

Reporting of Emission to Surface Water for the period from ...1st July 2016...to.31st December 2016...

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 <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
SW12	Aluminium, Dissolved		<10 µg/l		01/09/2016	Sampling Anec/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		1.94 µg/l				
	Boron, Dissolved		466 µg/l				
	Cadmium, Dissolved		<0.1 µg/l				
	Calcium, Dissolved		217 mg/l				
	Chromium, Dissolved		4.41 µg/l				
	Copper, Dissolved		1.49 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		38.4 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		1130 µg/l				
	Nickel, Dissolved		4.91 µg/l				
	Selenium Dissolved		1.72 µg/l				
	Vanadium, Dissolved		2.24 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		97 mg/l				
	Electrical Conductivity at 20C		2740 mS/cm				
	Potassium, Dissolved		30.8 mg/l				
	Sodium, Dissolved		319 mg/l				
	Sulphate, Dissolved		455 mg/l				
	Total Oxidised Nitrogen		5.4 mg/l				
	Chloride		580 mg/l				
	Fluoride		0.231 mg/l				
	Ammoniacal Nitrogen		0.259 mg/l				
	Total Organic Carbon		2.1 mg/l				
	Nitrate		0.231 mg/l				
	pH		7.92 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
SW12	Aluminium, Dissolved		<10 µg/l		23/11/2016	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		<1 µg/l				
	Boron, Dissolved		567 µg/l				
	Cadmium, Dissolved		0.931 µg/l				
	Calcium, Dissolved		211 mg/l				
	Chromium, Dissolved		3.27 µg/l				
	Copper, Dissolved		1.22 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		44.5 mg/l				
	Manganese, Dissolved		24.8 µg/l				
	Molybdenum, Dissolved		1370 µg/l				
	Nickel, Dissolved		4.06 µg/l				
	Selenium Dissolved		1.6 µg/l				
	Vanadium, Dissolved		<2 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		43 mg/l				
	Electrical Conductivity at 20C		2980 mS/cm				
	Potassium, Dissolved		35.5 mg/l				
	Sodium, Dissolved		378 mg/l				
	Sulphate, Dissolved		514 mg/l				
	Total Oxidised Nitrogen		4.13 mg/l				
	Chloride		700 mg/l				
	Fluoride		0.216 mg/l				
	Ammoniacal Nitrogen		0.043 mg/l				
	Total Organic Carbon		4.9 mg/l				
	Nitrate		0.0901 mg/l				
	pH		8.41 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
Settlement Ponds	Aluminium, Dissolved		118 µg/l		01/07/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		1.92 µg/l				
	Arsenic Dissolved	50	18.2 µg/l				
	Boron, Dissolved	2000	771 µg/l				
	Cadmium, Dissolved	5	0.805 µg/l				
	Calcium, Dissolved		287 mg/l				
	Chromium, Dissolved	50	14.2 µg/l				
	Copper, Dissolved		6.05 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		46.8 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		2300 µg/l				
	Nickel, Dissolved		5.55 µg/l				
	Selenium Dissolved		5.15 µg/l				
	Vanadium, Dissolved	60	21.5 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		59 mg/l				
	Electrical Conductivity at 20C		4290 mS/cm				
	Potassium, Dissolved		50.6 mg/l				
	Sodium, Dissolved		548 mg/l				
	Sulphate, Dissolved	400	540* mg/l				
	Total Oxidised Nitrogen		18.4 mg/l				
	Chloride		1120 mg/l				
	Fluoride		0.189 mg/l				
	Ammoniacal Nitrogen	0.6	<0.500 mg/l				
	Total Organic Carbon		4.7 mg/l				
	Nitrate		18.1 mg/l				
	pH	<9	8.13 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
Settlement Ponds	Aluminium, Dissolved		24 µg/l		01/08/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved	50	<1 µg/l				
	Boron, Dissolved	2000	876 µg/l				
	Cadmium, Dissolved	5	2.04 µg/l				
	Calcium, Dissolved		388 mg/l				
	Chromium, Dissolved	50	24.9 µg/l				
	Copper, Dissolved		2.45 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		56.8 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		2870 µg/l				
	Nickel, Dissolved		12.4 µg/l				
	Selenium Dissolved		2.04 µg/l				
	Vanadium, Dissolved	60	4.99 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		92 mg/l				
	Electrical Conductivity at 20C		5210 mS/cm				
	Potassium, Dissolved		64.5 mg/l				
	Sodium, Dissolved		732 mg/l				
	Sulphate, Dissolved	400	622* mg/l				
	Total Oxidised Nitrogen		26.1 mg/l				
	Chloride		1370 mg/l				
	Fluoride		0.151 mg/l				
	Ammoniacal Nitrogen	0.6	<0.500 mg/l				
	Total Organic Carbon		3 mg/l				
	Nitrate		25.3 mg/l				
	pH	<9	7.99 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
Settlement Ponds	Aluminium, Dissolved		63 µg/l		01/09/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		1.46 µg/l				
	Arsenic Dissolved	50	3.58 µg/l				
	Boron, Dissolved	2000	880 µg/l				
	Cadmium, Dissolved	5	1.96 µg/l				
	Calcium, Dissolved		351 mg/l				
	Chromium, Dissolved	50	17.8 µg/l				
	Copper, Dissolved		2.7 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		54.8 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		2980 µg/l				
	Nickel, Dissolved		5.44 µg/l				
	Selenium Dissolved		2.47 µg/l				
	Vanadium, Dissolved	60	10.5 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		47 mg/l				
	Electrical Conductivity at 20C		5150 mS/cm				
	Potassium, Dissolved		64.6 mg/l				
	Sodium, Dissolved		722 mg/l				
	Sulphate, Dissolved	400	650* mg/l				
	Total Oxidised Nitrogen		23.2 mg/l				
	Chloride		1360 mg/l				
	Fluoride		0.162 mg/l				
	Ammoniacal Nitrogen	0.6	<0.500 mg/l				
	Total Organic Carbon		3.7 mg/l				
	Nitrate		22.6 mg/l				
	pH	<9	7.82 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
Settlement Ponds	Aluminium, Dissolved		20 µg/l		03/10/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved	50	<1 µg/l				
	Boron, Dissolved	2000	923 µg/l				
	Cadmium, Dissolved	5	0.911 µg/l				
	Calcium, Dissolved		387 mg/l				
	Chromium, Dissolved	50	23.2 µg/l				
	Copper, Dissolved		2.01 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		54.6 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		2790 µg/l				
	Nickel, Dissolved		11.1 µg/l				
	Selenium Dissolved		2 µg/l				
	Vanadium, Dissolved	60	6.53 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		98 mg/l				
	Electrical Conductivity at 20C		5380 mS/cm				
	Potassium, Dissolved		63.5 mg/l				
	Sodium, Dissolved		786 mg/l				
	Sulphate, Dissolved	400	689* mg/l				
	Total Oxidised Nitrogen		24.2 mg/l				
	Chloride		1380 mg/l				
	Fluoride		0.143 mg/l				
	Ammoniacal Nitrogen	0.6	0.68** mg/l				
	Total Organic Carbon		3.9 mg/l				
	Nitrate		22.8 mg/l				
	pH	<9	7.89 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
Settlement Ponds	Aluminium, Dissolved		11 µg/l		01/11/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved	50	1 µg/l				
	Boron, Dissolved	2000	975 µg/l				
	Cadmium, Dissolved	5	1.39 µg/l				
	Calcium, Dissolved		414 mg/l				
	Chromium, Dissolved	50	27 µg/l				
	Copper, Dissolved		9 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		53 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		3220 µg/l				
	Nickel, Dissolved		13 µg/l				
	Selenium Dissolved		2 µg/l				
	Vanadium, Dissolved	60	6 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		172 mg/l				
	Electrical Conductivity at 20C		5820 mS/cm				
	Potassium, Dissolved		70 mg/l				
	Sodium, Dissolved		797 mg/l				
	Sulphate, Dissolved	400	713* mg/l				
	Total Oxidised Nitrogen		28 mg/l				
	Chloride		1550 mg/l				
	Fluoride		0.165 mg/l				
	Ammoniacal Nitrogen	0.6	1.29** mg/l				
	Total Organic Carbon		3 mg/l				
	Nitrate		27 mg/l				
	pH	<9	8.03 pH Units				

