



Eraring Power Station - EPA Licence 1429

Rocky Point Rd, Dora Creek NSW 2264

Environmental Monitoring Data

August 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 1st - 5th

No SOX results 13th-15th August due to instrument failure

	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 - August									
2 - August									
3 - August									
4 - August									
5 - August									
6 - August	173	190	147	7.2	10.6	2.5	192	198	187
7 - August	186	209	140	4.3	10.7	2.1	184	204	167
8 - August	186	198	155	3.5	5.4	2.7	173	185	158
9 - August	189	212	139	4.1	8.0	2.7	163	172	153
10 - August	197	230	164	4.3	7.5	2.5	169	188	146
11 - August	201	235	153	3.5	5.2	2.5	169	200	148
12 - August	171	188	141	6.1	9.4	3.9	170	190	166
13 - August	177	189	154	6.7	10.1	3.6			
14 - August	180	191	142	9.1	15.9	5.8			
15 - August	175	186	147	7.3	14.7	4.6			
16 - August	178	199	138	4.7	5.8	3.0	164	170	158
17 - August	181	212	135	6.9	10.4	3.9	152	161	138
18 - August	177	216	126	8.0	11.8	5.5	157	166	136
19 - August	155	209	127	10.6	12.3	7.8	158	174	141
20 - August	156	189	130	10.8	20.5	5.0	140	148	135
21 - August	195	225	147	10.9	18.8	3.7	144	176	123
22 - August	180	224	129	4.6	10.9	2.7	153	184	134
23 August	167	203	133	5.7	14.8	2.4	159	173	140
24 August	167	205	130	4.2	7.9	2.6	162	175	148
25 - August	180	221	135	4.1	8.1	2.8	167	188	153
26 - August	160	199	133	7.0	9.7	3.7	181	209	158
27 - August	181	233	140	12.1	29.9	3.5	171	183	159
28 - August	186	205	141	4.9	9.8	3.9	165	176	155
29 - August	179	219	146	6.1	13.7	4.0	190	223	165
30 - August	166	218	117	4.4	8.7	2.5	187	216	172
31 - August	147	184	109	6.0	10.8	3.0	192	200	163

Unit 2 Boiler Continuous Emission Monitoring Summary

*EPA Identification no. 12 - Air emissions monitoring, Boiler 2 stack discharge to air
Unit out of service 13th - 15th*

	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 - August	161	184	115	25.7	29.5	22.0	204	216	191
2 - August	145	165	104	26.0	29.1	23.8	223	236	207
3 - August	161	212	107	25.6	29.6	22.7	214	253	177
4 - August	167	183	137	24.8	27.3	21.2	208	221	181
5 - August	169	202	108	24.0	28.4	20.7	188	205	174
6 - August	155	185	104	22.0	26.0	18.8	206	220	194
7 - August	148	191	101	21.8	27.1	17.8	204	215	187
8 - August	135	155	118	21.7	32.6	16.7	199	214	173
9 - August	152	189	121	18.9	25.1	14.6	189	206	164
10 - August	167	181	154	18.6	25.1	15.6	192	221	158
11 - August	151	205	114	17.9	21.4	15.2	191	224	164
12 - August	121	130	114	20.0	27.2	15.7	192	213	161
13 - August									
14 - August									
15 - August									
16 - August	147	164	113	12.8	16.4	10.3	200	217	185
17 - August	148	172	104	13.8	22.0	9.5	189	196	170
18 - August	146	181	102	14.5	18.3	10.4	197	206	175
19 - August	113	139	103	18.9	20.8	15.6	216	229	186
20 - August	128	144	109	18.5	21.9	16.8	186	211	165
21 - August	156	189	114	15.9	22.4	11.6	181	194	158
22 - August	157	200	131	15.4	20.3	11.4	185	216	165
23 August	120	148	103	15.7	21.8	10.2	199	225	179
24 August	144	169	114	15.3	21.2	12.3	198	214	169
25 - August	150	183	114	15.9	21.1	14.2	201	227	183
26 - August	141	188	110	18.2	21.0	14.3	198	228	171
27 - August	184	226	121	17.4	21.0	12.8	189	206	178
28 - August	180	202	129	15.8	21.1	13.8	189	197	177
29 - August	185	211	157	15.1	20.6	12.9	196	224	163
30 - August	158	193	118	16.6	22.2	13.9	205	217	179
31 - August	151	197	111	17.5	20.2	14.3	202	213	178

