

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

Dear Martyn

**FACTUAL REPORT ON GROUNDWATER AND SURFACE WATER
SAMPLING IN OCTOBER 2017**

Date 08/12/2017

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 2017 to February 2018.

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Background

Ref LUK14-24454

Surface water monitoring during 2016/17 identified elevated concentrations of copper and/or zinc in the culverted stream that enters the Nant Mychydd (sampling point R7A and R7). 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 2016/17. 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.

Up gradient boreholes BH001, BH002 and COMAH area borehole BH801 which form part of the ongoing Site Protection and Monitoring Programme (SPMP)

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were included in the 2015/16 monitoring period (Report Ref: UK17-21704). However, statistical analysis of results indicated either 'no exceedances' or 'stable' trends for the main determinants of concern tested at BH001 and BH002; therefore, these boreholes were omitted from the 2016/17 monitoring programme. Monitoring of BH801 has continued into 2017/18. SPMP boreholes are monitored on an annual basis by Ramboll Environ and were sampled in September 2017 under the annual SPMP monitoring round.

Surface Water

Surface water samples were collected on the 31st October 2017 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 2017 are summarised in the attached table and are presented graphically on Figures 6, 7 and 8.

During the October 2017 monitoring, the maximum concentration of copper (0.007mg/l) was recorded at sampling point R7A, where the culverted stream emerges from site prior to entering the Nant Mychydd. This concentration marginally 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 0.001mg/l (for hardness between 0mg/l and 50mg/l CaCO₃) at sampling point C1 (0.002mg/l) where the watercourse to the north of the site is culverted under the site. It should be noted that sampling location C1 is upstream of the site.

The concentration of zinc marginally exceeded the lower EQS (for hardness between 0mg/l and 50mg/l) at sampling point C1, which is located upstream of the site. The concentration of zinc remained below the EQS at all other sampling points during the most recent round of monitoring (for hardness between 50mg/l and 100mg/l CaCO₃).

Where detected, concentrations of nickel were below the lower EQS value of 0.02mg/l (for hardness between 0mg/l and 50mg/l CaCO₃) at all surface water sampling locations.

Cyanide was not recorded above the laboratory limit of detection (LOD) at any of the sampling points, during the October 2017 monitoring round.

The TPH concentrations in this monitoring round were above the laboratory limit of detection in four sampling locations; therefore slightly exceeding the UK DWS of 0.01mg/l. The maximum TPH concentration was recorded at sampling point R7A (0.03mg/l), the culverted stream prior to entering the Nant Mychydd. TPH concentrations are comparable to those previously recorded at each sampling location.

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 2017 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 1st to 31st October 2017 and the daily average based on data from the same period in 2006 to 2017.

Table 1: Rainfall Data			
Date	Rainfall data (mm) *	1 st to 31 st October 2017 daily average (mm) *	2006 – 2017 October daily average (mm) *
26/10/17	0.8	2.34	3.37
27/10/17	0.3		
28/10/17	0.3		
29/10/17	0.0		
30/10/17	0.0		
31/10/17	0.0		
* Data gathered from 'IMIDGLAM3' weather station in Caerphilly located 13km East of site (www.wunderground.com) (accessed 04/12/17)			

The rainfall data indicates that rainfall in the period of 1st to 31st October 2017 was slightly lower than the average for recent years. Relatively low amounts of rainfall had occurred in the days leading up to the sampling date, the river level was not noted to be significantly higher or lower than average during sampling.

Groundwater Sampling

Groundwater samples were collected from the following boreholes: BH8, BH9, BH901R, BH10, BH13 BH32, and BH801 (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 (0.086mg/l), copper (0.090mg/l) and zinc (0.166mg/l) in borehole BH8 all exceeded their 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 2017.
- Samples were collected from boreholes BH9 and the borehole installed in 2015 (referred to as BH901R), that is a replacement for borehole BH901. Concentrations of nickel, copper and zinc in boreholes BH9 and BH901R are all above their respective EQS values. The concentration of nickel has slightly decreased in BH901R since the previous round of monitoring (from 0.158mg/l to 0.130mg/l). All other concentrations of nickel, copper and zinc have marginally increased since June 2017.
- Concentrations of nickel and zinc have slightly increased in borehole BH10 since the previous round of monitoring; and the concentration of copper has remained the same at 0.03mg/l. Concentrations

of nickel (0.047mg/l), copper (0.030mg/l) and zinc (0.085mg/l) were recorded slightly above the relevant EQS values in October 2017.

- In BH32, concentrations of nickel (0.173mg/l), copper (0.010mg/l) and zinc (0.423mg/l) have decreased slightly since the previous round of monitoring in June 2017. However, concentrations of copper, nickel and zinc all remain above the relevant EQS.
- Concentrations of copper (0.032mg/l) and zinc (0.068mg/l) have decreased slightly in borehole BH13 since the previous round of monitoring in June 2017; the concentration of nickel (0.037mg/l) has slightly decreased. 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. Concentrations of nickel (0.008mg/l), copper (0.002mg/l) and zinc (0.045mg/l) were all recorded in below their respective EQS values. Concentrations of copper, nickel and zinc have all decreased at this sampling location since the previous round of monitoring.
- Total chromium was only recorded above the laboratory limit of detection in borehole BH901R (0.002mg/l), during the most recent monitoring round. Therefore, all concentrations were below the EQS value of 0.0047mg/l.
- The concentration of cadmium was recorded above the laboratory LOD (0.0001mg/l) in all boreholes except BH801, with a maximum recorded value of 0.0006mg/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 4.8), BH9 (pH 5.5), and BH13 (pH 4.9). Samples from these and several other locations have regularly recorded low pH values throughout the monitoring programme.

During the 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 2017 (CBH6 and BHNP2D). Reduced concentrations of VOCs were recorded in both boreholes CBH6 and BHNP2, compared with concentrations recorded in August 2016. Where available, screening values have not been exceeded in October 2017.

The next round of surface water and groundwater monitoring is due to be carried out in February 2018. Please do not hesitate to contact me if there is anything you wish to discuss.

