	0.044	<0.001	3.44	<0.001	0.06	<0.0001	<0.001	<0.001	
26-Jul-13		5.4	8	2.461	0.001	0.0043	0.069	<0.001	7.082	<0.001	0.08	<0.0001	<0.001	<0.001	
07-Oct-13		5.7	13	2.991	0.001	0.0051	0.136	<0.001	6.877	<0.001	0.1	<0.0001	<0.001	<0.001	
25-Nov-13		6.7	82	0.511	<0.001	0.0007	0.005	<0.001	1.32	<0.001	0.07	<0.0001	0.003	<0.001	
30-Jan-14		6.4	66	0.298	<0.001	0.0004	0.008	<0.001	0.785	<0.001	0.05	<0.0001	0.002	<0.001	
04-Jun-14		5.8	40	0.512	<0.001	0.0008	0.005	<0.001	1.157	<0.001	0.04	<0.0001	0.001	<0.001	
08-Oct-14		7.2	7	1.349	<0.001	0.0025	0.119	<0.001	2.669	<0.001	0.08	<0.0001	<0.001	<0.001	
10-Feb-15		6.4	156	0.085	<0.001	0.0002	0.037	<0.001	0.248	<0.001	0.01	<0.0001	0.003	<0.001	
04-Jun-15		6.9	54	0.097	<0.001	0.0001	0.003	<0.001	0.226	<0.001	0.03	<0.0001	0.001	<0.001	
12-Oct-15		6.4	87	0.2	0.001	0.0003	0.005	<0.001	0.459	<0.001	0.03	<0.0001	<0.001	<0.001	
17-Feb-16		6	113	0.362	<0.001	0.0008	0.022	<0.001	0.699	<0.001	<0.01	<0.0001	<0.001	<0.001	
30-Jun-16		5.8	111	0.236	<0.001	0.0004	0.005	<0.001	0.585	<0.001	0.06	<0.0001	<0.001	<0.001	
25-Oct-16		5.7	145	0.391	<0.001	0.0007	0.009	<0.001	0.85	<0.001	0.06	<0.0001	<0.001	<0.001	
BH11		01-Feb-10	6.6	NA	0.003	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	0.01	<0.0001	<0.001	<0.002
		01-Apr-10	6.7	NA	0.003	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.002
		01-Jun-10	6.4	NA	0.003	0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.002
		01-Nov-11	7.2	108	0.004	0.002	<0.0001	<0.001	<0.001	<0.002	<0.001	NA	<0.0001	<0.001	NA
		14-Dec-11	7	129	0.004	0.002	<0.0001	<0.001	<0.001	0.007	<0.001	0.08	<0.0001	0.001	0.001
		13-Mar-12	7.2	89	0.003	0.003	<0.0001	0.001	<0.001	0.003	0.002	<0.01	<0.0001	<0.001	0.002
		14-May-12	7.3	111	0.006	0.003	<0.0001	0.002	<0.001	0.009	<0.001	0.01	<0.0001	<0.001	0.001
	10-Jul-12	7.4	83	0.004	0.001	<0.0001	0.001	<0.001	0.006	<0.001	<0.01	<0.0001	<0.001	<0.001	
	18-Sep-12	7.4	65	0.005	0.002	<0.0001	<0.001	<0.001	0.002	<0.001	0.02	<0.0001	<0.001	<0.001	
	27-Nov-12	7.6	83	0.004	0.001	<0.0001	0.004	<0.001	0.007	<0.001	0.01	<0.0001	<0.001	<0.001	
	25-Jan-13	7.5	80	0.002	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	0.04	<0.0001	<0.001	0.001	
	03-Apr-13	7.6	73	0.003	0.001	<0.0001	0.002	<0.001	0.003	<0.001	<0.01	<0.0001	<0.001	<0.001	
	31-May-13	7.4	78	0.003	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	
	26-Jul-13	6.7	93	0.002	0.002	<0.0001	0.001	<0.001	0.006	<0.001	<0.01	0.0003	<0.001	0.001	
	07-Oct-13	7	146	0.004	0.001	<0.0001	0.002	<0.001	0.007	<0.001	0.03	<0.0001	<0.001	<0.001	
	25-Nov-13	7.1	124	0.003	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	
	30-Jan-14	7	94	0.003	<0.001	<0.0001	0.001	<0.001	<0.002	<0.001	0.02	<0.0001	<0.001	<0.001	
	04-Jun-14	6.4	102	0.003	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001					

