



Eraring Power Station - EPA Licence 1429

Rocky Point Rd, Dora Creek NSW 2264

Environmental Monitoring Data January 2018



Unit 1 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 11 - Air emissions monitoring, Boiler 1 stack discharge to air
Unit out of service 1-4 and 31 January 2018

	NOX			Particulates			SOX		
	ppm (7% O ₂)			mg/m ³			ppm (7% O ₂)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 January	-	-	-	-	-	-	-	-	-
2 January	-	-	-	-	-	-	-	-	-
3 January	-	-	-	-	-	-	-	-	-
4 January	190	235	124	11.8	20.3	8.2	172	185	143
5 January	183	222	116	10.0	15.6	7.2	197	205	188
6 January	173	214	109	8.8	16.3	5.4	165	197	151
7 January	174	216	135	10.0	24.3	4.3	173	187	156
8 January	156	177	115	8.4	13.4	5.2	150	166	143
9 January	143	165	110	14.2	19.4	5.6	183	206	156
10 January	161	186	101	17.9	24.4	15.4	169	196	152
11 January	179	214	120	16.5	25.4	14.0	163	176	147
12 January	187	215	121	13.9	22.5	11.5	162	171	154
13 January	150	190	120	15.2	18.7	12.5	171	182	160
14 January	144	168	117	17.4	22.9	15.0	156	170	140
15 January	157	188	113	18.1	25.8	15.9	152	162	138
16 January	155	172	129	17.2	24.4	15.1	163	176	148
17 January	158	172	130	16.9	24.7	14.3	170	177	162
18 January	157	184	119	16.6	24.7	13.5	171	182	153
19 January	168	192	131	15.5	24.4	12.5	159	174	152
20 January	167	190	132	16.3	23.6	13.2	155	172	145
21 January	166	192	122	17.1	24.8	14.8	154	166	147
22 January	161	187	123	15.3	24.1	11.3	159	171	145
23 January	156	176	121	14.3	21.7	11.3	160	170	153
24 January	141	216	117	18.6	23.8	12.7	161	173	145
25 January	150	176	123	15.8	23.7	12.7	182	199	164
26 January	145	177	108	17.6	25.2	14.2	191	210	170
27 January	157	192	115	17.4	24.1	14.4	185	204	165
28 January	147	180	112	18.9	24.3	14.9	187	201	162
29 January	161	185	108	17.0	24.3	14.3	185	194	176
30 January	143	147	139	24.5	35.2	13.8	189	193	185
31 January	-	-	-	-	-	-	-	-	-

Unit 2 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 12 - Air emissions monitoring, Boiler 2 stack discharge to air

	NOX			Particulates			SOX		
	ppm (7% O ₂)			mg/m ³			ppm (7% O ₂)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 January	154	168	132	16.9	18.4	15.3	221	255	198
2 January	153	175	120	16.1	19.4	14.3	200	214	184
3 January	179	210	120	16.3	19.4	14.8	179	192	171
4 January	174	209	122	12.4	17.9	9.1	182	207	139
5 January	159	182	115	12.5	18.5	9.2	220	233	130
6 January	154	185	104	12.2	19.0	8.1	197	228	126
7 January	152	183	127	16.4	48.0	7.4	206	233	189
8 January	154	190	107	12.2	17.4	8.3	186	213	166
9 January	143	176	114	12.5	17.8	9.1	221	253	194
10 January	153	203	104	15.4	17.5	10.7	224	247	198
11 January	162	183	118	12.5	18.0	10.3	198	208	174
12 January	186	208	138	10.6	16.0	8.6	203	212	189
13 January	146	184	115	13.2	15.8	10.5	209	222	131
14 January	150	197	118	14.7	16.9	12.3	189	200	178
15 January	164	198	109	14.7	18.0	11.8	181	192	166
16 January	154	186	125	15.0	18.1	12.5	194	206	176
17 January	137	214	107	15.3	17.7	10.7	203	217	186
18 January	165	199	110	13.1	19.1	10.8	202	232	184
19 January	167	194	114	12.1	19.5	9.0	198	220	188
20 January	160	182	130	13.0	18.3	10.0	189	200	168
21 January	147	164	108	13.4	19.3	10.5	194	203	172
22 January	159	177	121	12.1	18.2	9.0	188	200	163
23 January	154	176	116	11.4	17.4	9.0	198	206	183
24 January	148	179	116	14.0	18.2	10.0	205	215	191
25 January	160	192	119	13.1	17.7	10.3	208	221	182
26 January	153	188	124	14.2	18.1	10.9	233	253	210
27 January	165	218	121	14.5	18.2	11.0	222	241	207
28 January	165	213	122	15.6	18.8	12.4	227	244	212
29 January	180	222	115	14.0	18.1	11.4	226	253	199
30 January	173	203	130	15.9	20.3	11.5	245	261	225
31 January	164	195	116	17.3	19.7	12.5	237	247	223

