Reporting of Emission to Surface Water for the period from ...1st July 2018...to...31st December 2018.

Operator : RWE Generation UK plc **Form:** Water1

Location: Aberthaw Quarry Ash Disposal Site

Permit/Variation Number: BP3339BH

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
SW12	Aluminium, Dissolved		<10 µg/l		30/08/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		<1 µg/l				
	Boron, Dissolved		701 µg/l				
	Cadmium, Dissolved		1.04 µg/l				
	Calcium, Dissolved		233 mg/l				
	Chromium, Dissolved		1.94 µg/l				
	Copper, Dissolved		1.38 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		48.1 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		1780 µg/l				
	Nickel, Dissolved		4.75 µg/l				
	Selenium Dissolved		2.14 µg/l				
	Vanadium, Dissolved		<2 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		54 mg/l				
	Electrical Conductivity at 20C		3010 mS/cm				
	Potassium, Dissolved		36.2 mg/l				
	Sodium, Dissolved		372 mg/l				
	Sulphate, Dissolved		581 mg/l				
	Total Oxidised Nitrogen		5.61 mg/l				
	Chloride		655 mg/l				
	Fluoride		0.205 mg/l				
	Ammoniacal Nitrogen		0.267 mg/l				
	Total Organic Carbon		4 mg/l				
	Nitrate		0.281 mg/l				
	pH		7.73 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
SW12	Aluminium, Dissolved		<10 µg/l		14/11/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		<1 µg/l				
	Boron, Dissolved		791 µg/l				
	Cadmium, Dissolved		3.24 µg/l				
	Calcium, Dissolved		306 mg/l				
	Chromium, Dissolved		3.45 µg/l				
	Copper, Dissolved		3.47 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		52.1 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		2210 µg/l				
	Nickel, Dissolved		6.65 µg/l				
	Selenium Dissolved		2.14 µg/l				
	Vanadium, Dissolved		<2 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		131 mg/l				
	Electrical Conductivity at 20C		3560 mS/cm				
	Potassium, Dissolved		42.8 mg/l				
	Sodium, Dissolved		437 mg/l				
	Sulphate, Dissolved		651 mg/l				
	Total Oxidised Nitrogen		11.5 mg/l				
	Chloride		807 mg/l				
	Fluoride		0.19 mg/l				
	Ammoniacal Nitrogen		0.416 mg/l				
	Total Organic Carbon		4.2 mg/l				
	Nitrate		7.99 mg/l				
	pH		7.99 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
Settlement Ponds	Aluminium, Dissolved		16.90 µg/l		04/07/2018	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved	50	2.82 µg/l				
	Boron, Dissolved	2000	1140.00 µg/l				
	Cadmium, Dissolved	5	<0.1 µg/l				
	Calcium, Dissolved		534.00 mg/l				
	Chromium, Dissolved	50	10.90 µg/l				
	Copper, Dissolved		2.86 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		71.50 mg/l				
	Manganese, Dissolved		96.70 µg/l				
	Molybdenum, Dissolved		4550.00 µg/l				
	Nickel, Dissolved		29.00 µg/l				
	Selenium Dissolved		1.54 µg/l				
	Vanadium, Dissolved	60	6.86 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		246.00 mg/l				
	Electrical Conductivity at 20C		8250.00 mS/cm				
	Potassium, Dissolved		64.90 mg/l				
	Sodium, Dissolved		800.00 mg/l				
	Sulphate, Dissolved	400	916.00 mg/l				
	Total Oxidised Nitrogen		43.80 mg/l				
	Chloride		1510.00 mg/l				
	Fluoride		0.16 mg/l				
	Ammoniacal Nitrogen	0.6	6.46 mg/l				
	Total Organic Carbon		1.20 mg/l				
	Nitrate		6.46 mg/l				
	pH	<9	7.09 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
Settlement Ponds	Aluminium, Dissolved		<100 µg/l		01/08/2018	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<10 µg/l				
	Arsenic Dissolved	50	2.85 µg/l				
	Boron, Dissolved	2000	1760.00 µg/l				
	Cadmium, Dissolved	5	3.17 µg/l				
	Calcium, Dissolved		617.00 mg/l				
	Chromium, Dissolved	50	19.30 µg/l				
	Copper, Dissolved		<10 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		91.50 mg/l				
	Manganese, Dissolved		33.40 µg/l				
	Molybdenum, Dissolved		5510.00 µg/l				
	Nickel, Dissolved		19.60 µg/l				
	Selenium Dissolved		3.39 µg/l				
	Vanadium, Dissolved	60	<20 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		156.00 mg/l				
	Electrical Conductivity at 20C		7420.00 mS/cm				
	Potassium, Dissolved		89.20 mg/l				
	Sodium, Dissolved		1020.00 mg/l				
	Sulphate, Dissolved	400	1080.00 mg/l				
	Total Oxidised Nitrogen		49.80 mg/l				
	Chloride		1930.00 mg/l				
	Fluoride		0.16 mg/l				
	Ammoniacal Nitrogen	0.6	4.79 mg/l				
	Total Organic Carbon		4.30 mg/l				
	Nitrate		46.10 mg/l				
	pH	<9	7.96 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Time [2]	Accreditation/ Certification [2]	Uncertainty [2]
Settlement Ponds	Aluminium, Dissolved		<10 µg/l		04/09/2018	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved	50	<1 µg/l				
	Boron, Dissolved	2000	1310.00 µg/l				
	Cadmium, Dissolved	5	2.48 µg/l				
	Calcium, Dissolved		424.00 mg/l				
	Chromium, Dissolved	50	11.60 µg/l				
	Copper, Dissolved		1.74 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		67.90 mg/l				
	Manganese, Dissolved		21.50 µg/l				
	Molybdenum, Dissolved		4230.00 µg/l				