Borehole	Date	Analysis												
		pH	CaCO ₃ (mg/l)	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (dissolved) mg/l
Guideline Value		6-9 (1)	NG	0.02 (1)	0.0047(1)	0.00008(1)	0.001-0.028* (1)	0.0072 (1)	0.008 - 0.125* (1)	0.05(1)	2 (1)	0.00005(1)	0.01(2)	0.02 - 0.06* (1)
BH13	01-Oct-09	5.2	NA	0.721	0.001	0.002	0.243	<0.001	0.611	<0.001	0.04	0.0001	<0.001	<0.002
	01-Feb-10	5.5	NA	0.263	0.001	0.0008	0.24	<0.001	0.055	<0.001	0.03	<0.0001	<0.001	<0.002
	01-Apr-10	5.5	NA	0.214	<0.001	0.0006	0.092	<0.001	0.154	<0.001	0.01	<0.0001	<0.001	<0.002
	01-Jun-10	4.6	NA	0.244	<0.001	0.0008	0.243	0.001	0.285	<0.001	0.02	0.0001	<0.001	<0.002
	01-Nov-11	6.4	0	0.193	<0.001	0.0004	0.111	<0.001	0.528	<0.001	NA	<0.0001	<0.001	NA
	16-Dec-11	7.4	47	0.128	0.001	0.0004	0.021	<0.001	0.287	<0.001	<0.01	<0.0001	<0.001	<0.001
	13-Mar-12	6.9	198	0.009	0.006	0.0004	0.001	<0.001	0.002	<0.001	<0.01	<0.0001	0.001	0.002
	14-May-12	6.7	0	0.214	<0.001	0.0005	0.104	<0.001	0.761	<0.001	0.01	<0.0001	<0.001	<0.001
	10-Jul-12	5.9	0	0.387	<0.001	0.0008	0.14	0.001	1.228	<0.001	0.02	<0.0001	<0.001	<0.001
	18-Sep-12	5.5	0	1.907	0.001	0.0037	0.138	0.002	1.851	<0.001	0.09	<0.0001	<0.001	<0.001
	27-Nov-12	7.3	12	0.249	<0.001	0.0006	0.034	<0.001	0.615	<0.001	0.02	<0.0001	<0.001	0.001
	25-Jan-13	6.5	20	0.306	<0.001	0.0007	0.114	<0.001	0.839	<0.001	0.06	<0.0001	<0.001	0.001
	03-Apr-13	6.8	12	0.276	<0.001	0.0006	0.098	<0.001	0.774	<0.001	<0.01	<0.0001	<0.001	<0.001
	31-May-13	6.9	50	0.553	<0.001	0.0011	0.091	0.001	0.681	<0.001	0.02	<0.0001	<0.001	<0.001
	26-Jul-13	5	<2	1.746	<0.001	0.0027	0.098	0.001	0.924	<0.001	0.09	<0.0001	<0.001	<0.001
	07-Oct-13	6.1	14	0.4	<0.001	0.0009	0.109	0.001	0.625	<0.001	0.04	<0.0001	<0.001	<0.001
