



Eraring Power Station - EPA Licence 1429

Rocky Point Rd, Dora Creek NSW 2264

Environmental Monitoring Data

July 2017



Unit 1 Boiler Continuous Emission Monitoring Summary

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

Unit out of service 29th – 31st July

NOX instrument out of service 8th July

SOX instrument out of service 8th-9th July

	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 - July	163	183	138	7.5	9.5	5.9	168	179	144
2 - July	167	192	148	9.3	15.9	7.0	159	174	146
3 - July	164	181	116	9.5	19.8	5.8	181	223	152
4 - July	162	188	137	9.3	14.3	7.3	182	218	158
5 - July	168	186	139	11.9	20.1	3.4	200	250	161
6 - July	158	186	135	15.1	21.6	9.2	238	255	205
7 - July	168	182	140	6.8	22.4	2.6	215	238	149
8 - July				3.4	3.8	2.7			
9 - July	194	214	136	4.9	9.0	2.7			
10 - July	185	213	143	4.1	7.5	2.9	178	206	170
11 - July	159	181	140	5.4	11.3	2.9	180	202	161
12 - July	157	179	131	4.3	9.3	3.3	198	219	161
13 - July	156	177	140	5.1	11.1	2.7	175	190	165
14 - July	145	165	120	7.3	18.5	3.3	199	234	169
15 - July	150	167	115	3.9	6.9	2.7	170	200	159
16 - July	155	181	130	4.5	8.6	3.3	145	159	137
17 - July	157	175	127	6.3	17.6	2.5	149	158	140
18 - July	164	189	127	5.7	16.7	2.0	147	172	138
19 - July	148	169	131	4.1	8.3	2.4	191	219	166
20 - July	147	166	128	4.3	9.3	2.4	180	213	168
21 - July	152	177	126	4.8	8.6	3.4	169	212	144
22 - July	156	204	128	5.8	9.7	3.5	198	218	169
23 - July	154	235	119	5.7	9.8	3.1	170	205	147
24 - July	187	237	121	4.1	6.7	3.1	181	198	171
25 - July	175	217	114	4.9	9.3	3.4	203	219	189
26 - July	169	200	124	4.1	8.2	2.5	212	231	175
27 - July	197	214	162	4.4	5.8	3.7	173	205	160
28 - July	168	203	122	5.3	9.5	2.6	200	225	183
29 - July									
30 - July									
31 - July									

Unit 2 Boiler Continuous Emission Monitoring Summary

*EPA Identification no. 12 - Air emissions monitoring, Boiler 2 stack discharge to air
NOX and SOX instrument out of service 8th July*

	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 - July	127	147	106	17.4	22.6	14.8	193	218	171
2 - July	133	158	115	21.7	29.1	17.2	184	196	163
3 - July	132	167	105	17.2	27.4	13.4	183	219	104
4 - July	139	166	112	15.4	19.1	13.2	205	232	168
5 - July	135	162	106	19.5	29.8	13.8	216	240	178
6 - July	136	168	100	23.2	27.6	19.8	211	226	182
7 - July	154	182	112	21.4	27.1	16.5	208	223	176
8 - July				21.6	23.3	19.1			
9 - July	179	197	171	21.0	25.7	16.9	220	222	217
10 - July	161	179	137	19.2	24.2	16.6	192	215	177
11 - July	150	172	115	20.7	27.4	18.5	209	230	173
12 - July	146	168	125	19.6	25.3	18.4	206	224	174
13 - July	140	165	114	20.8	26.2	17.7	198	229	168
14 - July	145	174	129	20.7	27.1	17.5	211	257	167
15 - July	152	176	112	19.1	24.3	16.9	202	238	177
16 - July	148	169	109	20.4	26.4	17.0	176	184	157
17 - July	154	178	107	19.8	27.3	14.4	182	190	169
18 - July	134	155	117	21.0	30.1	15.6	224	242	180
19 - July	135	153	109	23.1	27.9	18.2	235	269	203
20 - July	134	171	106	20.4	24.4	17.3	212	259	188
21 - July	142	163	127	21.3	25.6	18.2	235	258	214
22 - July	145	181	110	22.5	28.1	18.2	224	238	204
23 - July	142	219	111	21.7	26.0	15.7	188	202	176
24 - July	155	205	116	18.8	23.0	13.0	200	222	180
25 - July	142	180	117	19.9	25.4	16.7	213	236	183
26 - July	138	155	115	18.6	22.8	16.6	231	256	188
27 - July	154	168	134	18.8	20.7	17.1	196	221	163
28 - July	149	182	116	21.0	26.5	18.2	218	240	169
29 - July	155	174	127	24.6	28.9	21.6	231	257	198
30 - July	146	172	106	23.4	26.4	21.1	224	248	185
31 - July	150	173	102	24.3	26.2	22.1	221	247	188