Yours sincerely



Lucy Cleverley

Managing Consultant

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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/251723 (Ver. 1)

Your Ref: UK14-24454

November 10, 2017



Environmental Chemistry

SOCOTEC UK Limited

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DE15 0YZ

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Lucy Cleverley
Ramboll Environ
8 Village Way
Cardiff
CF15 7NE

For the attention of Lucy Cleverley

Dear Lucy Cleverley

Sample Analysis - Royal Mint Monitoring 2017/18

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 SOCOTEC UK Limited (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 SOCOTEC UK Limited

A handwritten signature in dark ink, appearing to read 'dgoddard', written over a faint rectangular stamp.

D Goddard
Project Co-ordinator
01283 554362

TEST REPORT



1252

Report No. EXR/251723 (Ver. 1)

Ramboll Environ
8 Village Way
Cardiff
CF15 7NE

Site: Royal Mint Monitoring 2017/18

The 14 samples described in this report were registered for analysis by SOCOTEC UK Limited on 01-Nov-2017. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 10-Nov-2017

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)
Table of VOC (HSA) Results (Pages 4 to 5)
Analytical and Deviating Sample Overview (Pages 6 to 7)
Table of Additional Report Notes (Page 8)
Table of Method Descriptions (Page 9)
Table of Report Notes (Page 10)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Tim Barnes

Operations Director
Energy & Waste Services

Date of Issue: 10-Nov-2017

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.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units : Method Codes : Method Reporting Limits : UKAS Accredited :			pH units	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	mg/l	
			WSLM3	Calc_CR3	Calc_HD	VOCHSAW	ICPWATVAR	ICPWATVAR	ICPWATVAR	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW
				0.003	7	1	1	1	0.01	0.001	0.001	0.0001	0.001	0.001	0.002	0.001	0.01	0.0001	
			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	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 (Dissolved)	Cadmium as Cd (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Arsenic as As (Dissolved)	Boron as B (Dissolved) a	Mercury as Hg (Dissolved)	
1839491	BHNP2D	31-Oct-17 10:15				Req													
1839492	CBH6	31-Oct-17 10:40				Req													
1839493	BH901R	31-Oct-17 11:00	6.3	<0.001 *	103		33	5	0.03	0.158	<0.001	0.0003	0.222	<0.001	0.368	<0.001	0.09	<0.0001	
1839494	BH9	31-Oct-17 11:30	5.5	<0.001 *	66		18	5	0.04	0.25	<0.001	0.0005	0.479	<0.001	0.566	<0.001	0.05	<0.0001	
1839495	BH801	31-Oct-17 12:00	6.4	<0.001 *	51		9	7	0.02	0.008	<0.001	<0.0001	0.002	<0.001	0.045	<0.001	<0.01	<0.0001	
1839496	BH32	31-Oct-17 12:30	6.1	<0.001 *	85		24	6	0.03	0.173	<0.001	0.0004	0.01	<0.001	0.423	<0.001	<0.01	<0.0001	
1839497	BH8	31-Oct-17 13:00	4.8	<0.001 *	56		16	4	0.02	0.086	<0.001	0.0006	0.09	<0.001	0.166	<0.001	<0.01	<0.0001	
1839498	BH10	31-Oct-17 13:30	6.3	<0.001 *	85		24	6	0.04	0.047	<0.001	0.0001	0.03	<0.001	0.085	<0.001	<0.01	<0.0001	
1839499	BH13	31-Oct-17 14:30	4.9	<0.001 *	45		13	3	0.04	0.037	<0.001	0.0002	0.04	<0.001	0.081	<0.001	<0.01	<0.0001	
1839500	C1	31-Oct-17 08:30	6.7	<0.001 *	42		12	3	<0.01	0.002	<0.001	<0.0001	0.002	<0.001	0.011	<0.001	<0.01	<0.0001	
1839501	R1	31-Oct-17 08:45	7	<0.001 *	66		18	5	0.02	<0.001	<0.001	<0.0001	<0.001	<0.001	0.002	<0.001	<0.01	<0.0001	
1839502	R6	31-Oct-17 09:00	7.1	<0.001 *	68		19	5	0.02	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.0001	
1839503	R7	31-Oct-17 09:15	7.1	<0.001 *	59		17	4	0.01	0.001	<0.001	<0.0001	0.002	<0.001	0.004	<0.001	<0.01	<0.0001	
1839504	R7A	31-Oct-17 09:30	7.1	<0.001 *	54		15	4	<0.01	0.004	<0.001	<0.0001	0.007	<0.001	0.01	<0.001	<0.01	<0.0001	
SOCOTEC  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 Contact Lucy Cleverley Royal Mint Monitoring 2017/18			Sample Analysis																
			Date Printed					10-Nov-2017											
			Report Number					EXR/251723											
			Table Number					1											

			Units :	mg/l	mg/l	mg/l	mg/l	mg/l									
			Method Codes :	ICPMSW	ICPMSW	KONENS	SFAPI	TPHFID	ICPWATVAR								
			Method Reporting Limits :	0.001	0.001	0.003	0.02	0.01	0.01								
			UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	No								
LAB ID Number EX/	Client Sample Description	Sample Date	Selenium as Se (Dissolved)	Vanadium as V (Dissolved)	Chromium VI as Cr	Cyanide (Total) as CN	TPH GC	Beryllium as Be (Dissolved) a									
1839491	BHNP2D	31-Oct-17 10:15															
1839492	CBH6	31-Oct-17 10:40															
1839493	BH901R	31-Oct-17 11:00	<0.001	<0.001	<0.003			<0.01									
1839494	BH9	31-Oct-17 11:30	<0.001	<0.001	<0.003			<0.01									
1839495	BH801	31-Oct-17 12:00	<0.001	<0.001	<0.003			<0.01									
1839496	BH32	31-Oct-17 12:30	<0.001	<0.001	<0.003			<0.01									
1839497	BH8	31-Oct-17 13:00	<0.001	<0.001	<0.003			<0.01									
1839498	BH10	31-Oct-17 13:30	<0.001	<0.001	<0.003			<0.01									
1839499	BH13	31-Oct-17 14:30	<0.001	<0.001	<0.003			<0.01									
1839500	C1	31-Oct-17 08:30	<0.001	<0.001	<0.003	<0.02	0.02	<0.01									
1839501	R1	31-Oct-17 08:45	<0.001	<0.001	<0.003	<0.02	<0.01	<0.01									
1839502	R6	31-Oct-17 09:00	<0.001	<0.001	<0.003	<0.02	0.02	<0.01									
1839503	R7	31-Oct-17 09:15	<0.001	<0.001	<0.003	<0.02	0.02	<0.01									
1839504	R7A	31-Oct-17 09:30	<0.001	<0.001	<0.003	<0.02	0.03	<0.01									
SOCOTEC 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	Lucy Cleverley													
			Royal Mint Monitoring 2017/18							Date Printed		10-Nov-2017					
										Report Number		EXR/251723					
										Table Number		1					