	25-Nov-13	6.6	8	0.169	<0.001	0.0006	0.075	<0.001	0.43	<0.001	0.03	<0.0001	<0.001	<0.001
	30-Jan-14	6.3	30	0.124	<0.001	0.0005	0.004	<0.001	0.133	<0.001	0.05	<0.0001	<0.001	<0.001
	04-Jun-14	4.8	234	0.168	<0.001	0.0005	0.054	<0.001	0.373	<0.001	<0.01	<0.0001	<0.001	<0.001
	08-Oct-14	7.4	<2	0.644	<0.001	0.0015	0.115	0.001	0.594	<0.001	0.06	<0.0001	<0.001	<0.001
	10-Feb-15	5.4	4	0.075	<0.001	0.0003	0.041	<0.001	0.14	<0.001	0.02	0.0004	<0.001	<0.001
	04-Jun-15	5.8	4	0.164	0.017	0.0003	0.04	<0.001	0.198	<0.001	0.02	<0.0001	<0.001	<0.001
	12-Oct-15	6.1	40	0.102	<0.001	0.0003	0.059	<0.001	0.227	<0.001	<0.01	<0.0001	<0.001	<0.001
	17-Feb-16	4.8	61	0.096	<0.001	0.0003	0.041	<0.001	0.128	<0.001	<0.01	<0.0001	<0.001	<0.001
	30-Jun-16	4.7	53	0.077	<0.001	0.0003	0.053	<0.001	0.162	<0.001	0.03	<0.0001	<0.001	<0.001
	25-Oct-16	4.6	75	0.069	<0.001	0.0004	0.074	<0.001	0.148	<0.001	0.03	<0.0001	<0.001	<0.001
BH901	01-Mar-06	5.8	<20	0.076	0.008	<0.001	0.074	<0.005	0.031	<0.005	<0.005	<0.00005	<0.005	NA
	01-May-06	4.3	<20	2.7	<0.005	0.002	2.2	<0.005	0.89	<0.005	0.032	<0.00005	<0.005	NA
	01-Dec-06	3.5	<20	3.8	0.006	0.005	2.3	<0.005	1.6	<0.005	0.140	<0.00005	<0.005	NA
	01-Aug-07	6.70	62	0.09	<0.005	<0.001	0.013	<0.005	0.018	<0.005	0.031	<0.00005	<0.005	NA
	01-Aug-08	3.3	<20	2.1	<0.005	0.003	0.96	<0.005	2.5	<0.005	0.060	<0.00005	<0.005	NA
	01-Sep-09	5.36	6.5	0.342	<0.005	<0.001	0.401	<0.005	0.522	<0.005	<0.018	<0.00005	<0.005	NA
	01-Aug-10	6.40	41	0.035	0.001	<0.001	0.019	<0.001	0.142	<0.001	0.030	<0.00005	<0.005	NA
	01-Aug-11	6.70	11	0.185	<0.001	0.0003	0.067	<0.001	0.749	<0.001	0.030	<0.0001	<0.001	NA
	14-Dec-11	6	<2	0.608	<0.001	0.0008	0.3	<0.001	2.682	<0.001	0.11	<0.0001	0.001	<0.001