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 - July	112	160	106	24.1	27.8	21.2	191	217	171
2 - July	150	192	129	24.6	29.0	20.7	205	221	194
3 - July	152	170	111	22.7	31.3	18.5	201	228	184
4 - July	161	214	109	21.3	26.8	18.4	189	220	129
5 - July	170	214	120	23.3	27.9	18.8	208	223	187
6 - July	169	199	128	24.1	28.7	20.2	208	217	190
7 - July	175	199	122	23.5	29.2	20.2	208	226	189
8 - July	174	196	134	23.3	25.6	20.4	223	236	197
9 - July	166	208	118	23.7	28.7	20.4	209	233	185
10 - July	177	204	114	24.5	30.9	21.0	202	232	189
11 - July	177	196	156	25.7	28.8	23.1	194	212	177
12 - July	168	191	131	24.8	28.1	21.3	200	222	183
13 - July	162	195	125	26.2	32.3	23.4	196	209	180
14 - July	160	194	123	27.3	35.4	22.8	190	229	165
15 - July	164	189	115	24.5	29.4	17.3	208	234	186
16 - July	165	207	112	24.7	30.3	21.5	174	187	169
17 - July	170	188	140	25.0	33.7	21.5	174	184	166
18 - July	154	193	120	24.7	39.2	20.6	203	237	164
19 - July	132	151	110	23.5	28.7	20.2	213	228	197
20 - July	135	161	107	23.5	27.9	20.4	202	225	185
21 - July	163	193	121	24.5	29.4	21.1	196	220	176
22 - July	154	206	115	26.2	32.0	23.2	203	221	178
23 - July	142	217	108	25.3	30.0	21.8	184	214	167
24 - July	160	205	121	24.3	32.4	20.5	195	209	182
25 - July	148	166	108	25.8	30.6	23.3	207	229	182
26 - July	151	174	117	24.1	29.6	21.9	214	237	185
27 - July	160	176	122	25.6	30.7	21.3	180	195	169
28 - July	158	186	128	24.9	30.2	21.3	203	243	168
29 - July	155	168	140	26.1	30.1	22.9	205	235	169
30 - July	158	182	114	24.9	28.0	22.9	189	216	161
31 - July	162	184	119	25.4	28.8	22.0	207	233	182

