Reporting of Emission to Groundwater for the period from 1st January 2023 to 30th June 2023.

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		<3.5 µg/l		01/03/2023	Sampling Station Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved		1.3 µg/l				
	Boron, Dissolved		720 µg/l				
	Cadmium, Dissolved		<0.02 µg/l				
	Calcium, Dissolved		263 mg/l				
	Chromium, Dissolved		4.3 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		37 mg/l				
	Manganese, Dissolved		2.5 µg/l				
	Molybdenum, Dissolved		1500 µg/l				
	Nickel, Dissolved		4.4 µg/l				
	Selenium Dissolved		16 µg/l				
	Vanadium, Dissolved		2.9 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		142 mg/l				
	Electrical Conductivity at 20C		2610 mS/cm				
	Potassium, Dissolved		41 mg/l				
	Sodium, Dissolved		290 mg/l				
	Sulphate, Dissolved		552 mg/l				
	Total Oxidised Nitrogen		13 mg/l				
	Chloride		500 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen		<0.41 mg/l				
	Total Organic Carbon		2.9 mg/l				
	Nitrate		12.5 mg/l				
	pH		8.0 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		4 µg/l		30/05/2023	Sampling Station Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved		1.5 µg/l				
	Boron, Dissolved		770 µg/l				
	Cadmium, Dissolved		<0.02 µg/l				
	Calcium, Dissolved		250 mg/l				
	Chromium, Dissolved		5.1 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		38 mg/l				
	Manganese, Dissolved		0.4 µg/l				
	Molybdenum, Dissolved		1600 µg/l				
	Nickel, Dissolved		4.9 µg/l				
	Selenium Dissolved		19 µg/l				
	Vanadium, Dissolved		3.1 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		195 mg/l				
	Electrical Conductivity at 20C		3780 mS/cm				
	Potassium, Dissolved		41 mg/l				
	Sodium, Dissolved		280 mg/l				
	Sulphate, Dissolved		535 mg/l				
	Total Oxidised Nitrogen		13 mg/l				
	Chloride		759 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen		3.80 mg/l				
	Total Organic Carbon		5.9 mg/l				
	Nitrate		26.8 mg/l				
	pH		7.9 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		13.0 µg/l		01/02/2023	Sampling Station Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved	50	2.1 µg/l				
	Boron, Dissolved	2000	920 µg/l				
	Cadmium, Dissolved	5	<0.02 µg/l				
	Calcium, Dissolved		261 mg/l				
	Chromium, Dissolved	50	10 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		35 mg/l				
	Manganese, Dissolved		25.0 µg/l				
	Molybdenum, Dissolved		1800 µg/l				
	Nickel, Dissolved		7.3 µg/l				
	Selenium Dissolved		26 µg/l				
	Vanadium, Dissolved	60	5.8 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		226 mg/l				
	Electrical Conductivity at 20C		2680 mS/cm				
	Potassium, Dissolved		43 mg/l				
	Sodium, Dissolved		310 mg/l				
	Sulphate, Dissolved	400	514 mg/l				
	Total Oxidised Nitrogen		24 mg/l				
	Chloride		499 mg/l				
	Fluoride		0.2 mg/l				
	Ammoniacal Nitrogen	0.6	1.83 mg/l				
	Total Organic Carbon		1.7 mg/l				
	Nitrate		22.7 mg/l				
	pH	<9	8.1 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		13.0 µg/l		01/03/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved	50	2.9 µg/l				
	Boron, Dissolved	2000	1200 µg/l				
	Cadmium, Dissolved	5	<0.02 µg/l				
	Calcium, Dissolved		388 mg/l				
	Chromium, Dissolved	50	16 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		42 mg/l				
	Manganese, Dissolved		43.0 µg/l				
	Molybdenum, Dissolved		2500 µg/l				
	Nickel, Dissolved		9.6 µg/l				
	Selenium Dissolved		37 µg/l				