	13-Mar-12	5.2	0	0.44	0.002	0.0011	2.143	0.002	2.89	<0.001	<0.01	<0.0001	<0.001	0.001
	14-May-12	6.7	0	3.982	0.007	0.0031	6.873	0.003	17.55	<0.001	0.03	<0.0001	0.003	<0.001
	10-Jul-12	4.9	0	0.279	0.002	0.0005	0.834	<0.001	1.561	<0.001	0.02	<0.0001	<0.001	<0.001
	18-Sep-12	6.1	0	0.212	0.001	0.0006	0.394	<0.001	0.815	<0.001	0.04	<0.0001	<0.001	<0.001
	27-Nov-12	4.7	<0	0.283	0.001	0.0006	0.523	0.002	1.196	<0.001	0.04	<0.0001	<0.001	<0.001
	25-Jan-13	6.4	13	0.319	<0.001	0.0008	0.536	0.002	1.19	<0.001	0.05	<0.0001	<0.001	0.001
	03-Apr-13	7.1	24	0.136	<0.001	0.0003	0.234	<0.001	0.462	<0.001	<0.01	<0.0001	<0.001	<0.001
	31-May-13	5.9	<30	0.307	0.001	0.0009	0.452	<0.001	1.325	<0.001	<0.01	<0.0001	<0.001	<0.001
	26-Jul-13	4.7	<2	0.316	<0.001	0.0013	0.272	0.002	1.394	<0.001	0.03	<0.0001	<0.001	<0.001
	07-Oct-13	5.4	0	0.36	<0.001	0.0014	0.437	<0.001	1.474	<0.001	0.04	<0.0001	<0.001	<0.001
	25-Nov-13	6	2	0.738	<0.001	0.0015	0.777	0.001	2.073	<0.001	0.1	<0.0001	<0.001	<0.001
	30-Jan-14	4.2	<2	0.553	<0.001	0.0009	1.356	0.003	1.592	<0.001	0.11	<0.0001	<0.001	<0.001
	04-Jun-14	4.3	0	0.521	<0.001	0.0036	1.612	0.003	2.457	<0.001	0.04	<0.0001	<0.001	<0.001
	08-Oct-14	6.3	<2	1.048	0.001	0.008	0.772	0.003	2.042	<0.001	0.04	<0.0001	<0.001	<0.001
	10-Feb-15	4.6	0	0.386	<0.001	0.0009	1.219	<0.001	1.098	<0.001	0.12	0.0002	<0.001	<0.001
	04-Jun-15	5.5	0	0.58	0.002	0.0028	1.03	0.001	1.482	<0.001	0.06	<0.0001	0.002	<0.001
BH901R	17-Feb-16	5.9	114	0.447	<0.001	0.0011	0.633	<0.001	1.214	<0.001	0.06	<0.0001	<0.001	<0.001
	30-Jun-16	5.9	131	0.266	<0.001	0.0006	0.184	<0.001	0.702	<0.001	0.05	<0.0001	<0.001	<0.001
	25-Oct-16	5.6	49	0.167	<0.001	0.0003	0.402	<0.001	0.448	<0.001	0.03	<0.0001	<0.001	<0.001