Unit 4 Boiler Continuous Emission Monitoring Summary

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

Unit out of service 26th July

	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 - July	163	175	150	28.9	31.3	24.6	243	273	216
2 - July	142	180	115	28.1	32.7	21.7	229	255	203
3 - July	147	165	111	32.6	39.7	15.8	224	250	204
4 - July	164	198	105	21.2	30.8	8.8	214	230	197
5 - July	172	190	136	17.4	18.9	16.9	222	240	197
6 - July	170	192	132	17.9	20.5	15.9	218	238	195
7 - July	155	178	118	18.6	23.5	14.9	229	247	206
8 - July	126	187	105	19.4	21.0	17.4	239	272	209
9 - July	169	190	151	18.8	20.9	16.8	219	244	198
10 - July	169	187	137	18.2	21.0	16.4	207	230	191
11 - July	176	201	157	18.3	20.5	17.4	222	253	194
12 - July	164	189	133	18.1	20.1	17.4	233	256	201
13 - July	156	181	123	18.7	22.6	17.3	220	241	211
14 - July	150	169	125	19.0	23.5	17.1	228	271	205
15 - July	162	185	126	17.7	19.8	16.7	218	249	197
16 - July	170	192	136	18.4	20.9	16.8	182	197	171
17 - July	175	201	140	18.1	20.9	15.3	179	195	169
18 - July	163	182	124	17.7	20.9	15.8	185	214	171
19 - July	152	165	131	17.7	20.4	16.3	228	256	213
20 - July	151	163	125	17.6	19.3	16.0	215	248	193
21 - July	162	172	147	18.2	20.6	16.5	229	258	199
22 - July	162	187	134	19.1	21.6	17.3	233	261	200
23 - July	147	186	123	18.8	20.9	17.3	192	246	176
24 - July	159	181	128	17.5	18.4	15.3	223	248	201
25 - July	127	146	114	19.5	25.5	14.2	233	252	176
26 - July									
27 - July	142	151	114	20.2	22.0	18.8	212	221	184
28 - July	153	182	124	19.7	23.0	17.9	224	257	196
29 - July	131	163	121	21.3	24.0	18.4	248	269	228
30 - July	116	126	111	20.2	22.3	18.9	230	261	210
31 - July	117	121	112	20.8	22.4	19.8	230	262	204

Unit 1 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	0.0012	mg/m ³	0.20	16/08/201
Carbon Dioxide (Wet)	12.9	%	-	16/08/201
Carbon Monoxide	2.0	mg/m ³	-	16/08/201
Chlorine	0.24	mg/m ³	300	16/08/201
Copper	0.0023	mg/m ³	-	16/08/201
Dry Gas Density	1.4	kg/m ³	-	16/08/201
Fluoride As HF - Total	8.7	mg/m ³	50	16/08/201
Hazardous Substances (Metals) - Total	0.018	mg/m ³	1.00	16/08/201
Hydrogen Chloride	1.3	mg/m ³	100.0	16/08/201
Mercury	0.00010	mg/m ³	0.200	16/08/201
Moisture	5.0	%	-	16/08/201
Particulates - Total	1.6	mg/m ³	50	16/08/201
Stack Gas Molecular Weight	30	kg/k-mole	-	16/08/201
Temperature	106.6	degC	-	16/08/201
Velocity	13.0	m/sec	-	16/08/201
Volatile Organic Compounds (VOC) - Total	0.21	mg/m ³	-	16/08/201
Volumetric Flow Rate (Dry At STP)	324	m ³ /sec	-	16/08/201

Unit 2 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	0.20	20/12/2016
Carbon Dioxide (Wet)	11.9	%	-	20/12/2016
Carbon Monoxide	3.0	mg/m ³	-	20/12/2016
Chlorine	0.61	mg/m ³	300	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	1.00	20/12/2016
Hydrogen Chloride	0.23	mg/m ³	100.0	20/12/2016
Mercury	0.0003	mg/m ³	0.200	20/12/2016
Moisture	4.0	%	-	20/12/2016
Particulates - Total	15.0	mg/m ³	50	20/12/2016
Stack Gas Molecular Weight	30	kg/k-mole	-	20/12/2016
Temperature	110.0	degC	-	20/12/2016
Velocity	12.0	m/sec	-	20/12/2016
Volatile Organic Compounds (VOC) - Total	0.07	mg/m ³	-	20/12/2016
Volumetric Flow Rate (Dry At STP)	299	m ³ /sec	-	20/12/2016

Unit 3 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	0.20	02/05/2017
Carbon Dioxide (Wet)	13.1	%	-	02/05/2017
Carbon Monoxide	12.0	mg/m ³	-	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	13.0	mg/m ³	50	02/05/2017
Hazardous Substances (Metals) - Total	0.009	mg/m ³	1.00	02/05/2017
Hydrogen Chloride	4.0	mg/m ³	100.0	02/05/2017
Mercury	0.00010	mg/m ³	0.200	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	118.0	degC	-	02/05/2017
Velocity	16.0	m/sec	-	02/05/2017
Volatile Organic Compounds (VOC) - Total	0.08	mg/m ³	-	02/05/2017
Volumetric Flow Rate (Dry At STP)	396	m ³ /sec	-	02/05/2017