Substance/ Emission point Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
Aluminium, Dissolved		13.1 µg/l		01/12/2016	Sampling Station/Testing EA NLS	
Antimony, Dissolved		<1 µg/l				
Arsenic Dissolved	50	3.62 µg/l				
Boron, Dissolved	2000	538 µg/l				
Cadmium, Dissolved	5	0.501 µg/l				
Calcium, Dissolved		234 mg/l				
Chromium, Dissolved	50	8.26 µg/l				
Copper, Dissolved		2.05 µg/l				
Iron, Dissolved		<30 µg/l				
Magnesium, Dissolved		41.3 mg/l				
Manganese, Dissolved		<10 µg/l				
Molybdenum, Dissolved		1240 µg/l				
Nickel, Dissolved		13.7 µg/l				
Selenium Dissolved		1.34 µg/l				
Vanadium, Dissolved	60	4.34 µg/l				
Mercury, Dissolved		<0.01 µg/l				
Total Alkalinity as CaCO3		252 mg/l				
Electrical Conductivity at 20C		2690 mS/cm				
Potassium, Dissolved		31.6 mg/l				
Sodium, Dissolved		315 mg/l				
Sulphate, Dissolved	400	500* mg/l				
Total Oxidised Nitrogen		13.1 mg/l				
Chloride		488 mg/l				
Fluoride		0.218 mg/l				
Ammoniacal Nitrogen	0.6	0.71** mg/l				
Total Organic Carbon		1.6 mg/l				
Nitrate		12.5 mg/l				
pH	<9	8.14 pH Units				