Notes:

The yellow cells indicate elevated concentrations compared with Environmental Quality Standards and UK Drinking Water Standards.

Blue cells are results obtained from the Site Protection Monitoring Programme (SPMP).

NS = Not Sampled

NG = No Guideline

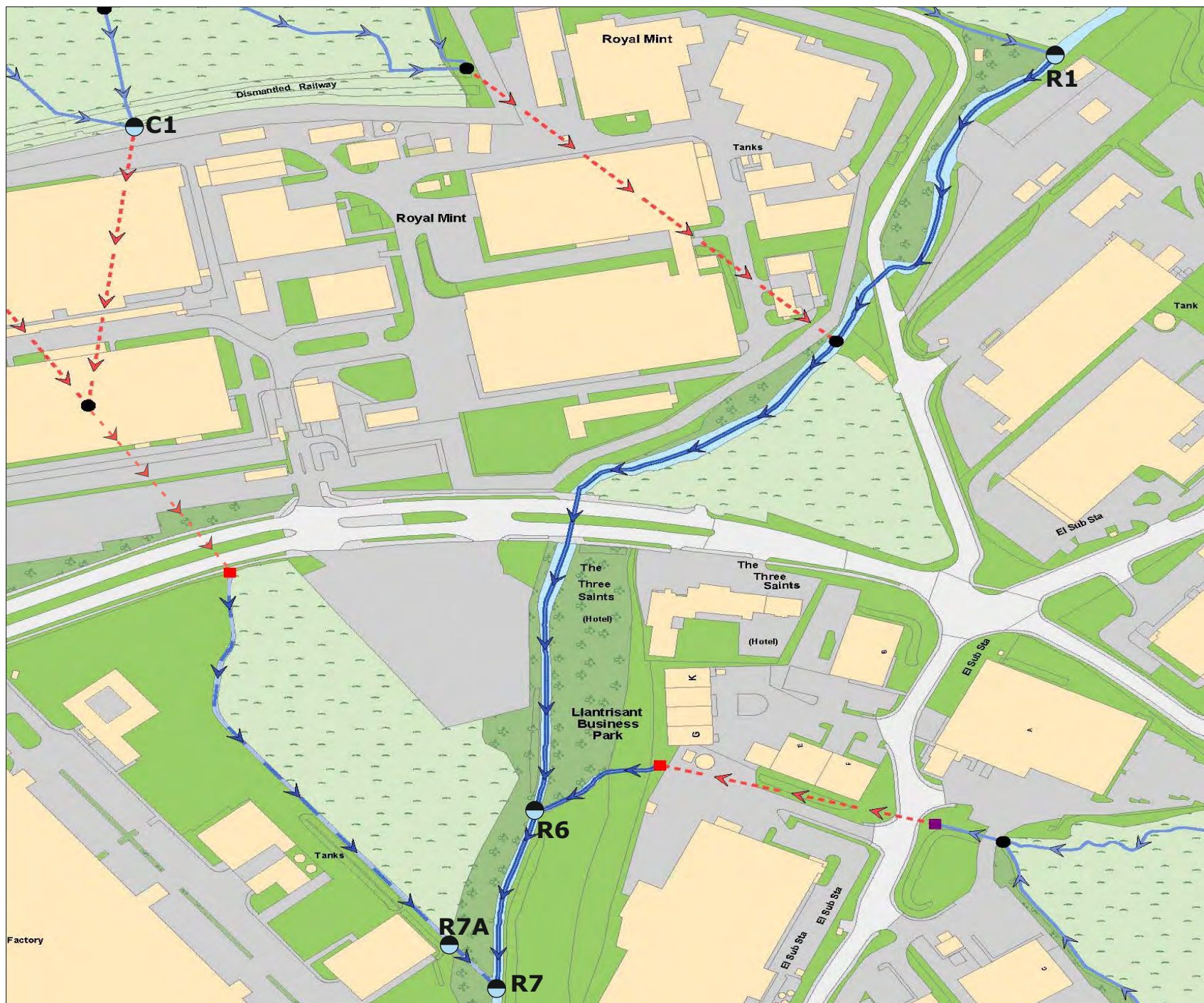
NA = Not Available

(1) = European Environmental Quality Standard (EQS): The River Basin Districts Typology, Standards and Groundwater threshold Values (Water Framework Directive (England and Wales) Directions 2010

(2) = Water Supply (Water Quality) (England and Wales) Regulations 2000 (SI 2000/3184) (as amended); Water Supply (Water Quality) (Wales) Regulations 2001 (SI 3911 W.323) (as amended)