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 - August	178	195	141	26.0	29.4	23.2	190	205	135
2 - August	165	182	128	27.1	30.6	24.3	209	221	135
3 - August	179	212	122	26.9	30.7	23.4	209	232	163
4 - August	177	195	125	27.5	29.7	25.6	207	220	192
5 - August	170	213	109	27.3	30.2	25.0	189	217	175
6 - August	150	203	114	27.2	31.2	25.0	205	219	188
7 - August	181	212	120	27.2	31.3	26.0	201	215	177
8 - August	178	214	128	27.3	30.7	24.6	196	210	185
9 - August	166	211	118	27.8	31.7	25.0	187	202	175
10 - August	154	168	128	27.3	31.7	14.9	208	238	182
11 - August	159	180	114	20.8	24.4	17.0	214	225	206
12 - August	161	186	110	20.1	23.1	16.9	221	240	214
13 - August	167	195	149	20.3	24.1	16.8	232	253	204
14 - August	171	190	136	22.8	25.8	19.7	211	235	201
15 - August	158	178	116	23.4	27.8	20.1	204	215	194
16 - August	153	178	106	22.0	27.4	18.0	208	218	192
17 - August	156	193	114	22.3	26.9	19.0	188	203	165
18 - August	152	185	114	21.3	24.1	18.8	197	207	173
19 - August	145	187	125	24.0	28.4	21.5	206	218	188
20 - August	145	162	126	25.7	28.7	22.9	185	195	177
21 - August	178	208	134	25.1	31.9	20.7	182	193	167
22 - August	160	205	135	24.2	31.6	20.1	189	223	166
23 August	154	201	128	26.2	33.8	21.9	206	217	199
24 August	162	195	134	26.0	30.0	22.8	209	223	191
25 - August	143	166	105	28.1	38.4	23.6	201	222	162
26 - August	132	154	120	29.5	36.8	26.3	198	218	173
27 - August	142	181	120	20.8	23.0	17.8	192	201	186
28 - August	166	188	131	21.3	25.6	18.3	188	195	183
29 - August	176	211	124	22.4	27.3	19.4	200	226	133
30 - August	169	200	150	21.9	28.4	19.0	206	229	145
31 - August	163	186	142	21.7	26.3	19.0	214	225	207

Unit 4 Boiler Continuous Emission Monitoring Summary

*EPA Identification no. 14 - Air emissions monitoring, Boiler 4 stack discharge to air.
Unit out of service 7th August*

	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 - August	120	127	113	21.0	22.4	19.3	214	232	203
2 - August	116	120	109	22.0	28.3	19.7	237	259	216
3 - August	120	127	112	21.7	23.8	19.2	219	270	173
4 - August	119	126	112	20.9	22.9	19.3	205	233	176
5 - August	137	148	116	21.1	22.9	19.9	195	213	183
6 - August	135	148	116	20.6	22.4	18.4	195	203	179
7 - August									
8 - August	160	181	119	19.1	25.5	16.9	186	202	172
9 - August	182	206	169	19.0	20.6	17.5	185	233	159
10 - August	173	198	154	18.6	20.7	16.7	188	223	167
11 - August	142	152	134	18.6	20.5	12.4	207	215	201
12 - August	160	173	145	21.2	22.6	20.0	205	242	181
13 - August	150	155	143	21.2	22.6	20.1	208	240	188
14 - August	151	162	142	21.0	23.2	18.5	198	216	189
15 - August	143	150	138	21.1	22.1	20.6	193	203	186
16 - August	133	148	123	19.6	21.6	18.5	194	205	175
17 - August	141	172	124	19.5	21.0	18.0	168	179	155
18 - August	148	190	129	20.1	21.1	19.1	176	190	157
19 - August	143	196	123	22.0	23.2	20.1	206	217	187
20 - August	133	168	116	22.6	23.7	20.6	182	197	168
21 - August	187	216	133	21.1	24.2	19.5	190	221	153
22 - August	190	231	161	21.3	24.0	19.0	193	244	164
23 August	203	244	174	21.3	24.1	18.9	203	235	182
24 August	220	243	188	20.5	23.9	19.4	203	222	194
25 - August	186	214	167	20.4	22.5	19.4	202	228	189
26 - August	154	196	135	21.9	23.5	19.4	195	223	178
27 - August	177	197	155	22.1	24.6	18.9	180	206	164
28 - August	170	186	144	20.4	24.3	19.2	184	191	175
29 - August	179	192	167	20.0	22.8	19.2	201	240	184
30 - August	177	200	146	20.7	23.3	19.1	207	239	186
31 - August	186	220	152	21.5	23.2	20.1	211	231	191