Settlement  
Ponds



Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
DP2	Aluminium, Dissolved		<10 µg/l		01/07/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		<1 µg/l				
	Boron, Dissolved		585 µg/l				
	Cadmium, Dissolved		0.753 µg/l				
	Calcium, Dissolved		337 mg/l				
	Chromium, Dissolved		2.82 µg/l				
	Copper, Dissolved		5.35 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		40.7 mg/l				
	Manganese, Dissolved		59.4 µg/l				
	Molybdenum, Dissolved		2260 µg/l				
	Nickel, Dissolved		17.7 µg/l				
	Selenium Dissolved		1.22 µg/l				
	Vanadium, Dissolved		<2 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		255 mg/l				
	Electrical Conductivity at 20C		4140 mS/cm				
	Potassium, Dissolved		38.2 mg/l				
	Sodium, Dissolved		537 mg/l				
	Sulphate, Dissolved		476 mg/l				
	Total Oxidised Nitrogen		27.9 mg/l				
	Chloride		962 mg/l				
	Fluoride		0.173 mg/l				
	Ammoniacal Nitrogen		1.96 mg/l				
	Total Organic Carbon		1 mg/l				
	Nitrate		26.3 mg/l				
	pH		7.22 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
DP2	Aluminium, Dissolved		18.6 µg/l		01/08/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		1.11 µg/l				
	Boron, Dissolved		727 µg/l				
	Cadmium, Dissolved		2.15 µg/l				
	Calcium, Dissolved		450 mg/l				
	Chromium, Dissolved		7.86 µg/l				
	Copper, Dissolved		2.15 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		46.8 mg/l				
	Manganese, Dissolved		77.3 µg/l				
	Molybdenum, Dissolved		3000 µg/l				
	Nickel, Dissolved		18.9 µg/l				
	Selenium Dissolved		1.33 µg/l				
	Vanadium, Dissolved		4.32 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		254 mg/l				
	Electrical Conductivity at 20C		5560 mS/cm				
	Potassium, Dissolved		57.5 mg/l				
	Sodium, Dissolved		788 mg/l				
	Sulphate, Dissolved		596 mg/l				
	Total Oxidised Nitrogen		35.7 mg/l				
	Chloride		1450 mg/l				
	Fluoride		0.166 mg/l				
	Ammoniacal Nitrogen		5.57 mg/l				
	Total Organic Carbon		1.30 mg/l				
	Nitrate		33.2 mg/l				
	pH		7.37 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
DP2	Aluminium, Dissolved		18.5 µg/l		01/09/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		1.19 µg/l				
	Boron, Dissolved		776 µg/l				
	Cadmium, Dissolved		1.99 µg/l				
	Calcium, Dissolved		408 mg/l				
	Chromium, Dissolved		6.34 µg/l				
	Copper, Dissolved		2.15 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		53.2 mg/l				
	Manganese, Dissolved		53.9 µg/l				
	Molybdenum, Dissolved		2870 µg/l				
	Nickel, Dissolved		19.9 µg/l				
	Selenium Dissolved		1.28 µg/l				
	Vanadium, Dissolved		3.66 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		261 mg/l				
	Electrical Conductivity at 20C		4860 mS/cm				
	Potassium, Dissolved		51 mg/l				
	Sodium, Dissolved		655 mg/l				
	Sulphate, Dissolved		615 mg/l				
	Total Oxidised Nitrogen		34.3 mg/l				
	Chloride		1170 mg/l				
	Fluoride		0.195 mg/l				
	Ammoniacal Nitrogen		2.18 mg/l				
	Total Organic Carbon		1.00 mg/l				
	Nitrate		31.6 mg/l				
	pH		7.18 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
DP2	Aluminium, Dissolved		12.5 µg/l		03/10/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		1.16 µg/l				
	Boron, Dissolved		722 µg/l				
	Cadmium, Dissolved		0.898 µg/l				
	Calcium, Dissolved		410 mg/l				
	Chromium, Dissolved		5.25 µg/l				
	Copper, Dissolved		2.16 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		48.5 mg/l				
	Manganese, Dissolved		67.8 µg/l				
	Molybdenum, Dissolved		2830 µg/l				
	Nickel, Dissolved		17.2 µg/l				
	Selenium Dissolved		1.25 µg/l				
	Vanadium, Dissolved		3.22 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		234 mg/l				
	Electrical Conductivity at 20C		5070 mS/cm				
	Potassium, Dissolved		50.8 mg/l				
	Sodium, Dissolved		705 mg/l				
	Sulphate, Dissolved		617 mg/l				
	Total Oxidised Nitrogen		33.1 mg/l				
	Chloride		1230 mg/l				
	Fluoride		0.186 mg/l				
	Ammoniacal Nitrogen		2.46 mg/l				
	Total Organic Carbon		1.20 mg/l				
	Nitrate		31.6 mg/l				
	pH		7.20 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
DP2	Aluminium, Dissolved		11.6 µg/l		01/11/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		<1 µg/l				
	Boron, Dissolved		711 µg/l				
	Cadmium, Dissolved		1.31 µg/l				
	Calcium, Dissolved		412 mg/l				
	Chromium, Dissolved		4.06 µg/l				
	Copper, Dissolved		7.39 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		45.2 mg/l				
	Manganese, Dissolved		68.6 µg/l				
	Molybdenum, Dissolved		2930 µg/l				
	Nickel, Dissolved		16 µg/l				
	Selenium Dissolved		1.3 µg/l				
	Vanadium, Dissolved		2.21 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO3		246 mg/l				
	Electrical Conductivity at 20C		5200 mS/cm				
	Potassium, Dissolved		54 mg/l				
	Sodium, Dissolved		687 mg/l				
	Sulphate, Dissolved		609 mg/l				
	Total Oxidised Nitrogen		29.4 mg/l				
	Chloride		1350 mg/l				
	Fluoride		0.174 mg/l				
	Ammoniacal Nitrogen		2.63 mg/l				
	Total Organic Carbon		1.10 mg/l				
	Nitrate		28 mg/l				
	pH		7.33 pH Units				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
DP2	Aluminium, Dissolved		11.3 µg/l		01/12/2016	Sampling Station/Testing EA NLS	
	Antimony, Dissolved		<1 µg/l				
	Arsenic Dissolved		<1 µg/l				
	Boron, Dissolved		398 µg/l				
	Cadmium, Dissolved		0.382 µg/l				
	Calcium, Dissolved		204 mg/l				
	Chromium, Dissolved		4.1 µg/l				
	Copper, Dissolved		2.65 µg/l				
	Iron, Dissolved		<30 µg/l				
	Magnesium, Dissolved		37.1 mg/l				
	Manganese, Dissolved		<10 µg/l				
	Molybdenum, Dissolved		961 µg/l				
	Nickel, Dissolved		14.3 µg/l				
	Selenium Dissolved		<1 µg/l				
	Vanadium, Dissolved		<2 µg/l				
	Mercury, Dissolved		<0.01 µg/l				
	Total Alkalinity as CaCO <sub>3</sub>		273 mg/l				
	Electrical Conductivity at 20C		2180 mS/cm				
	Potassium, Dissolved		24.3 mg/l				
	Sodium, Dissolved		219 mg/l				
	Sulphate, Dissolved		366 mg/l				
	Total Oxidised Nitrogen		13.4 mg/l				
	Chloride		365 mg/l				
	Fluoride		0.232 mg/l				
	Ammoniacal Nitrogen		1.69 mg/l				
	Total Organic Carbon		1.20 mg/l				
	Nitrate		12.6 mg/l				
	pH		7.49 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 as

[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

[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.

\*Settlement Pond Sulphate exceeding Compliance Limit. Reported to NRW and under investigation as part of HRA review.

\*Settlement Pond Ammoniacal-Nitrogen exceeding Compliance Limit after Dec 2016 result (3 consecutive sampling events). Under investigation as part of HRA review.

Signed A. Zuber Date 27/01/2017  
(authorised to sign as representative of the Operator)

Reporting of Emission to Groundwater for the period from ...1st July 2016...to...31st December 2016...

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 <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E09_01A	Aluminium, Dissolved		<10 ug/l		01/09/2016	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		120 mg/l				
	Chromium, Dissolved		<0.5 ug/l				
	Copper, Dissolved		<1 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		5.3 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		604 uS/cm				
	Potassium, Dissolved		1.45 mg/l				
	Sodium, Dissolved		14.9 mg/l				
	Sulphate, Dissolved		26.4 mg/l				
	Total Oxidised Nitrogen		2.91 mg/l				
	Chloride		28 mg/l				
	Fluoride		0.104 mg/l				
	Ammoniacal Nitrogen		0.03 mg/l				
	Total Organic Carbon		1.6 mg/l				
	pH		7.2 pH Units				
	Nitrate		<2.91 mg/l				
	Ionic Balance		-1.09 %				
	Electrical Conductivity		597 uS/cm				
	Temperature		12.60 deg C				
	Dissolved Oxygen		2.04 mg/l	Field Measurements			
	pH		6.96 pH Units				
	Groundwater Level		26.03 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E09_01A	Aluminium, Dissolved		<10 ug/l		23/11/2016	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		135 mg/l				
	Chromium, Dissolved		<0.5 ug/l				
	Copper, Dissolved		<1 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		452 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		285 mg/l				
	Electrical Conductivity at 25C		671 uS/cm				
	Potassium, Dissolved		0.827 mg/l				
	Sodium, Dissolved		13.1 mg/l				
	Sulphate, Dissolved		28.4 mg/l				
	Total Oxidised Nitrogen		7.44 mg/l				
	Chloride		30.3 mg/l				
	Fluoride		0.075 mg/l				
	Ammoniacal Nitrogen		<0.03 mg/l				
	Total Organic Carbon		1 mg/l				
	pH		7.15 pH Units				
	Nitrate		<7.44 mg/l				
	Ionic Balance		0.15 %				
	Electrical Conductivity		558 uS/cm				
	Temperature		11.50 deg C				
	Dissolved Oxygen		6.53 mg/l				
	pH		6.79 pH Units				
	Groundwater Level		28.88 mAOD				



Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E09_01B	Aluminium, Dissolved		<10 ug/l		01/09/2016	Sampling Annex/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		121 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 ug/l				
	Selenium, Dissolved		<1 ug/l				
	Vanadium, Dissolved		<2 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		288 mg/l				
	Electrical Conductivity at 25C		612 uS/cm				
	Potassium, Dissolved		1.32 mg/l				
	Sodium, Dissolved		15 mg/l				
	Sulphate, Dissolved		28.9 mg/l				
	Total Oxidised Nitrogen		2.8 mg/l				
	Chloride		28.7 mg/l				
	Fluoride		0.094 mg/l				
	Ammoniacal Nitrogen		0.03 mg/l				
	Total Organic Carbon		1.4 mg/l				
	pH		7.21 pH Units				
	Nitrate		<2.8 mg/l				
	Ionic Balance		+1.03 %				
	Electrical Conductivity		600 µS/cm				
	Temperature		12.80 deg C				
	Dissolved Oxygen		2.26 mg/l				
	pH		6.95 pH Units				
	Groundwater Level		24.74 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E09_01B	Aluminium, Dissolved		<10 ug/l		23/11/2016	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		131 mg/l				
	Chromium, Dissolved		<0.5 ug/l				
	Copper, Dissolved		<1 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		5.74 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		287 mg/l				
	Electrical Conductivity at 25C		659 uS/cm				
	Potassium, Dissolved		1.08 mg/l				
	Sodium, Dissolved		13.8 mg/l				
	Sulphate, Dissolved		28.7 mg/l				
	Total Oxidised Nitrogen		6.28 mg/l				
	Chloride		27.5 mg/l				
	Fluoride		0.085 mg/l				
	Ammoniacal Nitrogen		<0.03 mg/l				
	Total Organic Carbon		1 mg/l				
	pH		7.17 pH Units				
	Nitrate		<6.28 mg/l				
	Ionic Balance		0.503 %				
	Electrical Conductivity		548 uS/cm				
	Temperature		11.50 deg C				
	Dissolved Oxygen		5.57 mg/l				
	pH		6.83 pH Units				
	Groundwater Level		27.77 mAOD	Field Measurements			

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E09_02A	Aluminium, Dissolved		<10 ug/l		01/09/2016	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1 ug/l				
	Arsenic Dissolved		2.17 ug/l				
	Boron, Dissolved		<100 ug/l				
	Cadmium, Dissolved		<0.1 ug/l				
	Calcium, Dissolved		149 mg/l				
	Chromium, Dissolved		<0.5 ug/l				
	Copper, Dissolved		<1 ug/l				
	Iron, Dissolved		3140 ug/l				
	Magnesium, Dissolved		25.4 mg/l				
	Manganese, Dissolved		128 ug/l				
	Molybdenum, Dissolved		<3 ug/l				
	Nickel, Dissolved		1.34 ug/l				
	Selenium Dissolved		<1 ug/l				
	Vanadium, Dissolved		<2 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		435 mg/l				
	Electrical Conductivity at 25C		862 uS/cm				
	Potassium, Dissolved		1.94 mg/l				
	Sodium, Dissolved		20.4 mg/l				
	Sulphate, Dissolved		55.6 mg/l				
	Total Oxidised Nitrogen		<0.2 mg/l				
	Chloride		39.5 mg/l				
	Fluoride		0.164 mg/l				
	Ammoniacal Nitrogen		3.96 mg/l				
	Total Organic Carbon		3.9 mg/l				
	pH		6.94 pH Units				
	Nitrate		<0.2 mg/l				
	Ionic Balance		-2.37 %				
	Electrical Conductivity		873 µS/cm				
	Temperature		13.40 deg C				
	Dissolved Oxygen		1.36 mg/l	Field Measurements			
	pH		6.77 pH Units				
	Groundwater Level		27.49 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E09_02A	Aluminium, Dissolved		<10 ug/l		23/11/2016	Sampling Arned/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		254 mg/l				
	Chromium, Dissolved		<0.5 ug/l				
	Copper, Dissolved		1.3 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		12.4 mg/l				
	Manganese, Dissolved		20.9 ug/l				
	Molybdenum, Dissolved		<3 ug/l				
	Nickel, Dissolved		4.6 ug/l				
	Selenium Dissolved		<1 ug/l				
	Vanadium, Dissolved		<2 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		581 mg/l				
	Electrical Conductivity at 25C		1190 uS/cm				
	Potassium, Dissolved		0.815 mg/l				
	Sodium, Dissolved		23.7 mg/l				
	Sulphate, Dissolved		47.1 mg/l				
	Total Oxidised Nitrogen		15.5 mg/l				
	Chloride		38.3 mg/l				
	Fluoride		0.07 mg/l				
	Ammoniacal Nitrogen		0.09 mg/l				
	Total Organic Carbon		6.6 mg/l				
	pH		6.68 pH Units				
Nitrate		15.4 mg/l					
Ionic Balance		-0.134 %					
Electrical Conductivity		1012 uS/cm					
Temperature		12.00 deg C					
Dissolved Oxygen		2.51 mg/l					
pH		6.46 pH Units					
Groundwater Level		29.49 mAOD					