(3) = A filtered sample taken from BH9

* = Range determined by alkalinity



Legend

● River Sampling Locations

Title **Figure 2: River Sampling Locations**

Site **The Royal Mint, Llantrisant, Pontyclun, Mid Glamorgan, CF72 8YT**

Client **The Royal Mint**

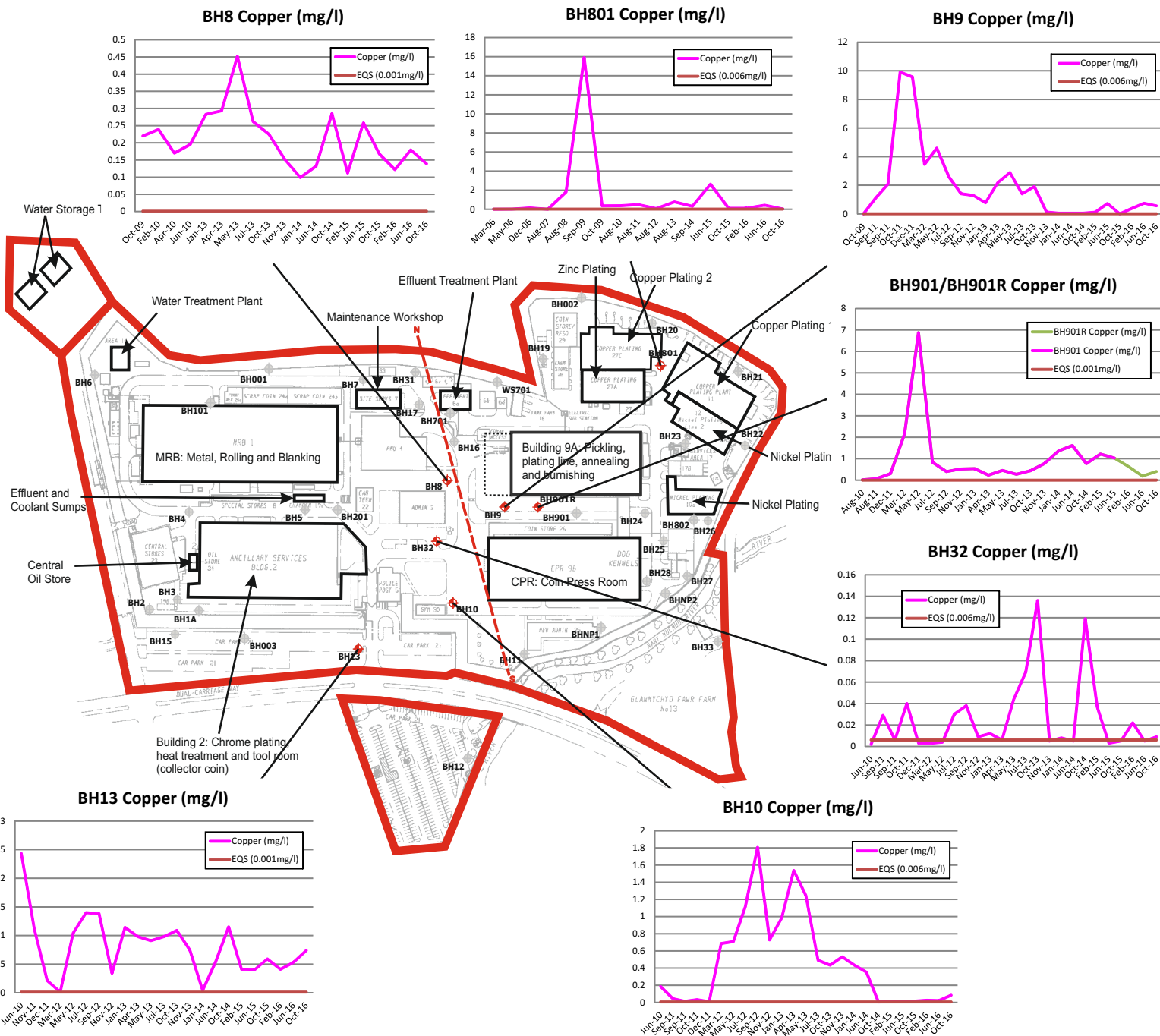
Project No. **UK17-23222**

Issue **2**

Date **October 2016**

Drawn by **RH**

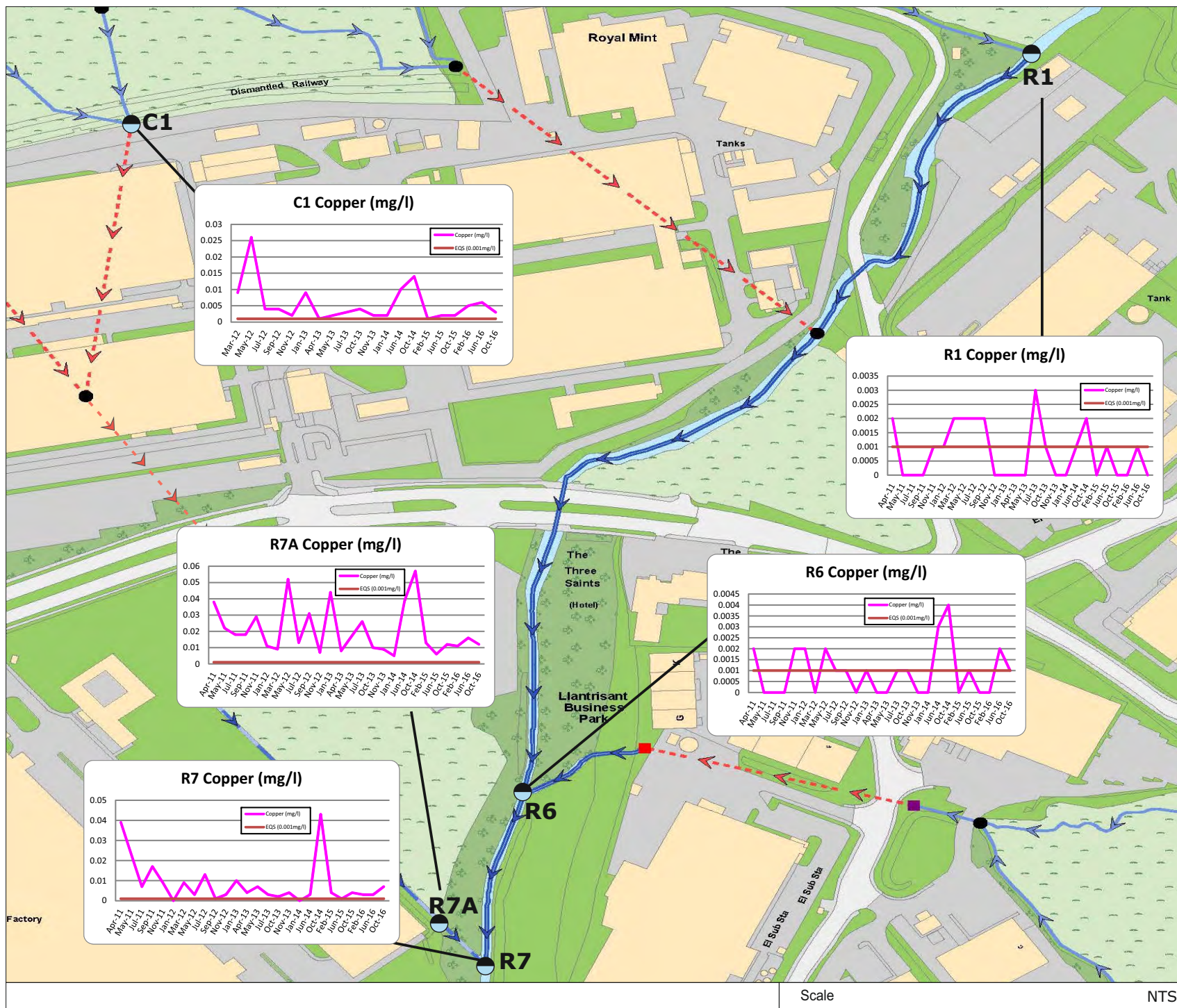
RAMBOLL
ENVIRON



Legend Site Boundary Sampled Boreholes	
For borehole BH801 data presented between March 2006 and September 2014 was obtained during the Site Protection Monitoring Programme (SPMP) annual groundwater monitoring.	
Title	Figure 3: Graphical Representation of Copper Concentrations
Site	The Royal Mint, Llantrisant Pontyclun, Mid Glamorgan, CF72 8YT
Client	The Royal Mint
Project No.	UK17-23222
Issue	2
Date	October 2016
Drawn by	RH
RAMBOLL ENVIRON	