	Nickel, Dissolved		12.20 µg/l				
	Selenium Dissolved		1.86 µg/l				
	Vanadium, Dissolved	60	7.73 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		65.00 mg/l				
	Electrical Conductivity at 20C		5700.00 mS/cm				
	Potassium, Dissolved		66.60 mg/l				
	Sodium, Dissolved		793.00 mg/l				
	Sulphate, Dissolved	400	841.00 mg/l				
	Total Oxidised Nitrogen		33.00 mg/l				
	Chloride		1460.00 mg/l				
	Fluoride		0.15 mg/l				
	Ammoniacal Nitrogen	0.6	1.60 mg/l				
	Total Organic Carbon		5.90 mg/l				
	Nitrate		31.40 mg/l				
	pH	<9	8.15 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [4]	Uncertainty [5]
Settlement Ponds	Aluminium, Dissolved		<10 µg/l		30/10/2018	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved	50	<1 µg/l				
	Boron, Dissolved	2000	1150.00 µg/l				
	Cadmium, Dissolved	5	2.99 µg/l				
	Calcium, Dissolved		377.00 mg/l				
	Chromium, Dissolved	50	12.00 µg/l				
	Copper, Dissolved		5.32 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		53.60 mg/l				
	Manganese, Dissolved		16.60 µg/l				
	Molybdenum, Dissolved		3790.00 µg/l				
	Nickel, Dissolved		12.90 µg/l				
	Selenium Dissolved		1.67 µg/l				
	Vanadium, Dissolved	60	6.50 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		203.00 mg/l				
	Electrical Conductivity at 20C		4960.00 mS/cm				
	Potassium, Dissolved		62.50 mg/l				
	Sodium, Dissolved		670.00 mg/l				
	Sulphate, Dissolved	400	765.00 mg/l				
	Total Oxidised Nitrogen		30.50 mg/l				
	Chloride		1190.00 mg/l				
	Fluoride		0.17 mg/l				
	Ammoniacal Nitrogen	0.6	2.10 mg/l				
	Total Organic Carbon		3.20 mg/l				
	Nitrate		28.30 mg/l				
	pH	<9	8.02 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [7]	Test Method [8]	Sample Date and Times [9]	Accreditation/ Certification [10]	Uncertainty [11]
Settlement Ponds	Aluminium, Dissolved		<10 µg/l		04/12/2018	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved	50	2 µg/l				
	Boron, Dissolved	2000	916 µg/l				
	Cadmium, Dissolved	5	<0.1 µg/l				
	Calcium, Dissolved		330 mg/l				
	Chromium, Dissolved	50	11 µg/l				
	Copper, Dissolved		1 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		45 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		2300 µg/l				
	Nickel, Dissolved		14 µg/l				
	Selenium Dissolved		2 µg/l				
	Vanadium, Dissolved	60	6 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		189 mg/l				
	Electrical Conductivity at 20C		3930 mS/cm				
	Potassium, Dissolved		50 mg/l				
	Sodium, Dissolved		518 mg/l				
	Sulphate, Dissolved	400	607 mg/l				
	Total Oxidised Nitrogen		25 mg/l				
	Chloride		931 mg/l				
	Fluoride		0 mg/l				
	Ammoniacal Nitrogen	0.6	1 mg/l				
	Total Organic Carbon		3 mg/l				
	Nitrate		23 mg/l				
	pH	<9	8 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
Settlement Ponds	Aluminium, Dissolved		13.2 µg/l		03/01/2019	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved	50	2.29 µg/l				
	Boron, Dissolved	2000	702 µg/l				
	Cadmium, Dissolved	5	0.525 µg/l				
	Calcium, Dissolved		241 mg/l				
	Chromium, Dissolved	50	8.07 µg/l				
	Copper, Dissolved		1.82 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		36.2 mg/l				
	Manganese, Dissolved		16.7 µg/l				
	Molybdenum, Dissolved		1870 µg/l				
	Nickel, Dissolved		10 µg/l				
	Selenium Dissolved		1.39 µg/l				
	Vanadium, Dissolved	60	5.03 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		226 mg/l				
	Electrical Conductivity at 20C		2720 mS/cm				
	Potassium, Dissolved		36.3 mg/l				
	Sodium, Dissolved		318 mg/l				
	Sulphate, Dissolved	400	516 mg/l				
	Total Oxidised Nitrogen		21.4 mg/l				
	Chloride		540 mg/l				
	Fluoride		0.184 mg/l				
	Ammoniacal Nitrogen	0.6	0.89 mg/l				
	Total Organic Carbon		1.5 mg/l				
	Nitrate		20.8 mg/l				
	pH	<9	8.04 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [3]	Uncertainty [4]
DP2	Aluminium, Dissolved		23.7 µg/l		04/07/2018	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		<1 µg/l				
	Boron, Dissolved		1450 µg/l				
	Cadmium, Dissolved		<0.1 µg/l				
	Calcium, Dissolved		485 mg/l				
	Chromium, Dissolved		15.5 µg/l				
	Copper, Dissolved		2.63 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		86.1 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		4880 µg/l				
	Nickel, Dissolved		20.6 µg/l				
	Selenium Dissolved		2.03 µg/l				
	Vanadium, Dissolved		9.37 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		63 mg/l				
	Electrical Conductivity at 20C		5980 mS/cm				
	Potassium, Dissolved		71.7 mg/l				
	Sodium, Dissolved		795 mg/l				
	Sulphate, Dissolved		927 mg/l				
	Total Oxidised Nitrogen		42 mg/l				
	Chloride		1470 mg/l				
	Fluoride		0.142 mg/l				
	Ammoniacal Nitrogen		1.18 mg/l				
	Total Organic Carbon		4.1 mg/l				
	Nitrate		40.1 mg/l				
	pH		8.32 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
DP2	Aluminium, Dissolved		<100 µg/l		01/08/2018	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<10 µg/l				