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>		
E09_02B	Aluminium, Dissolved		<10 ug/l		01/09/2016	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		216 mg/l						
	Chromium, Dissolved		<0.5 ug/l						
	Copper, Dissolved		1.24 ug/l						
	Iron, Dissolved		<30 ug/l						
	Magnesium, Dissolved		16.1 mg/l						
	Manganese, Dissolved		19.8 ug/l						
	Molybdenum, Dissolved		<3 ug/l						
	Nickel, Dissolved		1.48 ug/l						
	Selenium Dissolved		<1 ug/l						
	Vanadium, Dissolved		<2 ug/l						
	Mercury, Dissolved		<0.01 ug/l						
	Total Alkalinity as CaCO3		389 mg/l						
	Electrical Conductivity at 25C		1090 uS/cm						
	Potassium, Dissolved		1.17 mg/l						
	Sodium, Dissolved		26.2 mg/l						
	Sulphate, Dissolved		100 mg/l						
	Total Oxidised Nitrogen		28 mg/l						
	Chloride		48.6 mg/l						
	Fluoride		0.088 mg/l						
	Ammoniacal Nitrogen		0.03 mg/l						
	Total Organic Carbon		4.1 mg/l						
	pH		6.98 pH Units						
	Nitrate		27.1 mg/l						
	Ionic Balance		0.164 %						
	Electrical Conductivity		1084 µS/cm	Field Measurements					
	Temperature		12.30 deg C						
	Dissolved Oxygen		0.53 mg/l						
	pH		6.76 pH Units						
	Groundwater Level		27.49 mAOD						

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E09_02B	Aluminium, Dissolved		<10 ug/l		23/11/2016	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		247 mg/l				
	Chromium, Dissolved		<0.5 ug/l				
	Copper, Dissolved		3.46 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		11.1 mg/l				
	Manganese, Dissolved		<10 ug/l				
	Molybdenum, Dissolved		<3 ug/l				
	Nickel, Dissolved		2.34 ug/l				
	Selenium, Dissolved		<1 ug/l				
	Vanadium, Dissolved		<2 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		463 mg/l				
	Electrical Conductivity at 25C		1210 uS/cm				
	Potassium, Dissolved		0.724 mg/l				
	Sodium, Dissolved		22.7 mg/l				
	Sulphate, Dissolved		62 mg/l				
	Total Oxidised Nitrogen		29.4 mg/l				
	Chloride		40.3 mg/l				
	Fluoride		0.065 mg/l				
	Ammoniacal Nitrogen		<0.03 mg/l				
	Total Organic Carbon		5.4 mg/l				
	pH		6.76 pH Units				
	Nitrate		29.4 mg/l				
	Ionic Balance		1.64 %				
	Electrical Conductivity		1029 uS/cm				
	Temperature		11.80 deg C				
	Dissolved Oxygen		6.72 mg/l	Field Measurements			
	pH		6.57 pH Units				
	Groundwater Level		31.67 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E05_03	Aluminium, Dissolved	50	<10 ug/l		01/09/2016	Sampling Artec/Testing EA NLS	
	Antimony, Dissolved		<1 ug/l				
	Arsenic, Dissolved	10	<1 ug/l				
	Boron, Dissolved	2800	1580 ug/l				
	Cadmium, Dissolved	0.4	1.34* ug/l				
	Calcium, Dissolved		391 mg/l				
	Chromium, Dissolved	50	0.762 ug/l				
	Copper, Dissolved		1.95 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		262 mg/l				
	Manganese, Dissolved		56.2 ug/l				
	Molybdenum, Dissolved	50	1810** ug/l				
	Nickel, Dissolved		3.85 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		176 mg/l				
	Electrical Conductivity at 25C		6230 uS/cm				
	Potassium, Dissolved		11.1 mg/l				
	Sodium, Dissolved		648 mg/l				
	Sulphate, Dissolved	400	563*** mg/l				
	Total Oxidised Nitrogen		7.2 mg/l				
	Chloride		1840 mg/l				
	Fluoride		0.907 mg/l				
	Ammoniacal Nitrogen	1.6	1.06 mg/l				
	Total Organic Carbon		1.7 mg/l				
	pH		7.33 pH Units				
	Nitrate		7.18 mg/l				
	Ionic Balance		1.39 %				
	Electrical Conductivity		6142 µS/cm				
	Temperature		13.30 deg C				
	Dissolved Oxygen		0.70 mg/l	Field Measurements			
	pH		6.90 pH Units				
	Groundwater Level		18.82 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E05_03	Aluminium, Dissolved	50	<10 ug/l		23/11/2016	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1 ug/l				
	Arsenic, Dissolved	10	<1 ug/l				
	Boron, Dissolved	2800	1630 ug/l				
	Cadmium, Dissolved	0.4	<0.1 ug/l				
	Calcium, Dissolved		425 mg/l				
	Chromium, Dissolved	50	0.708 ug/l				
	Copper, Dissolved		1.33 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		267 mg/l				
	Manganese, Dissolved		34.5 ug/l				
	Molybdenum, Dissolved	50	1880** 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		176 mg/l				
	Electrical Conductivity at 25C		6770 uS/cm				
	Potassium, Dissolved		11.3 mg/l				
	Sodium, Dissolved		666 mg/l				
	Sulphate, Dissolved	400	562*** mg/l				
	Total Oxidised Nitrogen		10.1 mg/l				
	Chloride		2010 mg/l				
	Fluoride		0.779 mg/l				
	Ammoniacal Nitrogen	1.6	1 mg/l				
	Total Organic Carbon		<0.7 mg/l				
	pH		7.25 pH Units				
	Nitrate		<10.1 mg/l				
	Ionic Balance		-0.118 %				
	Electrical Conductivity		5678 uS/cm				
	Temperature		11.60 deg C				
	Dissolved Oxygen		4.71 mg/l	Field Measurements			
	pH		7.06 pH Units				
	Groundwater Level		18.62 mAOD				



Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
EO5_04	Aluminium, Dissolved	50	<10 ug/l		01/09/2016	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1 ug/l				
	Arsenic, Dissolved	10	1.57 ug/l				
	Boron, Dissolved	2800	2140 ug/l				
	Cadmium, Dissolved	0.4	<0.1 ug/l				
	Calcium, Dissolved		8.65 mg/l				
	Chromium, Dissolved	50	<0.5 ug/l				
	Copper, Dissolved		<1 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		6.32 mg/l				
	Manganese, Dissolved		<10 ug/l				
	Molybdenum, Dissolved	50	22.60 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		367 mg/l				
	Electrical Conductivity at 25C		993 uS/cm				
	Potassium, Dissolved		2.93 mg/l				
	Sodium, Dissolved		235 mg/l				
	Sulphate, Dissolved	400	81.80 mg/l				
	Total Oxidised Nitrogen		<0.2 mg/l				
	Chloride		69.60 mg/l				
	Fluoride		5.05 mg/l				
	Ammoniacal Nitrogen	1.6	0.40 mg/l				
	Total Organic Carbon		0.70 mg/l				
	pH		8.38 pH Units				
	Nitrate		<0.151 mg/l				
	Ionic Balance		1.10 %				
	Electrical Conductivity		1025 µS/cm				
	Temperature		14.80 deg C				
	Dissolved Oxygen		0.80 mg/l				
	pH		8.28 pH Units				
	Groundwater Level		18.46 mAOD	Field Measurements			