Scale

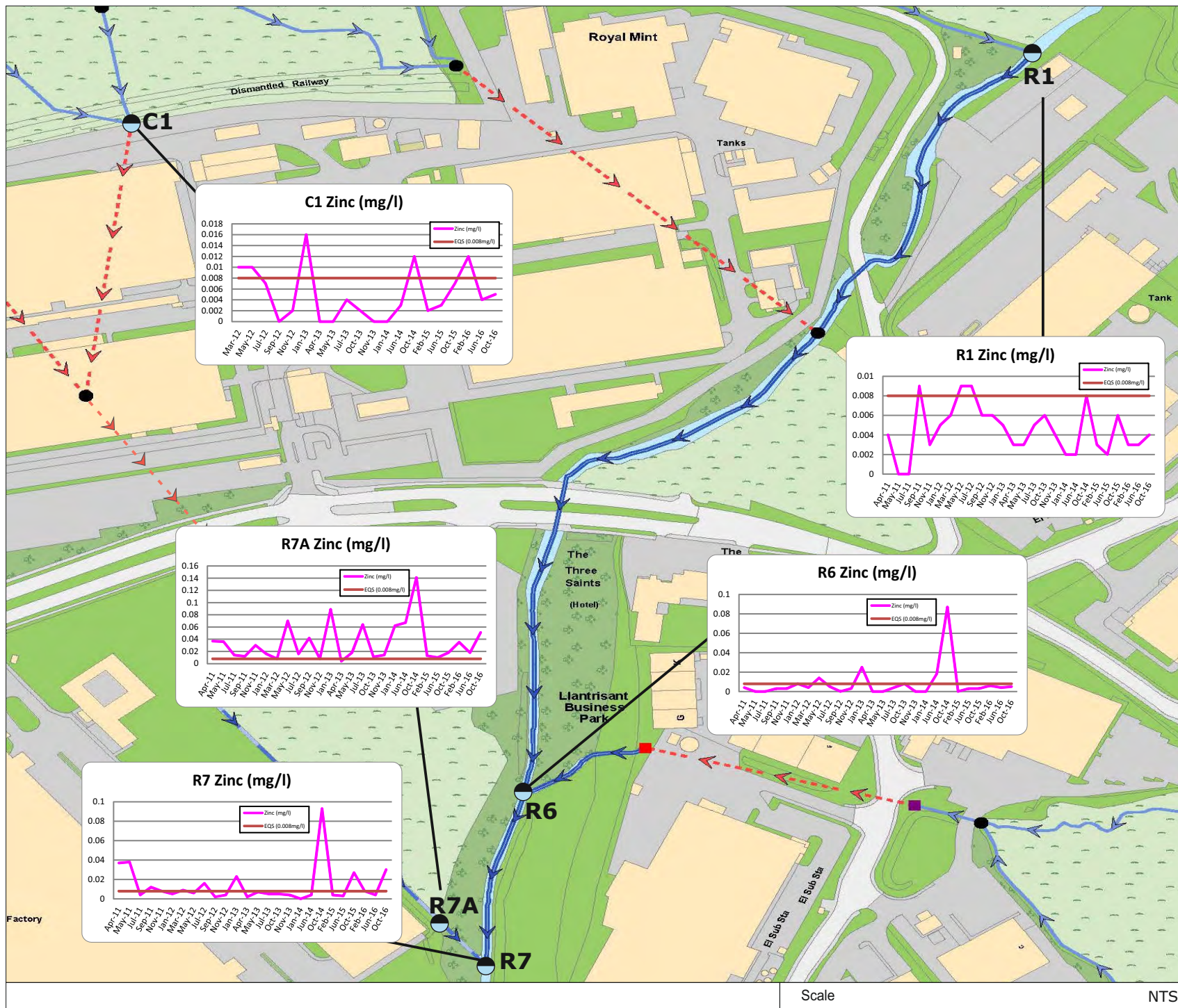
NTS



Legend River Sampling Locations	
Title Figure 6: Copper Concentration Graphs - Surface Water	
Site The Royal Mint, Llantrisant, Pontyclun, Mid Glamorgan, CF72 8YT	
Client The Royal Mint	
Project No. UK17-23222	
Issue 2	
Date October 2016	
Drawn by RH	

Scale

NTS



Legend River Sampling Locations	
Title Figure 8: Zinc Concentration Graphs - Surface Water	
Site The Royal Mint, Llantrisant, Pontyclun, Mid Glamorgan, CF72 8YT	
Client	The Royal Mint
Project No.	UK17-23222
Issue	2
Date	October 2016
Drawn by	RH