



Eraring Power Station - EPA Licence 1429

Rocky Point Rd, Dora Creek NSW 2264

Environmental Monitoring Data January 2017



Unit 1 Boiler Continuous Emission Monitoring Summary

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

	NOX			Particulates			SOX		
	ppm (7% O2)			mg/m3			ppm (7% O2)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Jan	127	153	108	11	16	8	175	189	163
2 - Jan	142	181	110	10	18	6	180	189	155
3 - Jan	154	176	113	9	17	6	175	186	163
4 - Jan	151	181	115	9	15	6	171	187	159
5 - Jan	150	170	115	11	19	8	178	188	167
6 - Jan	169	197	124	10	17	7	168	187	159
7 - Jan	197	229	151	10	17	6	169	176	153
8 - Jan	163	210	150	9	19	6	177	182	169
9 - Jan	184	208	157	9	17	6	170	182	160
10 - Jan	178	200	137	9	17	5	191	247	178
11 - Jan	170	210	125	7	14	3	208	254	195
12 - Jan	169	200	127	7	11	5	186	195	171
13 - Jan	183	223	117	8	24	2	179	195	172
14 - Jan	180	198	156	6	12	3	171	181	160
15 - Jan	159	173	136	10	14	7	167	176	144
16 - Jan	165	186	147	9	14	5	167	175	143
17 - Jan	156	178	135	8	17	3	184	193	156
18 - Jan	164	186	104	6	10	3	188	195	168
19 - Jan	177	196	151	9	13	7	189	202	167
20 - Jan	169	187	141	8	13	5	192	200	180
21 - Jan	137	151	119	9	13	8	187	193	172
22 - Jan	126	138	112	12	15	9	180	186	168
23 - Jan	171	198	124	10	23	5	189	197	184
24 - Jan	169	198	135	7	15	3	194	200	175
25 - Jan	153	185	127	14	25	9	184	193	172
26 - Jan	147	186	119	12	17	9	187	198	178
27 - Jan	173	199	118	12	19	7	186	190	167
28 - Jan	164	206	125	10	21	6	177	182	165
29 - Jan	165	219	106	12	18	8	166	171	156
30 - Jan	184	226	122	11	33	4	166	173	147
31 - Jan	184	218	157	8	14	4	180	191	156

Unit 2 Boiler Continuous Emission Monitoring Summary

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

- SOx Instrument error on the 3rd.

	NOX			Particulates			SOX		
	ppm (7% O2)			mg/m3			ppm (7% O2)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Jan	126	135	114	14	17	12	176	187	164
2 - Jan	122	155	102	14	17	11	186	189	184
3 - Jan	153	177	103	14	19	12	0	0	0
4 - Jan	152	183	107	14	18	12	175	188	168
5 - Jan	155	175	116	14	18	11	178	194	167
6 - Jan	160	180	119	14	18	12	169	178	162
7 - Jan	132	163	109	15	18	12	173	185	153
8 - Jan	122	134	105	15	19	13	181	192	173
9 - Jan	159	194	108	15	20	13	187	195	181
10 - Jan	162	198	106	17	25	14	190	209	166
11 - Jan	159	192	115	19	27	14	209	242	189
12 - Jan	168	198	101	12	23	8	187	194	168
13 - Jan	159	183	105	11	23	7	197	211	189
14 - Jan	119	170	103	11	14	8	189	201	172
15 - Jan	111	119	101	12	15	11	186	205	172
16 - Jan	156	203	101	10	12	8	181	189	152
17 - Jan	146	180	107	10	14	8	195	206	173
18 - Jan	143	176	106	11	24	8	203	213	185
19 - Jan	164	192	111	10	14	9	194	198	177
20 - Jan	149	177	102	10	14	9	187	205	176
21 - Jan	114	132	107	12	15	11	189	199	170
22 - Jan	122	156	100	13	16	11	188	200	172
23 - Jan	156	184	102	11	14	8	192	198	176
24 - Jan	156	183	106	10	13	8	190	194	171
25 - Jan	164	202	107	11	14	9	182	190	171
26 - Jan	127	188	107	11	14	8	181	192	158
27 - Jan	162	189	103	10	13	8	185	192	171
28 - Jan	149	191	114	11	13	7	180	188	162
29 - Jan	138	184	110	12	15	9	173	180	162
30 - Jan	156	190	101	10	13	7	168	182	148
31 - Jan	130	156	108	10	13	7	178	193	151

Unit 3 Boiler Continuous Emission Monitoring Summary

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

- 3rd Unit out of service.