Volatile Organic Compounds by HSA-GCMS

UKAS accredited?: Yes

Customer and Site Details:	Ramboll Environ: Royal Mint Monitoring 2017/18	Directory/Quant file:	2017\110217\	Initial Calibration	Matrix:	Water
Sample Details:	BHNP2D	Date Booked in:	01-Nov-17		Method:	Headspace
LIMS ID Number:	EX1839491	Date Analysed:	02-Nov-17		Multiplier:	1
Job Number:	W25_1723	Operator:	PR/ME		Position:	24

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	1.85	2	M
trans 1,2-Dichloroethene	156-60-5	-	< 1	-
1,1-Dichloroethane	75-34-3	2.85	10	98
2,2-Dichloropropane	594-20-7 *	-	< 1	-
cis 1,2-Dichloroethene	156-59-2	3.27	3	76
Bromochloromethane	74-97-5	-	< 1	-
Chloroform	67-66-3	-	< 1	-
1,1,1-Trichloroethane	71-55-6	3.54	16	88
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	4.03	5	85
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	3.56	92	Dibromofluoromethane	116
1,4-Difluorobenzene	3.92	96	Toluene-d8	99
Chlorobenzene-d5	5.06	96	Bromofluorobenzene	94
1,4-Dichlorobenzene-d4	5.86	88		

Volatile Organic Compounds by HSA-GCMS

UKAS accredited?: Yes

Customer and Site Details:	Ramboll Environ: Royal Mint Monitoring 2017/18	Directory/Quant file:	2017\110217\	Initial Calibration	Matrix:	Water
Sample Details:	CBH6	Date Booked in:	01-Nov-17		Method:	Headspace
LIMS ID Number:	EX1839492	Date Analysed:	02-Nov-17		Multiplier:	1
Job Number:	W25_1723	Operator:	PR/ME		Position:	25

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	1.01	2	M
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	2.86	2	53
2,2-Dichloropropane	594-20-7 *	-	< 1	-
cis 1,2-Dichloroethene	156-59-2	3.26	4	70
Bromochloromethane	74-97-5	-	< 1	-
Chloroform	67-66-3	-	< 1	-
1,1,1-Trichloroethane	71-55-6	3.54	6	91
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	4.03	6	86
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	3.56	94	Dibromofluoromethane	115
1,4-Difluorobenzene	3.92	98	Toluene-d8	99
Chlorobenzene-d5	5.06	98	Bromofluorobenzene	94
1,4-Dichlorobenzene-d4	5.86	91		

Sample Analysis

Socotec Environmental Chemistry

W251723

Analytical and Deviating Sample Overview

Customer Site Report No

Ramboll Environ
Royal Mint Monitoring 2017/18
W251723

Consignment No W128355
Date Logged 01-Nov-2017
In-House Report Due 08-Nov-2017

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	Calc_CR3	Calc_HD	CUSTSERV	ICPMSW											ICPMA/TAR		
			Sampled	Chromium (III) (CALC)	Total Hardness as CaCO3 (CALC)	Report A	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)	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Barium as Ba (Dissolved) VAR	Boron as B (Dissolved) VAR
				✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
EX/1839491	BHNP2D	Groundwater	31/10/17																	
EX/1839492	CBH6	Groundwater	31/10/17																	
EX/1839493	BH901R	Groundwater	31/10/17	EF																
EX/1839494	BH9	Groundwater	31/10/17	EF																
EX/1839495	BH801	Groundwater	31/10/17	EF																
EX/1839496	BH32	Groundwater	31/10/17	EF																
EX/1839497	BH8	Groundwater	31/10/17	EF																
EX/1839498	BH10	Groundwater	31/10/17	EF																
EX/1839499	BH13	Groundwater	31/10/17	EF																
EX/1839500	C1	Surface Water	31/10/17	EF																
EX/1839501	R1	Surface Water	31/10/17	EF																
EX/1839502	R6	Surface Water	31/10/17	EF																
EX/1839503	R7	Surface Water	31/10/17	EF																
EX/1839504	R7A	Surface Water	31/10/17	EF																

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

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.

Sample Analysis

Socotec Environmental Chemistry
Analytical and Deviating Sample Overview

W251723

Customer Ramboll Environ
Site Royal Mint Monitoring 2017/18
Report No W251723

Consignment No W128355
Date Logged 01-Nov-2017
In-House Report Due 08-Nov-2017

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		KONENS	SFAPI	TPHFID	VOCHSAM	WSLM3	
		Matrix Type	Sampled	Chromium VI. as Cr (Kone)	Cyanide (Total) as CN SFA	TPH GC	VOC HSA-GCMS	pH units	
				✓	✓	✓	✓	✓	
EX/1839491	BHNP2D	Groundwater	31/10/17						
EX/1839492	CBH6	Groundwater	31/10/17						
EX/1839493	BH901R	Groundwater	31/10/17						
EX/1839494	BH9	Groundwater	31/10/17						
EX/1839495	BH801	Groundwater	31/10/17						
EX/1839496	BH32	Groundwater	31/10/17						
EX/1839497	BH8	Groundwater	31/10/17						
EX/1839498	BH10	Groundwater	31/10/17						
EX/1839499	BH13	Groundwater	31/10/17						
EX/1839500	C1	Surface Water	31/10/17						
EX/1839501	R1	Surface Water	31/10/17						
EX/1839502	R6	Surface Water	31/10/17						
EX/1839503	R7	Surface Water	31/10/17						
EX/1839504	R7A	Surface Water	31/10/17						

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

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.