	Vanadium, Dissolved	60	8.2 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		202 mg/l				
	Electrical Conductivity at 20C		3920 mS/cm				
	Potassium, Dissolved		54 mg/l				
	Sodium, Dissolved		450 mg/l				
	Sulphate, Dissolved	400	726 mg/l				
	Total Oxidised Nitrogen		33 mg/l				
	Chloride		817 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen	0.6	1.05 mg/l				
	Total Organic Carbon		2.2 mg/l				
	Nitrate		31.0 mg/l				
	pH	<9	7.8 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		6 µg/l		04/04/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		<1.4 µg/l				
	Arsenic Dissolved	50	2.6 µg/l				
	Boron, Dissolved	2000	1300 µg/l				
	Cadmium, Dissolved	5	<0.02 µg/l				
	Calcium, Dissolved		261 mg/l				
	Chromium, Dissolved	50	7 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		36 mg/l				
	Manganese, Dissolved		30.0 µg/l				
	Molybdenum, Dissolved		2000 µg/l				
	Nickel, Dissolved		6.5 µg/l				
	Selenium Dissolved		28 µg/l				
	Vanadium, Dissolved	60	3.9 µg/l				
	Mercury, Dissolved		<0.02 µg/l				
	Total Alkalinity as CaCO3		202 mg/l				
	Electrical Conductivity at 20C		2530 mS/cm				
	Potassium, Dissolved		41 mg/l				
	Sodium, Dissolved		290 mg/l				
	Sulphate, Dissolved	400	471 mg/l				
	Total Oxidised Nitrogen		19 mg/l				
	Chloride		817 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen	0.6	1.31 mg/l				
	Total Organic Carbon		1.8 mg/l				
	Nitrate		17.9 mg/l				
	pH	<9	8.0 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		12.0 µg/l		03/05/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved	50	2.5 µg/l				
	Boron, Dissolved	2000	1200 µg/l				
	Cadmium, Dissolved	5	<0.02 µg/l				
	Calcium, Dissolved		339 mg/l				
	Chromium, Dissolved	50	14 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		40 mg/l				
	Manganese, Dissolved		5.4 µg/l				
	Molybdenum, Dissolved		2500 µg/l				
	Nickel, Dissolved		9.1 µg/l				
	Selenium Dissolved		35 µg/l				
	Vanadium, Dissolved	60	6.2 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		154 mg/l				
	Electrical Conductivity at 20C		3320 mS/cm				
	Potassium, Dissolved		47 mg/l				
	Sodium, Dissolved		370 mg/l				
	Sulphate, Dissolved	400	655 mg/l				
	Total Oxidised Nitrogen		24 mg/l				
	Chloride		694 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen	0.6	2.10 mg/l				
	Total Organic Carbon		2.2 mg/l				
	Nitrate		24.3 mg/l				
	pH	<9	8.1 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		21 µg/l		30/05/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved	50	2.8 µg/l				
	Boron, Dissolved	2000	1300 µg/l				
	Cadmium, Dissolved	5	<0.02 µg/l				
	Calcium, Dissolved		369 mg/l				
	Chromium, Dissolved	50	15 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		45 mg/l				
	Manganese, Dissolved		53.0 µg/l				
	Molybdenum, Dissolved		2700 µg/l				
	Nickel, Dissolved		9.1 µg/l				
	Selenium Dissolved		39 µg/l				
	Vanadium, Dissolved	60	7.9 µg/l				
	Mercury, Dissolved		0.01 µg/l				
	Total Alkalinity as CaCO3		195 mg/l				
	Electrical Conductivity at 20C		3780 mS/cm				
	Potassium, Dissolved		53 mg/l				
	Sodium, Dissolved		460 mg/l				
	Sulphate, Dissolved	400	725 mg/l				
	Total Oxidised Nitrogen		28 mg/l				
	Chloride		759 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen	0.6	3.80 mg/l				
	Total Organic Carbon		2.9 mg/l				
	Nitrate		26.8 mg/l				
	pH	<9	7.9 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		22 µg/l		26/06/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved	50	3.0 µg/l				
	Boron, Dissolved	2000	1700 µg/l				