Unit 4 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	0.0012	mg/m ³	0.20	15/02/2017
Carbon Dioxide (Wet)	13.5	%	-	15/02/2017
Carbon Monoxide	15.0	mg/m ³	-	15/02/2017
Chlorine	0.12	mg/m ³	200	15/02/2017
Copper	0.0018	mg/m ³	-	15/02/2017
Dry Gas Density	1.4	kg/m ³	-	15/02/2017
Fluoride As HF - Total	8.3	mg/m ³	50	15/02/2017
Hazardous Substances (Metals) - Total	0.009	mg/m ³	1.00	15/02/2017
Hydrogen Chloride	1.9	mg/m ³	100.0	15/02/2017
Mercury	0.0001	mg/m ³	0.200	15/02/2017
Moisture	5.6	%	-	15/02/2017
Particulates - Total	7.8	mg/m ³	50	15/02/2017
Stack Gas Molecular Weight	31	kg/k-mole	-	15/02/2017
Temperature	121.0	degC	-	15/02/2017
Velocity	17.0	m/sec	-	15/02/2017
Volatile Organic Compounds (VOC) - Total	0.06	mg/m ³	-	15/02/2017
Volumetric Flow Rate (Dry At STP)	431	m ³ /sec	-	15/02/2017

Emergency Turbine Generator Emission Test Results

EPA Identification no. 19 - Air emissions monitoring, Emergency Turbine Generator Stack discharge to air

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Nitrogen oxides	81	mg/m ³	86	13/07/2017
Solid Particles	1.9	mg/m ³	20	13/07/2017
Carbon Dioxide	3.2	%		13/07/2017
Dry gas density	1.30	kg/m ³		13/07/2017
Moisture	3.8	%		13/07/2017
Molecular weight of stack gas	29.2	g/g		13/07/2017
Oxygen	16.5	%		13/07/2017
Velocity	26	m/s		13/07/2017
Volumetric flowrate	100	m ³ /s		13/07/2017

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	0.5	0.1	0.6
E4	0.3	0.1	0.4
E6	0.1	0.3	0.4
U6	0.1	0.4	0.5

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	15.80					1.75
010cm	16.02	7.79	33.4	77.2	6.06	
050cm	15.71	7.88	33.6	74.2	5.81	
100cm	15.53	7.89	33.7	75.6	5.93	
150cm	15.44	7.89	33.8	81.4	6.38	
200cm	15.36	7.97	33.8	84.0	6.62	
250cm	15.34	7.97	33.8	80.0	6.29	
Bottom	15.38	7.98	33.8	82.3	6.47	

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	15.88					3.75
010cm	16.24	7.93	33.9	83.4	6.45	
050cm	16.28	7.91	33.9	84.2	6.51	
100cm	16.25	7.91	33.9	88.2	6.83	
150cm	16.23	7.98	33.9	89.8	6.97	
200cm	16.20	7.99	33.9	89.4	6.97	
250cm	16.26	7.99	33.9	89.6	6.94	
300cm	16.16	7.99	33.9	91.8	7.14	
350cm	16.14	7.99	33.9	92.7	7.19	
400cm	16.13	7.99	33.9	94.6	7.36	
450cm	16.11	8.00	33.9	93.3	7.24	
500cm	16.10	8.00	33.9	94.2	7.31	
550cm	16.09	8.01	33.9	95.5	7.41	
600cm	16.09	8.01	33.9	92.8	7.21	
650cm	16.07	8.01	33.9	94.4	7.33	
700cm	16.08	8.01	33.9	93.7	7.27	
Bottom	16.08	8.01	33.9	90.1	7.00	