Report Number : W/EXR/251723

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
VOCHSAW	EX1839491-92	The primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (chlorobenzene) . These circumstances should be taken into consideration when utilising the data.

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	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	SFAP1	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	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 2017/18
Report Number : W25_1723

[illegible]

Table 2: Surface Water Monitoring 2017-2018 (UK14-24454) - Summary of Results

Sample Point	Date	Analysis															TPH (mg/l)
		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)	
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
	Feb-17	6.6	59	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-17	6.4	56	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
	Oct-17	7	66	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
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

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.	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
	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
	Feb-17	6.7	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	0.01
	Jun-17	6.6	59	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	0.011	<0.001	0.02	<0.0001	<0.001	<0.001	<0.02	0.04
	Oct-17	7.1	68	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
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

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)
R7 Cont.	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
	Feb-17	6.6	61	NT	<0.001	<0.001	<0.0001	<0.001	<0.001	0.002	<0.001	<0.01	<0.0001	<0.001	<0.001	0.04	0.01
	Jun-17	6.4	59	NT	<0.001	<0.001	<0.0001	0.001	<0.001	0.007	<0.001	0.01	<0.0001	<0.001	<0.001	<0.02	0.02
R7A	Oct-17	7.1	59	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	0.02
	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
	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
	Feb-17	6.7	56	NT	0.003	<0.001	<0.0001	0.006	<0.001	0.012	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.01
	Jun-17	6.6	59	NT	0.008	<0.001	<0.0001	0.024	<0.001	0.032	<0.001	0.01	<0.0001	<0.001	<0.001	<0.02	0.02
	Oct-17	7.1	54	NT	0.004	<0.001	<0.0001	0.007	<0.001	0.01	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.03
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

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)
C1 Cont.	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
	Feb-17	6.4	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-17	6.2	46	NT	0.001	<0.001	<0.0001	0.002	<0.001	<0.002	<0.001	0.03	<0.0001	<0.001	<0.001	<0.02	0.01
	Oct-17	6.7	42	NT	0.002	<0.001	<0.0001	0.002	<0.001	0.011	<0.001	<0.01	<0.0001	<0.001	<0.001	<0.02	0.02
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)

Notes:

2017-2018 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 2017 - 2018 (UK14-24454) - Summary of Results

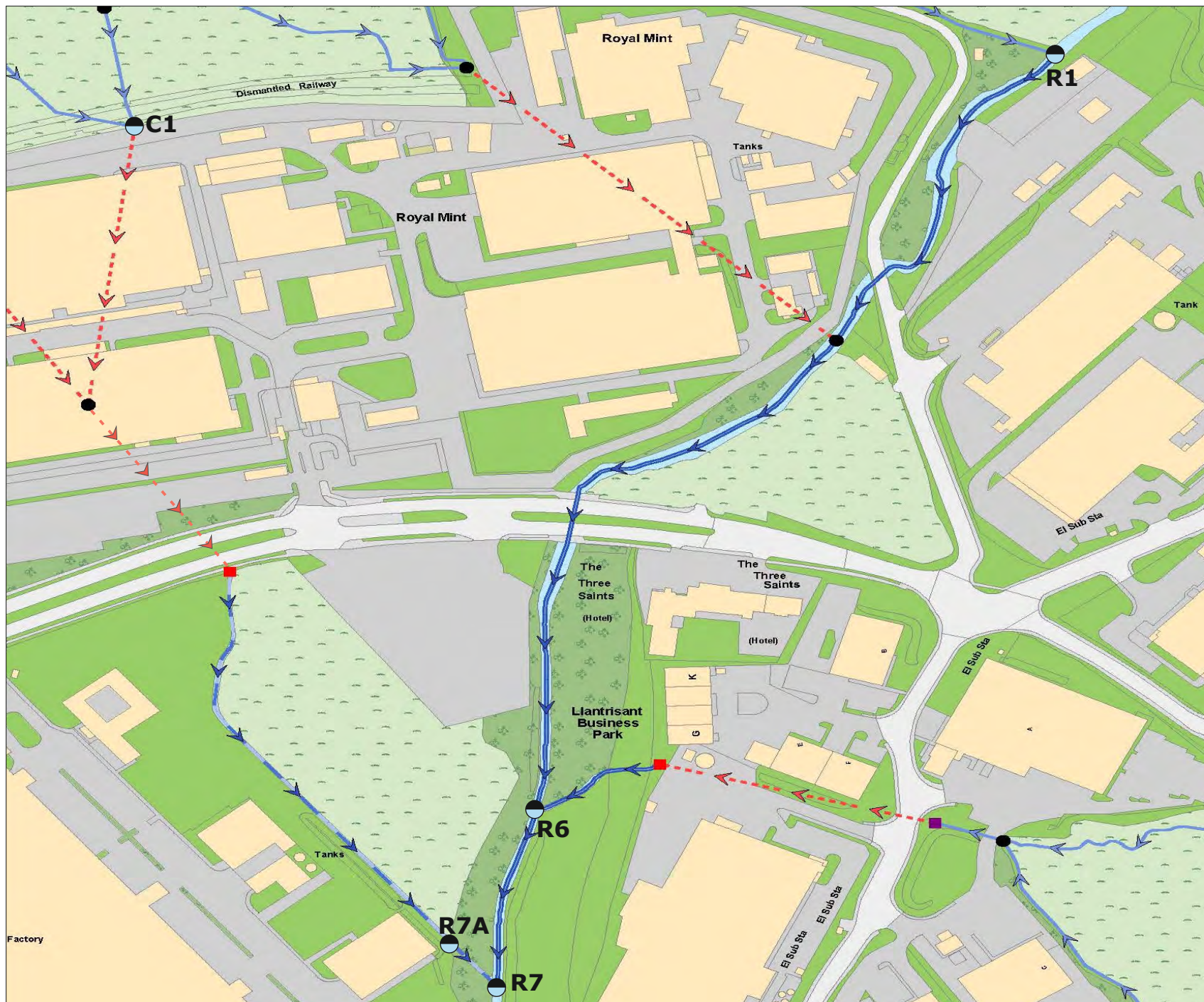
Borehole	Date	Analysis												
		pH	CaCO3 (mg/l)	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (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	NT
	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	0.015	<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	NT
	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
	30-Jun-16	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
14-Feb-17	6.3	54	0.009	<0.001	<0.0001	0.005	<0.001	0.053	<0.001	<0.01	<0.0001	<0.001	<0.001	
16-Jun-17	6.2	52	0.022	<0.001	0.0001	0.086	<0.001	0.784	<0.001	0.01	<0.0001	<0.001	<0.001	
31-Oct-17	6.4	51	0.008	<0.001	<0.0001	0.002	<0.001	0.045	<0.001	<0.01	<0.0001	<0.001	<0.001	
BH8	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	0.0001	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
	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	
14-Feb-17	4.9	61	0.097	<0.001	0.0007	0.105	0.001	0.214	<0.001	0.02	<0.0001	<0.001	<0.001	
16-Jun-17	4.3													

