



Eraring Power Station - EPA Licence 1429

Rocky Point Rd, Dora Creek NSW 2264

Environmental Monitoring Data February 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 1-5 February 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 February	-	-	-	-	-	-	-	-	-
2 February	-	-	-	-	-	-	-	-	-
3 February	-	-	-	-	-	-	-	-	-
4 February	-	-	-	-	-	-	-	-	-
5 February	-	-	-	-	-	-	-	-	-
6 February	160	200	128	16.8	25.7	13.6	201	228	177
7 February	145	170	118	16.5	23.5	13.6	210	234	184
8 February	154	174	112	16.2	24.0	13.5	188	204	178
9 February	163	185	120	14.3	22.5	11.0	183	196	174
10 February	158	185	122	15.7	24.6	11.0	197	223	165
11 February	167	196	129	15.5	22.8	10.4	172	188	152
12 February	164	200	136	15.4	22.4	12.5	191	207	174
13 February	152	167	113	15.2	22.1	13.2	197	205	188
14 February	140	168	120	15.6	23.3	12.4	198	210	188
15 February	151	183	116	16.2	19.0	14.4	196	207	181
16 February	156	169	127	16.4	24.0	14.0	190	200	181
17 February	137	174	111	17.3	22.0	15.1	193	200	181
18 February	153	187	113	17.6	23.1	14.6	181	189	176
19 February	152	174	122	17.0	21.3	14.6	192	200	176
20 February	160	185	129	19.9	28.3	16.3	206	212	186
21 February	147	163	110	18.7	23.7	15.1	201	218	190
22 February	143	166	119	20.5	27.9	18.0	208	224	175
23 February	154	173	115	19.7	26.9	17.4	196	209	184
24 February	160	192	116	17.9	24.2	14.9	200	231	175
25 February	164	183	131	19.2	29.3	16.6	191	200	172
26 February	160	177	117	23.8	35.2	19.0	187	210	163
27 February	151	186	121	21.5	28.7	18.4	189	203	180
28 February	151	174	110	20.6	27.3	17.4	179	192	167

Unit 2 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 12 - Air emissions monitoring, Boiler 2 stack discharge to air
Unit out of service 20 February 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 February	170	193	128	19.7	21.2	18.6	224	255	187
2 February	173	195	131	19.6	21.7	18.7	210	239	171
3 February	139	180	108	19.7	23.4	17.8	224	248	196
4 February	144	169	124	19.8	21.7	17.6	217	257	171
5 February	137	166	114	19.0	25.4	15.0	252	273	239
6 February	136	160	117	17.8	24.0	14.9	254	296	229
7 February	128	143	107	19.8	25.4	16.2	233	252	207
8 February	142	169	114	19.0	23.8	16.3	201	219	176
9 February	150	170	122	17.6	24.5	14.3	212	231	181
10 February	157	195	127	19.8	26.2	15.2	228	244	201
11 February	165	198	126	21.1	26.2	17.2	230	244	199
12 February	175	197	140	20.5	27.3	17.6	228	242	208
13 February	160	173	129	21.3	28.9	18.4	226	245	211
14 February	142	153	124	25.2	31.0	21.9	236	245	212
15 February	153	176	125	24.7	34.3	20.0	233	244	220
16 February	150	170	123	26.4	35.7	23.0	225	238	198
17 February	143	173	118	23.3	30.7	14.9	219	238	204
18 February	131	152	115	16.6	19.6	13.4	215	233	198
19 February	179	214	143	16.4	18.5	13.4	232	242	215
20 February	-	-	-	-	-	-	-	-	-
21 February	145	181	113	19.8	24.3	15.3	241	247	234
22 February	145	169	119	25.7	30.2	22.8	236	256	200
23 February	160	185	125	29.3	36.5	23.2	234	255	208
24 February	155	170	118	18.5	37.9	10.1	225	266	185
25 February	150	163	116	15.6	17.5	12.3	223	229	206
26 February	134	151	110	14.3	21.7	9.0	215	236	185
27 February	155	197	108	14.1	18.7	12.5	226	236	196
28 February	143	187	106	17.0	23.8	12.6	233	243	218