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	9.15					2.75
010cm	15.56	7.60	34.4	111.4	8.65	
050cm	15.83	7.64	34.3	112.8	8.79	
100cm	15.96	7.68	34.3	113.4	8.78	
150cm	15.97	7.71	34.3	112.0	8.69	
200cm	16.06	7.72	34.3	114.6	8.89	
250cm	16.09	7.75	34.3	114.7	8.88	
300cm	16.05	7.75	34.3	112.5	8.72	
350cm	16.01	7.76	34.3	109.9	8.52	
400cm	16.13	7.78	34.3	113.0	8.74	
450cm	16.13	7.79	34.2	113.1	8.76	
500cm	16.12	7.81	34.2	111.4	8.62	
550cm	16.15	7.83	34.4	112.8	8.72	
600cm	16.17	7.84	34.3	111.7	8.65	
650cm	16.17	7.84	34.4	110.2	8.52	
700cm	16.23	7.85	34.4	109.4	8.44	
750cm	16.26	7.87	34.3	109.2	8.41	
800cm	16.26	7.87	34.3	108.0	8.34	
850cm	16.27	7.87	34.3	111.1	8.57	
900cm	16.26	7.88	34.3	107.9	8.32	
Bottom	16.28	7.88	34.3	107.3	8.28	

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	14.88					3.75
010cm	18.53	7.99	34.0	95.4	7.06	
050cm	18.62	7.99	34.0	95.6	7.07	
100cm	18.64	7.99	33.9	94.6	7.00	
150cm	18.54	7.99	33.9	93.2	6.91	
200cm	18.40	7.99	33.9	97.8	7.24	
250cm	18.12	8.00	33.8	95.4	7.13	
300cm	17.90	8.00	33.8	101.6	7.64	
350cm	17.83	8.00	33.8	95.2	7.15	
400cm	17.51	8.01	33.8	91.0	6.85	
450cm	17.22	8.02	33.8	80.3	6.09	
500cm	16.90	8.03	33.8	82.5	6.31	
550cm	16.83	8.03	33.8	82.2	6.30	
Bottom	16.79	8.03	34.0	73.3	5.61	

Eraring Ash Dam Effluent Quality Monitoring

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

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.07	ug/L	-	06/07/2017
Copper	0.6	ug/L	-	06/07/2017
Iron	<2	ug/L	-	06/07/2017
Lead	<0.1	ug/L	-	06/07/2017
Manganese	15.8	ug/L	-	06/07/2017
Nitrite and Nitrate as N	2280	ug/L	-	06/07/2017
Phosphorus Reactive as P - Total	374	ug/L	-	06/07/2017
Phosphorus as P - Total	437	ug/L	-	06/07/2017
Selenium	27.0	ug/L	-	06/07/2017
Suspended Solids (SS)	25,000	ug/L	-	06/07/2017
Zinc	<1	ug/L	-	06/07/2017
pH	9.39	-	-	06/07/2017

Eraring Cooling Water Inlet Canal

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

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Copper	0.8	ug/L	-	06/07/2017
Iron	12	ug/L	-	06/07/2017
Selenium	<1	ug/L	-	06/07/2017
Temperature - Average	15.2	deg C	-	July 2017
Temperature - Minimum	13.9	deg C	-	July 2017
Temperature - Maximum	16.2	deg C	-	July 2017

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	1.7	ug/L	5	06/07/2017
Iron	44	ug/L	300	06/07/2017
Selenium	<1	ug/L	2	06/07/2017
Temperature - Average	23.4	deg C	35	July 2017
Temperature - Minimum	18.8	deg C	35	July 2017
Temperature - Maximum	26.3	deg C	35	July 2017
Maximum Daily Discharge from Ash Dam	20.81	ML	150	July 2017
Monthly Discharge from Ash Dam	118.3	ML	-	July 2017

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	252	ug/L	-	06/07/2017
Phosphorus as P - Total	35	ug/L	-	06/07/2017
pH	7.02	-	-	06/07/2017