Borehole	Date	Analysis													
		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	
	14-Feb-17	6.2	71	0.064	<0.001	0.0001	0.06	<0.001	0.151	<0.001	0.03	<0.0001	<0.001	<0.001	
	16-Jun-17	6.2	59	0.027	<0.001	<0.0001	0.03	<0.001	0.055	<0.001	0.02	<0.0001	<0.001	<0.001	
	31-Oct-17	6.3	85	0.047	<0.001	0.0001	0.03	<0.001	0.085	<0.001	<0.01	<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	
14-Feb-17		6.4	115	0.242	<0.001	0.0004	0.005	<0.001	0.581	<0.001	0.05	<0.0001	<0.001	<0.001	
16-Jun-17		5.5	96	0.345	<0.001	0.0007	0.025	<0.001	0.811	<0.001	0.07	<0.0001	<0.001	<0.001	
31-Oct-17		6.1	85	0.173	<0.001	0.0004	0.01	<0.001	0.423	<0.001	<0.01	<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-0														

Borehole	Date	Analysis													
		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)	
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	
	14-Feb-17	5.0	61	0.052	<0.001	0.0002	0.052	<0.001	0.109	<0.001	0.02	<0.0001	<0.001	<0.001	
	16-Jun-17	5.2	47	0.038	<0.001	0.0002	0.032	<0.001	0.068	<0.001	0.03	<0.0001	<0.001	<0.001	
	31-Oct-17	4.9	45	0.037	<0.001	0.0002	0.04	<0.001	0.081	<0.001	<0.01	<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	
	14-Feb-17	6.2	125	0.202	<0.001	0.0004	0.252	<0.001	0.497	<0.001	0.06	<0.0001	<0.001	<0.001	
	31-Oct-17	6.3	103	0.158	<0.001	0.0003	0.222	<0.001	0.368	<0.001	0.09	<0.0001	<0.001	<0.001	
	16-Jun-17	6.2	45	0.13	<0.001	0.0004	0.319	<0.001	0.392	<0.001	0.05	<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