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E05_04	Aluminium, Dissolved	50	<10 ug/l		23/11/2016	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1 ug/l				
	Arsenic, Dissolved	10	1.17 ug/l				
	Boron, Dissolved	2800	2090 ug/l				
	Cadmium, Dissolved	0.4	<0.1 ug/l				
	Calcium, Dissolved		9.21 mg/l				
	Chromium, Dissolved	50	<0.5 ug/l				
	Copper, Dissolved		<1 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		6.86 mg/l				
	Manganese, Dissolved		<10 ug/l				
	Molybdenum, Dissolved	50	40.70 ug/l				
	Nickel, Dissolved		<1 ug/l				
	Selenium, Dissolved		<1 ug/l				
	Vanadium, Dissolved	20	2.71 ug/l				
	Mercury, Dissolved	0.03	<0.01 ug/l				
	Total Alkalinity as CaCO3		366 mg/l				
	Electrical Conductivity at 25C		1080 uS/cm				
	Potassium, Dissolved		2.94 mg/l				
	Sodium, Dissolved		239 mg/l				
	Suphate, Dissolved	400	89.50 mg/l				
	Total Oxidised Nitrogen		<0.2 mg/l				
	Chloride		93.60 mg/l				
	Fluoride		5.17 mg/l				
	Ammoniacal Nitrogen	1.6	0.54 mg/l				
	Total Organic Carbon		<0.7 mg/l				
	pH		8.82 pH Units				
	Nitrate		<0.2 mg/l				
	Ionic Balance		-1.39 %				
	Electrical Conductivity		899 uS/cm				
	Temperature		11.40 deg C				
	Dissolved Oxygen		5.72 mg/l	Field Measurements			
	pH		8.24 pH Units				
	Groundwater Level		19.00 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E06_01	Aluminium, Dissolved	50	15.90 ug/l		01/09/2016	Sampling Arneq/Testing EA NLS	
	Antimony, Dissolved		<1 ug/l				
	Arsenic Dissolved	10	1.76 ug/l				
	Boron, Dissolved	2800	1760 ug/l				
	Cadmium, Dissolved	0.4	<0.1 ug/l				
	Calcium, Dissolved		6.00 mg/l				
	Chromium, Dissolved	50	<0.5 ug/l				
	Copper, Dissolved		<1 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		4.36 mg/l				
	Manganese, Dissolved		14.00 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		372 mg/l				
	Electrical Conductivity at 25C		855 uS/cm				
	Potassium, Dissolved		2.37 mg/l				
	Sodium, Dissolved		208 mg/l				
	Sulphate, Dissolved	400	79.40 mg/l				
	Total Oxidised Nitrogen		<0.2 mg/l				
	Chloride		31.60 mg/l				
	Fluoride		2.75 mg/l				
	Ammoniacal Nitrogen	1.6	0.44 mg/l				
	Total Organic Carbon		0.90 mg/l				
	pH		8.62 pH Units				
	Nitrate		<0.194 mg/l				
	Ionic Balance		-1.09 %				
	Electrical Conductivity		876 uS/cm				
	Temperature		13.70 deg C				
	Dissolved Oxygen		2.05 mg/l	Field Measurements			
	pH		8.58 pH Units				
	Groundwater Level		18.59 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E06_01	Aluminium, Dissolved	50	10.90 ug/l		23/11/2016	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		1.11 ug/l				
	Arsenic Dissolved	10	1.75 ug/l				
	Boron, Dissolved	2800	1510 ug/l				
	Cadmium, Dissolved	0.4	<0.1 ug/l				
	Calcium, Dissolved		26.40 mg/l				
	Chromium, Dissolved	50	<0.5 ug/l				
	Copper, Dissolved		<1 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		16.30 mg/l				
	Manganese, Dissolved		45.00 ug/l				
	Molybdenum, Dissolved	50	66.9*** ug/l				
	Nickel, Dissolved		<1 ug/l				
	Selenium Dissolved		<1 ug/l				
	Vanadium, Dissolved	20	5.06 ug/l				
	Mercury, Dissolved	0.03	<0.01 ug/l				
	Total Alkalinity as CaCO3		306 mg/l				
	Electrical Conductivity at 25C		1100 uS/cm				
	Potassium, Dissolved		4.20 mg/l				
	Sodium, Dissolved		213 mg/l				
	Sulphate, Dissolved	400	219.00 mg/l				
	Total Oxidised Nitrogen		1.19 mg/l				
	Chloride		56.20 mg/l				
	Fluoride		2.14 mg/l				
	Ammoniacal Nitrogen	1.6	0.66 mg/l				
	Total Organic Carbon		0.80 mg/l				
	pH		8.47 pH Units				
Nitrate		1.18 mg/l					
Ionic Balance		-1.28 %					
Electrical Conductivity		946 uS/cm					
Temperature		12.20 deg C	Field Measurements				
Dissolved Oxygen		4.79 mg/l					
pH		7.99 pH Units					
Groundwater Level		18.81 mAOD					

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E06_02	Aluminium, Dissolved		<10 ug/l		02/09/2016	Sampling Artec/Testing EA NLS	
	Antimony, Dissolved		2.23 ug/l				
	Arsenic Dissolved		1.71 ug/l				
	Boron, Dissolved		1200 ug/l				
	Cadmium, Dissolved		<0.1 ug/l				
	Calcium, Dissolved		50.70 mg/l				
	Chromium, Dissolved		<0.5 ug/l				
	Copper, Dissolved		<1 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		37.80 mg/l				
	Manganese, Dissolved		<10 ug/l				
	Molybdenum, Dissolved		9.36 ug/l				
	Nickel, Dissolved		1.18 ug/l				
	Selenium Dissolved		<1 ug/l				
	Vanadium, Dissolved		8.28 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		258 mg/l				
	Electrical Conductivity at 25C		975 uS/cm				
	Potassium, Dissolved		6.29 mg/l				
	Sodium, Dissolved		120 mg/l				
	Sulphate, Dissolved		245.00 mg/l				
	Total Oxidised Nitrogen		0.94 mg/l				
	Chloride		33.60 mg/l				
	Fluoride		0.57 mg/l				
	Ammoniacal Nitrogen		0.40 mg/l				
	Total Organic Carbon		0.80 mg/l				
	pH		7.79 pH Units				
Nitrate		0.82 mg/l					
Ionic Balance		-1.12 %					
Electrical Conductivity		955 µS/cm					
Temperature		13.30 deg C	Field Measurements				
Dissolved Oxygen		4.71 mg/l					
pH		7.64 pH Units					
Groundwater Level		20.61 mAOD					