Unit 3 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 13 - Air emissions monitoring, Boiler 3 stack discharge to air

	NOX			Particulates			SOX		
	ppm (7% O ₂)			mg/m ³			ppm (7% O ₂)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 January	138	182	110	13.4	16.8	9.1	204	214	191
2 January	169	199	109	11.0	12.7	9.1	197	212	180
3 January	150	179	116	11.7	13.8	10.2	177	199	117
4 January	176	213	111	11.0	13.8	9.7	177	203	114
5 January	167	199	112	11.7	15.3	9.7	209	233	123
6 January	162	208	110	11.0	14.8	8.7	187	215	131
7 January	131	196	110	13.7	49.2	9.8	189	201	116
8 January	131	159	113	10.9	12.9	8.8	183	192	150
9 January	160	183	116	10.0	12.5	7.9	206	231	188
10 January	158	177	114	11.2	12.5	10.4	204	223	189
11 January	168	206	110	10.3	14.1	8.9	188	199	163
12 January	177	196	116	9.6	12.5	7.9	196	204	181
13 January	165	192	135	10.3	12.0	9.0	205	216	184
14 January	137	157	114	11.2	12.5	10.0	181	189	167
15 January	171	211	112	11.9	14.6	10.5	179	183	165
16 January	164	194	117	12.1	14.6	10.9	188	203	161
17 January	154	180	110	11.9	15.1	10.5	199	211	175
18 January	162	194	101	11.2	15.1	8.9	198	210	188
19 January	162	197	103	10.4	15.1	7.9	192	214	180
20 January	164	195	108	10.9	14.6	9.0	181	194	161
21 January	152	171	109	10.6	14.2	8.6	184	194	161
22 January	167	202	107	9.8	15.9	7.4	184	204	167
23 January	168	196	106	9.4	13.0	7.4	186	195	177
24 January	164	193	104	10.1	13.7	8.0	189	201	180
25 January	152	193	110	10.5	14.1	8.0	198	214	187
26 January	148	190	110	10.7	13.6	7.9	214	221	207
27 January	144	203	108	11.2	14.1	9.0	206	221	199
28 January	140	167	107	11.4	13.2	10.6	207	224	194
29 January	154	181	113	10.7	14.2	9.5	202	224	187
30 January	164	196	111	9.7	13.5	7.9	213	232	195
31 January	161	188	107	11.5	14.7	9.4	219	228	200

Unit 4 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 14 - Air emissions monitoring, Boiler 4 stack discharge to air.
SOX unit out of service 15-17 January 2018

	NOX			Particulates			SOX		
	ppm (7% O ₂)			mg/m ³			ppm (7% O ₂)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 January	162	225	134	13.0	14.7	8.5	216	230	201
2 January	193	215	154	19.4	23.9	14.5	208	226	195
3 January	186	207	149	21.6	23.0	16.7	189	207	155
4 January	187	204	147	11.1	13.2	9.2	191	210	173
5 January	183	208	146	11.8	13.3	9.7	237	249	216
6 January	177	212	129	11.5	14.9	7.6	219	239	200
7 January	163	203	135	13.0	29.2	9.6	202	224	126
8 January	169	195	136	11.6	13.4	7.9	183	200	109
9 January	166	191	129	13.2	20.7	8.1	212	234	192
10 January	178	202	143	16.3	18.8	14.7	205	223	190
11 January	188	220	140	14.4	18.3	12.1	192	206	184
12 January	191	209	168	12.9	17.0	10.7	201	211	191
13 January	164	188	133	14.7	16.9	11.6	204	215	190
14 January	146	164	134	16.3	17.9	15.9	182	189	176
15 January	166	195	134	16.8	18.9	14.2	-	-	-
16 January	168	195	129	17.4	19.3	16.2	-	-	-
17 January	168	185	134	17.2	19.3	15.7	-	-	-
18 January	191	216	142	16.0	20.0	13.3	201	212	190
19 January	191	215	140	14.8	19.5	11.2	195	202	189
20 January	186	220	142	15.5	18.4	12.7	185	200	176
21 January	176	197	141	14.8	18.4	11.2	189	201	179
22 January	184	214	154	13.0	18.0	9.6	190	205	175
23 January	172	196	145	13.5	17.4	10.7	200	213	186
24 January	175	211	136	14.2	18.0	10.7	203	222	183
25 January	170	202	136	14.7	18.0	11.1	206	217	191
26 January	175	213	145	15.5	18.3	11.5	226	236	213
27 January	190	252	151	15.8	18.8	13.1	216	230	202
28 January	193	227	158	16.5	18.3	14.8	221	237	201
29 January	209	240	153	15.9	18.3	12.7	225	238	214
30 January	204	229	158	13.7	17.4	11.1	238	250	224
31 January	188	242	126	16.3	18.9	13.3	214	241	135