	NOX			Particulates			SOX		
	ppm (7% O2)			mg/m3			ppm (7% O2)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Jan	136	148	113	18	20	13	155	161	149
2 - Jan	142	151	133	21	33	16	146	158	135
3 - Jan	0	0	0	0	0	0	0	0	0
4 - Jan	122	124	121	21	27	19	144	147	141
5 - Jan	168	227	122	26	33	17	161	169	141
6 - Jan	162	179	136	24	26	18	157	165	124
7 - Jan	151	167	138	24	25	20	155	163	122
8 - Jan	157	171	133	23	25	18	167	175	152
9 - Jan	174	195	129	24	26	20	164	176	155
10 - Jan	179	199	122	22	24	19	172	202	129
11 - Jan	147	194	115	23	29	17	175	212	110
12 - Jan	119	137	112	25	27	20	170	181	131
13 - Jan	178	213	118	23	27	18	166	177	124
14 - Jan	159	203	145	23	25	19	173	186	155
15 - Jan	151	166	134	23	24	18	156	163	148
16 - Jan	185	209	141	22	24	18	155	164	118
17 - Jan	164	193	129	22	24	17	169	183	119
18 - Jan	152	176	125	22	23	17	170	182	128
19 - Jan	153	168	133	23	24	19	178	187	128
20 - Jan	150	173	112	23	26	18	175	185	129
21 - Jan	123	147	115	23	25	19	169	175	123
22 - Jan	137	171	121	23	24	19	160	178	129
23 - Jan	149	170	114	23	25	19	174	181	146
24 - Jan	129	160	107	23	25	20	173	179	128
25 - Jan	121	174	111	25	28	21	165	175	131
26 - Jan	148	177	121	23	25	20	167	175	126
27 - Jan	150	166	118	23	25	19	168	175	127
28 - Jan	146	174	108	23	26	19	164	174	127
29 - Jan	147	179	117	23	24	20	155	160	124
30 - Jan	169	202	130	23	27	20	153	160	122
31 - Jan	152	167	144	23	25	19	166	178	122

Unit 4 Boiler Continuous Emission Monitoring Summary

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

- 3rd to 9th Unit 1 out of service.

	NOX			Particulates			SOX		
	ppm (7% O2)			mg/m3			ppm (7% O2)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Jan	147	177	132	12	15	11	169	174	163
2 - Jan	153	162	138	15	23	12	169	179	155
3 - Jan	0	0	0	0	0	0	0	0	0
4 - Jan	0	0	0	0	0	0	0	0	0
5 - Jan	0	0	0	0	0	0	0	0	0
6 - Jan	0	0	0	0	0	0	0	0	0
7 - Jan	0	0	0	0	0	0	0	0	0
8 - Jan	0	0	0	0	0	0	0	0	0
9 - Jan	0	0	0	0	0	0	0	0	0
10 - Jan	147	155	137	10	12	8	153	162	139
11 - Jan	151	169	132	12	15	11	179	201	163
12 - Jan	139	153	117	13	17	11	181	193	172
13 - Jan	139	154	116	13	16	11	186	200	174
14 - Jan	132	146	124	12	14	11	181	193	163
15 - Jan	130	146	103	13	17	11	175	187	163
16 - Jan	133	145	112	13	15	12	172	178	164
17 - Jan	121	128	115	13	15	11	188	200	176
18 - Jan	133	149	109	12	18	10	186	205	173
19 - Jan	144	155	128	13	17	12	171	175	163
20 - Jan	140	154	110	13	17	11	168	178	157
21 - Jan	127	138	113	12	15	11	170	180	155
22 - Jan	128	147	107	13	14	11	160	175	147
23 - Jan	151	175	114	13	17	12	171	181	158
24 - Jan	154	169	125	12	16	11	170	178	103
25 - Jan	164	183	129	14	17	12	157	176	100
26 - Jan	161	179	133	13	15	11	169	184	160
27 - Jan	168	185	133	13	16	12	170	181	164
28 - Jan	166	191	133	13	15	11	165	171	154
29 - Jan	143	168	109	13	15	10	157	165	148
30 - Jan	158	177	136	13	15	11	156	166	151
31 - Jan	144	173	117	13	14	11	171	188	156