	Cadmium, Dissolved	5	<0.02 µg/l				
	Calcium, Dissolved		498 mg/l				
	Chromium, Dissolved	50	15 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		58 mg/l				
	Manganese, Dissolved		13.0 µg/l				
	Molybdenum, Dissolved		4200 µg/l				
	Nickel, Dissolved		10.0 µg/l				
	Selenium Dissolved		43 µg/l				
	Vanadium, Dissolved	60	9.6 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		144 mg/l				
	Electrical Conductivity at 20C		4890 mS/cm				
	Potassium, Dissolved		71 mg/l				
	Sodium, Dissolved		620 mg/l				
	Sulphate, Dissolved	400	985 mg/l				
	Total Oxidised Nitrogen		34 mg/l				
	Chloride		1200 mg/l				
	Fluoride		0.2 mg/l				
	Ammoniacal Nitrogen	0.6	4.25 mg/l				
	Total Organic Carbon		2.8 mg/l				
	Nitrate		31.9 mg/l				
	pH	<9	8.2 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		23 µg/l		01/02/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved		3.2 µg/l				
	Boron, Dissolved		1100 µg/l				
	Cadmium, Dissolved		<0.02 µg/l				
	Calcium, Dissolved		337 mg/l				
	Chromium, Dissolved		18 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		41 mg/l				
	Manganese, Dissolved		25.0 µg/l				
	Molybdenum, Dissolved		2200 µg/l				
	Nickel, Dissolved		8.5 µg/l				
	Selenium Dissolved		36 µg/l				
	Vanadium, Dissolved		9.2 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		227 mg/l				
	Electrical Conductivity at 20C		3110 mS/cm				
	Potassium, Dissolved		47 mg/l				
	Sodium, Dissolved		350 mg/l				
	Sulphate, Dissolved		587 mg/l				
	Total Oxidised Nitrogen		28 mg/l				
	Chloride		591 mg/l				
	Fluoride		0.2 mg/l				
	Ammoniacal Nitrogen		5.60 mg/l				
	Total Organic Carbon		1.3 mg/l				
	Nitrate		27.0 mg/l				
	pH		7.3 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		21 µg/l		01/03/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		1.80 µg/l				
	Arsenic Dissolved		3.4 µg/l				
	Boron, Dissolved		1400 µg/l				
	Cadmium, Dissolved		<0.02 µg/l				
	Calcium, Dissolved		422 mg/l				
	Chromium, Dissolved		20 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		45 mg/l				
	Manganese, Dissolved		36.0 µg/l				
	Molybdenum, Dissolved		3000 µg/l				
	Nickel, Dissolved		10.0 µg/l				
	Selenium Dissolved		43 µg/l				
	Vanadium, Dissolved		10.0 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		219 mg/l				
	Electrical Conductivity at 20C		4050 mS/cm				
	Potassium, Dissolved		53 mg/l				
	Sodium, Dissolved		470 mg/l				
	Sulphate, Dissolved		761 mg/l				
	Total Oxidised Nitrogen		34 mg/l				
	Chloride		835 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen		4.57 mg/l				
	Total Organic Carbon		1.1 mg/l				
	Nitrate		32.5 mg/l				
	pH		7.0 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		15 µg/l		04/04/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved		<2 µg/l				
	Boron, Dissolved		870 µg/l				
	Cadmium, Dissolved		<0.02 µg/l				
	Calcium, Dissolved		257 mg/l				
	Chromium, Dissolved		8 µg/l				
	Copper, Dissolved		<40 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		34 mg/l				
	Manganese, Dissolved		21.0 µg/l				
	Molybdenum, Dissolved		1900 µg/l				
	Nickel, Dissolved		<10 µg/l				
	Selenium Dissolved		25 µg/l				
	Vanadium, Dissolved		3.7 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		238 mg/l				
	Electrical Conductivity at 20C		2340 mS/cm				
	Potassium, Dissolved		37 mg/l				
	Sodium, Dissolved		260 mg/l				
	Sulphate, Dissolved		439 mg/l				
	Total Oxidised Nitrogen		23 mg/l				