	Arsenic Dissolved		2.25 µg/l				
	Boron, Dissolved		1410 µg/l				
	Cadmium, Dissolved		3.07 µg/l				
	Calcium, Dissolved		661 mg/l				
	Chromium, Dissolved		10.3 µg/l				
	Copper, Dissolved		<10 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		72.8 mg/l				
	Manganese, Dissolved		128 µg/l				
	Molybdenum, Dissolved		5110 µg/l				
	Nickel, Dissolved		24.7 µg/l				
	Selenium Dissolved		2.19 µg/l				
	Vanadium, Dissolved		<20 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		236 mg/l				
	Electrical Conductivity at 20C		7160 mS/cm				
	Potassium, Dissolved		80 mg/l				
	Sodium, Dissolved		1030 mg/l				
	Sulphate, Dissolved		1020 mg/l				
	Total Oxidised Nitrogen		47.2 mg/l				
	Chloride		1800 mg/l				
	Fluoride		0.167 mg/l				
	Ammoniacal Nitrogen		8.43 mg/l				
	Total Organic Carbon		1.1 mg/l				
	Nitrate		45 mg/l				
	pH		7.08 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [4]	Uncertainty [5]
DP2	Aluminium, Dissolved		14.1 µg/l		04/09/2018	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		1.4 µg/l				
	Boron, Dissolved		837 µg/l				
	Cadmium, Dissolved		1.68 µg/l				
	Calcium, Dissolved		409 mg/l				
	Chromium, Dissolved		6.49 µg/l				
	Copper, Dissolved		1.65 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		42.9 mg/l				
	Manganese, Dissolved		75.1 µg/l				
	Molybdenum, Dissolved		3250 µg/l				
	Nickel, Dissolved		14.4 µg/l				
	Selenium Dissolved		1.59 µg/l				
	Vanadium, Dissolved		3.93 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		258 mg/l				
	Electrical Conductivity at 20C		5230 mS/cm				
	Potassium, Dissolved		59.7 mg/l				
	Sodium, Dissolved		703 mg/l				
	Sulphate, Dissolved		589 mg/l				
	Total Oxidised Nitrogen		29 mg/l				
	Chloride		1280 mg/l				
	Fluoride		0.17 mg/l				
	Ammoniacal Nitrogen		5.87 mg/l				
	Total Organic Carbon		1.6 mg/l				
	Nitrate		27.5 mg/l				
	pH		8.32 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [4]	Uncertainty [5]
DP2	Aluminium, Dissolved		13.7 µg/l		30/10/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		1.58 µg/l				
	Boron, Dissolved		872 µg/l				
	Cadmium, Dissolved		2.66 µg/l				
	Calcium, Dissolved		394 mg/l				
	Chromium, Dissolved		5.36 µg/l				
	Copper, Dissolved		4.13 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		43.3 mg/l				
	Manganese, Dissolved		57.4 µg/l				
	Molybdenum, Dissolved		3230 µg/l				
	Nickel, Dissolved		14 µg/l				
	Selenium Dissolved		1.72 µg/l				
	Vanadium, Dissolved		3.79 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		204 mg/l				
	Electrical Conductivity at 20C		4670 mS/cm				
	Potassium, Dissolved		53.6 mg/l				
	Sodium, Dissolved		597 mg/l				
	Sulphate, Dissolved		568 mg/l				
	Total Oxidised Nitrogen		32.4 mg/l				
	Chloride		1090 mg/l				
	Fluoride		0.181 mg/l				
	Ammoniacal Nitrogen		3.06 mg/l				
	Total Organic Carbon		1.2 mg/l				
	Nitrate		31.1 mg/l				
	pH		7.25 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
DP2	Aluminium, Dissolved		<10 µg/l		04/12/2018	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		1.67 µg/l				
	Boron, Dissolved		749 µg/l				
	Cadmium, Dissolved		<0.1 µg/l				
	Calcium, Dissolved		320 mg/l				
	Chromium, Dissolved		3.27 µg/l				
	Copper, Dissolved		1.33 µg/l				
	Iron, Dissolved		0 µg/l				
	Magnesium, Dissolved		0 mg/l				
	Manganese, Dissolved		51.5 µg/l				
	Molybdenum, Dissolved		28.6 µg/l				
	Nickel, Dissolved		2030 µg/l				
	Selenium Dissolved		19.4 µg/l				
	Vanadium, Dissolved		1.12 µg/l				
	Mercury, Dissolved		0 µg/l				
	Total Alkalinity as CaCO3		<0.01 mg/l				
	Electrical Conductivity at 20C		264 mS/cm				
	Potassium, Dissolved		3320 mg/l				
	Sodium, Dissolved		35.6 mg/l				
	Sulphate, Dissolved		392 mg/l				
	Total Oxidised Nitrogen		597 mg/l				
	Chloride		22.1 mg/l				
	Fluoride		669 mg/l				
	Ammoniacal Nitrogen		0 mg/l				
	Total Organic Carbon		1.42 mg/l				
	Nitrate		21.5 mg/l				
	pH		7.24 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
DP2	Aluminium Dissolved		16.80 µg/l		03/01/2019	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		2.66 µg/l				
	Boron, Dissolved		745.00 µg/l				
	Cadmium, Dissolved		0.61 µg/l				
	Calcium, Dissolved		275.00 mg/l				
	Chromium, Dissolved		10.60 µg/l				
	Copper, Dissolved		4.40 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		39.90 mg/l				
	Manganese, Dissolved		23.60 µg/l				
	Molybdenum, Dissolved		2120.00 µg/l				
	Nickel, Dissolved		12.30 µg/l				
	Selenium Dissolved		1.85 µg/l				
	Vanadium, Dissolved		5.91 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		251.00 mg/l				
	Electrical Conductivity at 20C		2880.00 mS/cm				
	Potassium, Dissolved		36.00 mg/l				
	Sodium, Dissolved		311.00 mg/l				
	Sulphate, Dissolved		514.00 mg/l				
	Total Oxidised Nitrogen		29.70 mg/l				
	Chloride		576.00 mg/l				
	Fluoride		0.21 mg/l				
	Ammoniacal Nitrogen		3.62 mg/l				
	Total Organic Carbon		1.20 mg/l				
	Nitrate		27.90 mg/l				
	pH		7.35 pH Units				