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/m3	0.20	16/08/2016
Carbon Dioxide (Wet)	12.9	%	-	16/08/2016
Carbon Monoxide	2.0	mg/m3	-	16/08/2016
Chlorine	0.24	mg/m3	300	16/08/2016
Copper	0.0023	mg/m3	-	16/08/2016
Dry Gas Density	1.4	kg/m3	-	16/08/2016
Fluoride As HF - Total	8.7	mg/m3	50	16/08/2016
Hazardous Substances (Metals) - Total	0.018	mg/m3	1.00	16/08/2016
Hydrogen Chloride	1.3	mg/m3	100.0	16/08/2016
Mercury	0.00010	mg/m3	0.200	16/08/2016
Moisture	5.0	%	-	16/08/2016
Particulates - Total	1.6	mg/m3	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	0.53	mg/m3	-	16/08/2016
Volumetric Flow Rate (Dry At STP)	324	m3/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/m3	0.20	20/12/2016
Carbon Dioxide (Wet)	11.9	%	-	20/12/2016
Carbon Monoxide	3.0	mg/m3	-	20/12/2016
Chlorine	0.61	mg/m3	300	20/12/2016
Copper	0.0020	mg/m3	-	20/12/2016
Dry Gas Density	1.4	kg/m3	-	20/12/2016
Fluoride As HF - Total	7.5	mg/m3	50	20/12/2016
Hazardous Substances (Metals) - Total	0.009	mg/m3	1.00	20/12/2016
Hydrogen Chloride	0.23	mg/m3	100.0	20/12/2016
Mercury	0.0003	mg/m3	0.200	20/12/2016
Moisture	4.0	%	-	20/12/2016
Particulates - Total	15.0	mg/m3	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/m3	-	20/12/2016
Volumetric Flow Rate (Dry At STP)	299	m3/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	0.05	mg/m3	0.20	22/08/2015
Carbon Dioxide (Wet)	11.8	%	-	22/08/2015
Carbon Monoxide	1.00	mg/m3	-	22/08/2015
Chlorine	0.76	mg/m3	200	22/08/2015
Copper	0.010	mg/m3	-	22/08/2015
Dry Gas Density	1.4	kg/m3	-	22/08/2015
Fluoride As HF - Total	11.8	mg/m3	50	22/08/2015
Hazardous Substances (Metals) - Total	0.07	mg/m3	1.00	22/08/2015
Hydrogen Chloride	0.53	mg/m3	100.0	22/08/2015
Mercury	0.0003	mg/m3	0.200	22/08/2015
Moisture	3.2	%	-	22/08/2015
Particulates - Total	2.1	mg/m3	50	22/08/2015
Stack Gas Molecular Weight	30	kg/k-mole	-	22/08/2015
Temperature	117.0	degC	-	22/08/2015
Velocity	10.3	m/sec	-	22/08/2015
Volatile Organic Compounds (VOC) - Total	0.76	mg/m3	-	22/08/2015
Volumetric Flow Rate (Dry At STP)	236	m3/sec	-	22/08/2015

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	0.0006	mg/m3	0.20	31/10/2015
Carbon Dioxide (Wet)	10.2	%	-	31/10/2015
Carbon Monoxide	0.11	mg/m3	-	31/10/2015
Chlorine	0.86	mg/m3	200	31/10/2015
Copper	0.0004	mg/m3	-	31/10/2015
Dry Gas Density	1.3	kg/m3	-	31/10/2015
Fluoride As HF - Total	3.3	mg/m3	50	31/10/2015
Hazardous Substances (Metals) - Total	0.07	mg/m3	1.00	31/10/2015
Hydrogen Chloride	0.30	mg/m3	100.0	31/10/2015
Mercury	0.0011	mg/m3	0.200	31/10/2015
Moisture	5.4	%	-	31/10/2015
Particulates - Total	0.22	mg/m3	50	31/10/2015
Stack Gas Molecular Weight	30	kg/k-mole	-	31/10/2015
Temperature	112.5	degC	-	31/10/2015
Velocity	11.5	m/sec	-	31/10/2015
Volatile Organic Compounds (VOC) - Total	0.86	mg/m3	-	31/10/2015
Volumetric Flow Rate (Dry At STP)	258	m3/sec	-	31/10/2015

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	0.20	0.10	0.30
E4	0.20	0.20	0.40
E6	0.40	0.30	0.70
U6	0.40	0.20	0.60

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	23.67					
010cm	26.44	8.13	35.60	92.30	5.92	2.25
050cm	26.55	8.08	35.60	81.90	5.23	
100cm	26.64	8.08	35.90	79.20	5.07	
150cm	26.64	8.08	35.90	83.40	5.28	
200cm	26.67	8.08	35.70	85.10	5.48	
250cm	26.66	8.08	35.80	85.70	5.45	
300cm	26.65	8.09	36.50	85.90	5.47	
Bottom	26.69	8.09	35.90	81.50	5.14	

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	26.66					
010cm	26.77	8.10	36.20	79.00	5.01	2.25
050cm	27.06	8.09	36.10	83.20	5.25	
100cm	27.10	8.09	36.10	82.40	5.14	
150cm	27.14	8.09	36.10	83.70	5.26	
200cm	27.16	8.09	36.10	80.10	5.07	
250cm	27.16	8.09	36.10	83.40	5.23	
300cm	27.15	8.09	36.10	81.80	5.17	
350cm	27.15	8.09	36.10	79.10	4.96	
400cm	27.17	8.09	36.10	76.40	4.83	
450cm	27.17	8.09	36.10	79.10	5.00	
500cm	27.18	8.09	36.10	74.90	4.68	
550cm	27.19	8.09	36.10	75.10	4.72	
600cm	27.18	8.09	36.10	72.40	4.57	
650cm	27.12	8.08	36.10	71.10	4.48	
Bottom	27.05	8.06	36.10	63.50	3.96	