Unit 3 Boiler Continuous Emission Monitoring Summary

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

Unit out of service 24-27 February 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 February	148	178	118	11.0	14.2	9.5	222	239	202
2 February	171	242	112	11.2	13.1	9.6	226	244	190
3 February	162	194	111	12.3	15.8	10.6	241	277	201
4 February	160	180	116	11.4	14.2	9.0	246	261	236
5 February	167	192	111	10.6	14.8	8.9	258	270	236
6 February	158	182	108	11.3	14.8	9.5	256	278	233
7 February	154	177	108	11.1	14.2	10.0	234	269	195
8 February	159	187	105	10.6	13.7	9.0	213	231	202
9 February	174	204	111	9.9	12.0	8.3	208	219	195
10 February	161	188	111	10.3	12.9	8.6	216	237	197
11 February	166	200	110	10.6	12.9	8.7	213	232	194
12 February	174	203	127	10.7	12.9	8.9	221	233	214
13 February	162	182	108	11.3	15.9	9.8	219	231	202
14 February	149	173	117	11.7	14.7	9.1	223	230	205
15 February	166	195	125	11.3	13.3	10.0	219	229	200
16 February	142	178	108	11.6	14.9	9.2	215	223	204
17 February	139	161	116	12.6	13.9	11.3	214	221	209
18 February	148	172	118	12.0	14.5	9.8	204	218	191
19 February	157	188	125	12.2	16.1	9.9	209	221	184
20 February	140	159	112	16.6	26.2	12.6	233	243	218
21 February	170	208	116	14.5	17.1	12.9	236	263	209
22 February	172	186	129	15.7	18.0	12.6	237	254	212
23 February	151	173	112	15.9	20.0	12.5	225	234	202
24 February	-	-	-	-	-	-	-	-	-
25 February	-	-	-	-	-	-	-	-	-
26 February	-	-	-	-	-	-	-	-	-
27 February	-	-	-	-	-	-	-	-	-
28 February	131	150	113	14.0	17.2	11.3	226	236	210

Unit 4 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 14 - Air emissions monitoring, Boiler 4 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 February	193	216	156	16.2	17.0	14.9	230	260	203
2 February	189	207	146	16.8	19.0	14.9	219	236	206
3 February	171	196	141	16.9	19.6	15.5	222	268	190
4 February	168	187	139	16.3	19.1	13.9	240	272	213
5 February	168	187	132	15.7	19.1	13.3	267	299	243
6 February	171	196	131	16.4	19.0	14.4	253	277	238
7 February	162	178	132	16.6	19.0	14.9	230	244	209
8 February	177	200	144	15.5	18.0	12.8	200	218	186
9 February	173	200	133	14.6	18.0	11.3	215	231	195
10 February	179	203	149	15.4	18.0	12.4	224	258	193
11 February	188	214	155	16.1	19.2	12.4	204	230	180
12 February	187	210	162	15.2	17.0	11.9	216	236	205
13 February	176	199	149	15.6	18.5	12.9	221	233	211
14 February	158	175	140	15.6	17.5	12.8	237	257	224
15 February	181	213	148	16.3	20.1	14.3	223	246	209
16 February	177	197	148	16.8	19.0	14.8	228	245	217
17 February	170	208	146	17.1	19.0	15.9	217	228	205
18 February	169	197	148	16.6	18.5	13.3	217	224	210
19 February	146	175	125	16.5	19.1	14.6	225	240	185
20 February	181	200	129	19.3	21.8	17.0	246	252	236
21 February	178	196	146	19.4	21.6	17.1	232	243	227
22 February	165	196	148	19.8	21.8	18.3	223	238	212
23 February	164	188	144	21.6	24.9	19.6	231	242	201
24 February	166	195	152	22.7	26.4	20.2	219	262	194
25 February	159	182	127	23.2	28.5	16.7	230	250	195
26 February	164	186	132	29.8	39.4	19.3	218	238	183
27 February	169	188	138	17.4	34.6	14.6	234	241	227
28 February	161	184	120	15.7	18.7	12.0	224	240	209

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	0.4	1.3	1.7
E4	0.6	0.2	0.8
E6	1.4	1.8	3.2
U6	0.4	0.3	0.7

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	22.84					
010cm	25.30	7.05	37.0	101.8	6.68	1.25
050cm	25.31	7.06	36.9	85.5	5.54	
100cm	25.32	7.05	37.0	88.1	5.70	
150cm	25.32	7.04	37.0	88.9	5.75	
200cm	25.16	7.03	37.1	86.3	5.60	
250cm	25.05	7.01	37.0	84.2	5.44	
300cm	25.02	7.00	37.0	83.0	5.40	
Bottom	24.98	7.03	36.9	78.7	5.19	