Unit 1 Boiler Emission Test Results

EPA Identification no. 11 - Air emissions monitoring, Boiler 1 stack discharge to air

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.019	mg/m ³	0.2	15/08/2017
Carbon Dioxide (Wet)	12.6	%	-	15/08/2017
Carbon Monoxide	14	ppm	-	15/08/2017
Chlorine	0.083	mg/m ³	200	15/08/2017
Copper	0.0014	mg/m ³	-	15/08/2017
Dry Gas Density	1.35	kg/m ³	-	15/08/2017
Fluoride As HF - Total	8.7	mg/m ³	50	15/08/2017
Hazardous Substances (Metals) - Total	0.030	mg/m ³	1	15/08/2017
Hydrogen Chloride	2.6	mg/m ³	100	15/08/2017
Mercury	<0.000096	mg/m ³	0.2	15/08/2017
Moisture	5.3	%	-	15/08/2017
Particulates - Total	1.9	mg/m ³	50	15/08/2017
Stack Gas Molecular Weight	30.3	kg/k-mole	-	15/08/2017
Temperature	107	degC	-	15/08/2017
Velocity	15	m/sec	-	15/08/2017
Volatile Organic Compounds (VOC) - Total	<0.08	ppm	-	15/08/2017
Volumetric Flow Rate (Dry At STP)	343	m ³ /sec	-	15/08/2017

Unit 2 Boiler Emission Test Results

EPA Identification no. 12 - Air emissions monitoring, Boiler 2 stack discharge to air

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.0050	mg/m ³	0.2	20/12/2016
Carbon Dioxide (Wet)	11.9	%	-	20/12/2016
Carbon Monoxide	3	ppm	-	20/12/2016
Chlorine	0.61	mg/m ³	200	20/12/2016
Copper	0.0020	mg/m ³	-	20/12/2016
Dry Gas Density	1.4	kg/m ³	-	20/12/2016
Fluoride As HF - Total	7.5	mg/m ³	50	20/12/2016
Hazardous Substances (Metals) - Total	0.009	mg/m ³	1	20/12/2016
Hydrogen Chloride	0.23	mg/m ³	100	20/12/2016
Mercury	0.0003	mg/m ³	0.2	20/12/2016
Moisture	4.0	%	-	20/12/2016
Particulates - Total	15	mg/m ³	50	20/12/2016
Stack Gas Molecular Weight	30	kg/k-mole	-	20/12/2016
Temperature	110	degC	-	20/12/2016
Velocity	12.0	m/sec	-	20/12/2016
Volatile Organic Compounds (VOC) - Total	0.07	ppm	-	20/12/2016
Volumetric Flow Rate (Dry At STP)	299	m ³ /sec	-	20/12/2016

Unit 3 Boiler Emission Test Results

EPA Identification no. 13 - Air emissions monitoring, Boiler 3 stack discharge to air

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.0040	mg/m ³	0.2	02/05/2017
Carbon Dioxide (Wet)	13.1	%	-	02/05/2017
Carbon Monoxide	12	ppm	-	02/05/2017
Chlorine	0.037	mg/m ³	200	02/05/2017
Copper	0.0015	mg/m ³	-	02/05/2017
Dry Gas Density	1.4	kg/m ³	-	02/05/2017
Fluoride As HF - Total	13	mg/m ³	50	02/05/2017
Hazardous Substances (Metals) - Total	0.009	mg/m ³	1	02/05/2017
Hydrogen Chloride	4.0	mg/m ³	100	02/05/2017
Mercury	0.00010	mg/m ³	0.2	02/05/2017
Moisture	5.8	%	-	02/05/2017
Particulates - Total	0.07	mg/m ³	50	02/05/2017
Stack Gas Molecular Weight	30	kg/k-mole	-	02/05/2017
Temperature	118	degC	-	02/05/2017
Velocity	16.0	m/sec	-	02/05/2017
Volatile Organic Compounds (VOC) - Total	0.08	ppm	-	02/05/2017
Volumetric Flow Rate (Dry At STP)	396	m ³ /sec	-	02/05/2017