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements, or flow/time proportional samples, the

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

[6] The emission limit values for all substances is expressed as a maximum individual value, unless otherwise stated.

Signed R T. Powell Date 22/1/19

(authorised to sign as representative of the Operator)

Reporting of Emission to Groundwater for the period from ...1st July 2018...to...31st December 2018.

Operator : RWE Generation UK plc **Form: Groundwater1**

Location: Aberthaw Quarry Ash Disposal Site

Permit/Variation Number: BP3339BH

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [4]	Uncertainty ±
E09_01A	Aluminium, Dissolved		<10	ug/l		31/08/2018	Sampling Annex/Testing EA NLS	
	Ammonia, Dissolved		<1	mg/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		<100	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		123	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		<1	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		5.37	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		<3	ug/l				
	Nickel, Dissolved		<1	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		286	mg/l				
	Electrical Conductivity at 20C		651	uS/cm				
	Potassium, Dissolved		1.42	mg/l				
	Sodium, Dissolved		16.3	mg/l				
	Sulphate, Dissolved		32.2	mg/l				
	Total Oxidised Nitrogen		5.32	mg/l				
	Chloride		31	mg/l				
	Fluoride		0.069	mg/l				
	Ammoniacal Nitrogen		<0.03	mg/l				
	Total Organic Carbon		1.5	mg/l				
	pH		7.22	pH Units				
	Nitrate		<0.004	mg/l				
	Ionic Balance		0.4	%				
	Electrical Conductivity		390	µS/cm	Field Measurements			
	Temperature		11.70	deg C				
	Dissolved Oxygen		3.56	mg/l				
	pH		7.22	pH Units				
	Groundwater Level		26.75	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [1]	Sample Date and Times [1]	Accreditation/ Certification [1]	Uncertainty [1]
E09_01A	Aluminium, Dissolved		<10	ug/l		14/11/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		<100	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		127	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		<1	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		5.21	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		<3	ug/l				
	Nickel, Dissolved		1.33	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		295	mg/l				
	Electrical Conductivity at 25C		843	uS/cm				
	Potassium, Dissolved		1.39	mg/l				
	Sodium, Dissolved		15	mg/l				
	Sulphate, Dissolved		28.6	mg/l				
	Total Oxidised Nitrogen		4.34	mg/l				
	Chloride		28.8	mg/l				
	Fluoride		<0.3	mg/l				
	Ammoniacal Nitrogen		<0.03	mg/l				
	Total Organic Carbon		1.5	mg/l				
	pH		7.22	pH Units				
	Nitrate		<0.004	mg/l				
	Ionic Balance		-1.07	%				
	Electrical Conductivity		499	µS/cm	Field Measurements			
	Temperature		11.50	deg C				
	Dissolved Oxygen		5.00	mg/l				
	pH		8.94	pH Units				
	Groundwater Level		27.36	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [3]	Uncertainty [4]
E09_01B	Aluminium, Dissolved		<10	ug/l		31/08/2018	Sampling Arrec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		<100	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		123	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		<1	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		6.22	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		<3	ug/l				
	Nickel, Dissolved		<1	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		290	mg/l				
	Electrical Conductivity at 25C		656	uS/cm				
	Potassium, Dissolved		1.34	mg/l				
	Sodium, Dissolved		16.1	mg/l				
	Sulphate, Dissolved		32.9	mg/l				
	Total Oxidised Nitrogen		5.1	mg/l				
	Chloride		30.7	mg/l				
	Fluoride		0.082	mg/l				
	Ammoniacal Nitrogen		<0.03	mg/l				
	Total Organic Carbon		1.5	mg/l				
	pH		7.2	pH Units				
	Nitrate		<0.004	mg/l				
	Ionic Balance		-2.01	%				
	Electrical Conductivity		395	µS/cm	Field Measurements			
	Temperature		11.59	deg C				
	Dissolved Oxygen		2.58	mg/l				
	pH		7.20	pH Units				
	Groundwater Level		25.40	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
E09_01B	Aluminium, Dissolved		14.1	ug/l		14/11/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		<100	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		124	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		<1	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		6.03	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		<3	ug/l				
	Nickel, Dissolved		1.39	ug/l				
	Selenium, Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		291	mg/l				
	Electrical Conductivity at 25C		644	uS/cm				
	Potassium, Dissolved		1.33	mg/l				
	Sodium, Dissolved		15.6	mg/l				
	Sulphate, Dissolved		31.1	mg/l				
	Total Oxidised Nitrogen		4.08	mg/l				
	Chloride		29.2	mg/l				
	Fluoride		<0.3	mg/l				
	Ammoniacal Nitrogen		<0.03	mg/l				
	Total Organic Carbon		1.4	mg/l				
	pH		7.23	pH Units				
	Nitrate		<0.004	mg/l				
	Ionic Balance		-1.23	%				
	Electrical Conductivity		499	µS/cm	Field Measurements			
	Temperature		11.50	deg C				
	Dissolved Oxygen		3.82	mg/l				
	pH		6.94	pH Units				
	Groundwater Level		25.89	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [4]	Uncertainty [5]
E09_02A	Aluminium, Dissolved		<10	ug/l		31/08/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		120	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		186	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		2.56	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		21.7	mg/l				
	Manganese, Dissolved		33.6	ug/l				