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	21.90					
010cm	24.81	7.01	37.4	101.3	6.39	2.75
050cm	24.90	7.02	37.3	81.5	5.31	
100cm	25.02	7.01	37.2	85.7	5.60	
150cm	25.03	7.02	37.2	86.4	5.61	
200cm	25.03	7.01	37.2	86.7	5.61	
250cm	25.06	7.01	37.2	89.6	5.62	
300cm	25.05	7.01	37.2	89.1	5.84	
350cm	25.07	7.02	37.2	88.7	5.78	
400cm	25.14	7.01	37.3	93.9	5.78	
450cm	25.21	7.00	37.3	95.9	6.08	
500cm	25.22	7.01	37.3	94.6	6.20	
550cm	25.22	7.01	37.3	93.0	6.12	
600cm	25.21	7.01	37.4	94.1	5.99	
650cm	25.19	7.01	37.3	89.9	6.09	
700cm	25.19	7.01	37.3	90.7	5.78	
750cm	25.21	7.02	37.4	83.0	5.78	
Bottom	25.21	7.02	37.3	81.9	5.16	

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	23.51					
010cm	22.63	7.28	35.6	98.1	6.71	2.75
050cm	23.39	7.06	35.6	95.5	6.41	
100cm	23.43	7.06	35.7	99.9	6.72	
150cm	23.40	7.06	35.6	103.2	6.94	
200cm	23.50	7.05	35.6	101.7	6.83	
250cm	23.51	7.06	35.6	104.2	7.01	
300cm	23.52	7.04	35.6	101.4	6.83	
350cm	23.52	7.05	35.6	100.6	6.76	
400cm	23.52	7.02	35.6	103.5	6.89	
450cm	23.50	7.04	35.7	101.3	6.79	
500cm	23.52	7.02	35.6	102.1	6.83	
550cm	23.58	7.02	35.6	104.9	7.01	
600cm	23.61	7.01	35.7	102.2	6.87	
650cm	23.60	7.00	35.7	100.2	6.70	
700cm	23.64	7.02	35.7	104.2	7.07	
750cm	23.64	7.01	35.7	105.1	7.02	
800cm	23.69	7.00	35.7	96.3	6.38	
850cm	23.73	6.98	35.8	99.9	6.64	
900cm	23.81	6.97	35.8	96.4	6.47	
950cm	23.90	6.98	35.8	93.5	6.17	
Bottom	23.94	7.01	35.9	87.0	5.81	

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	22.61					
010cm	27.28	6.97	37.4	100.0	6.36	2.75
050cm	27.65	7.00	37.3	102.6	6.46	
100cm	27.71	7.01	37.3	106.9	6.69	
150cm	27.72	6.99	37.3	110.3	6.83	
200cm	27.73	6.99	37.3	110.3	6.90	
250cm	27.72	7.00	37.2	110.7	6.89	
300cm	27.66	6.99	37.2	109.8	6.85	
350cm	27.17	6.97	37.2	111.3	6.98	
400cm	26.56	7.00	37.1	109.8	6.88	
450cm	26.03	6.97	36.9	102.1	6.38	
500cm	25.83	6.97	36.9	96.8	6.22	
550cm	25.80	6.95	37.0	91.8	5.75	
600cm	25.82	6.99	37.0	83.4	5.45	
Bottom	25.66	6.99	37.0	71.2	4.57	

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	-	01/02/2018
Copper	1.0	ug/L	-	01/02/2018
Iron	<2	ug/L	-	01/02/2018
Lead	<0.1	ug/L	-	01/02/2018
Manganese	18.8	ug/L	-	01/02/2018
Nitrite and Nitrate as N	1560	ug/L	-	01/02/2018
Phosphorus Reactive as P - Total	803	ug/L	-	01/02/2018
Phosphorus as P - Total	907	ug/L	-	01/02/2018
Selenium	9.4	ug/L	-	01/02/2018
Suspended Solids (SS)	5000	ug/L	-	01/02/2018
Zinc	<1	ug/L	-	01/02/2018
pH	8.86		-	01/02/2018

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	0.9	ug/L	-	01/02/2018
Iron	<5	ug/L	-	01/02/2018
Selenium	1.0	ug/L	-	01/02/2018
Temperature – Average	26.9	deg C	-	Feb 2018
Temperature – Minimum	23.6	deg C	-	Feb 2018
Temperature - Maximum	29.7	deg C	-	Feb 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	1.5	ug/L	5	01/02/2018
Iron	7	ug/L	300	01/02/2018
Selenium	1	ug/L	2	01/02/2018
Temperature – Average	33.5	deg C	37.5	Feb 2018
Temperature – Minimum	28.0	deg C	37.5	Feb 2018
Temperature - Maximum	36.4	deg C	37.5	Feb 2018
Maximum Daily Discharge from Ash Dam	28.25	ML	150	Feb 2018
Monthly Discharge from Ash Dam	175.4	ML	-	Feb 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	53	ug/L	-	01/02/2018
Phosphorus as P – Total	474	ug/L	-	01/02/2018
pH	6.67		-	01/02/2018