Unit 4 Boiler Emission Test Results

EPA Identification no. 14 - Air emissions monitoring, Boiler 4 stack discharge to air

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.0028	mg/m ³	0.2	24-25/10/2017
Carbon Dioxide (Wet)	12.3	%	-	24-25/10/2017
Carbon Monoxide	10	ppm	-	24-25/10/2017
Chlorine	0.051	mg/m ³	200	24-25/10/2017
Copper	0.00055	mg/m ³	-	24-25/10/2017
Dry Gas Density	1.36	kg/m ³	-	24-25/10/2017
Fluoride As HF - Total	5.8	mg/m ³	50	24-25/10/2017
Hazardous Substances (Metals) - Total	0.0075	mg/m ³	1	24-25/10/2017
Hydrogen Chloride	1.8	mg/m ³	100	24-25/10/2017
Mercury	0.000091	mg/m ³	0.2	24-25/10/2017
Moisture	5.1	%	-	24-25/10/2017
Particulates - Total	1.2	mg/m ³	50	24-25/10/2017
Stack Gas Molecular Weight	30.4	kg/k-mole	-	24-25/10/2017
Temperature	121	degC	-	24-25/10/2017
Velocity	15.5	m/sec	-	24-25/10/2017
Volatile Organic Compounds (VOC) - Total	<0.07	ppm	-	24-25/10/2017
Volumetric Flow Rate (Dry At STP)	376	m ³ /sec	-	25-25/10/2017

Eraring Depositional Dust Gauges

*EPA Identification no. 18, 25, 26 & 27 - Depositional dust monitoring within 1km
of the coal handling operations*

	Deposited Matter		
	g/m ² /month		
	Ash	Combustible	Insolubles
E2	0.6	0.7	1.3
E4	1.1	0.8	1.9
E6	0.9	1.0	1.9
U6	0.4	0.5	0.9

Water Quality - Lake Monitoring LM10

EPA Identification no. 4 - The waters of Lake Macquarie located midway between cooling water inlet and Hungary Point

	Temp	pH	Salinity	Dissolved Oxygen		Secchi
	degC		ppt	%	mg/L	m
Depth/Air	24.97					
010cm	27.53	7.75	36.0	93.0	5.72	1.75
050cm	27.84	8.35	36.0	101.7	6.39	
100cm	27.92	8.31	36.0	110.3	6.90	
150cm	27.95	8.30	36.0	89.1	5.52	
200cm	27.96	8.29	36.0	89.3	5.55	
250cm	27.97	8.31	36.0	87.0	5.41	
Bottom	27.96	8.32	36.1	78.4	4.79	

Water Quality - Lake Monitoring LM12

EPA Identification no. 6 - The waters of Lake Macquarie located at the Eraring/Vales Point mixing zone off Fishery Point

	Temp	pH	Salinity	Dissolved Oxygen		Secchi
	degC		ppt	%	mg/L	m
Depth/Air	24.04					
010cm	27.06	8.34	36.4	128.4	8.01	2.25
050cm	27.52	8.32	36.4	115.5	7.25	
100cm	27.53	8.28	36.5	110.3	6.88	
150cm	27.55	8.28	36.4	106.7	6.69	
200cm	27.61	8.29	36.4	109.9	6.87	
250cm	27.60	8.29	36.5	104.3	6.56	
300cm	27.61	8.30	36.4	100.9	6.33	
350cm	27.60	8.31	36.4	101.8	6.38	
400cm	27.60	8.31	36.4	100.6	6.29	
450cm	27.61	8.31	36.5	95.7	6.03	
500cm	27.60	8.30	36.4	99.4	6.21	
550cm	27.61	8.30	36.4	97.7	6.10	
600cm	27.61	8.30	36.4	101.3	6.16	
650cm	27.62	8.34	36.4	98.6	6.13	
700cm	27.61	8.30	36.4	96.9	6.04	
Bottom	27.59	8.30	36.5	84.7	5.18	

Water Quality - Lake Monitoring LM4

EPA Identification no. 7 - The northern waters of Lake Macquarie east off Lake Macquarie Yacht Club