	Molybdenum, Dissolved		<3	ug/l				
	Nickel, Dissolved		2.59	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		462	mg/l				
	Electrical Conductivity at 25C		1040	uS/cm				
	Potassium, Dissolved		1.36	mg/l				
	Sodium, Dissolved		25.7	mg/l				
	Sulphate, Dissolved		79.5	mg/l				
	Total Oxidised Nitrogen		10.4	mg/l				
	Chloride		43.3	mg/l				
	Fluoride		0.113	mg/l				
	Ammoniacal Nitrogen		0.069	mg/l				
	Total Organic Carbon		6.2	mg/l				
	pH		6.83	pH Units				
	Nitrate		0.233	mg/l				
	Ionic Balance		0.41	%				
	Electrical Conductivity		627	µS/cm	Field Measurements			
	Temperature		12.12	deg C				
	Dissolved Oxygen		0.22	mg/l				
	pH		6.88	pH Units				
	Groundwater Level		27.81	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
E09_02A	Aluminium, Dissolved		<10	ug/l		14/11/2018	Sampling Arnec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		<100	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		151	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		<1	ug/l				
	Iron, Dissolved		60.2	ug/l				
	Magnesium, Dissolved		26.6	mg/l				
	Manganese, Dissolved		59.6	ug/l				
	Molybdenum, Dissolved		<3	ug/l				
	Nickel, Dissolved		2.31	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		428	mg/l				
	Electrical Conductivity at 25C		895	uS/cm				
	Potassium, Dissolved		1.41	mg/l				
	Sodium, Dissolved		21.9	mg/l				
	Sulphate, Dissolved		68.9	mg/l				
	Total Oxidised Nitrogen		<0.2	mg/l				
	Chloride		37.3	mg/l				
	Fluoride		<0.3	mg/l				
	Ammoniacal Nitrogen		2.47	mg/l				
	Total Organic Carbon		3.4	mg/l				
	pH		6.96	pH Units				
	Nitrate		0.021	mg/l				
	Ionic Balance		-1.53	%				
	Electrical Conductivity		754	µS/cm	Field Measurements			
	Temperature		11.80	deg C				
	Dissolved Oxygen		0.70	mg/l				
	pH		6.68	pH Units				
	Groundwater Level		27.78	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
E09_02B	Aluminium, Dissolved		<10	ug/l		31/08/2018	Sampling Arnec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic Dissolved		<1	ug/l				
	Boron, Dissolved		<100	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		181	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		2	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		20	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		<3	ug/l				
	Nickel, Dissolved		3.42	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium Dissolved		<2	ug/l				
	Mercury Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		384	mg/l				
	Electrical Conductivity at 25C		1060	uS/cm				
	Potassium, Dissolved		1.83	mg/l				
	Sodium, Dissolved		33.7	mg/l				
	Sulphate, Dissolved		98.3	mg/l				
	Total Oxidised Nitrogen		20.6	mg/l				
	Chloride		41.9	mg/l				
	Fluoride		0.11	mg/l				
	Ammoniacal Nitrogen		<0.03	mg/l				
	Total Organic Carbon		4	mg/l				
	pH		7.07	pH Units				
	Nitrate		<0.004	mg/l				
	Ionic Balance		5.62	%				
	Electrical Conductivity		635	µS/cm	Field Measurements			
	Temperature		11.94	deg C				
	Dissolved Oxygen		1.65	mg/l				
	pH		6.95	pH Units				
	Groundwater Level		27.79	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [4]	Uncertainty [5]
E09_02B	Aluminium, Dissolved		<10	ug/l		14/11/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		2.32	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		<100	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		165	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		1.54	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		24.4	mg/l				
	Manganese, Dissolved		47.6	ug/l				
	Molybdenum, Dissolved		<3	ug/l				
	Nickel, Dissolved		3.69	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		411	mg/l				
	Electrical Conductivity at 25C		959	uS/cm				
	Potassium, Dissolved		1.83	mg/l				
	Sodium, Dissolved		31.7	mg/l				
	Sulphate, Dissolved		93.6	mg/l				
	Total Oxidised Nitrogen		8.75	mg/l				
	Chloride		38.9	mg/l				
	Fluoride		0.26	mg/l				
	Ammoniacal Nitrogen		0.34	mg/l				
	Total Organic Carbon		3.3	mg/l				
	pH		7.13	pH Units				
	Nitrate		8.527	mg/l				
	Ionic Balance		-0.357	%				
	Electrical Conductivity		800	µS/cm	Field Measurements			
	Temperature		11.50	deg C				
	Dissolved Oxygen		0.64	mg/l				
	pH		6.86	pH Units				
	Groundwater Level		27.90	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
E05_03	Aluminium, Dissolved	50	<10	ug/l		30/06/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic Dissolved	10	<1	ug/l				
	Boron, Dissolved	2800	1500	ug/l				
	Cadmium, Dissolved	0.4	0.963	ug/l				
	Calcium, Dissolved		418	mg/l				
	Chromium, Dissolved	50	<0.5	ug/l				
	Copper, Dissolved		1.17	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		289	mg/l				
	Manganese, Dissolved		20	ug/l				
	Molybdenum, Dissolved	50	1480	ug/l				
	Nickel, Dissolved		<1	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved	20	<2	ug/l				
	Mercury, Dissolved	0.03	<0.01	ug/l				
	Total Alkalinity as CaCO3		182	mg/l				
	Electrical Conductivity at 25C		6580	uS/cm				
	Potassium, Dissolved		13.3	mg/l				
	Sodium, Dissolved		839	mg/l				
	Sulphate, Dissolved	400	568	mg/l				
	Total Oxidised Nitrogen		2.85	mg/l				
	Chloride		1990	mg/l				
	Fluoride		0.497	mg/l				
	Ammoniacal Nitrogen	1.6	<0.03	mg/l				
	Total Organic Carbon		<0.7	mg/l				
	pH		7.17	pH Units				
	Nitrate		0.118	mg/l				
	Ionic Balance		0.35	%				
	Electrical Conductivity		4512	µS/cm	Field Measurements			
	Temperature		16.46	deg C				
	Dissolved Oxygen		1.18	mg/l				
	pH		7.09	pH Units				
	Groundwater Level		16.82	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [4]	Uncertainty [5]