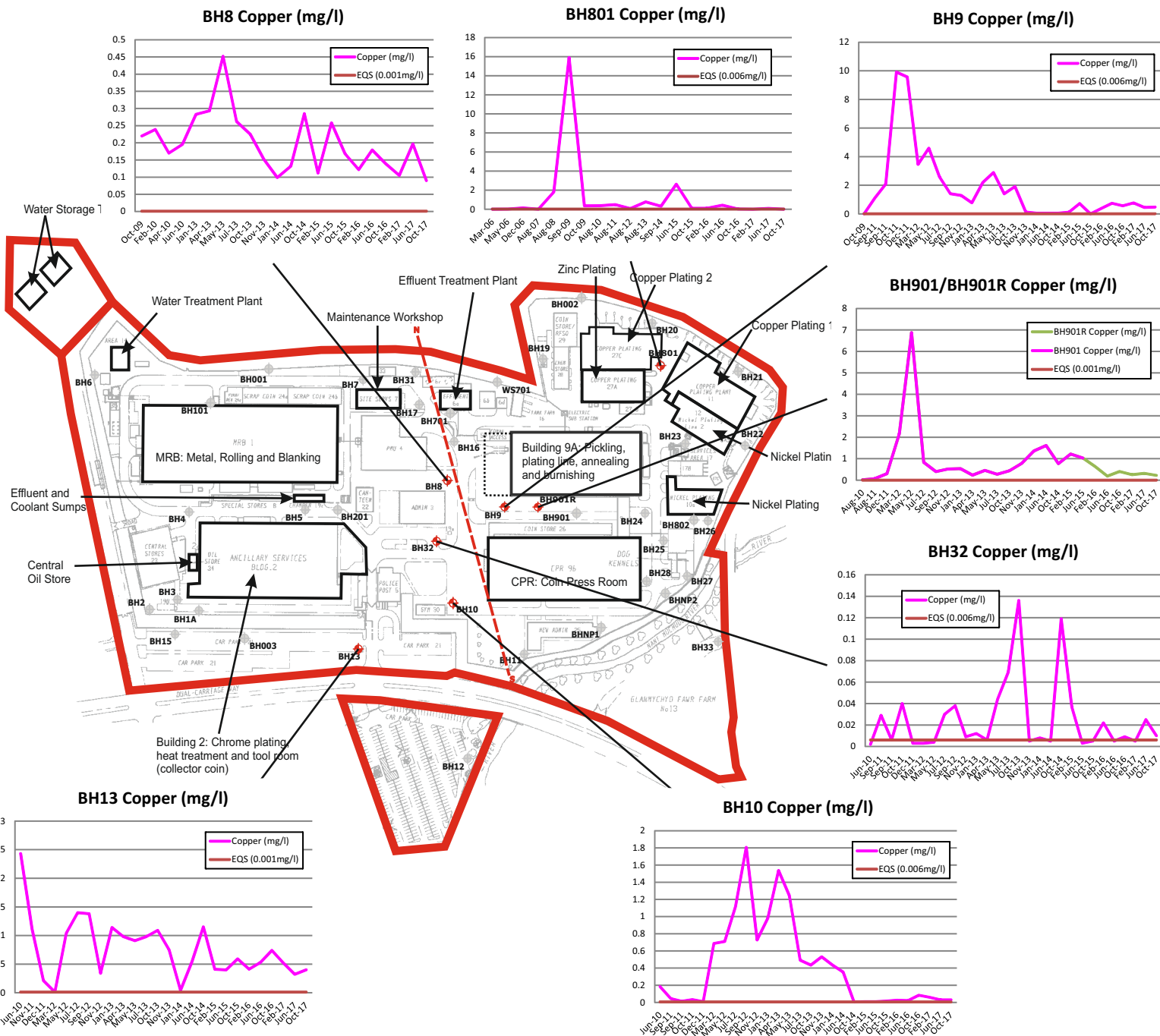
Legend

● 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.	UK14-24454
Issue	2
Date	October 2017
Drawn by	RH



Title Figure 3: Graphical Representation of Copper Concentrations

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

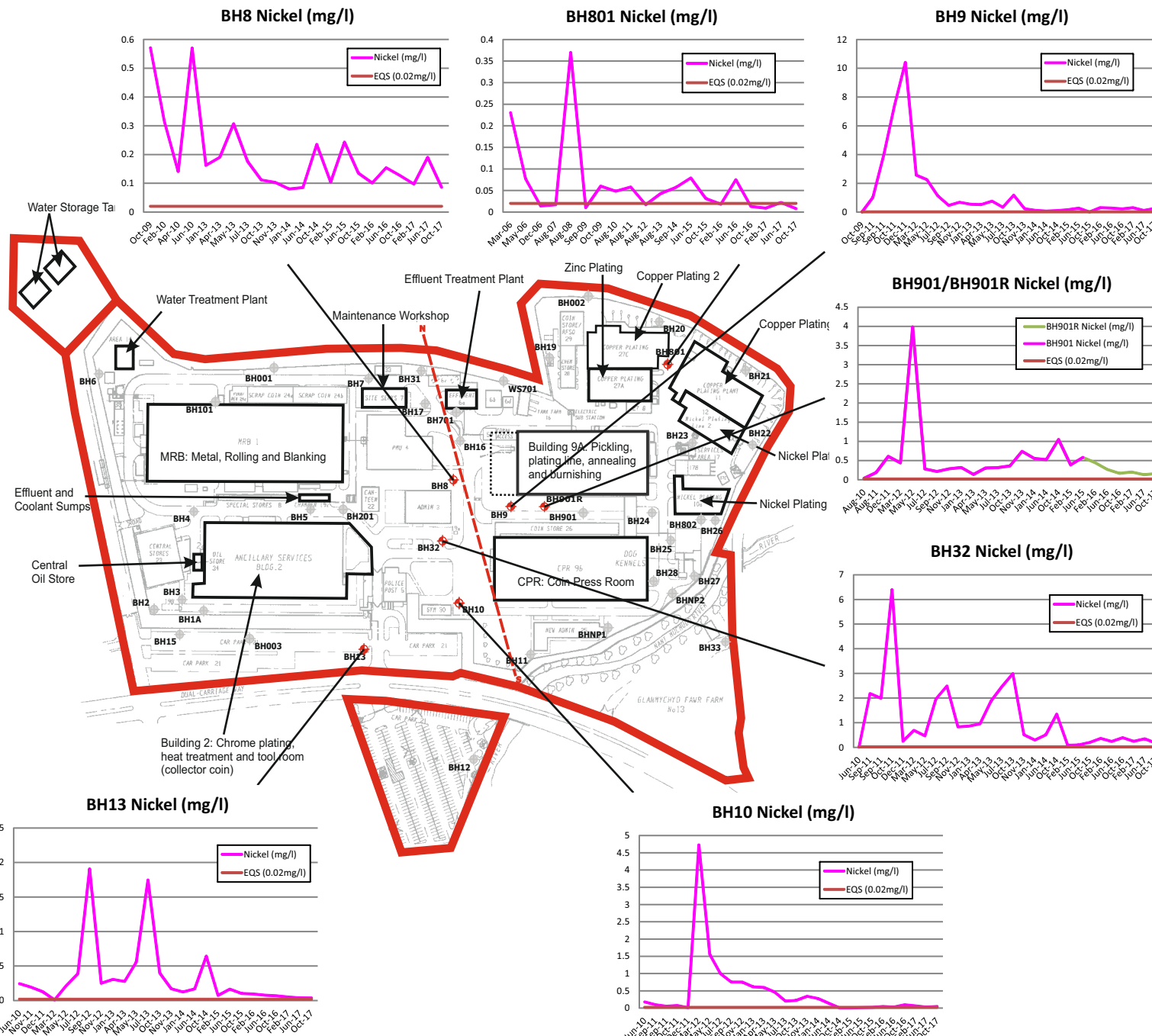
Client The Royal Mint

Project No. UK14-24454

Issue 2

Date October 2017

Drawn by RH



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.