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_02	Aluminium, Dissolved		<10 ug/l		23/11/2016	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		1.01 ug/l				
	Arsenic Dissolved		1.34 ug/l				
	Boron, Dissolved		557 ug/l				
	Cadmium, Dissolved		<0.1 ug/l				
	Calcium, Dissolved		96.20 mg/l				
	Chromium, Dissolved		<0.5 ug/l				
	Copper, Dissolved		<1 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		35.40 mg/l				
	Manganese, Dissolved		<10 ug/l				
	Molybdenum, Dissolved		19.90 ug/l				
	Nickel, Dissolved		1.26 ug/l				
	Selenium Dissolved		<1 ug/l				
	Vanadium, Dissolved		4.90 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		171 mg/l				
	Electrical Conductivity at 25C		923 uS/cm				
	Potassium, Dissolved		5.91 mg/l				
	Sodium, Dissolved		66 mg/l				
	Sulphate, Dissolved		315.00 mg/l				
	Total Oxidised Nitrogen		1.20 mg/l				
	Chloride		26.20 mg/l				
	Fluoride		0.42 mg/l				
	Ammoniacal Nitrogen		0.18 mg/l				
	Total Organic Carbon		0.80 mg/l				
	pH		7.77 pH Units				
	Nitrate		1.18 mg/l				
	Ionic Balance		-0.36 %				
	Electrical Conductivity		799 uS/cm				
	Temperature		12.60 deg C				
	Dissolved Oxygen		6.80 mg/l				
	pH		7.25 pH Units				
	Groundwater Level		20.76 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(3)</sup>	Sample Date and Times <sup>(2)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E06_03	Aluminium, Dissolved		<10 ug/l		01/09/2016	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		1.55 ug/l				
	Arsenic, Dissolved		<1 ug/l				
	Boron, Dissolved		485 ug/l				
	Cadmium, Dissolved		<0.1 ug/l				
	Calcium, Dissolved		140 mg/l				
	Chromium, Dissolved		<0.5 ug/l				
	Copper, Dissolved		1.00 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		83.20 mg/l				
	Manganese, Dissolved		<10 ug/l				
	Molybdenum, Dissolved		12.10 ug/l				
	Nickel, Dissolved		2.12 ug/l				
	Selenium, Dissolved		<1 ug/l				
	Vanadium, Dissolved		<2 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		162 mg/l				
	Electrical Conductivity at 25C		1220 uS/cm				
	Potassium, Dissolved		8.21 mg/l				
	Sodium, Dissolved		52 mg/l				
	Sulphate, Dissolved		593 mg/l				
	Total Oxidised Nitrogen		<0.2 mg/l				
	Chloride		31.90 mg/l				
	Fluoride		0.49 mg/l				
	Ammoniacal Nitrogen		0.27 mg/l				
	Total Organic Carbon		1.00 mg/l				
	pH		7.79 pH Units				
	Nitrate		<0.178 mg/l				
	Ionic Balance		-0.55 %				
	Electrical Conductivity		1281 uS/cm				
	Temperature		14.80 deg C				
	Dissolved Oxygen		8.14 mg/l	Field Measurements			
	pH		7.94 pH Units				
	Groundwater Level		21.34 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>		
E06_03	Aluminium, Dissolved		<10 ug/l		24/11/2016	Sampling Amec/Testing EA NLS			
	Antimony, Dissolved		<1 ug/l						
	Arsenic, Dissolved		<1 ug/l						
	Boron, Dissolved		301 ug/l						
	Cadmium, Dissolved		<0.1 ug/l						
	Calcium, Dissolved		108 mg/l						
	Chromium, Dissolved		<0.5 ug/l						
	Copper, Dissolved		1.29 ug/l						
	Iron, Dissolved		<30 ug/l						
	Magnesium, Dissolved		58.70 mg/l						
	Manganese, Dissolved		<10 ug/l						
	Molybdenum, Dissolved		14.40 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		115 mg/l						
	Electrical Conductivity at 25C		961 uS/cm						
	Potassium, Dissolved		7.92 mg/l						
	Sodium, Dissolved		28 mg/l						
	Sulphate, Dissolved		393 mg/l						
	Total Oxidised Nitrogen		0.22 mg/l						
	Chloride		24.90 mg/l						
	Fluoride		0.44 mg/l						
	Ammoniacal Nitrogen		0.04 mg/l						
	Total Organic Carbon		104.00 mg/l						
	pH		7.77 pH Units						
	Nitrate		<0.22 mg/l						
	Ionic Balance		1.89 %						
	Electrical Conductivity		822 µS/cm						
	Temperature		12.10 deg C	Field Measurements					
	Dissolved Oxygen		6.96 mg/l						
	pH		7.50 pH Units						
	Groundwater Level		21.50 mAOD						



Substance/ Emission point Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[3]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
Aluminium, Dissolved		<10 ug/l		01/09/2016	Sampling Amec/Testing EA NLS	
Antimony, Dissolved		<1 ug/l				
Arsenic Dissolved		<1 ug/l				
Boron, Dissolved		245 ug/l				
Cadmium, Dissolved		<0.1 ug/l				
Calcium, Dissolved		262 mg/l				
Chromium, Dissolved		<0.5 ug/l				
Copper, Dissolved		3.69 ug/l				
Iron, Dissolved		<30 ug/l				
Magnesium, Dissolved		70.00 mg/l				
Manganese, Dissolved		<10 ug/l				
Molybdenum, Dissolved		7.34 ug/l				
Nickel, Dissolved		4.39 ug/l				
Selenium Dissolved		<1 ug/l				
Vanadium, Dissolved		<2 ug/l				
Mercury, Dissolved		<0.01 ug/l				
Total Alkalinity as CaCO3		204 mg/l				
Electrical Conductivity at 25C		1750 uS/cm				
Potassium, Dissolved		61.40 mg/l				
Sodium, Dissolved		66 mg/l				
Sulphate, Dissolved		714 mg/l				
Total Oxidised Nitrogen		0.23 mg/l				
Chloride		154.00 mg/l				
Fluoride		0.45 mg/l				
Ammoniacal Nitrogen		<0.03 mg/l				
Total Organic Carbon		2.80 mg/l				
pH		7.36 pH Units				
Nitrate		<0.23 mg/l				
Ionic Balance		0.01 %				
Electrical Conductivity		1776 µS/cm				
Temperature		13.90 deg C				
Dissolved Oxygen		3.74 mg/l				
pH		7.16 pH Units				
Groundwater Level		21.93 mAOD				
			Field Measurements			