E05_03	Aluminium, Dissolved	50	<10	ug/l		14/11/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved	10	<1	ug/l				
	Boron, Dissolved	2800	1590	ug/l				
	Cadmium, Dissolved	0.4	<0.1	ug/l				
	Calcium, Dissolved		425	mg/l				
	Chromium, Dissolved	50	<0.5	ug/l				
	Copper, Dissolved		1.8	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		267	mg/l				
	Manganese, Dissolved		35.8	ug/l				
	Molybdenum, Dissolved	50	1670	ug/l				
	Nickel, Dissolved		3.23	ug/l				
	Selenium, Dissolved		<1	ug/l				
	Vanadium, Dissolved	20	<2	ug/l				
	Mercury, Dissolved	0.03	<0.01	ug/l				
	Total Alkalinity as CaCO3		172	mg/l				
	Electrical Conductivity at 25C		6550	uS/cm				
	Potassium, Dissolved		13.5	mg/l				
	Sodium, Dissolved		681	mg/l				
	Sulphate, Dissolved	400	562	mg/l				
	Total Oxidised Nitrogen		1.46	mg/l				
	Chloride		2020	mg/l				
	Fluoride		1.73	mg/l				
	Ammoniacal Nitrogen	1.8	0.401	mg/l				
	Total Organic Carbon		<0.7	mg/l				
	pH		7.31	pH Units				
	Nitrate		0.112	mg/l				
	Ionic Balance		0.856	%				
	Electrical Conductivity		5155	µS/cm	Field Measurements			
	Temperature		13.20	deg C				
	Dissolved Oxygen		2.31	mg/l				
	pH		7.15	pH Units				
	Groundwater Level		18.82	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [1]	Accreditation/ Certification [2]	Uncertainty [3]
E05_04	Aluminium, Dissolved	50	<10	ug/l		31/08/2018	Sampling Arrec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved	10	1.10	ug/l				
	Boron, Dissolved	2800	2100	ug/l				
	Cadmium, Dissolved	0.4	<0.1	ug/l				
	Calcium, Dissolved		8.59	mg/l				
	Chromium, Dissolved	50	<0.5	ug/l				
	Copper, Dissolved		<1	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		6.73	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved	50	31.50	ug/l				
	Nickel, Dissolved		<1	ug/l				
	Selenium, Dissolved		<1	ug/l				
	Vanadium, Dissolved	20	<2	ug/l				
	Mercury, Dissolved	0.03	<0.01	ug/l				
	Total Alkalinity as CaCO3		388	mg/l				
	Electrical Conductivity at 25C		1110	uS/cm				
	Potassium, Dissolved		3.23	mg/l				
	Sodium, Dissolved		255	mg/l				
	Sulphate, Dissolved	400	88.90	mg/l				
	Total Oxidised Nitrogen		<0.2	mg/l				
	Chloride		113.00	mg/l				
	Fluoride		0.82	mg/l				
	Ammoniacal Nitrogen	1.8	0.09	mg/l				
	Total Organic Carbon		<0.7	mg/l				
	pH		8.27	pH Units				
	Nitrate		0.11	mg/l				
	Ionic Balance		1.01	%				
	Electrical Conductivity		722	µS/cm	Field Measurements			
	Temperature		14.57	deg C				
	Dissolved Oxygen		0.00	mg/l				
	pH		8.42	pH Units				
	Groundwater Level		18.10	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
E05_04	Aluminium, Dissolved	50	47.60	ug/l		15/11/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved	10	1.19	ug/l				
	Boron, Dissolved	2600	2000	ug/l				
	Cadmium, Dissolved	0.4	<0.1	ug/l				
	Calcium, Dissolved		8.49	mg/l				
	Chromium, Dissolved	50	<0.5	ug/l				
	Copper, Dissolved		<1	ug/l				
	Iron, Dissolved		68.90	ug/l				
	Magnesium, Dissolved		6.54	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved	50	20.30	ug/l				
	Nickel, Dissolved		<1	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved	20	<2	ug/l				
	Mercury, Dissolved	0.03	<0.01	ug/l				
	Total Alkalinity as CaCO3		380	mg/l				
	Electrical Conductivity at 25C		984	uS/cm				
	Potassium, Dissolved		3.02	mg/l				
	Sodium, Dissolved		230	mg/l				
	Sulphate, Dissolved	400	73.80	mg/l				
	Total Oxidised Nitrogen		<0.2	mg/l				
	Chloride		72.10	mg/l				
	Fluoride		5.64	mg/l				
	Ammoniacal Nitrogen	1.6	0.39	mg/l				
	Total Organic Carbon		0.70	mg/l				
	pH		8.50	pH Units				
	Nitrate		<0.004	mg/l				
	Ionic Balance		-0.56	%				
	Electrical Conductivity		825	µS/cm	Field Measurements			
	Temperature		12.90	deg C				
	Dissolved Oxygen		0.17	mg/l				
	pH		8.42	pH Units				
	Groundwater Level		18.27	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result[1]		Test Method[2]	Sample Date and Time[3]	Accreditation/ Certification[4]	Uncertainty [5]
E06_01	Aluminium, Dissolved	50	15.00	ug/l		30/08/2018	Sampling Arrec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved	10	1.01	ug/l				
	Boron, Dissolved	2800	1750	ug/l				
	Cadmium, Dissolved	0.4	<0.1	ug/l				
	Calcium, Dissolved		5.55	mg/l				
	Chromium, Dissolved	50	<0.5	ug/l				
	Copper, Dissolved		<1	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		4.00	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved	50	<3	ug/l				
	Nickel, Dissolved		<1	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved	20	<2	ug/l				
	Mercury, Dissolved	0.03	<0.01	ug/l				
	Total Alkalinity as CaCO3		383	mg/l				
	Electrical Conductivity at 25C		881	uS/cm				
	Potassium, Dissolved		2.43	mg/l				
	Sodium, Dissolved		216	mg/l				
	Sulphate, Dissolved	400	80.80	mg/l				
	Total Oxidised Nitrogen		0.34	mg/l				
	Chloride		30.50	mg/l				
	Fluoride		2.87	mg/l				
	Ammoniacal Nitrogen	1.8	0.09	mg/l				
	Total Organic Carbon		<0.7	mg/l				
	pH		8.56	pH Units				
	Nitrate		0.28	mg/l				
	Ionic Balance		0.69	%				
	Electrical Conductivity		557	µS/cm	Field Measurements			
	Temperature		13.65	deg C				
	Dissolved Oxygen		3.52	mg/l				
	pH		9.24	pH Units				
	Groundwater Level		18.73	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
	Aluminium, Dissolved	50	14.30	ug/l				
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved	10	<1	ug/l				
	Boron, Dissolved	2000	1720	ug/l				
	Cadmium, Dissolved	0.4	<0.1	ug/l				
	Calcium, Dissolved		6.64	mg/l				
	Chromium, Dissolved	50	<0.5	ug/l				