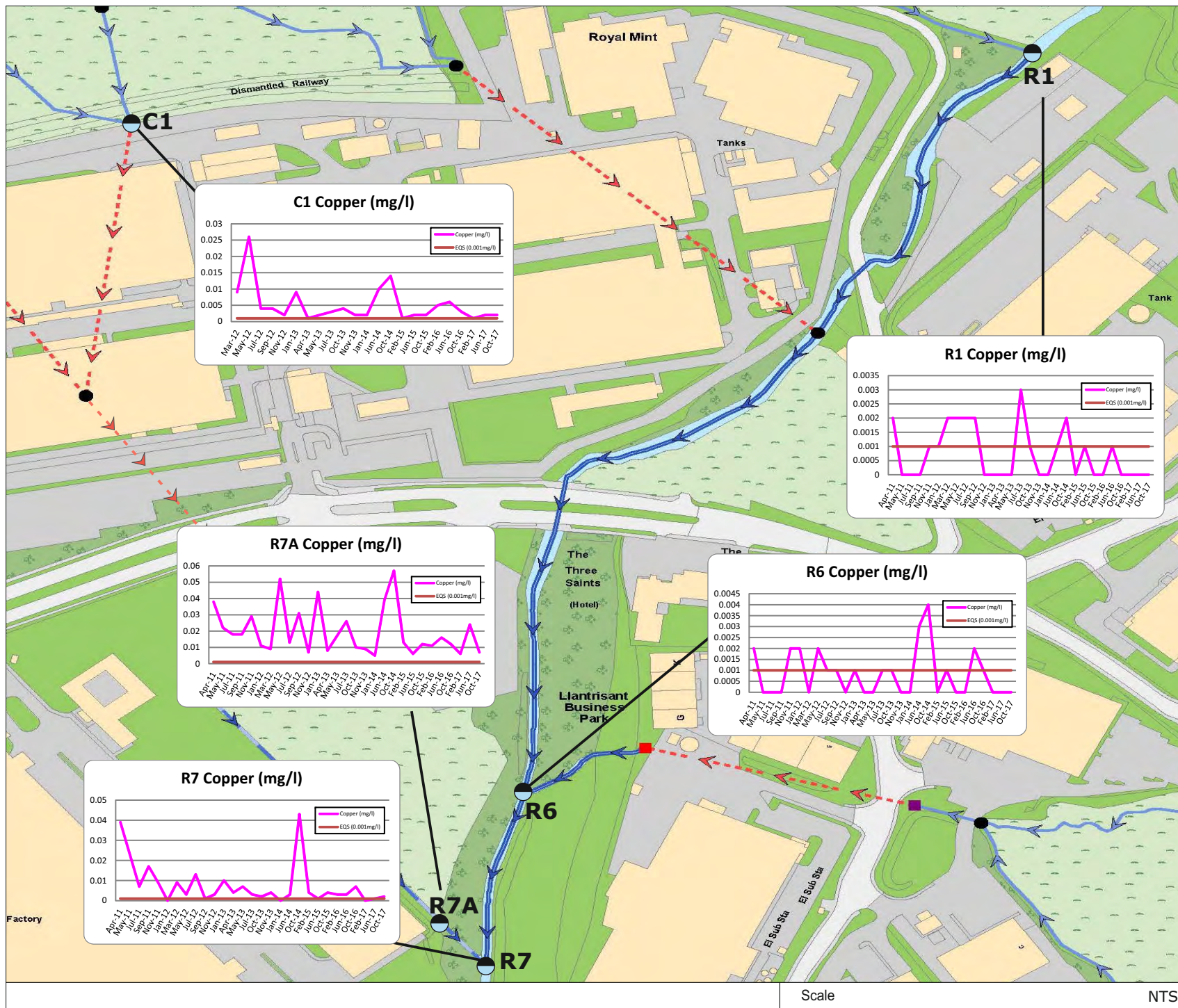
Title Figure 4: Graphical Representation of Nickel Concentrations

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

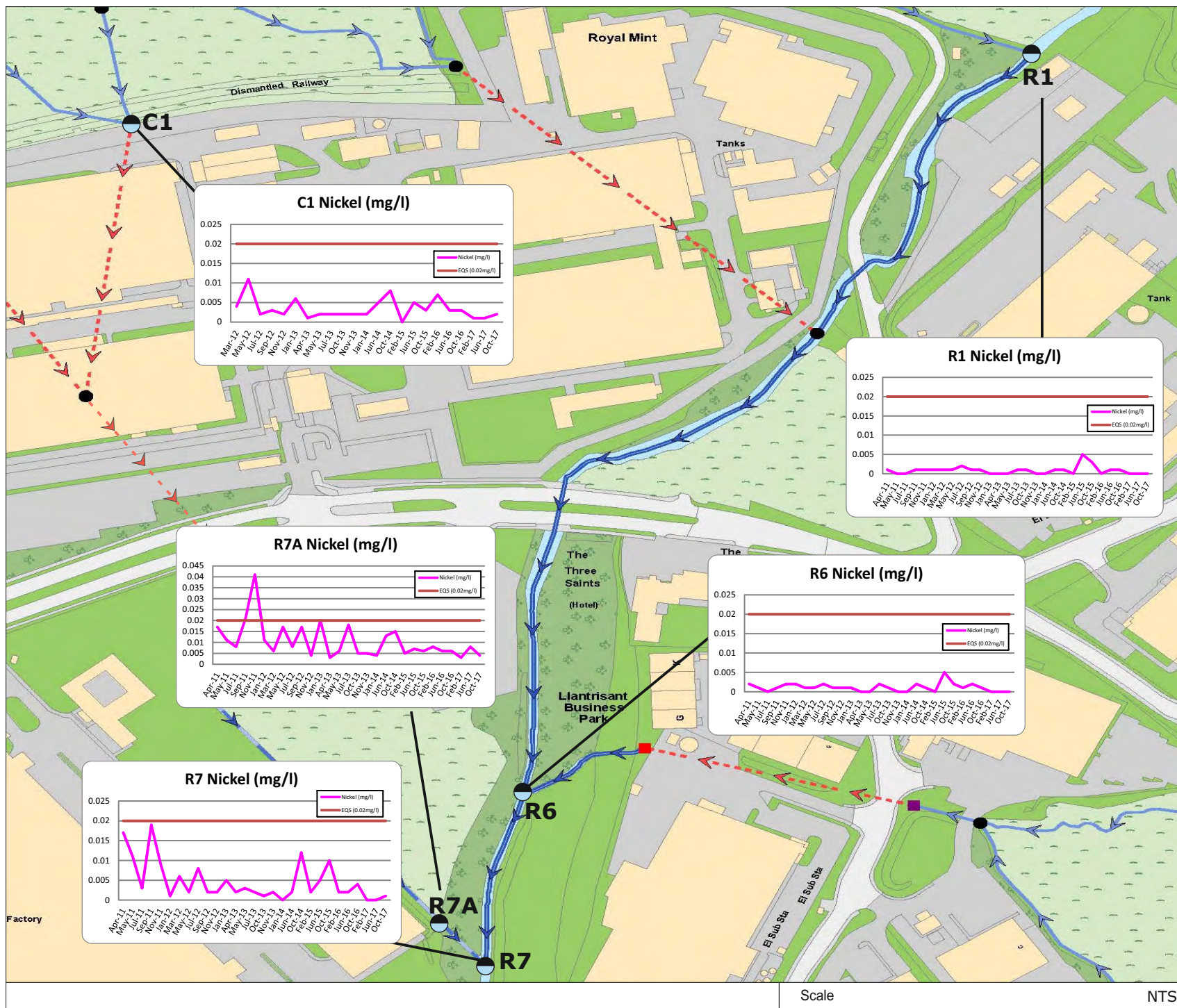
Client	The Royal Mint
Project No.	UK14-24454
Issue	2
Date	October 2017
Drawn by	RH