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	24.35					
010cm	24.70	8.05	35.10	101.40	6.71	2.25
050cm	24.84	8.07	35.10	99.80	6.65	
100cm	24.85	8.06	35.10	102.10	6.72	
150cm	24.85	8.06	35.10	100.10	6.72	
200cm	24.86	8.06	35.10	101.80	6.65	
250cm	24.88	8.06	35.10	101.90	6.69	
300cm	24.86	8.06	35.10	101.00	6.68	
350cm	24.89	8.06	35.10	103.20	6.77	
400cm	24.89	8.06	35.10	101.10	6.58	
450cm	24.90	8.06	35.10	100.10	6.56	
500cm	24.90	8.06	35.10	101.40	6.72	
550cm	24.89	8.06	35.10	97.10	6.38	
600cm	24.89	8.07	35.20	100.50	6.61	
650cm	24.89	8.07	35.10	99.40	6.56	
700cm	24.63	8.07	35.10	98.70	6.51	
750cm	24.51	8.08	35.20	99.80	6.65	
800cm	24.40	8.09	35.20	102.70	6.83	
850cm	24.21	8.10	35.10	101.10	6.73	
900cm	23.63	8.10	35.00	101.00	6.82	
Bottom	23.32	8.08	35.00	96.60	6.52	

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	23.31					
010cm	27.22	8.06	35.80	88.80	5.63	2.75
050cm	27.61	8.06	36.00	90.70	5.70	
100cm	27.79	8.05	35.90	95.30	5.99	
150cm	27.82	8.05	35.80	105.00	6.65	
200cm	27.81	8.05	35.60	107.70	6.74	
250cm	27.83	8.06	35.40	110.70	6.94	
300cm	27.68	8.05	35.40	110.30	6.93	
350cm	27.43	8.04	35.40	104.20	6.56	
400cm	26.89	8.05	35.30	101.10	6.45	
450cm	26.88	8.05	35.30	107.70	6.91	
500cm	26.90	8.05	35.20	105.30	6.71	
550cm	26.88	8.04	35.20	103.10	6.57	
Bottom	26.87	8.04	35.90	91.10	5.76	

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	0.08	ug/L	-	05/01/2017
Copper	4.0	ug/L	-	05/01/2017
Iron	2.0	ug/L	-	05/01/2017
Lead	0.10	ug/L	-	05/01/2017
Manganese	4.9	ug/L	-	05/01/2017
Nitrite and Nitrate as N	908	ug/L	-	05/01/2017
Phosphorus Reactive as P - Total	125	ug/L	-	05/01/2017
Phosphorus as P - Total	192	ug/L	-	05/01/2017
Selenium	29	ug/L	-	05/01/2017
Suspended Solids (SS)	5,000	ug/L	-	05/01/2017
Zinc	2.0	ug/L	-	05/01/2017
pH	8.9	-	-	05/01/2017

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	0.20	ug/L	-	05/01/2017
Iron	5.0	ug/L	-	05/01/2017
Selenium	1.00	ug/L	-	05/01/2017
Temperature - Average	28.0	deg C	-	Jan 2017
Temperature - Minimum	26.2	deg C	-	Jan 2017
Temperature - Maximum	30.0	deg C	-	Jan 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	1.20	ug/L	5	05/01/2017
Iron	6.0	ug/L	300	05/01/2017
Selenium	1.00	ug/L	2	05/01/2017
Temperature - Average	33.8	deg C	35	Jan 2017
Temperature - Minimum	28.1	deg C	35	Jan 2017
Temperature - Maximum	36.6	deg C	35	Jan 2017
Maximum Daily Discharge from Ash Dam	13.4	ML	150	Jan 2017
Monthly Discharge from Ash Dam	240	ML	-	Jan 2017

- The 98.5% limit specified for temperature in the outlet canal means during normal electricity supply conditions, cooling water may be discharged over 35 degC but up to a max temperature of 38.5 degC for up to 181 hrs over the reporting period.

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>
Cadmium	0.050	ug/L	-	05/01/2017
Copper	0.50	ug/L	-	05/01/2017
Iron	266	ug/L	-	05/01/2017
Lead	0.10	ug/L	-	05/01/2017
Manganese	696	ug/L	-	05/01/2017
Nitrite and Nitrate as N	222	ug/L	-	05/01/2017
Phosphorus as P - Total	29	ug/L	-	05/01/2017
Selenium	0.50	ug/L	-	05/01/2017
Zinc	2.0	ug/L	-	05/01/2017
pH	7.0		-	05/01/2017