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	0.0012	mg/m ³	0.20	16/08/2016
Carbon Dioxide (Wet)	12.9	%	-	16/08/2016
Carbon Monoxide	2.0	mg/m ³	-	16/08/2016
Chlorine	0.24	mg/m ³	300	16/08/2016
Copper	0.0023	mg/m ³	-	16/08/2016
Dry Gas Density	1.4	kg/m ³	-	16/08/2016
Fluoride As HF - Total	8.7	mg/m ³	50	16/08/2016
Hazardous Substances (Metals) - Total	0.018	mg/m ³	1.00	16/08/2016
Hydrogen Chloride	1.3	mg/m ³	100.0	16/08/2016
Mercury	0.00010	mg/m ³	0.200	16/08/2016
Moisture	5.0	%	-	16/08/2016
Particulates - Total	1.6	mg/m ³	50	16/08/2016
Stack Gas Molecular Weight	30	kg/k-mole	-	16/08/2016
Temperature	106.6	degC	-	16/08/2016
Velocity	13.0	m/sec	-	16/08/2016
Volatile Organic Compounds (VOC) - Total	0.21	mg/m ³	-	16/08/2016
Volumetric Flow Rate (Dry At STP)	324	m ³ /sec	-	16/08/2016

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	0.20	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 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	0.20	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 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	0.0012	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

Eraring Depositional Dust Gauges

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

	Deposited Matter		
	g/m2/month		
	Ash	Combustible	Insolubles
E2	1.1	0.3	1.4
E4	0.6	0.2	0.8
E6	0.6	0.4	1.0
U6	0.4	0.2	0.6

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	14.65					
010cm	14.89	8.91	34.0	85.3	6.66	2.50
050cm	15.32	8.09	34.1	82.7	6.48	
100cm	15.37	8.06	34.0	87.5	6.91	
150cm	15.36	8.05	34.4	89.7	7.05	
200cm	15.29	8.04	34.0	89.2	7.03	
Bottom	15.28	8.08	34.7	89.4	6.91	

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	14.94					
010cm	15.66	8.06	34.3	82.9	6.48	3.75
050cm	15.72	8.05	34.4	84.8	6.61	
100cm	15.72	8.05	34.4	89.4	6.97	
150cm	15.76	8.07	34.3	90.1	7.02	
200cm	15.78	8.07	34.4	93.5	7.27	
250cm	15.78	8.07	34.4	92.4	7.19	
300cm	15.80	8.07	34.4	94.9	7.42	
350cm	15.79	8.06	34.4	96.9	7.56	
400cm	15.76	8.06	34.4	95.8	7.45	
450cm	15.78	8.07	34.4	96.6	7.52	
500cm	15.80	8.07	34.4	95.7	7.45	
550cm	15.63	8.07	34.4	97.3	7.59	
600cm	15.63	8.07	34.4	97.0	7.56	
650cm	15.56	8.08	34.4	94.8	7.42	
700cm	15.51	8.07	34.3	87.4	6.82	
750cm	15.56	8.07	34.4	99.7	7.77	
Bottom	15.57	8.08	34.4	96.9	7.57	