RAMBOLL

ENVIRON



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.	UK14-24454
Issue	2
Date	October 2017
Drawn by	RH



Legend



River Sampling Locations

Title Figure 7: Nickel Concentration
Graphs - Surface Water

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

Client	The Royal Mint
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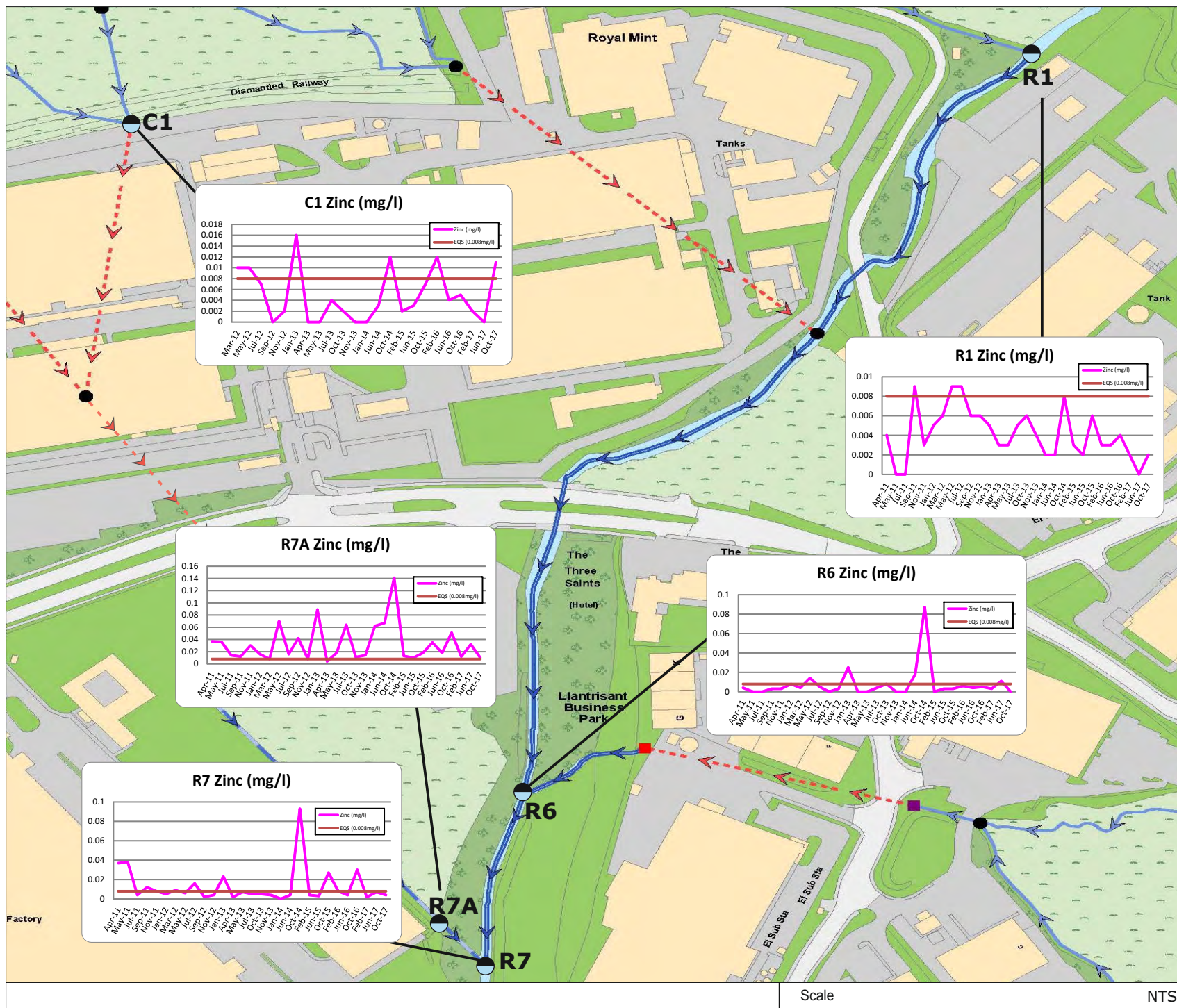
Project No.	UK14-24454
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Issue	2
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Date	October 2017
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Drawn by	RH
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Legend  River Sampling Locations	
Title Figure 8: Zinc Concentration Graphs - Surface Water	
Site The Royal Mint, Llantrisant Pontyclun, Mid Glamorgan, CF72 8YT	
Client The Royal Mint	
Project No.	UK14-24454
Issue	2
Date	October 2017
Drawn by	RH
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