	Copper, Dissolved		<1	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		4.53	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved	50	7.62	ug/l				
	Nickel, Dissolved		<1	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved	20	2.27	ug/l				
	Mercury, Dissolved	0.03	<0.01	ug/l				
ED6_01	Total Alkalinity as CaCO3		360	mg/l		15/11/2018	Sampling Amec/Testing EA NLS	
	Electrical Conductivity at 25C		921	uS/cm				
	Potassium, Dissolved		2.58	mg/l				
	Sodium, Dissolved		225	mg/l				
	Sulphate, Dissolved	400	113.00	mg/l				
	Total Oxidised Nitrogen		<0.2	mg/l				
	Chloride		34.80	mg/l				
	Fluoride		2.83	mg/l				
	Ammoniacal Nitrogen	1.6	0.50	mg/l				
	Total Organic Carbon		1.00	mg/l				
	pH		8.72	pH Units				
	Nitrate		0.01	mg/l				
	Ionic Balance		0.12	%				
	Electrical Conductivity		580	µS/cm				
	Temperature		11.70	deg C				
	Dissolved Oxygen		3.88	mg/l	Field Measurements			
	pH		8.63	pH Units				
	Groundwater Level		18.76	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
E08_02	Aluminium, Dissolved		<10	ug/l		30/08/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		993	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		108.00	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		<1	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		54.70	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		104.00	ug/l				
	Nickel, Dissolved		1.38	ug/l				
	Selenium, Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		258	mg/l				
	Electrical Conductivity at 25C		1320	uS/cm				
	Potassium, Dissolved		6.48	mg/l				
	Sodium, Dissolved		139	mg/l				
	Sulphate, Dissolved		392.00	mg/l				
	Total Oxidised Nitrogen		0.41	mg/l				
	Chloride		116.00	mg/l				
	Fluoride		0.58	mg/l				
	Ammoniacal Nitrogen		0.27	mg/l				
	Total Organic Carbon		1.20	mg/l				
	pH		7.63	pH Units				
	Nitrate		0.21	mg/l				
	Ionic Balance		1.38	%				
	Electrical Conductivity		814	µS/cm	Field Measurements			
	Temperature		15.63	deg C				
	Dissolved Oxygen		0.35	mg/l				
	pH		7.71	pH Units				
	Groundwater Level		20.69	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [4]	Uncertainty [5]
	Aluminium Dissolved		<10	ug/l				
	Antimony, Dissolved		<1	ug/l				
	Arsenic Dissolved		<1	ug/l				
	Boron, Dissolved		867	ug/l				
	Cadmium Dissolved		0.13	ug/l				
	Calcium, Dissolved		107.00	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		2.03	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		51.70	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		53.40	ug/l				
	Nickel, Dissolved		<1	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
E06_02	Total Alkalinity as CaCO3		220	mg/l		14/11/2018	Sampling Amec/Testing EA NLS	
	Electrical Conductivity at 25C		1230	uS/cm				
	Potassium, Dissolved		7.54	mg/l				
	Sodium, Dissolved		116	mg/l				
	Sulphate, Dissolved		402.00	mg/l				
	Total Oxidised Nitrogen		<0.2	mg/l				
	Chloride		79.80	mg/l				
	Fluoride		0.40	mg/l				
	Ammoniacal Nitrogen		0.49	mg/l				
	Total Organic Carbon		1.10	mg/l				
	pH		7.66	pH Units				
	Nitrate		0.01	mg/l				
	Ionic Balance		-0.60	%				
	Electrical Conductivity		999	µS/cm	Field Measurements			
	Temperature		12.90	deg C				
	Dissolved Oxygen		1.66	mg/l				
	pH		7.54	pH Units				
	Groundwater Level		20.76	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [3]	Uncertainty [3]
E06_03	Aluminium, Dissolved		<10	ug/l		30/08/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		1.09	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		340	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		134	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		1.20	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		88.40	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		11.80	ug/l				
	Nickel, Dissolved		2.78	ug/l				
	Selenium, Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		148	mg/l				
	Electrical Conductivity at 25C		1110	uS/cm				
	Potassium, Dissolved		9.00	mg/l				
	Sodium, Dissolved		28	mg/l				
	Sulphate, Dissolved		514	mg/l				
	Total Oxidised Nitrogen		<0.2	mg/l				
	Chloride		21.30	mg/l				
	Fluoride		0.42	mg/l				
	Ammoniacal Nitrogen		<0.03	mg/l				
	Total Organic Carbon		1.70	mg/l				
	pH		7.67	pH Units				
	Nitrate		0.01	mg/l				
	Ionic Balance		1.84	%				
	Electrical Conductivity		732	µS/cm	Field Measurements			
	Temperature		15.47	deg C				
	Dissolved Oxygen		6.05	mg/l				
	pH		8.04	pH Units				
	Groundwater Level		21.29	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [4]	Uncertainty [5]
	Aluminium, Dissolved		<10	ug/l				
	Antimony, Dissolved		1.00	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		329	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		135	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		1.00	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		70.00	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		14.20	ug/l				
	Nickel, Dissolved		2.60	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved		2.05	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
E08_03	Total Alkalinity as CaCO3		131	mg/l		15/11/2016	Sampling Amec/Testing EA NLS	
	Electrical Conductivity at 25C		1120	uS/cm				
	Potassium, Dissolved		8.57	mg/l				
	Sodium, Dissolved		28	mg/l				
	Sulphate, Dissolved		517	mg/l				
	Total Oxidised Nitrogen		<0.2	mg/l				
	Chloride		22.70	mg/l				
	Fluoride		0.47	mg/l				
	Ammoniacal Nitrogen		0.07	mg/l				
	Total Organic Carbon		1.60	mg/l				
	pH		7.74	pH Units				
	Nitrate		<0.004	mg/l				
	Ionic Balance		-0.33	%				