	Chloride		398 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen		<0.41 mg/l				
	Total Organic Carbon		1.6 mg/l				
	Nitrate		19.8 mg/l				
	pH		7.5 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		17 µg/l		03/05/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved		2.2 µg/l				
	Boron, Dissolved		1200 µg/l				
	Cadmium, Dissolved		0.35 µg/l				
	Calcium, Dissolved		373 mg/l				
	Chromium, Dissolved		14.0 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		42 mg/l				
	Manganese, Dissolved		31.0 µg/l				
	Molybdenum, Dissolved		2500 µg/l				
	Nickel, Dissolved		8.5 µg/l				
	Selenium Dissolved		38 µg/l				
	Vanadium, Dissolved		6.6 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		218 mg/l				
	Electrical Conductivity at 20C		3650 mS/cm				
	Potassium, Dissolved		46 mg/l				
	Sodium, Dissolved		450 mg/l				
	Sulphate, Dissolved		638 mg/l				
	Total Oxidised Nitrogen		25 mg/l				
	Chloride		777 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen		2.63 mg/l				
	Total Organic Carbon		1.6 mg/l				
	Nitrate		25.3 mg/l				
	pH		7.2 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		25 µg/l		30/05/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		1.50 µg/l				
	Arsenic Dissolved		3.6 µg/l				
	Boron, Dissolved		1500 µg/l				
	Cadmium, Dissolved		<0.02 µg/l				
	Calcium, Dissolved		428 mg/l				
	Chromium, Dissolved		23 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		51 mg/l				
	Manganese, Dissolved		55.0 µg/l				
	Molybdenum, Dissolved		3500 µg/l				
	Nickel, Dissolved		10.0 µg/l				
	Selenium Dissolved		48 µg/l				
	Vanadium, Dissolved		11.0 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		202 mg/l				
	Electrical Conductivity at 20C		4120 mS/cm				
	Potassium, Dissolved		55 mg/l				
	Sodium, Dissolved		490 mg/l				
	Sulphate, Dissolved		866 mg/l				
	Total Oxidised Nitrogen		34 mg/l				
	Chloride		864 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen		8.64 mg/l				
	Total Organic Carbon		1.7 mg/l				
	Nitrate		32.9 mg/l				
	pH		7.2 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		22 µg/l		26/06/2023	Sampling Station / Testing ALS	
	Antimony, Dissolved		<1.3 µg/l				
	Arsenic Dissolved		3.0 µg/l				
	Boron, Dissolved		1700 µg/l				
	Cadmium, Dissolved		<0.02 µg/l				
	Calcium, Dissolved		498 mg/l				
	Chromium, Dissolved		15 µg/l				
	Copper, Dissolved		<4 µg/l				
	Iron, Dissolved		<20 µg/l				
	Magnesium, Dissolved		58 mg/l				
	Manganese, Dissolved		13.0 µg/l				
	Molybdenum, Dissolved		4200 µg/l				
	Nickel, Dissolved		10.0 µg/l				
	Selenium Dissolved		43 µg/l				
	Vanadium, Dissolved		9.6 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		175 mg/l				
	Electrical Conductivity at 20C		5400 mS/cm				
	Potassium, Dissolved		71 mg/l				
	Sodium, Dissolved		620 mg/l				
	Sulphate, Dissolved		1180 mg/l				
	Total Oxidised Nitrogen		46 mg/l				
	Chloride		97 mg/l				
	Fluoride		0.3 mg/l				
	Ammoniacal Nitrogen		14.40 mg/l				
	Total Organic Carbon		2.4 mg/l				
	Nitrate		43.3 mg/l				
	pH		7.6 pH Units				

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

[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

[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 percentage of 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.

Emission point	Substance/ Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]

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

Signed ..... Date 22/08/2023

(authorised to sign as representative of the Operator)