	Temp	pH	Salinity	Dissolved Oxygen		Secchi
	degC		ppt	%	mg/L	m
Depth/Air	22.27					
010cm	24.88	7.93	35.1	102.7	6.78	3.75
050cm	25.01	8.01	35.1	104.9	6.91	
100cm	25.05	8.07	35.1	104.1	6.81	
150cm	25.05	8.09	35.1	103.5	6.75	
200cm	25.06	8.11	35.1	104.8	6.90	
250cm	25.06	8.12	35.1	99.2	6.44	
300cm	25.07	8.11	35.1	106.4	7.00	
350cm	25.07	8.12	35.1	106.4	7.01	
400cm	25.07	8.12	35.1	105.4	6.86	
450cm	25.07	8.13	35.1	103.2	6.77	
500cm	25.06	8.12	35.1	109.7	7.21	
550cm	25.05	8.12	35.1	107.7	7.10	
600cm	25.00	8.13	35.1	105.6	6.96	
650cm	24.97	8.13	35.1	105.2	6.92	
700cm	24.99	8.13	35.1	101.2	6.68	
750cm	24.88	8.14	35.0	102.7	6.79	
800cm	24.70	8.15	35.0	101.9	6.76	
850cm	24.30	8.14	35.0	99.3	6.64	
900cm	23.92	8.14	34.9	95.2	6.38	
Bottom	23.50	8.14	34.9	89.7	6.01	

Water Quality - Lake Monitoring LM7

EPA Identification no. 5 - The waters of Lake Macquarie located off old Wangi power station inlet point in Myuna Bay

	Temp	pH	Salinity	Dissolved Oxygen		Secchi
	degC		ppt	%	mg/L	m
Depth/Air	24.87					
010cm	29.95	8.47	22.4	162.6	10.96	1.75
050cm	30.24	8.17	36.3	124.1	7.46	
100cm	30.28	8.18	36.4	120.3	7.25	
150cm	30.29	8.17	36.4	119.5	7.18	
200cm	30.29	8.20	36.4	121.1	7.28	
250cm	30.29	8.20	36.3	118.0	7.03	
300cm	30.28	8.20	36.3	119.3	7.19	
350cm	30.28	8.21	36.3	120.0	7.24	
400cm	30.29	8.21	36.3	121.1	7.26	
450cm	30.27	8.21	36.3	119.5	7.14	
500cm	30.14	8.20	36.3	116.2	6.99	
550cm	28.36	8.17	36.1	94.3	5.88	
600cm	27.85	8.21	36.0	86.7	5.48	
Bottom	27.76	8.19	36.0	77.0	4.85	

Eraring Ash Dam Effluent Quality Monitoring

EPA Identification no. 10 - Discharge point below siphon pond weir at Ash Dam

<u>Name</u>		<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	<0.05	ug/L	-	03/01/2018
Copper	1.9	ug/L	-	03/01/2018
Iron	4	ug/L	-	03/01/2018
Lead	<0.1	ug/L	-	03/01/2018
Manganese	4.3	ug/L	-	03/01/2018
Nitrite and Nitrate as N	2670	ug/L	-	03/01/2018
Phosphorus Reactive as P - Total	754	ug/L	-	03/01/2018
Phosphorus as P - Total	785	ug/L	-	03/01/2018
Selenium	9.6	ug/L	-	03/01/2018
Suspended Solids (SS)	3000	ug/L	-	03/01/2018
Zinc	<1	ug/L	-	03/01/2018
pH	8.61		-	03/01/2018

Eraring Cooling Water Inlet Canal

EPA Identification no. 8 - Inlet canal of the cooling water intake from Lake Macquarie

<u>Name</u>		<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Copper	2.3	ug/L	-	03/01/2018
Iron	6	ug/L	-	03/01/2018
Selenium	2	ug/L	-	03/01/2018
Temperature – Average	27.6	deg C	-	Jan 2018
Temperature – Minimum	17.4	deg C	-	Jan 2018
Temperature - Maximum	29.9	deg C	-	Jan 2018

Eraring Cooling Water Outlet Canal

EPA Identification no. 1 - Cooling water outlet canal to Myuna Bay

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Copper	3.1	ug/L	5	03/01/2018
Iron	14	ug/L	300	03/01/2018
Selenium	1	ug/L	2	03/01/2018
Temperature – Average	33.8	deg C	37.5	Jan 2018
Temperature – Minimum	28.9	deg C	37.5	Jan 2018
Temperature - Maximum	36.5	deg C	37.5	Jan 2018
Maximum Daily Discharge from Ash Dam	38.15	ML	150	Jan 2018
Monthly Discharge from Ash Dam	309.0	ML	-	Jan 2018

Emergency Discharge – Toe Drain Pond

EPA Identification no. 17 - Emergency discharge to toe drain collection pond

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Nitrite and Nitrate as N	239	ug/L	-	03/01/2018
Phosphorus as P – Total	49	ug/L	-	03/01/2018
pH	6.96		-	03/01/2018