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_04	Aluminium, Dissolved		<10 ug/l		24/11/2016	Sampling Amec/Testing EA NLS	
	Antimony, Dissolved		<1 ug/l				
	Arsenic, Dissolved		<1 ug/l				
	Boron, Dissolved		178 ug/l				
	Cadmium, Dissolved		<0.1 ug/l				
	Calcium, Dissolved		261 mg/l				
	Chromium, Dissolved		2.40 ug/l				
	Copper, Dissolved		3.46 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		62.60 mg/l				
	Manganese, Dissolved		<10 ug/l				
	Molybdenum, Dissolved		8.81 ug/l				
	Nickel, Dissolved		4.28 ug/l				
	Selenium, Dissolved		<1 ug/l				
	Vanadium, Dissolved		<2 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		188 mg/l				
	Electrical Conductivity at 25C		1880 uS/cm				
	Potassium, Dissolved		73.10 mg/l				
	Sodium, Dissolved		66 mg/l				
	Sulphate, Dissolved		705 mg/l				
	Total Oxidised Nitrogen		3.18 mg/l				
	Chloride		159.00 mg/l				
	Fluoride		0.45 mg/l				
	Ammoniacal Nitrogen		<0.03 mg/l				
	Total Organic Carbon		2.70 mg/l				
	pH		7.39 pH Units				
	Nitrate		<3.18 mg/l				
	Ionic Balance		0.44 %				
	Electrical Conductivity		1609 µS/cm				
	Temperature		12.20 deg C				
	Dissolved Oxygen		5.10 mg/l				
	pH		7.28 pH Units				
	Groundwater Level		22.36 mAOD				

Emission Point	Substance/ Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
E06_05	Aluminium, Dissolved		<10 ug/l		01/09/2016	Sampling Area/Testing EA NLS	
	Antimony, Dissolved		<1 ug/l				
	Arsenic, Dissolved		<1 ug/l				
	Boron, Dissolved		303 ug/l				
	Cadmium, Dissolved		<0.1 ug/l				
	Calcium, Dissolved		183 mg/l				
	Chromium, Dissolved		<0.5 ug/l				
	Copper, Dissolved		1.32 ug/l				
	Iron, Dissolved		<30 ug/l				
	Magnesium, Dissolved		75.00 mg/l				
	Manganese, Dissolved		12 ug/l				
	Molybdenum, Dissolved		4.84 ug/l				
	Nickel, Dissolved		1.50 ug/l				
	Selenium, Dissolved		<1 ug/l				
	Vanadium, Dissolved		<2 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		186 mg/l				
	Electrical Conductivity at 25C		1180 uS/cm				
	Potassium, Dissolved		4.48 mg/l				
	Sodium, Dissolved		22 mg/l				
	Sulphate, Dissolved		575 mg/l				
	Total Oxidised Nitrogen		<0.2 mg/l				
	Chloride		26.90 mg/l				
	Fluoride		0.45 mg/l				
	Ammoniacal Nitrogen		0.11 mg/l				
	Total Organic Carbon		0.80 mg/l				
	pH		7.44 pH Units				
	Nitrate		<0.195 mg/l				
	Ionic Balance		-0.16 %				
	Electrical Conductivity		1230 uS/cm				
	Temperature		14.90 deg C				
	Dissolved Oxygen		3.40 mg/l	Field Measurements			
	pH		7.39 pH Units				
	Groundwater Level		25.00 mAOD				

Substance/ Emission point Parameter	Emission Limit Value	Result <sup>(1)</sup>	Test Method <sup>(2)</sup>	Sample Date and Times <sup>(3)</sup>	Accreditation/ Certification <sup>(4)</sup>	Uncertainty <sup>(5)</sup>
Aluminium, Dissolved		<10 ug/l				
Antimony, Dissolved		<1 ug/l				
Arsenic, Dissolved		<1 ug/l				
Boron, Dissolved		195 ug/l				
Cadmium, Dissolved		<0.1 ug/l				
Calcium, Dissolved		193 mg/l				
Chromium, Dissolved		<0.5 ug/l				
Copper, Dissolved		1.35 ug/l				
Iron, Dissolved		<30 ug/l				
Magnesium, Dissolved		74.10 mg/l				
Manganese, Dissolved		<10 ug/l				
Molybdenum, Dissolved		5.11 ug/l				
Nickel, Dissolved		1.04 ug/l				
Selenium, Dissolved		<1 ug/l				
Vanadium, Dissolved		<2 ug/l				
Mercury, Dissolved		<0.01 ug/l				
Total Alkalinity as CaCO3		162 mg/l				
Electrical Conductivity at 25C		1280 uS/cm		24/11/2016	Sampling Amec/Testing EA NLS	
Potassium, Dissolved		4.87 mg/l				
Sodium, Dissolved		20 mg/l				
Sulphate, Dissolved		598 mg/l				
Total Oxidised Nitrogen		<0.2 mg/l				
Chloride		25.90 mg/l				
Fluoride		0.39 mg/l				
Ammoniacal Nitrogen		0.05 mg/l				
Total Organic Carbon		<0.7 mg/l				
pH		7.54 pH Units				
Nitrate		<0.2 mg/l				
Ionic Balance		0.95 %				
Electrical Conductivity		1097 uS/cm				
Temperature		12.40 deg C				
Dissolved Oxygen		3.58 mg/l				
pH		7.35 pH Units				
Groundwater Level		25.69 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 flow/time 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.

**\*E05\_03 Cd result 01/09/2016 not exceedance of Compliance limit as criteria is 3 consecutive sampling events against 1 elevated sampling event.**

**\*\*E05\_03 Mo exceeded Compliance limit since June 2014 (14 elevated sampling events in total). Discussed with NRW and under investigation.**

**\*\*\*E05\_03 S04 result 01/09/2016 & 23/11/2016 not exceedance of Compliance limit as criteria is 3 consecutive sampling events against 2 consecutive elevated sampling events.**

**\*\*\*\*E06\_01 Mo result 23/11/2016 not exceedance of Compliance limit as criteria is 3 consecutive sampling events against 1 elevated sampling event.**

Signed A. Jander Date 27/10/2017  
(authorised to sign as representative of the Operator)