	Electrical Conductivity		941	µS/cm	Field Measurements			
	Temperature		13.10	deg C				
	Dissolved Oxygen		9.19	mg/l				
	pH		7.73	pH Units				
	Groundwater Level		21.36	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
E06_04	Aluminium, Dissolved		<10	ug/l		30/08/2018	Sampling Arrac/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		200	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		282	mg/l				
	Chromium, Dissolved		1.16	ug/l				
	Copper, Dissolved		3.55	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		66.10	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		8.41	ug/l				
	Nickel, Dissolved		3.66	ug/l				
	Selenium, Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		0	ug/l				
	Total Alkalinity as CaCO3		163	mg/l				
	Electrical Conductivity at 25C		1760	uS/cm				
	Potassium, Dissolved		57.40	mg/l				
	Sodium, Dissolved		54	mg/l				
	Sulphate, Dissolved		767	mg/l				
	Total Oxidised Nitrogen		1.46	mg/l				
	Chloride		114.00	mg/l				
	Fluoride		0.45	mg/l				
	Ammoniacal Nitrogen		<0.03	mg/l				
	Total Organic Carbon		2.70	mg/l				
	pH		7.56	pH Units				
	Nitrate		<0.004	mg/l				
	Ionic Balance		0.32	%				
	Electrical Conductivity		1282	uS/cm	Field Measurements			
	Temperature		13.67	deg C				
	Dissolved Oxygen		3.19	mg/l				
	pH		7.66	pH Units				
	Groundwater Level		22.15	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
E06_04	Aluminium, Dissolved		<30	ug/l		14/11/2018	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic Dissolved		<1	ug/l				
	Boron, Dissolved		213	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		309	mg/l				
	Chromium, Dissolved		0.64	ug/l				
	Copper, Dissolved		5.59	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		75.30	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		8.93	ug/l				
	Nickel, Dissolved		4.72	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		171	mg/l				
	Electrical Conductivity at 25C		1950	uS/cm				
	Potassium, Dissolved		60.40	mg/l				
	Sodium, Dissolved		59	mg/l				
	Sulphate, Dissolved		912	mg/l				
	Total Oxidised Nitrogen		<0.2	mg/l				
	Chloride		114.00	mg/l				
	Fluoride		0.30	mg/l				
	Ammoniacal Nitrogen		<0.03	mg/l				
	Total Organic Carbon		2.90	mg/l				
	pH		7.42	pH Units				
	Nitrate		<0.004	mg/l				
	Ionic Balance		0.21	%				
	Electrical Conductivity		851	µS/cm	Field Measurements			
	Temperature		12.10	deg C				
	Dissolved Oxygen		7.87	mg/l				
	pH		7.25	pH Units				
	Groundwater Level		22.25	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
E08_05	Aluminium, Dissolved		<10	ug/l		30/08/2018	Sampling Arrec/Testing EA NLS	
	Antimony, Dissolved		<1	ug/l				
	Arsenic Dissolved		<1	ug/l				
	Boron, Dissolved		304	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		194	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		1.33	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		76.30	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		4.37	ug/l				
	Nickel, Dissolved		1.35	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
	Total Alkalinity as CaCO3		184	mg/l				
	Electrical Conductivity at 25C		1310	uS/cm				
	Potassium, Dissolved		5.02	mg/l				
	Sodium, Dissolved		22	mg/l				
	Sulphate, Dissolved		891	mg/l				
	Total Oxidised Nitrogen		<0.2	mg/l				
	Chloride		22.40	mg/l				
	Fluoride		0.42	mg/l				
	Ammoniacal Nitrogen		<0.03	mg/l				
	Total Organic Carbon		<0.7	mg/l				
	pH		7.55	pH Units				
	Nitrate		0.06	mg/l				
	Ionic Balance		1.21	%				
	Electrical Conductivity		887	µS/cm	Field Measurements			
	Temperature		15.83	deg C				
	Dissolved Oxygen		2.20	mg/l				
	pH		7.52	pH Units				
	Groundwater Level		25.37	mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]		Test Method [2]	Sample Date and Time [3]	Accreditation/ Certification [4]	Uncertainty [5]
	Ammonia, Dissolved		<15	ug/l				
	Antimony, Dissolved		<1	ug/l				
	Arsenic, Dissolved		<1	ug/l				
	Boron, Dissolved		264	ug/l				
	Cadmium, Dissolved		<0.1	ug/l				
	Calcium, Dissolved		219	mg/l				
	Chromium, Dissolved		<0.5	ug/l				
	Copper, Dissolved		3.19	ug/l				
	Iron, Dissolved		<30	ug/l				
	Magnesium, Dissolved		83.00	mg/l				
	Manganese, Dissolved		<10	ug/l				
	Molybdenum, Dissolved		3.07	ug/l				
	Nickel, Dissolved		1.62	ug/l				
	Selenium Dissolved		<1	ug/l				
	Vanadium, Dissolved		<2	ug/l				
	Mercury, Dissolved		<0.01	ug/l				
E06_05	Total Alkalinity as CaCO3		182	mg/l		14/11/2018	Sampling Amec/Testing EA NLS	
	Electrical Conductivity at 25C		1360	uS/cm				
	Potassium, Dissolved		5.12	mg/l				
	Sodium, Dissolved		22	mg/l				
	Sulphate Dissolved		598	mg/l				
	Total Oxidised Nitrogen		0.38	mg/l				
	Chloride		21.50	mg/l				
	Fluoride		0.46	mg/l				
	Ammoniacal Nitrogen		0.09	mg/l				
	Total Organic Carbon		1.10	mg/l				
	pH		7.50	pH Units				
	Nitrate		<0.004	mg/l				
	Ionic Balance		0.16	%				
	Electrical Conductivity		851	µS/cm				
	Temperature		12.10	deg C				
	Dissolved Oxygen		7.87	mg/l	Field Measurements			
	pH		7.25	pH Units				
	Groundwater Level		25.57	mAOD				

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. colorimetry.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements, or flowtime proportional samples, the percentage of the process operating time covered by the monitoring is given.

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

[6] The emission limit values for all substances is expressed as a maximum individual value, unless otherwise stated.

Signed .... R T. Powell ..... Date 22/1/19

(authorised to sign as representative of the Operator)