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	12.07					
010cm	14.41	7.82	34.0	102.9	8.22	4.75
050cm	14.90	7.86	34.5	98.0	7.75	
100cm	14.99	7.85	34.5	99.5	7.85	
150cm	15.00	7.85	34.5	105.4	8.35	
200cm	15.04	7.85	34.6	106.3	8.37	
250cm	15.05	7.86	34.6	107.9	8.50	
300cm	15.11	7.86	34.5	96.7	7.58	
350cm	15.12	7.88	34.6	96.2	7.51	
400cm	15.15	7.88	34.8	92.1	7.21	
450cm	15.13	7.89	34.7	100.9	7.95	
500cm	15.14	7.90	34.7	100.1	7.87	
550cm	15.15	7.91	34.8	99.2	7.81	
600cm	15.15	7.91	34.8	98.4	7.73	
650cm	15.16	7.92	34.8	98.7	7.76	
700cm	15.15	7.93	34.7	90.4	7.08	
750cm	15.17	7.93	34.7	91.0	7.21	
800cm	15.15	7.95	34.7	92.3	7.76	
850cm	15.13	7.95	34.7	88.7	6.94	
900cm	15.14	7.95	34.7	96.0	7.48	
Bottom	15.13	7.96	34.8	81.4	6.37	

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	14.42					
010cm	17.94	7.95	34.6	97.9	7.32	2.25
050cm	18.03	7.95	34.6	102.5	7.64	
100cm	18.04	7.96	34.7	105.4	7.84	
150cm	18.02	7.97	34.7	106.9	7.99	
200cm	18.04	7.97	34.7	109.9	8.17	
250cm	18.01	8.00	34.6	117.5	8.75	
300cm	18.02	8.04	34.6	121.0	9.01	
350cm	17.99	8.04	34.6	124.4	9.24	
400cm	18.01	8.06	34.6	108.4	8.07	
450cm	18.01	8.04	34.6	108.8	8.11	
500cm	18.01	8.04	34.6	105.5	7.86	
550cm	18.00	8.04	34.6	105.7	7.85	
Bottom	17.99	8.05	34.6	106.3	7.92	

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	0.08	ug/L	-	03/08/2017
Copper	1.1	ug/L	-	03/08/2017
Iron	3	ug/L	-	03/08/2017
Lead	<0.1	ug/L	-	03/08/2017
Manganese	20.8	ug/L	-	03/08/2017
Nitrite and Nitrate as N	1170	ug/L	-	03/08/2017
Phosphorus Reactive as P - Total	206	ug/L	-	03/08/2017
Phosphorus as P - Total	280	ug/L	-	03/08/2017
Selenium	18.0	ug/L	-	03/08/2017
Suspended Solids (SS)	7000	ug/L	-	03/08/2017
Zinc	<1	ug/L	-	03/08/2017
pH	9.09		-	03/08/2017

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	1.1	ug/L	-	03/08/2017
Iron	10	ug/L	-	03/08/2017
Selenium	<1	ug/L	-	03/08/2017
Temperature – Average	15.5	deg C	-	Aug 2017
Temperature – Minimum	13.8	deg C	-	Aug 2017
Temperature - Maximum	17.3	deg C	-	Aug 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	1.6	ug/L	5	03/08/2017
Iron	10	ug/L	300	03/08/2017
Selenium	<1	ug/L	2	03/08/2017
Temperature – Average	22.9	deg C	35	Aug 2017
Temperature – Minimum	17.9	deg C	35	Aug 2017
Temperature - Maximum	26.5	deg C	35	Aug 2017
Maximum Daily Discharge from Ash Dam	17.85	ML	150	Aug 2017
Monthly Discharge from Ash Dam	19.9	ML	-	Aug 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	276	ug/L	-	03/08/2017
Phosphorus as P – Total	128	ug/L	-	03/08/2017
pH	7.01		-	03/08/2017
